



# BARBODN



## BMS MONTHLY CLIMATE OUTLOOK NEWSLETTER

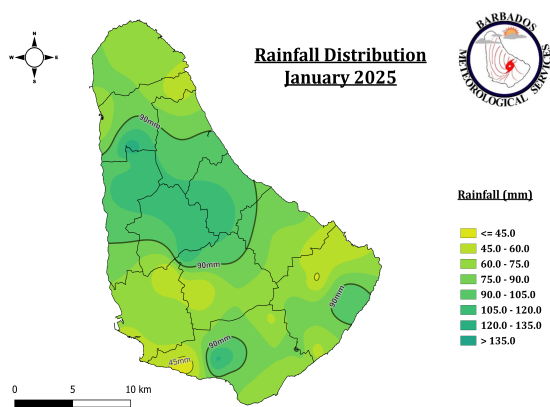
January 2025 | Issue No.60

**Key Messages:** Near to above-average rainfall is expected until July. The longer-term alert level for Agricultural and Hydrological drought has been elevated to yellow for February and it is possible an agricultural drought watch may be in place for MAM, persons should monitor the BMS seasonal outlooks for updates. The cool season should end around late March/ early April and the Heat Season should begin to evolve thereafter. Warmer than normal temperatures should persist given that warmer than normal Atlantic SSTs are expected. Pacific sea surface temperatures are now below average and La Niña conditions are present. La Niña conditions are possible through FMA with ENSO neutral conditions by MAM.

## JANUARY IN REVIEW

### Precipitation

Figure 1: January Rainfall Distribution



Typical for the dry season, the Atlantic high-pressure system dominated much of January. Rainfall recorded here at Charnocks totalled 70.3mm, which was only 2.2mm more than the average for January (68.1mm) and occurred across 17 rain days. Meanwhile, rainfall accumulations at BMS 3DPAWs stations across the island ranged from 44.6mm at Oughterson, St. Philip, to 124.0mm at Black Bess, St. Peter.

Multiple marine advisories were issued in January for above-normal swell heights. These events were either the result of mid-latitude cyclones in the Atlantic or strong Atlantic High-pressure systems generating strong surface-to-low-level winds, which agitated the seas. The alert for marine conditions began at a yellow alert level, and by the 9th, the BMS issued the month's first Small Craft advisory (orange alert level). A high surf advisory was issued from 13 - 16 January, particularly for the western coastlines, as choppy sea conditions were observed. By the 18th, a small craft warning and high-surf advisory were issued for Barbados' eastern coastlines and open water. This alert level was only lowered to a small craft advisory (orange alert level) on the 26th.

### Temperature

Figure 2: January Average Temperature Distribution

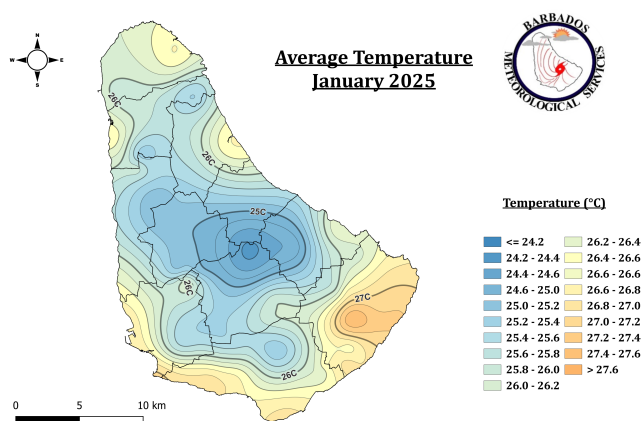
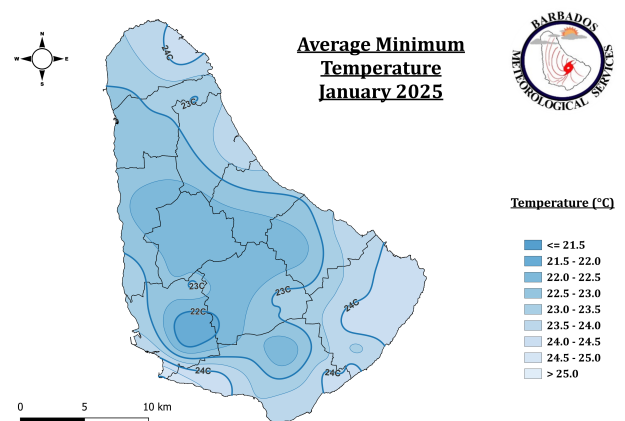


