MARCH 2025

CLIMATE BULLETIN

DEKAD 3, MARCH (21-31)

GMET/CLIMATE/030325 FORM337

3/1/2025

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SUMMARY

- **Rainfall:**
  - Most areas received l rainfall above 50mm
  - Ada received the highest rainfall of 113.8 mm.
  - : Highest rainy days were 5 days
- **Rainfall Anomalies:**
  - Surplus rainfall in most areas.
  - Western portion experienced deficit rainfall.
- **Relative Humidity:**
  - Maximum value of 76% was recorded over Axim
  - Minimum value of 32% was recorded over Navrongo.
- **Temperatures:**
  - **Maximum:**
    - Above normal temperatures along the Coast and Eastern fringes.
    - The maximum of the Maximum temperature of 40.8°C was recorded in Navrongo
    - Relatively cooler temperatures along the coast and in select forested areas.
  - **Minimum:**
    - Warmer temperatures in the Northern Zone
    - Relatively above normal temperatures across the country
    - The minimum of the Minimum temperature was recorded in Sunyani, reaching 21.4°C.

1.OBSERVED CLIMATE DRIVERS

1.1 INTERTROPICAL FRONT

Also known as the Intertropical Convergence Zone (ITCZ) is a critical meteorological feature that significantly influences weather patterns in West Africa, including Ghana. The ITF is a boundary zone where the warm, moist air from the Atlantic Ocean (southwesterly monsoon winds) meets the hot, dry air from the Sahara Desert (northeasterly Harmattan winds). This convergence leads to the formation of clouds and precipitation, making it a key driver of the rainy season in West Africa. The northward movement of the ITF during March-July brings the rainy season to Ghana.

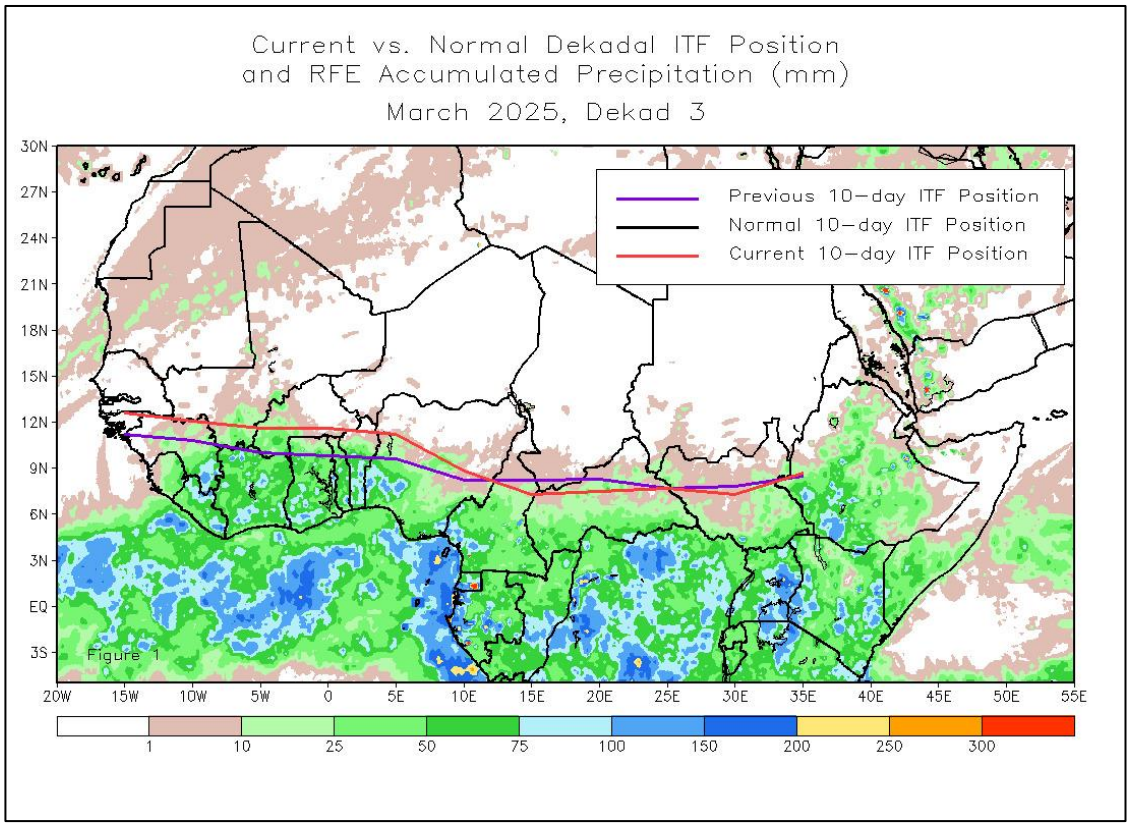


Figure 1. Current ITF position for March 3rd Dekad, 2025

Figure 1 displays the position of the ITF during the 3rd dekad of March and its previous position during the 2nd dekad of March. Between March 21 and 31, the current Inter-Tropical Front (ITF) shifted northward compared to its previous location. Specifically, the current ITF was located at approximately 11.5N in the northern sector of the country which is north of its previous position at 9.8N. Similarly, *Table 1* below also shows the evolving ITF's position of Ghana, located between 5W and 5E.

