
Rainfall and Temperature Outlook for Trinidad and Tobago, December 2022 to May 2023

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

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

Near Normal to Above Normal Rainfall is Expected For December & the 2023 Dry

Season

Flood Potential Remains Moderate for December 2022

Key Messages

- The La Niña event is expected to continue into the months of late February/early March 2023 and will likely enhance local rainfall events during this period.
- December is likely to get above-normal rainfall across many areas of Trinidad and in few areas in Tobago;
- The 2023 Dry Season (January-May) rainfall outlook indicates high chances for enhanced rainfall that tilts the odds towards wetter than usual conditions with near-normal to above-normal rainfall totals favoured at this time for both islands.
- The majority of the country is likely to get a percentage of average seasonal rainfall totals that range between 88% to 141%;
- Trinidad and Tobago receives on average 3 to 8, 7-day dry spells and 1 to 5, 10-day dry spells in the dry season. For 2023, there is a 70% probability for 3 to 5, 7-day dry spells and 1 to 3, 10-day dry spells;
- The outlook indicates relatively moderate to high probabilities (40%-100%) across most areas for seasonal rainfall totals to exceed the national dry season average of 412.0 mm;
- There is a low (2%-17%) probability for totals to be in the lowest 10% of all dry season rainfall totals;
- The December and the 2023 Dry Season temperature outlook indicates that near-normal seasonal mean, maximum and minimum temperatures are likely, but at least three (3) to seven (7) cold nights when temperatures can fall below 20.0°C are possible in January and February 2023;
- The Madden Julian Oscillation (MJO) is at a moderate to strong rain-enhancing phase and is presently over the eastern Caribbean. It is forecast to migrate eastward into the central Atlantic Ocean by the end of the second week of December 2022. This increases the chances for enhanced rainfall across Trinidad and Tobago during the second week of December.

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Likely Impacts

- Recent rainfall excesses during October and November 2022 have already influenced surface water flows and river levels. Wetter than usual conditions will increase surface and ground water recharge rates and stream flow rates;
- Wetter conditions in the dry season usually increase breeding areas for mosquitoes, flies, rodents, and other wild creatures in and around homes and covered dry areas
- The earlier part of the dry season is expected to be wetter than normal and will likely decrease bush, forest and landfill fire potential.
- The latter half of the dry season is expected to be normal to drier than normal, therefore, the probability of bush, forest and landfill fires is likely to increase. This will likely reduce air quality and negatively affect persons with existing respiratory and other ailments.

Early Actions & Preparedness

- Review household water plan. Conserve, store and manage water safely and adequately.
- Sensitize vulnerable communities on negative impacts of the forecast and actions to be taken.
- Raise awareness on dry season agriculture, pest and disease control measures and bushfires 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.

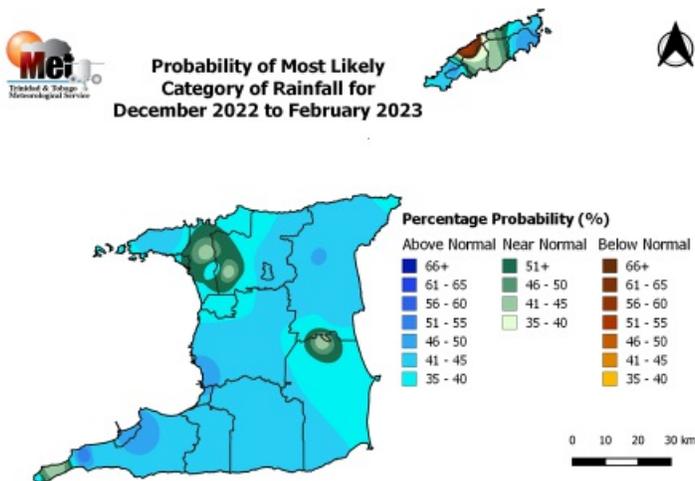


Figure 1: Category of rainfall likely for DJF (December to February) 2022/3 with the highest chance of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above normal rainfall, brown areas show an increased chance for below normal rainfall, while green areas show an increased chance for near normal rainfall.

