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Rainfall and Temperature Outlook for Trinidad and Tobago, December 2023 to May 2024

Key words: below-normal ("less than usual"), near-normal ("usual") or above-normal ("More than usual")

Rainfall and Temperature Outlook for Trinidad and Tobago, December to May 2024

Near Normal Rainfall and Warm Temperatures are Expected For The 2024 Dry Season
Flood Potential Remains Low for December 2023.

Key Messages:

- The 2024 Dry Season rainfall outlook indicates strongly enhanced signals for suppression of rainfall towards drier-than-usual conditions in the first half of the season followed by wetter than usual for the second half of the season for both islands. December is likely to get near-normal rainfall;
- Below-normal rainfall totals are favoured for January to March while above-normal rainfall totals are favoured for March to May 2024;
- The majority of the country is likely to get a percentage of average dry season rainfall totals that range between 61% to 102%;
- Trinidad and Tobago normally receives 3 to 8, 7-day dry spells and 1 to 5, 10-day dry spells in the dry season. For 2024, there is a 70% probability for 4-7, 7-day dry spells and 1 to 3, 10-day dry spells;
- The outlook indicates relatively moderate to high probabilities (31%-98%) across most areas for seasonal rainfall totals to exceed the national dry season average of 412.0 mm;
- The probability for totals to be in the lowest 10% of all dry season rainfall totals is low (8%-27%);
- The Dry Season 2024 temperature outlook indicates above-normal seasonal mean, maximum and minimum temperatures are likely, but at least three to seven cool nights when temperatures can fall below 20.0 oC in Trinidad and 22.0 oC in Tobago are possible in January and February 2024;
- There is a moderate probability (55%-60%) that a moderately strong El Niño will persist throughout the first half of the dry season followed by weakening in the second half of the Dry Season 2024.

Likely Impacts:

- Recent rainfall events during November and the first week of December 2023 have already positively influenced surface water flows, river levels and groundwater recharge. The expected drier-than-usual conditions in the first half of the dry season will negatively impact surface and groundwater recharge rates and stream flow rates;
- Initial drier than usual and warmer than usual conditions at the beginning of the dry season may lead to an increase in breeding areas for insect vectors such as mosquitoes due to uncovered water storage devices;
- The expected 2024 dry season conditions will increase chances for bush, forest and landfill fire potential, especially from early January to March 2024 but less so in April and May 2024. This will likely reduce air quality and negatively affect persons with existing respiratory and other ailments.

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Early Actions & Preparedness

- Review household water plan. Conserve, store, and manage water safely and adequately.
- Sensitize vulnerable communities on the negative impacts of the forecast and actions to be taken
- Raise awareness on dry season agriculture pest and disease control measures and bushfire risk.
- Ramp-up contingency plans to mitigate the possible occurrence of landfill fires.
- Review contingency plans to manage dry season spikes in vector-borne diseases such as gastroenteritis and leptospirosis; and dust/smoke-related respiratory ailments.

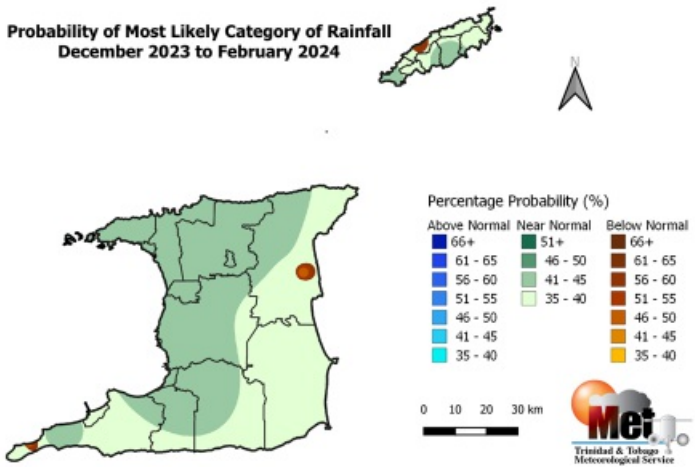

Figure 1: Category of rainfall likely for DJF (December to February) 2023/4 with the highest chance of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above-normal rainfall, brown areas show an increased chance for below-normal rainfall, while green areas show an increased chance for near-normal rainfall. Normal is defined by the rainfall that was observed in the middle one-third of the DJF period rainfall totals during the historical period used to produce the outlook.