DEKAD	5W	0	5E
January 1	7.2	7.6	7.8
January 2	7.3	7.8	7.5
January 3	7.9	8.2	8.5
February 1	6.6	8.1	8.3
February 2	9.6	9.0	8.8
February 3	8.2	9.2	8.9
March 1	11.0	10.5	10.1
March 2	10.0	9.8	9.6
March 3	11.6	11.6	11.2

Table 1. Dekadal evolution of the ITF position over Ghana 2025.

1.2 MADDEN-JULIAN OSCILLATION (MJO)

MJO is a tropical disturbance that moves eastward around the globe, influencing weather patterns, including rainfall and temperature, in various regions. The MJO has phases (1-8), with each phase corresponding to its location over the tropics. Its position and strength can have significant implications for weather in Ghana, particularly during the West African monsoon season.

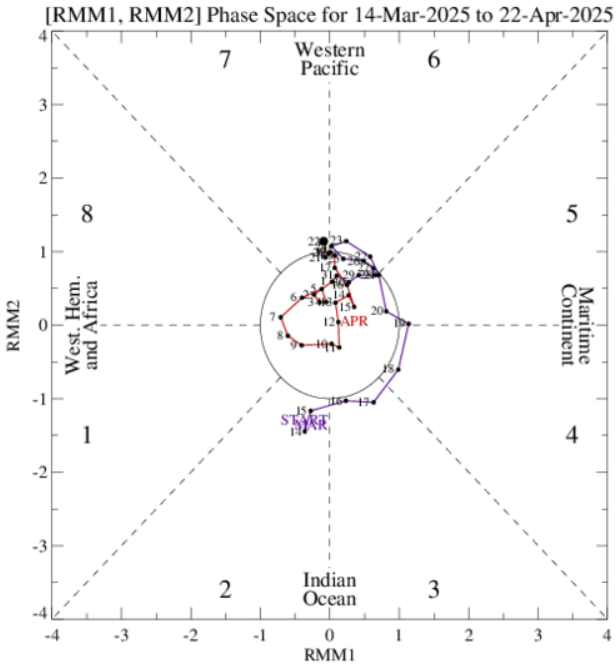


Figure 2. Current MJO position as of March 3rd Dekad, 2025

As depicted in Figure 2, the Madden-Julian Oscillation (MJO) was observed between Phases 5 and 6, corresponding to the Maritime Continent and Western Pacific regions. However, its position near the centre of the phase-space diagram indicates a weak amplitude, signifying a less active MJO signal during this period.

Given its current phase and weak intensity, the MJO was unlikely to significantly enhance convective activity over West Africa. This may have contributed to the suppression of rainfall over Ghana in the short term, as the influence of the MJO during weak phases tends to be minimal across the region.