Figure 3: January Average Minimum Temperature Distribution



Although temperatures across the island continued to cool, the dominance of the warmer Atlantic SSTs continue to produce warmer than normal temperatures. Here at Charnocks, the average air temperature for January was 26.3°C, 0.3°C warmer than the climatological average air temperature for January of 26.0°C. Meanwhile, at 3DPAWS stations across the island, average air temperatures ranged from 24.3°C to 27.5°C. Overnight minimum temperatures at Charnocks cooled to an average of 23.9°C which was 0.6°C warmer than the climatological average of 23.3°C. As for the remainder of the island, minimum temperatures ranged between 21.7°C and 24.9°C, with the warmest nighttime temperature observed at St. Ann's Fort, Christ Church and the coolest nighttime temperature observed in the Belle, St. Michael, as seen in Figure 3.



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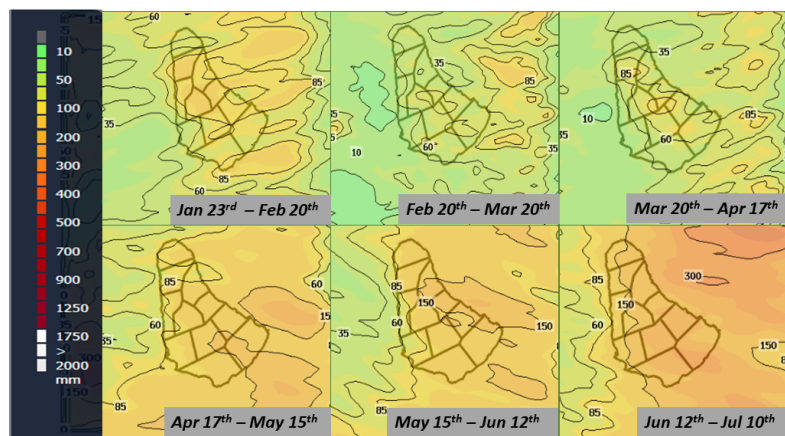


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January 2025 | Issue No.60

### PRECIPITATION OUTLOOK

Figure 4: BMS Experimental rainfall forecast from January to June 2025



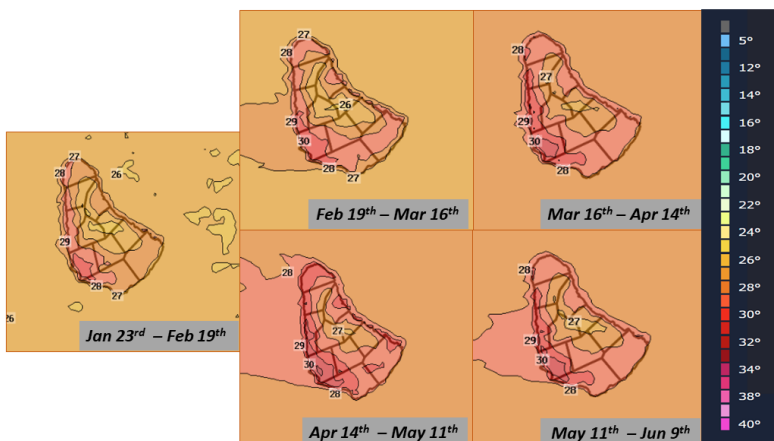
Rainfall during the remainder of the Dry Season and the early part of the Wet Season is expected to be near to above average. Given the presence of weak La Niña conditions across the tropical Pacific and the persistently warmer than normal Atlantic SSTs, BMS experimental high-resolution WRF Climate model (figure 4) along with other regional climate models suggest average to above average rainfall accumulations for much of the forecast. This has been reflected in the BMS official forecast. However, periodic intrusions of Saharan dust, which are not well resolved at the seasonal timescale and usually peak in the latter part of the forecast period, could limit rainfall. Therefore, persons are urged to continue to monitor all forecast issued by the BMS. Table 1 shows the projected rainfall accumulations and the deviation from the climatological average at Charnocks.

