

Agro-meteorological Bulletin and Assessment for Farmers and Livestock Producers of Trinidad and Tobago for the Third Dekad (21st -31st) of December, 2018.

Definitions used in the forecast and bulletin:

Term		Meaning
Dekad		10 day rainfall measuring period
Rain Day		A day with 1.0 mm or more of rainfall amount
Wet Day		A day with 10.0 mm or more of rainfall amount
Extremely Wet Day		A day with 25.0 mm or more of rainfall amount
Normal Rainfall		Between 75% and 125 % of the average
Below Normal Rainfall		Rainfall below 75% of the average
Above Normal Rainfall		Rainfall in excess of 125 % of the average
Much below Normal Rainfall		Rainfall below 50% of the average
Much above Normal Rainfall		Rainfall above 150% of the average
Scanty Rainfall		Less than 1 mm
Moderate Rainfall		1-10 mm
Heavy Rainfall		10-50 mm
Very heavy Rainfall		Greater than 50 mm
Probability of 1-30 %		Low Chance
Probability of 30-70 %		Moderate Chance
Probability greater than 70%		High Chance
Term	Amount of Rain	Type of day
Scanty Rainfall	Less than 1 mm	Relatively dry day
Moderate Rainfall	1-10 mm	Relatively wet day
Heavy Rainfall	10-50 mm	Wet day
Very heavy Rainfall	Greater than 50 mm	Excessively wet day

Weather Assessment for the Second Dekad (11th–20th) of December, 2018.

Mostly dry weather, dominated Trinidad and Tobago during the dekad, where both islands experienced some patchy cloudy conditions at times during the dekad, with mostly light rainfall over some areas during the 14th, 15th, 16th, 17th and 18th. Preliminary results of rainfall amounts are as follows, North-eastern and eastern areas had rainfall totals as follows: Piarco (15.0 mm), Cumaca (49.9 mm) and Sangre Grande (15.0 mm) were mostly within the forecasted range of 20.0 mm to 50.0 mm. Similarly, central areas had rainfall totals as follows: Chaguanas (6.1 mm), Flanagan Town (24.0 mm), Navet (43.2 mm), Tamana (26.0 mm), which were mostly within range forecasted of 20.0 mm to 50.0 mm.

Also, southern areas had the following rainfall amounts: Point Fortin (8.8 mm), Barrackpore (23.8 mm), Penal (17.6 mm), Princes Town (27.9 mm), CatsHill (25.4 mm) and Guayaguayare (33.0 mm),

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all within the range forecasted of 20.0 mm to 50.0 mm. Likewise, northern areas such as Caura (9.6 mm), Tunapuna (6.1 mm) and St Anns (5.4 mm) had rainfall amounts within the range 0.0 mm to 20.0 mm.

Furthermore, north-western areas of Trinidad such as Moka (4.0 mm) and Diamond Vale (2.8 mm) were within expected range of 0.0 mm to 20.0 mm.

Similarly, Tobago had experienced some rainfall, central areas such as Mt. Pleasant had 18.5 mm while western areas such as Crown Point had rainfall totals around 13.5 mm, below the forecasted amount of 0.0 mm to 20.0 mm.

Trinidad's temperature was generally within expected range, maximum temperature went up to 33.0 °C, which was outside the expected range of 31.1 °C to 32.1 °C. At the same time Tobago's maximum got up to 30.2 °C, within the range expected of 30.2 °C to 31.2 °C. Similarly, lowest temperatures recorded were 20.6 °C in Trinidad and 23.1 °C in Tobago. In Trinidad's case, the minimum temperature was below the expected range of 22.4 °C to 20.8 °C. Similarly, the minimum temperature was within the range of 23.3 °C to 21.9 °C for Tobago. The average humidity for both islands remained in the mid-sixties, falling lower during hot and breezy conditions and raising during cloudy, cool and relatively wet periods. Since mostly relatively wet to relative dry days occurred during the dekad, frequent irrigation may have been necessary during of the dekad.

Expected Weather for Third Dekad (21st– 31st) of December 2018 and Likely Impact on Agriculture.