2.0 RAINFALL, TEMPERATURE AND RELATIVE DISTRIBUTION

2.1 RAINFALL

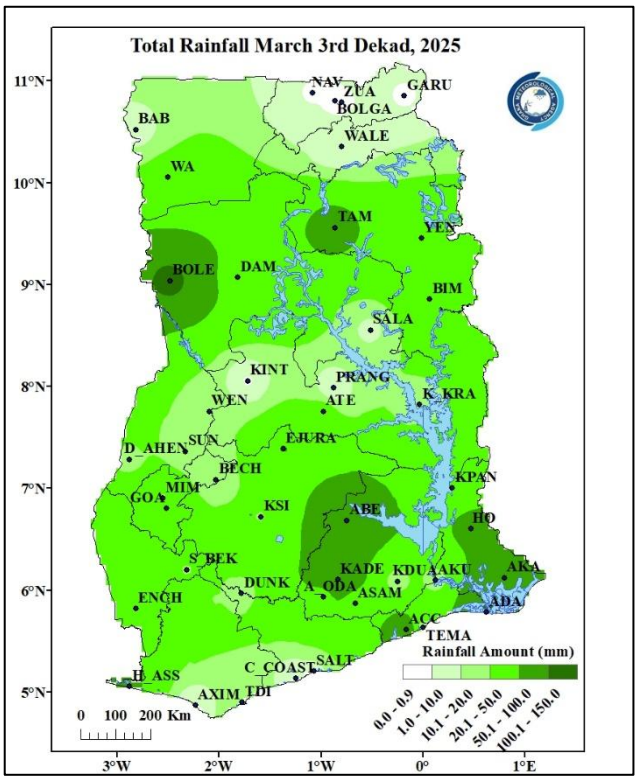


Figure 3a. Total Rainfall March 3rd Dekad, 2025

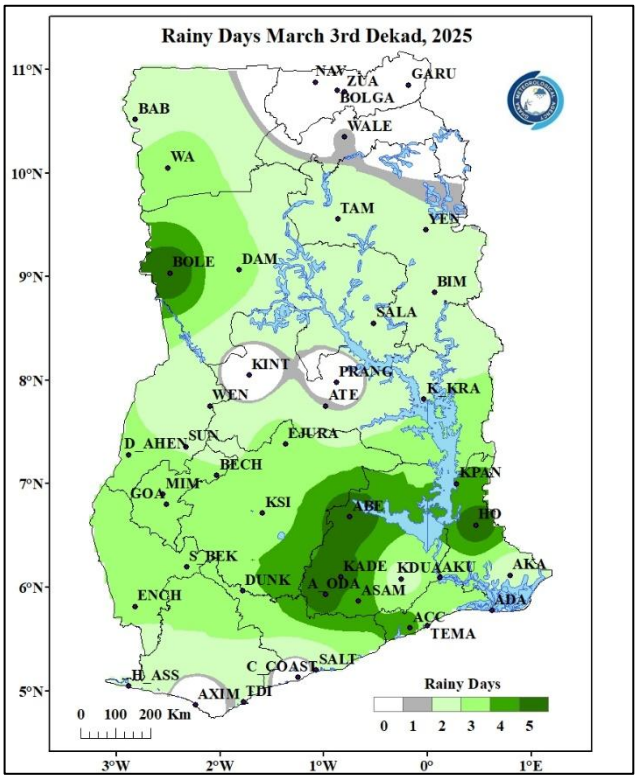


Figure 3b. Rainy Days March 3rd Dekad, 2025

Figure 3a presents the spatial distribution of rainfall across Ghana during the third ten-day period (dekad) of March. During this period, Ada recorded the highest total rainfall, amounting to 113.8 mm. In contrast, several locations, particularly in the Northern and Southern parts of the country such as Zuarungu, Navrongo, Garu, Prang, Kintampo, and Cape Coast experienced no rainfall.

Figure 3b illustrates the frequency of rainy days within the same period. Most areas across Ghana, spanning from the Northern to the Southern zones, recorded between two (2) and five (5) rainy days. However, like the rainfall distribution, locations including Zuarungu, Navrongo, Garu, Prang, Kintampo, and Cape Coast did not record any rainy days during this dekad.

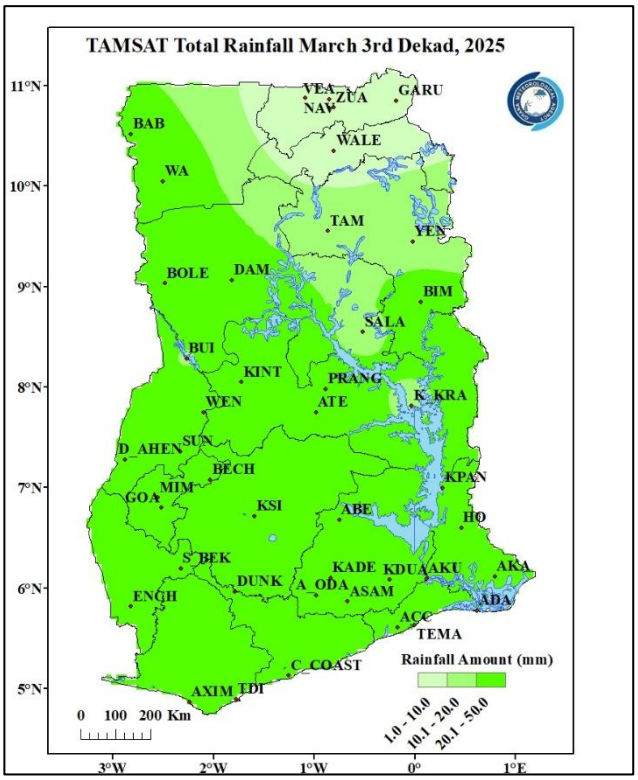


Figure 4. TAMSAT Total Rainfall March 3rd Dekad, 2025

Figure 4 presents total rainfall for the duration, as calculated from the TAMSAT rainfall estimates**.** While the satellite-based data is helpful in terms of nationwide rainfall distribution, there were discrepancies when compared with ground-based observations. There was both underestimation as well as overestimation in different regions of the country, reflecting the shortcomings of satellite estimates.