Normal is defined by the rainfall that was observed in middle one-third of the DJF period rainfall totals during the historical period used to produce the outlook.

- The DJF 2022-2023 rainfall outlook indicates that there are enhanced chances for wetter than usual conditions to occur across Trinidad and Tobago, with above normal seasonal rainfall totals most likely;
- The percentage or chance for above-normal DJF rainfall totals is greater than 60% across all areas.

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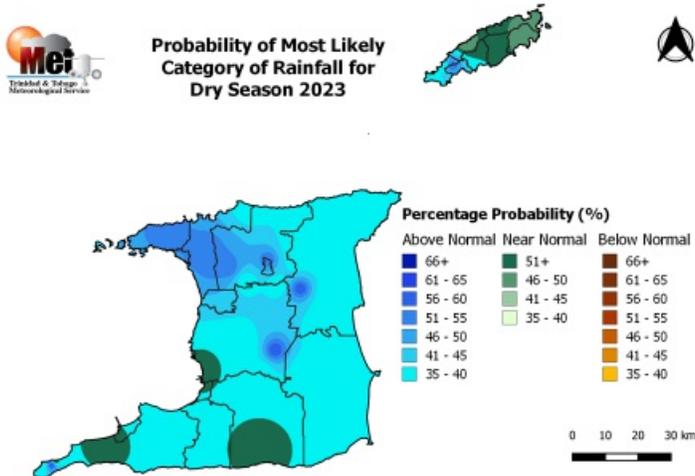


Figure 2: Category of rainfall likely for the 2023 Dry Season with highest chances of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above normal rainfall, brown areas show an increased chance for below normal rainfall, while green 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 2023 Dry Season rainfall outlook indicates a strongly enhanced signal for greater rainfall amounts that tilts the odds in favour for wetter than normal conditions across most areas of Trinidad and south-western areas of Tobago.

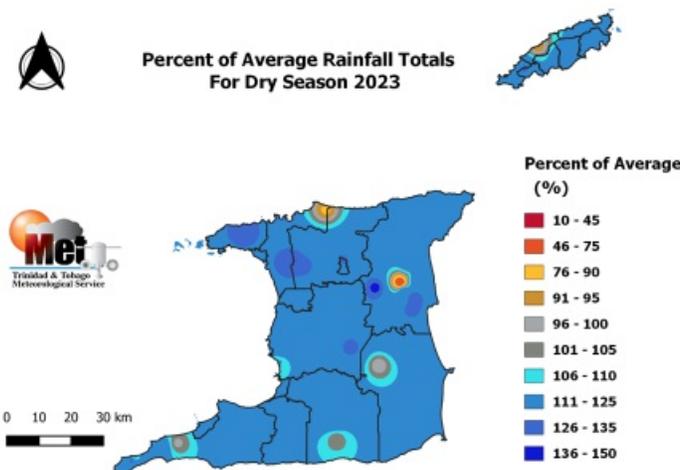


Figure 3: Percentage of average rainfall totals likely for the 2023 Dry Season.

- In general, the Dry Season outlook is likely to get a percentage of average seasonal rainfall that is between 100% to 141% of the average;
- There are small patches of areas in northern and north-east Trinidad and south-western Tobago that will get less than the average rainfall;
- The country is likely to get about 78 dry-days during the season, which is significantly less than the average of 109 dry-days (a dry-day is defined as a day with less than 1.0 mm of rainfall);

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- The country usually receives 3 to 8, 7-day dry spells and 1 to 5, 10-day dry spells in the dry season. For 2023, there is a 70% probability for 3-5, 7-day dry spells and 1 to 3, 10-day dry spells.