Table 1: Rainfall Projections for February to June 2025

Month	Projections (mm)	Deviation from 30-yr Average at Charnocks
February 2025	40-85	Near to Above average
March 2025	40-70	Near to Above average
April 2025	50-100	Near to Above average
May 2025	100-150	Above average
June 2025	150-200	Above Average

### TEMPERATURE OUTLOOK

Figure 5: BMS Experimental peak temperature forecast from January to June 2025



Although comfortable temperatures are expected until Barbados' cool season ends in late March/ early April, temperatures are expected to be warmer than normal. Given the expected persistence of the above-normal Atlantic SSTs, the latest probabilistic and dynamic model forecasts continue to project above-normal maximum, minimum and mean temperatures for the entire forecast period (table 2). Based on the BMS experimental WRF model (figure 5), daytime temperatures should peak between 28°C and 31°C until late March/ early April. Thereafter, a transition into the Heat Season means that conditions will become uncomfortable and that daytime temperature should peak between 29°C and 33°C. Members of the public are urged to monitor the BMS temperature outlooks for updates in the coming months and adhere to the advice and recommendations from the Ministry of Health and Wellness during the warmer months.

Table 2: Temperature Outlook for January to May 2025

Temperature	Season	Forecast Probability (%)		
		Below	Normal	Above
Minimum Temperature	FMA	13	22	65
	MJJ	12	23	65
Maximum Temperature	FMA	18	36	46
	MJJ	31	23	46
Mean Temperature	FMA	6	18	76
	MJJ	13	22	67

### DROUGHT OUTLOOK

As the dry season evolves, drought conditions are expected. The agricultural drought alert level has been set to be aware, at least for February. The alert level has been elevated to an **Agricultural Drought Watch for MAM**. Persons in the agriculture sector are urged to continue monitoring the Ministry of Agriculture, Food and Nutritional Security and the BMS for updates to the seasonal drought forecast for updates. Similarly, the alert level for hydrological drought has been set at be aware until March and a **Hydrological Drought Watch is likely from March - June**. Members of the public are urged to take responsibility and continue to conserve water, regardless of the drought alert level and to continue monitoring the BWA and the BMS for updates. Below is a table of the forecast drought alert levels based on the forecast rainfall accumulations (Table 1).

Table 3: Drought Outlooks for February to June 2025

MONTH	AGRICULTURAL	HYDROLOGICAL
FEBRUARY 2025	Be Aware	Be Aware
MARCH 2025	Drought Watch	Drought Watch
APRIL 2025	Drought Watch	Drought Watch
MAY 2024	Drought Watch	Drought Watch
JUNE 2025	Drought Watch	Drought Watch



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January 2025 | Issue No.60

### Agricultural Drought: Be Aware

Responses to the predicted Drought Alert Level.

*Key Messages:*

- Monitor resources
- Prepare the infrastructure for the possibility of drought
- Prepare for the possibility of increased irrigation during periods of extensive dryness

- ✓ Continue to monitor for updates from the Barbados Water Authority and Ministry of Agriculture, Food and Nutritional Security.
- ✓ Continue to monitor the BMS Climate Outlook for monthly updates.

### Hydrological Drought: Be Aware

Responses to the predicted Drought Alert Level.

*Key Messages:*

- Encourage water conservation through public awareness campaigns
- Monitor resources and upgrade infrastructure
- Update and ratify management plans for the possibility of drought

- ✓ Continue to monitor for updates from the Barbados Water Authority.
- ✓ Continue to monitor the BMS Climate Outlook for monthly updates.

## Likely Impacts for the February to July 2025 Period

### What do these forecasts mean for Barbados?

- Continue to conserve water.
- Depletion of reservoir/aquifer levels as the dry season progresses.
- There may be inadequate soil moisture at times for certain crops.
- Employ rainwater harvesting techniques for rain feed crops.
- It is recommended to have an irrigation plan and systems to ensure the best crop yield during periods of dryness.
- More comfortable days and nights until late March/ early April.
- A transition into the Heat Season and uncomfortable temperatures around April.
- Air quality may be impacted by periodic intrusions of Saharan dust and grass fires.
- Keep updated with daily weather as well as seasonal forecasts issued by the BMS.

## CLIMATE OUTLOOK

### ENSO (El Niño Southern Oscillation)

ENSO is the interaction between the ocean and atmosphere in the equatorial Pacific which results in periodic departures from the expected sea surface temperatures. There are two phases of ENSO, the cold phase of sea surface temperatures, La Niña and the warm phase, El Niño. La Niña conditions usually results in higher rainfall for Barbados. El Niño conditions usually result in lower rainfall for the island. Neutral conditions which are close to average or what is normally expected. These are the general conditions associated with each phase however, there are other factors which influence the rainfall patterns across Barbados which may result in a deviation from the norm.