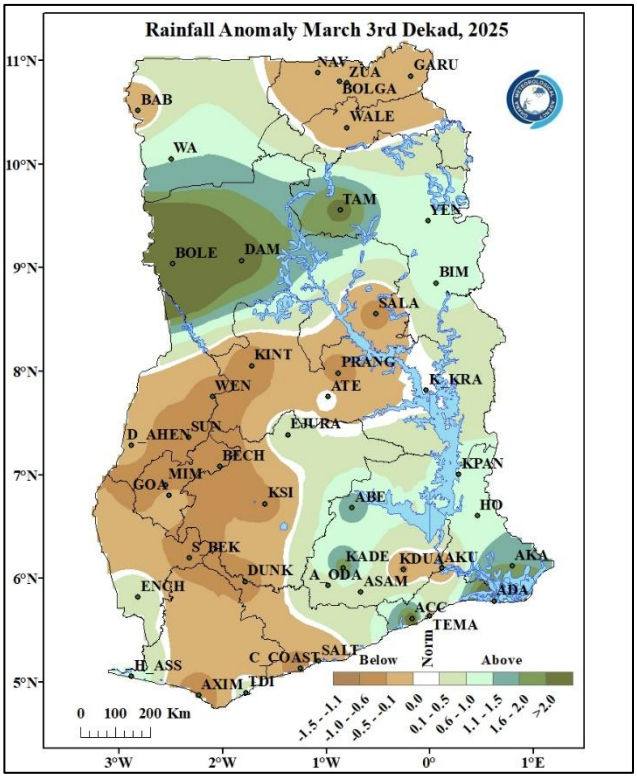


Figure 5: Rainfall Anomaly for March 3rd Dekad, 2025

Figure 5 highlights areas across the country that experienced deviations from normal rainfall during the reporting period. Notably, most locations along the eastern fringes, the Coastal belt, and parts of the Northern zone particularly Bole, Damongo, and Tamale recorded surplus rainfall. In contrast, the western parts of the country generally experienced deficit rainfall.