- The December to February (DJF) 2023-2024 rainfall outlook indicates that there is an enhanced chance for near-normal conditions to occur across Trinidad and Tobago;
- Most of the DJF seasonal rainfall will occur in December 2023;
- There are small pockets of below-normal rainfall seasonal totals in Trinidad and Tobago.

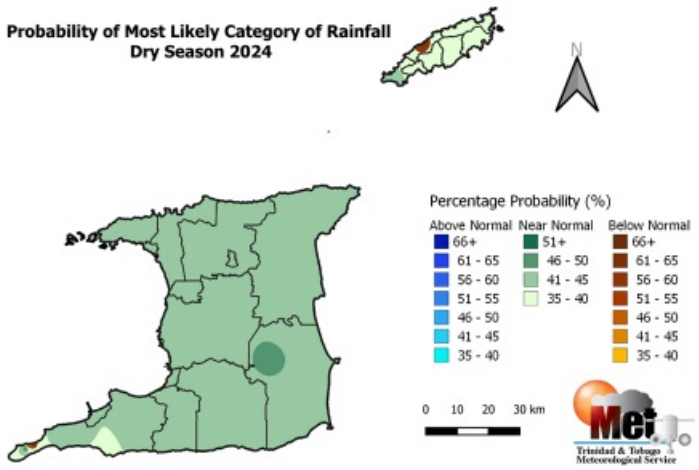

Figure 2: Category of rainfall likely for the 2024 Dry Season with highest chances of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above-normal rainfall, brown areas show an increased chance for below-normal rainfall, while green areas show an increased chance for near-normal rainfall. Normal is defined by the rainfall that was observed in the middle one-third of the JFMAM period rainfall totals during the historical period used to produce the outlook.

- The 2024 Dry Season rainfall outlook indicates a strongly enhanced signal for usual rainfall amounts with odds in favour of wet as normal conditions across most areas of Trinidad and Tobago.

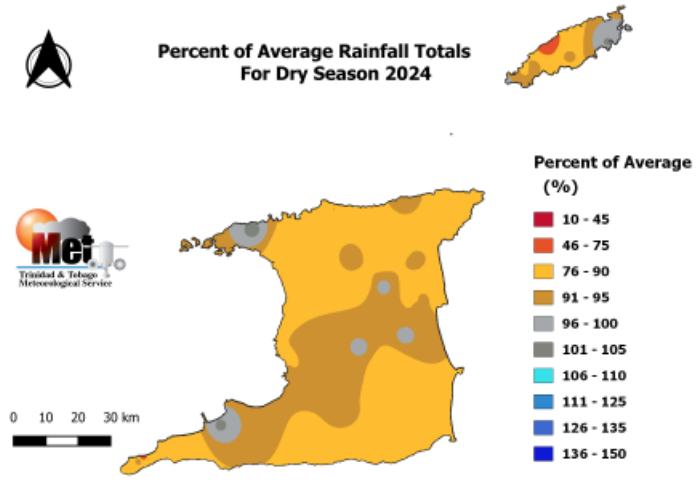

Figure 3: Percentage of average rainfall totals likely for the 2024 Dry Season.

- In general, the dry season outlook is likely to get a percentage of average seasonal rainfall that is mostly between 61% to 102% of the average;
- There is a small pocket in Tobago that will get less than the average rainfall;

- The country is likely to get about 102 dry days during the season, which is just below the average of 108 dry days (a dry day is defined as a day with less than 1.0 mm of rainfall);
- The country usually receives 3 to 8, 7-day dry spells and 1 to 5, 10-day dry spells in the dry season. For 2024, there is a 70% probability for 4-7, 7-day dry spells and 1 to 3, 10-day dry spells;