The forecast for the third dekad of December indicates that farmers can expect similarly dry conditions as compared to the second dekad of December. Expect relatively dry conditions on days: 21st, 22nd, 23rd, 26th, 27th, 28th and 29th; with relatively wet conditions on days: 24th, 25th, 30th and 31st. During relatively dry days, expect sporadic light rainfall; while during relatively wet days, expect light rainfall over most areas. The ten-day period rainfall totals, forecast to range between 15.0 mm and 40.0 mm in Trinidad and 15.0 mm to 30.0 mm in Tobago.

The average daily temperatures across Trinidad and Tobago are likely to range between 26.0 °C and 26.5 °C. Expect the highest maximum temperature over the dekad to peak near 32.9 °C in **Trinidad**, while the lowest night to early morning minimum temperature could dip below 20.0 °C. Especially along the foothills and valleys during relatively cloud-free nights. Likewise, during the dekad, in **Tobago**, the highest maximum temperature will peak near 31.0 °C, while the lowest minimum temperature will dip below 21.0 °C, mostly during relatively cloud-free nights.

For both Trinidad and Tobago, the daytime relative humidity (RH) is likely to range between 55% and 67%. However, during relatively wet days, RH percentage values will range around 68% to 100%. At the same time, wind speeds are expected to range between 24 km/h and 38 km/h but can gust to 50 km/h. In addition, evaporation rates are expected to range between 5.0 mm/day and 10.0

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mm/day, but can be slightly more during warmer and windier periods and slightly less during relatively wet days. The mostly relatively dry to relatively wet days during the dekad, may warrant more frequent irrigation during the dekad.

Impacts on Agriculture:

On days: 24th, 25th, 30th and 31st, there is a low chance (10%) lightning strikes, heavy down-pours, water logged soils, flash flooding and riverine flooding in some areas. There is also a moderate (70%) probability of visitation of Saharan dust/haze that will occasionally reduce visibility to less than 14.0 km, particularly during days: 21st, 22nd, 23rd, 26th, 27th, 28th and 29th. Additionally, during the dekad, there is a low (10%) probability of some agricultural insects, pests, fungi and diseases to get a foot in and possibly develop and thrive. Moreover, the expected daytime increase in wind speeds and funnelling effect of wind along narrow paths and undulating landscapes, may affect some seedlings negatively by causing seedlings' stems and leaves to be damaged.

Sun, Moon and bright objects in the sky:

The sun is presently at a latitude approximately 23.3 degrees south latitude, during the 21st and 22nd this will herald the winter solstice in the northern hemisphere, and as a consequence of its position, the day length for this dekad will be just under 1.4 hours, shortest days for the whole year. The intense solar irradiance episodes will be at its lowest during this dekad when the sky is generally cloud free. There is low probability (10%) of heat stress on certain variety plant seedlings and animals from direct exposure to solar radiation and hot temperatures. Additionally, the moon's full phase (full moon) will be on the 22nd and third quarter on the 29th, illuminating crops, fields and livestock at night. As the sun sets in the west, planets, Jupiter and Mars will be seen in the evening sky followed by Mercury and Venus seen in just before dawn.

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Trinidad's Mean Daily Rainfall Forecast for the Third Dekad of December (21st–31st) 2018.

Northern & Northwestern areas:

Moderate chance (61%) of mean daily rainfall up to 1.9 mm.

North-Eastern and Eastern areas:

Moderate chance (66%) of mean daily rainfall up to 3.5 mm.

Central, West-Central and inland areas:

Moderate chance (60%) of mean daily rainfall up to 1.5 mm.

South-Eastern areas:

Moderate chance (67%) of mean daily rainfall up to 3.7 mm.

Southern areas:

Moderate chance (63%) of mean daily rainfall up to 2.5 mm.

South-Western areas:

Moderate chance (61%) of mean daily rainfall up to 1.7 mm.