2.2 TEMPERATURE

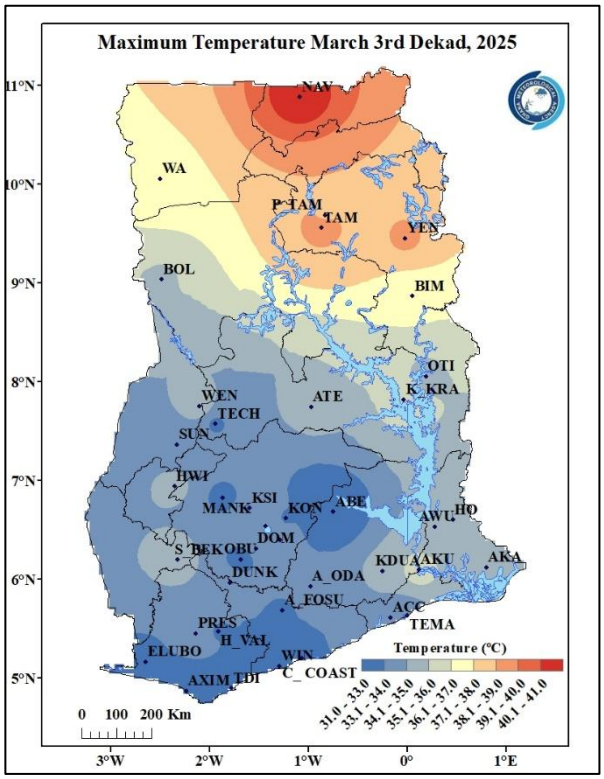


Figure 6a. Maximum Temperature March 3rd Dekad, 2025

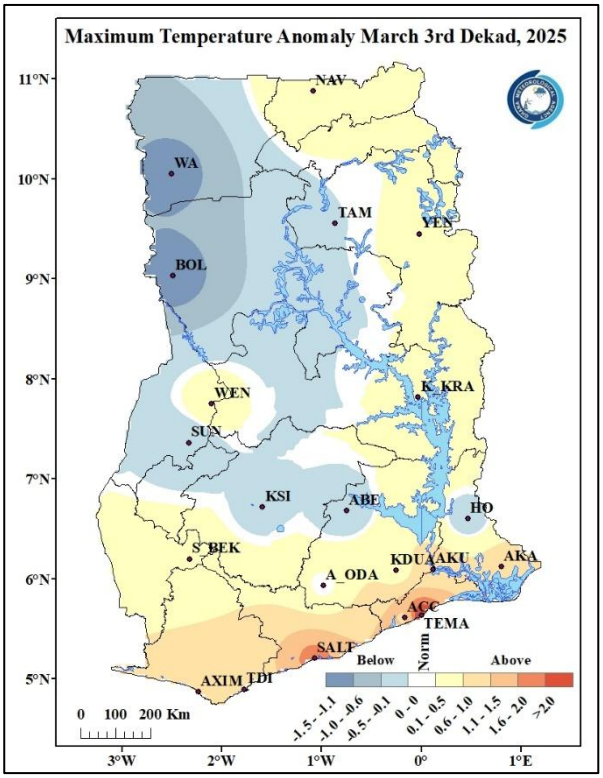


Figure 6b. Maximum Temperature Anomaly March 3rd Dekad, 2025

Figure 6a displays the distribution of average Maximum temperatures across the country. During the reporting period, the northern belt of Ghana recorded the highest temperatures, ranging from 36.0°C to 41.0°C. The highest temperature, 40.8°C, was observed in Navrongo, while the lowest, 30.5°C, was recorded in Abetifi.In the transition zone, temperatures ranged between 33.0°C and 36.0°C, whereas the southern sector, including locations such as Abetifi, Axim, Saltpond, and Cape Coast, experienced relatively cooler conditions, with temperatures ranging from 31.0°C to 33.0°C.

Figure 6b illustrates the Maximum Temperature Anomalies across the country. Areas along the coast and the eastern fringes exhibited above-normal to near-normal temperatures, except for Ho, which recorded below-normal temperatures. Additionally, locations including Wa, Bole, Sunyani, Kumasi, Abetifi, and Ho also experienced below-normal maximum temperatures, indicating localized cooler-than-average conditions for this time of year