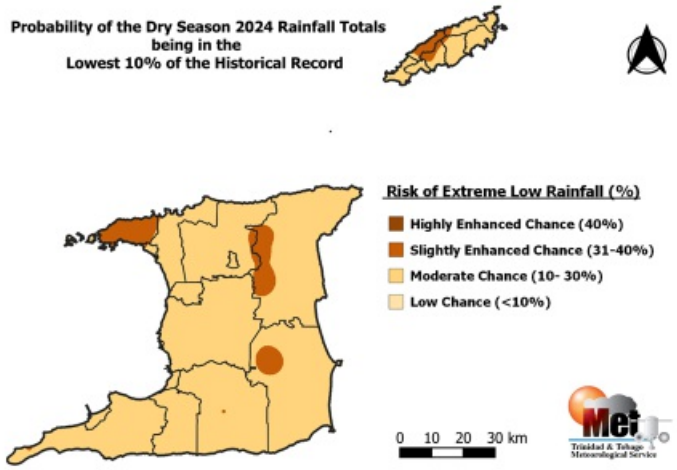

Figure 4 : The map shows the chances for extremely dry conditions over the 2024 Dry Season. Extremely dry conditions refer to the lowest 10% of dry Season total rainfall amount in historical records.

- The probability for totals to be in the lowest 10% of all dry season rainfall totals is low (8%-27%);
- Although there is a moderate (65%) chance of dry spells to occur in the first half of the season, the probability of long-term drought conditions by the end of May 2024 is low.

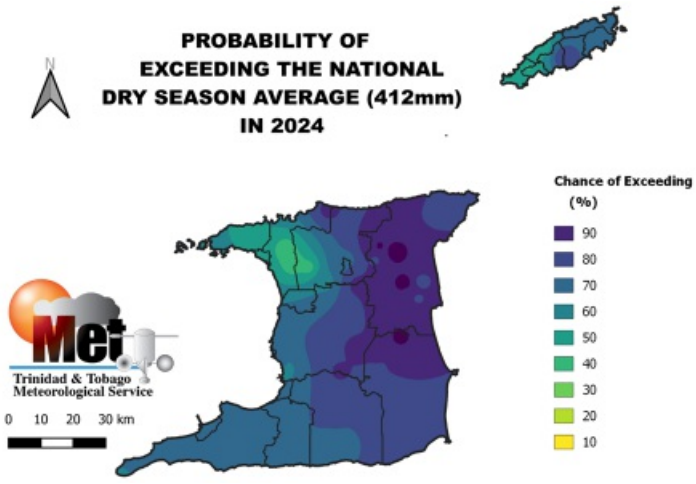

Figure 5: The map shows the probability of the 2024 Dry Season rainfall totals exceeding the national average of 412

mm.

- The outlook indicates moderate to high probability (31%-98%) that the national average of 412 mm will be surpassed;
- Areas in eastern Trinidad and central Tobago have the highest probability of exceeding the national average, while small areas in northwest Trinidad and southwest Tobago have lower probabilities of surpassing the national average;

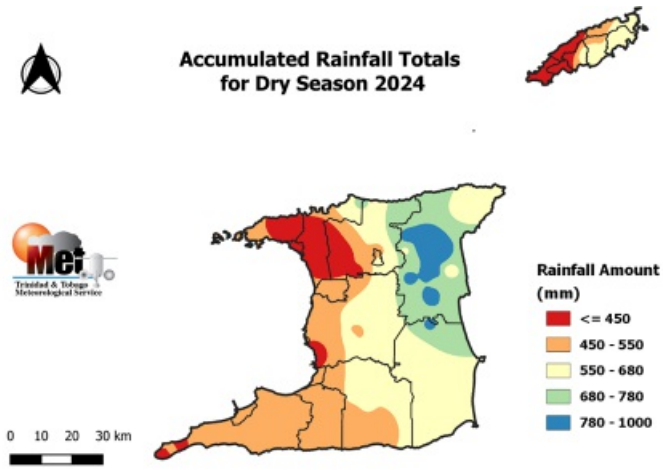

Figure 6: Possible accumulated rainfall totals with the highest chance of occurrence during the 2024 Dry Season.