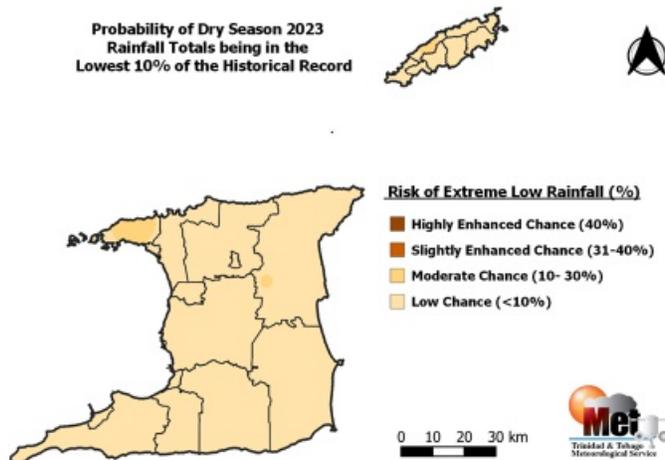


Figure 4: The map shows the chances for extremely dry conditions over the 2023 Dry Season. Extremely dry conditions refer to the lowest 10% of Dry Season total rainfall amounts in historical records.

- The probability for totals to be in the lowest 10% of all dry season rainfall totals is low (2%-17%);
- There is a very low chance of short-term drought conditions developing during the season and chances for long term drought is non-existent;

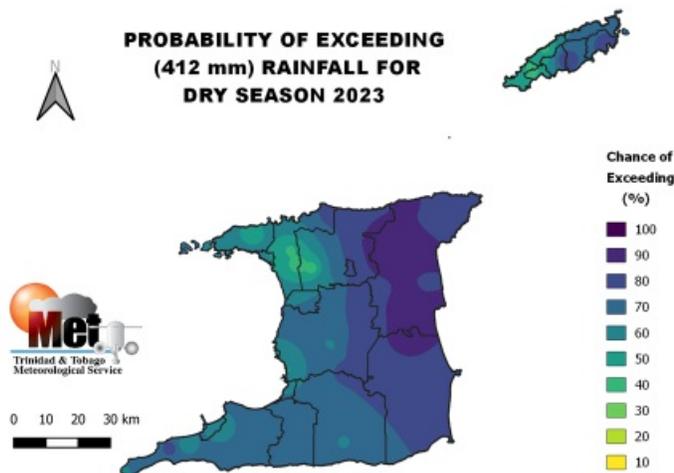


Figure 5: The map shows the probability of the 2023 Dry Season rainfall totals exceeding the national average of 412 mm.

- The outlook indicates a moderate to high probability (40%-100%) that the national average of 412 mm will be surpassed;
- Areas in northern, northern-eastern Trinidad and Tobago have the highest probability of exceeding the national average, while small pockets in northwest Trinidad and southwest Tobago have lower probabilities of surpassing the national average.

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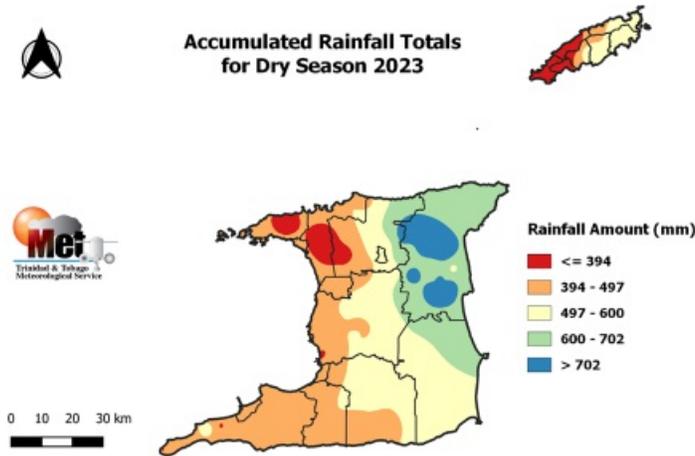


Figure 6: Possible accumulated rainfall totals with the highest chance of occurrence during the 2023 Dry Season.

- The dry season accumulated rainfall totals for 2023 in Trinidad and Tobago are likely to be the highest in northern and eastern areas in the vicinity of Valencia, North Oropouche, Toco, Sangre Grande in Trinidad and Charlotteville, Speyside, Roxborough and Glamorgan in Tobago, where the totals could range between 313 mm and 811 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.