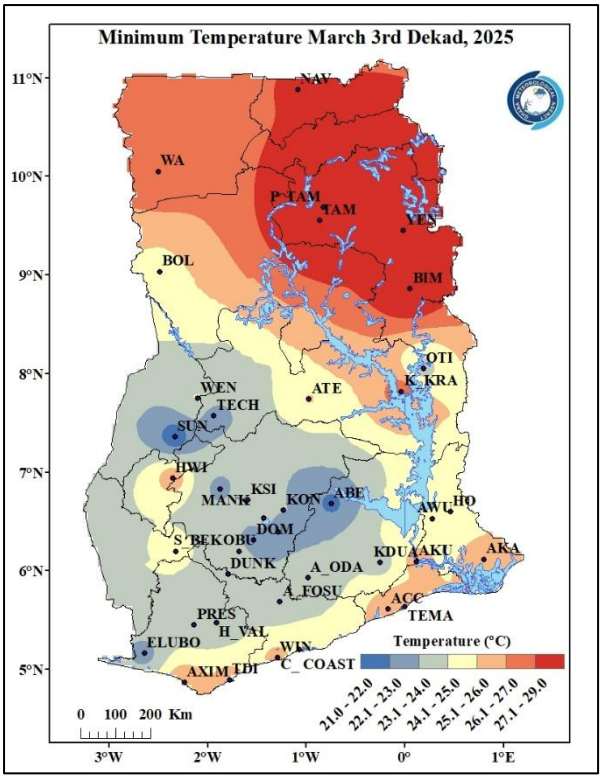


Figure 7a. Minimum Temperature March 3rd Dekad, 2025

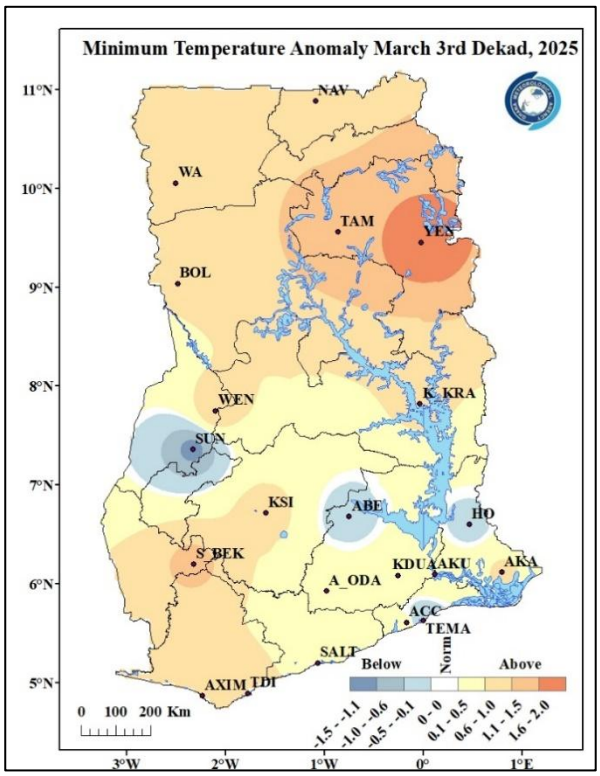


Figure 7b. Minimum Temperature Anomaly March 3rd Dekad, 2025

In *Figure 7a*, the average minimum temperatures varied across different regions. The Northern zones and areas along the coast of the country (Navrongo, Wa. Tamale, Yendi and Bimbila experienced relatively warmer temperatures, with average values ranging from 25°C to 29.0°C. In contrast, the remaining portions areas such as Sunyani, Abetifi, Kumasi to mention a few experienced relatively cooler average nighttime temperatures ranging from 21.0°C to 24.0°C. The lowest average nighttime temperature was recorded in Sunyani in the Transition Zone, reaching 21.4°C.

In *figure 7b*, we see the Minimum Temperature Anomaly. It is evident that, most parts of the country experienced above normal temperatures indicating increasing nighttime temperatures. However, areas such as Sunyani, Abetifi, Accra and Hoe experienced below normal minimum temperatures.

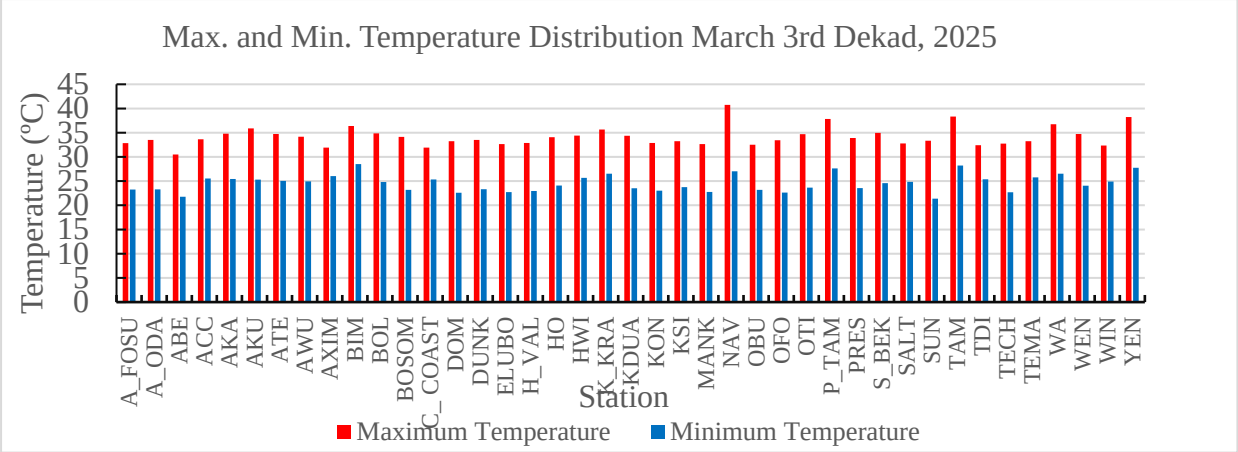


Figure 8. Max. and Min. Temperature Distribution for March 3rd Dekad, 2025

2.3 RELATIVE HUMIDITY

Observed Relative Humidity (RH) over the ten (10) day period is presented in *figure 9a* below. The forest and coastal areas experienced RH of 60 to 80%. On the other hand, the Transition and Northern areas experienced RH values ranging from 30 to 50 %. The minimum value of 32% was recorded over Navrongo while a maximum value of 76% was recorded over Axim.

Average RH Anomaly is also presented in *figure 9b.* Generally, a below normal RH is observed over almost the entire country. However, areas around Wa experienced an above normal RH.