- The dry season accumulated rainfall totals for 2024 in Trinidad and Tobago are likely to be the highest in northern and eastern areas in the vicinity of Valencia, North Oropouche, Sangre Grande in Trinidad and Charlotteville, Speyside, Roxborough and Glamorgan in Tobago, where the totals could range between 634 mm and 986 mm.
- The lowest dry season totals are likely in northwestern parts of Trinidad, such as St. Joseph, San Juan, Port of Spain and Diego Martin and southwestern Tobago such as Scarborough, Mason Hall, Crown Point and Plymouth.

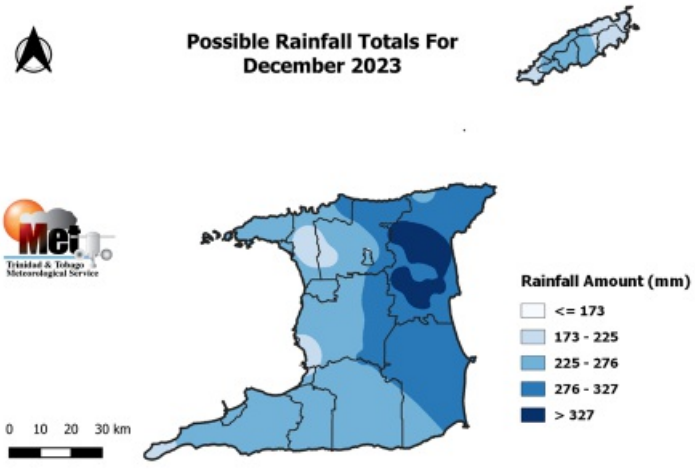

Figure 7: Possible rainfall totals with the highest chances of occurring during December 2023.

- Near-normal rainfall totals are likely for December 2023.
- The areas that are likely to get the highest rainfall totals are within the north-eastern areas of Trinidad and central Tobago.
- Few areas in western Trinidad and north-eastern Tobago are likely to get rainfall totals below 60 mm.
- Some areas in Trinidad and Tobago are favoured to observe rainfall totals above 200 mm, with some areas in northeast Trinidad likely to get well above 300 mm.
- Tobago is likely to get rainfall totals of more than 130 mm across most areas.
- Flash flooding; waterlogged soils and water ponding are likely in December 2023.

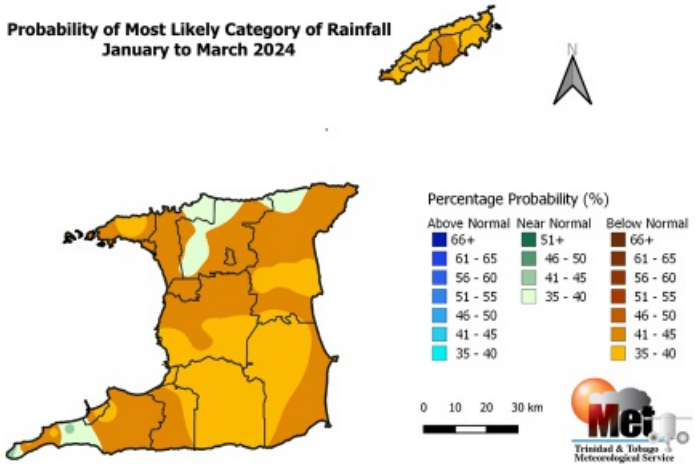

Figure 8: Category of rainfall likely for January to March (JFM) with the highest chances of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above-normal rainfall, brown areas show an increased chance for below-normal rainfall, while green areas show an increased chance for near-normal rainfall. Normal is defined by the rainfall that was observed in the middle one-third of the JFM period over the 1991-2020 period used as the climate normal.

- The 3-month period, January to March 2024 is likely to be mostly drier than usual overall, with less rainfall events occurring during this period.
- Most of the observable dryness is expected from January to March 2024.