#### **Current state**

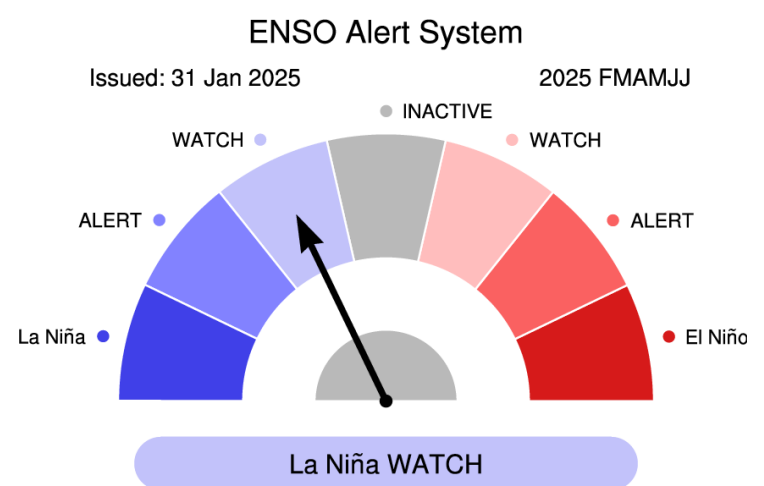
La Niña conditions are present as below-average sea surface temperatures (SSTs) are present across the eastern and central equatorial Pacific Ocean.

#### **What's the Outlook?**

La Niña conditions are likely to persist for the FMA period and there is a 60% chance that a transition to ENSO-neutral is likely for the MAM period.

#### **Impact to the Upcoming Seasons**

La Niña conditions usually favour an increase in rainfall across Barbados.



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(Source: APCC/ Climate Information Services)



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## CLIMATE OUTLOOK

### Sea Surface Temperatures (SSTs)

The Multi-Model Ensemble continues to forecast above-normal sea surface temperatures (SSTs) across the tropical Atlantic. Across much of the tropical Atlantic, SSTs are forecast to remain above normal by 0.2°C – 0.6°C through February- March - April and 0.2°C through June. Across the eastern and central equatorial Pacific, SSTs are expected to be below normal, consistent with a weak La Niña. A transition to ENSO-neutral is likely by April - May- June 2025.

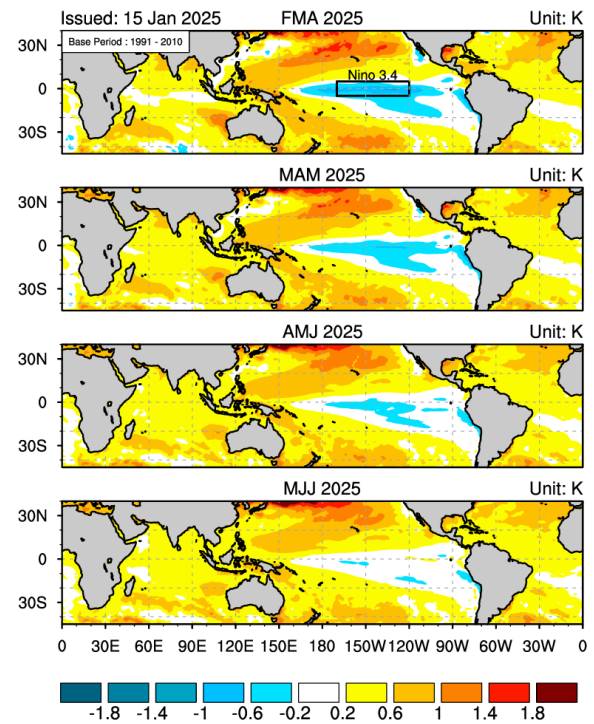
### Impact on Rainfall

Warmer than normal SSTs may favour increased rainfall characterized by intense rainfall events which may result in flash flooding across the island.

### Impact on Temperatures

Warmer-than-normal SSTs across the tropical Atlantic will cause warmer-than-normal temperatures to persist. Temperatures during the cooler months are not expected to result in significant heat stress. However, as Barbados transitions to the Heat Season episodes of heat stress are likely.

### SST Anomaly for FMA-MJJ 2025



(Source: APCC/ Climate Information Services)

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