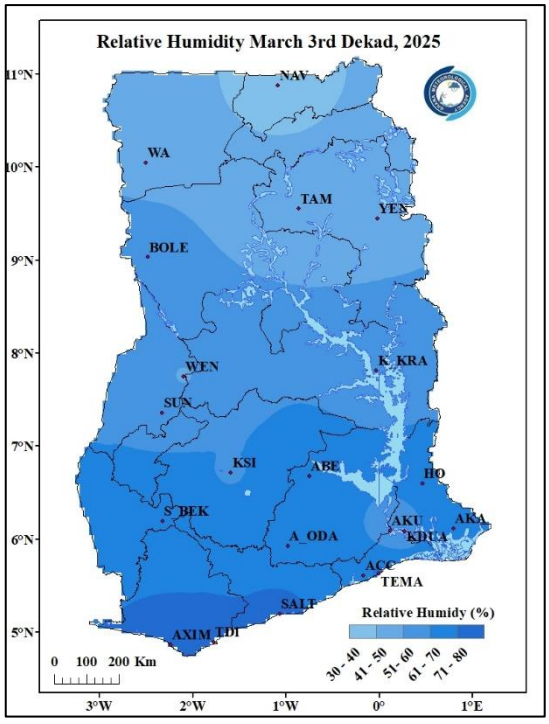


Figure 9a. Average Relative Humidity March 3rd Dekad, 2025

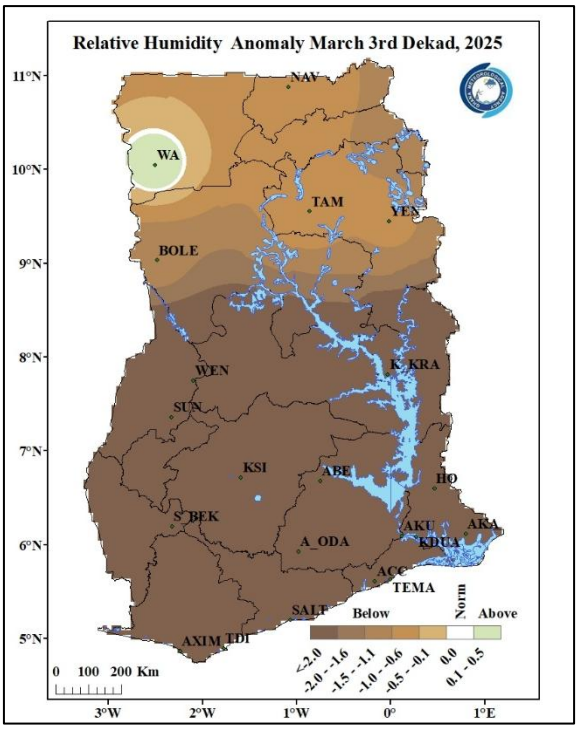
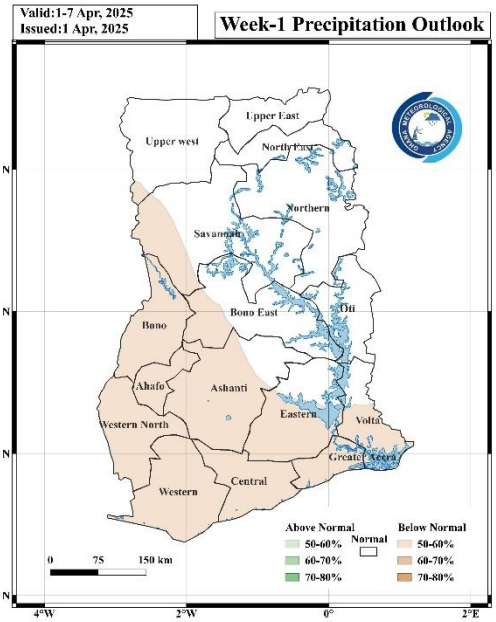
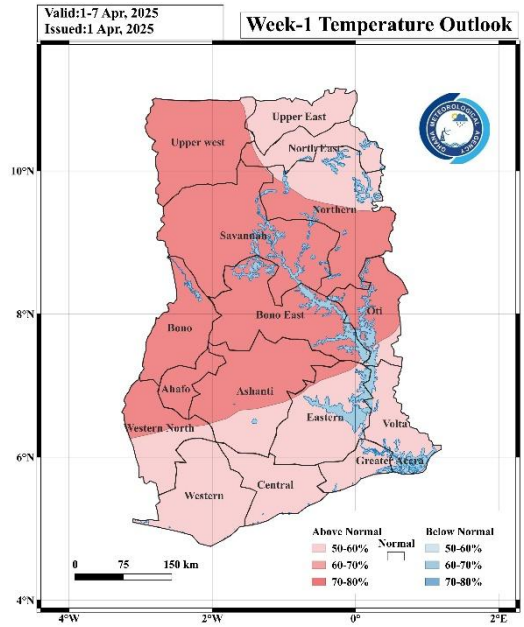


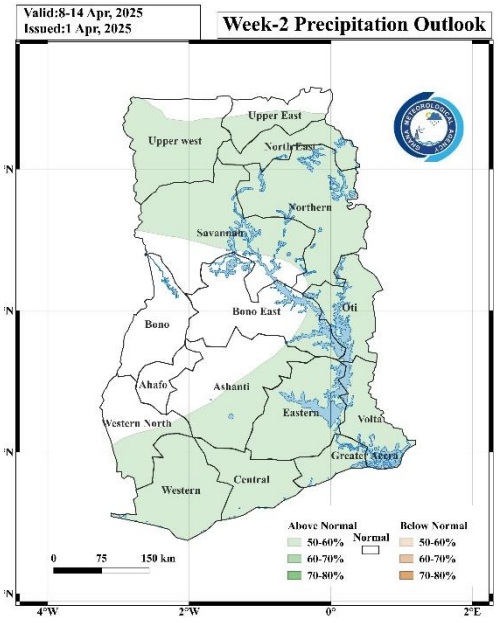
Figure 9b. Average Relative Humidity Anomaly March 3rd Dekad, 2025