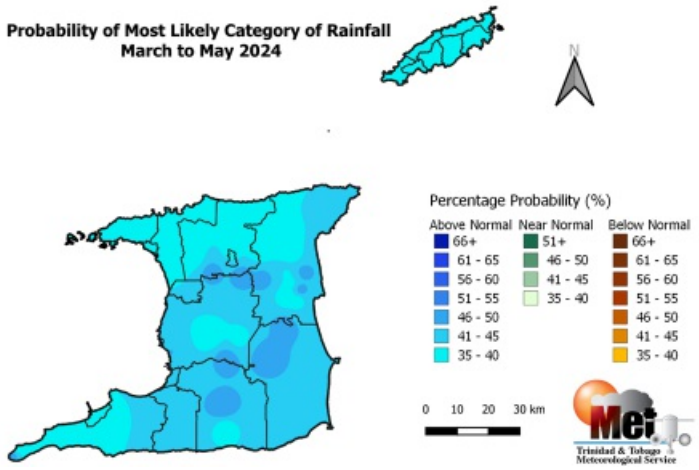

Figure 9: Category of rainfall likely for March to May (MAM) with the highest chances of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above-normal rainfall, brown areas show an increased chance for below-normal rainfall, while green areas show an increased chance for near-normal rainfall. Normal is defined by the rainfall that was observed in the middle one-third of the MAM period over the 1991-2020 period used as the climate normal.

- The March to May 2024, rainfall outlook indicates that above-normal rainfall is likely across Trinidad and Tobago.
- Most observable wetness in the environment is expected in April and May 2024;

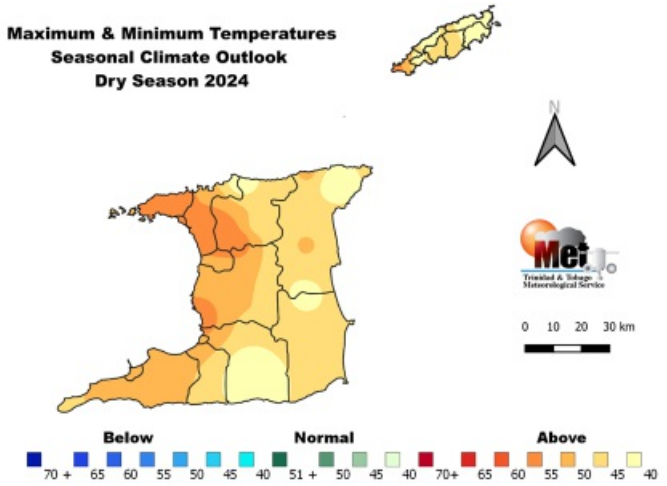

Figure 10: The map shows the colour-coded category (below-normal, above-normal, and near-normal) of maximum and maximum temperatures that is most likely to occur across Trinidad and Tobago for the 2024 Dry Season. The colour-coded bar-graph with the numbers to the right gives the likelihood for each forecast category to occur.

The Temperature Outlook Favours Normal Temperatures over large sections of Trinidad and Tobago for the Dry Season of 2024.

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- Both daytime and night temperatures are likely to be above-normal over the majority of both islands;
- The greatest odds for warmer than average nights and days are over cities, urban and build-up areas;
- Chances of cooler than average nights are higher in rural parts of Trinidad and Tobago;
- A moderate chance (40%) exists for short duration warm spells during May 2024 with maximum temperatures averaging around 33.5 ^{o}C in Trinidad and 32.5 ^{o}C in Tobago;

Climatic Influencers and Context of the Outlook

- As observed in 2023, the development and strengthening of the El Niño phenomena has negatively influenced rainfall occurrence over the southern Caribbean, including Trinidad and Tobago except for April and May;
- El Niño conditions continued to be present in the tropical Pacific Ocean and further strengthened in November to a moderately strong El Niño;
- Sea surface temperatures (SSTs) in waters in close proximity to Trinidad and Tobago, further east and southeast into the Atlantic Ocean are now mostly above-average for this time of the year and is forecast to continue into the dry season;
- During the earlier part of 2023, the North Atlantic Oscillation (NAO) was generally in a negative phase and is forecast to have a similar pattern during December 2023. The NAO is likely to produce weak winds and will maintain current positive sea surface temperature anomalies in waters around Trinidad and Tobago.
- The Madden Julian Oscillation (MJO) is at moderate strength and is presently over the southeastern Caribbean. It is forecasted to migrate eastward into the central tropical Atlantic Ocean by the end of the second week of December 2023. This increases the chances for enhanced rainfall across Trinidad and Tobago during the first two weeks of December 2023.