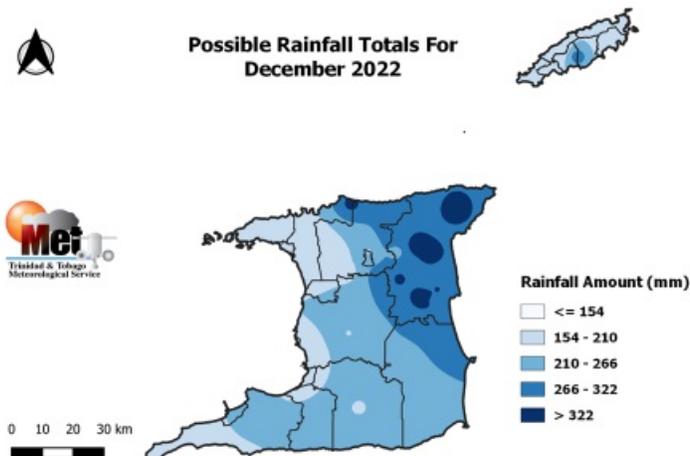


Figure 7: Possible rainfall totals with the highest chances of occurring during December 2022.

- Near normal to above normal rainfall totals are likely for December 2022.
- The areas that are likely to get highest rainfall totals are within the northeastern areas of Trinidad and central Tobago.
- Few areas in western Trinidad and north-western Tobago are likely to get rainfall totals below 150 mm.
- Most areas in Trinidad and Tobago are favoured to observe rainfall totals above 200 mm, with some areas in northeast Trinidad likely to exceed 300 mm.
- Tobago is likely to get rainfall totals lower than 170 mm across most areas.
- Flash flooding, waterlogged soils and water ponding are likely in December 2022.

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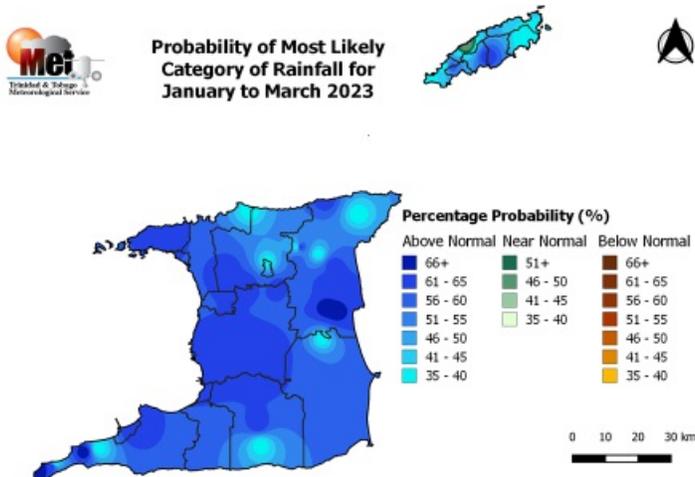


Figure 8: Category of rainfall likely for January to March (JFM) with highest chances of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above normal rainfall, brown areas show an increased chance for below normal rainfall, while green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

- The 3-month period, January to March is likely to be mostly wetter than usual overall, with enhanced rainfall events occurring especially in January and February 2023.
- Moderately wet days (< 10 mm rainfall) will likely account for most of the rainfall during the period.