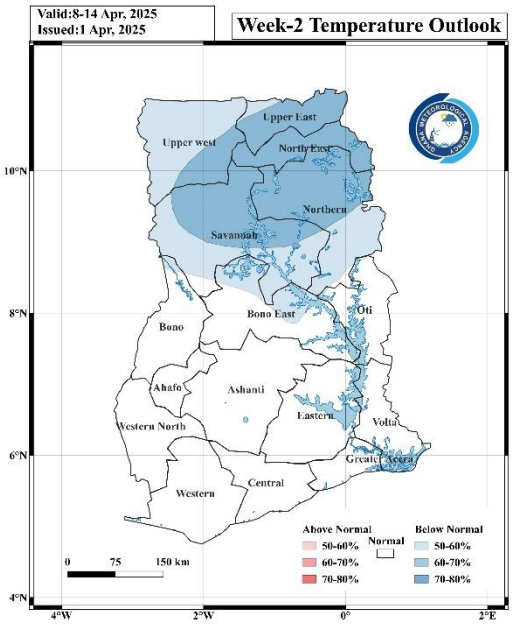
3.0 RAINFALL AND TEMPERATURE OUTLOOK 1ST- 14TH APRIL 2025

Week 1 is expected to bring below-normal rainfall to the southern regions, accompanied by above-normal temperatures across the country. In Week 2, rainfall is projected to be above normal in the southern areas and portions of the North, while temperatures will drop below normal in the North.









4.0 ADVISORIES

1. **Health Sector**

    - Increased temperatures may lead to dehydration and heat stress.
    - Be cautious of heat-related illnesses, especially for vulnerable groups (elderly, children, and those with chronic illnesses) due to high daytime temperatures particularly in the Northern belt.

2. **Water Resources Management Sector**
    - Conserve water and use it efficiently, especially in regions with less rainfall (Northern sector).
    -

3. **General Public**

    - Above-Normal Temperatures (Nationwide). The general public should limit outdoor activities during peak heat hours (11 am to 4 pm).
    - The use of fans or air conditioning where available to stay cool
    - Stay hydrated, avoid prolonged sun exposure, and wear light clothing.
    - Stay updated on weather forecasts from the Ghana Meteorological Agency.

5.0 APPENDIX

5.1 TABLE OF STATIONS

STATIONS	Abrevation	STATIONS	Abrevation	STATIONS	Abrevation
Abetifi	ABE	Bui	BUI	Salaga	SALA
Accra	ACC	Cape Coast	C. COAST	Saltpond	SALT
Ada	ADA	Damongo	DAM	Sefwi Bekwai	S. BEK
Agona Kwanyako	AG. KWA	Dorma Ahenkro	D. AHEN	Sefwi Wiawso	S. WIAW
Agona Swedro	AG. SWE	Duayaw Nkwanta	D. NKWA	Sunyani	SUNY
Akatsi	AKA	Dunkwa	DUNK	Techiman	TECH
Akim Oda	AK. ODA	Goaso	GOA	Tafo	TAFO
Akropong Akwapim	A. Akwap	Ho	HO	Takoradi	TADI
Akuse	AKU	Kade	KADE	Tamale	TAMA
Asamankese	ASAM	Kete Krachi	K. KRA	Tarkwa	TARK
Asankragwa	ASANK	Kintampo	KINT	Tema	TEMA
Atebubu	ATE	Koforidua	KOF	Twifo Praso	T. PRA
Atieku	ATIEKU	Kpando	KPAN	Vea Dam	VEA
Axim	AXIM	Kumasi	KSI	Wa	WA
Babile	BABILE	Manga Bawku	M. BAWKU	Walewale	WALE
Bechem	BECH	Mim	MIM	Wamfie	WAMF
Bibiani	BIB	Navrongo	NAV	Wassaw Akropong	W. AKR
Bimbila	BIMB	Nsoatre	NSOA	Wenchi	WEN
Bole	BOLE	Obuasi	OBUASI	Winneba	WINN
Bolgatanga	BOLGA	Pong Tamale	P. TAM	Yendi	YEN
Bompata	BOMPA	Prang	PRANG	Zuarungu	ZUA
Breman Asikuma	B. ASIK				

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