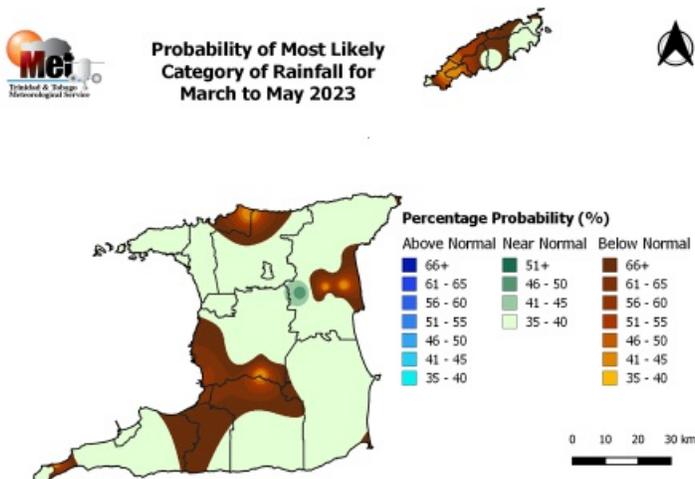


Figure 9: Category of rainfall likely for March to May (MAM) with highest chances of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above normal rainfall, brown areas show an increased chance for below normal rainfall, while green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

- The March to May 2023 rainfall outlook indicates that near normal to below normal rainfall is likely across Trinidad and Tobago.
- Most of the observable dryness will be seen in April and May 2023.

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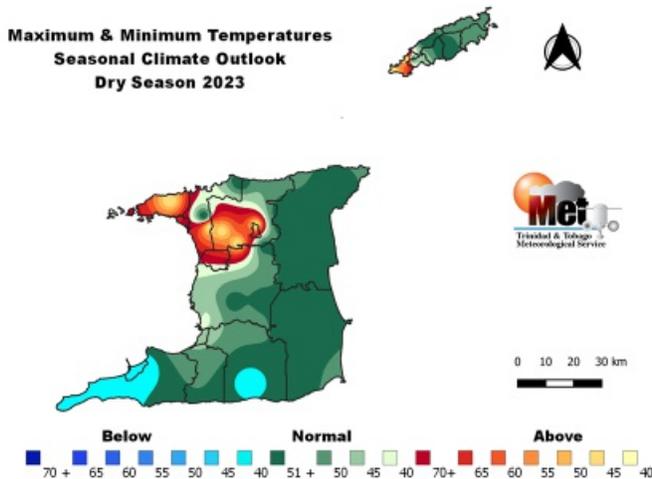


Figure 10: The map shows the colour-coded category (below-normal, above-normal, and near-normal) of maximum and maximum temperatures that is most likely to occur across Trinidad and Tobago for the 2023 Dry Season. The colour-coded bar-graph with the numbers to the right gives the likelihood for each forecast category to occur.

The Temperature Outlook Favours Normal Temperatures over large sections of Trinidad and Tobago for Dry Season 2023.

- Both daytime and night temperatures are likely to be near normal over the majority of both islands with the exemption of north-western and south-western Trinidad and south-western Tobago;
- The greatest odds for warmer than average nights and warmer than average days are located over cities, urban and build up areas;
- Chances of warmer than average nights are higher in north-western Trinidad where there is a 55% chance, while south-western Tobago has a 40% chance of warmer than average temperatures;
- Chances of colder than average nights are higher in south-western Trinidad.
- A reasonably moderate chance (55%) exists for short duration warm spells during the month of May 2023 with maximum temperatures averaging around 33.0 °C in Trinidad, and 32.0°C in Tobago;

Climatic Influencers and Context of the Outlook

- As observed in the 2022 wet season, the La Niña event has influenced an increase in rainfall occurrences over the southern Caribbean, including Trinidad and Tobago.
- During November 2022, La Niña conditions continued to be present in the tropical Pacific Ocean with key oceanic and atmospheric variables consistent with La Niña conditions but slightly weaker than October 2022. These conditions are expected to continue into the months of late February/ early March 2023.
- 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. The forecast favours maintenance of above-average SSTs until the end of February 2023.
- During November, the North Atlantic Oscillation (NAO) varied between its negative and positive phases and is forecast to have a similar pattern during December 2022. This pattern of the NAO is likely to maintain current sea surface temperature anomalies in waters around Trinidad and Tobago.
- The Madden Julian Oscillation (MJO) is at moderate to strong strength and is presently over the eastern Caribbean. It is forecasted to migrate eastward into the central Atlantic Ocean by the end of the second week of December 2022. This increases the chances for enhanced rainfall across Trinidad and Tobago during the second week of December.

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