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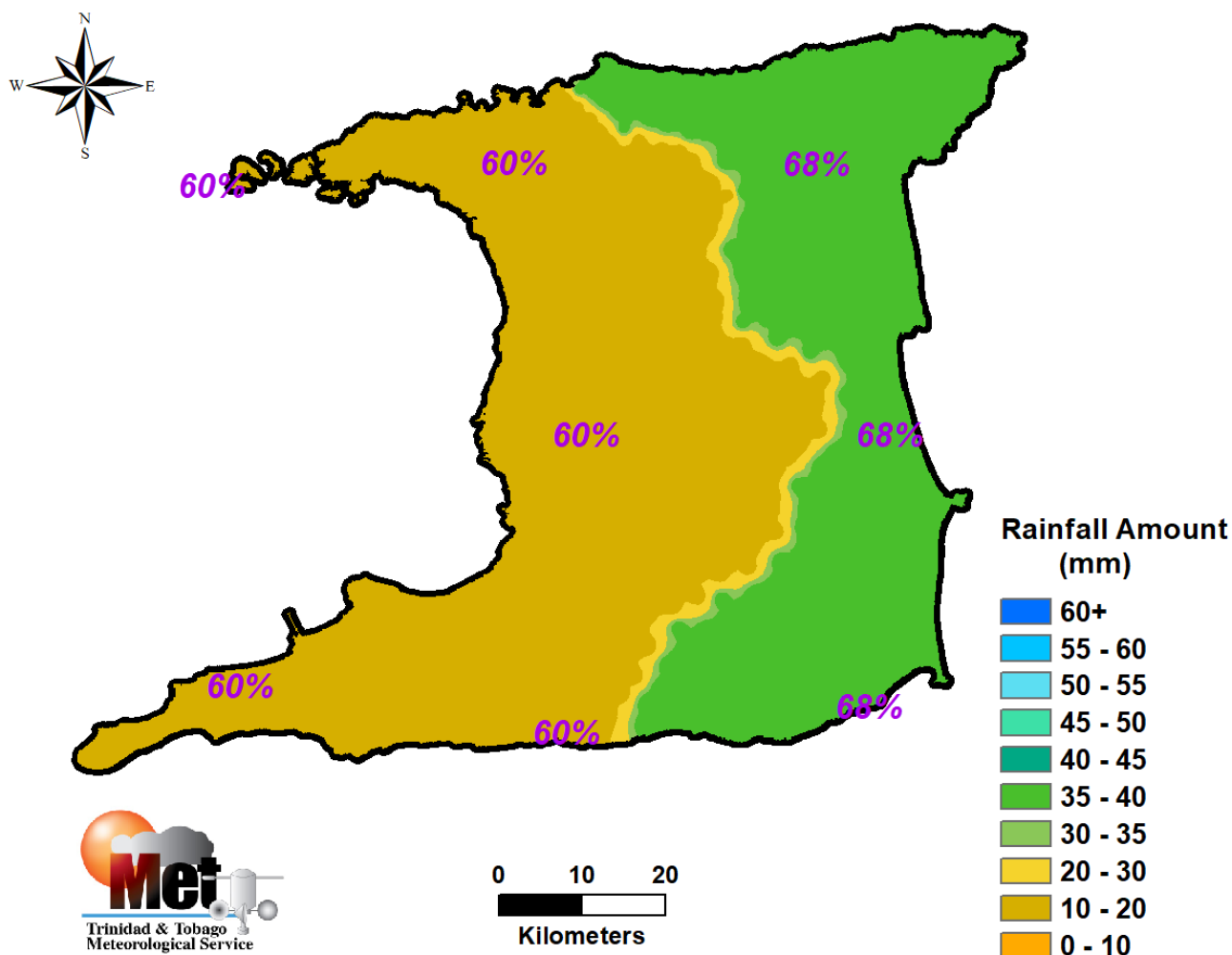


Figure 1. Rainfall Map of Trinidad showing possible rainfall totals for varying districts during third dekad of December 2018 and percentage probability of occurrence.

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Tobago's Mean Daily Rainfall Forecast for the Third Dekad of December (21st-31st) 2018.

Northeastern areas:

Moderate chance (67%) of mean daily rainfall up to 2.8 mm.

South-Western areas:

Moderate chance (63%) of mean daily rainfall up to 2.1 mm.

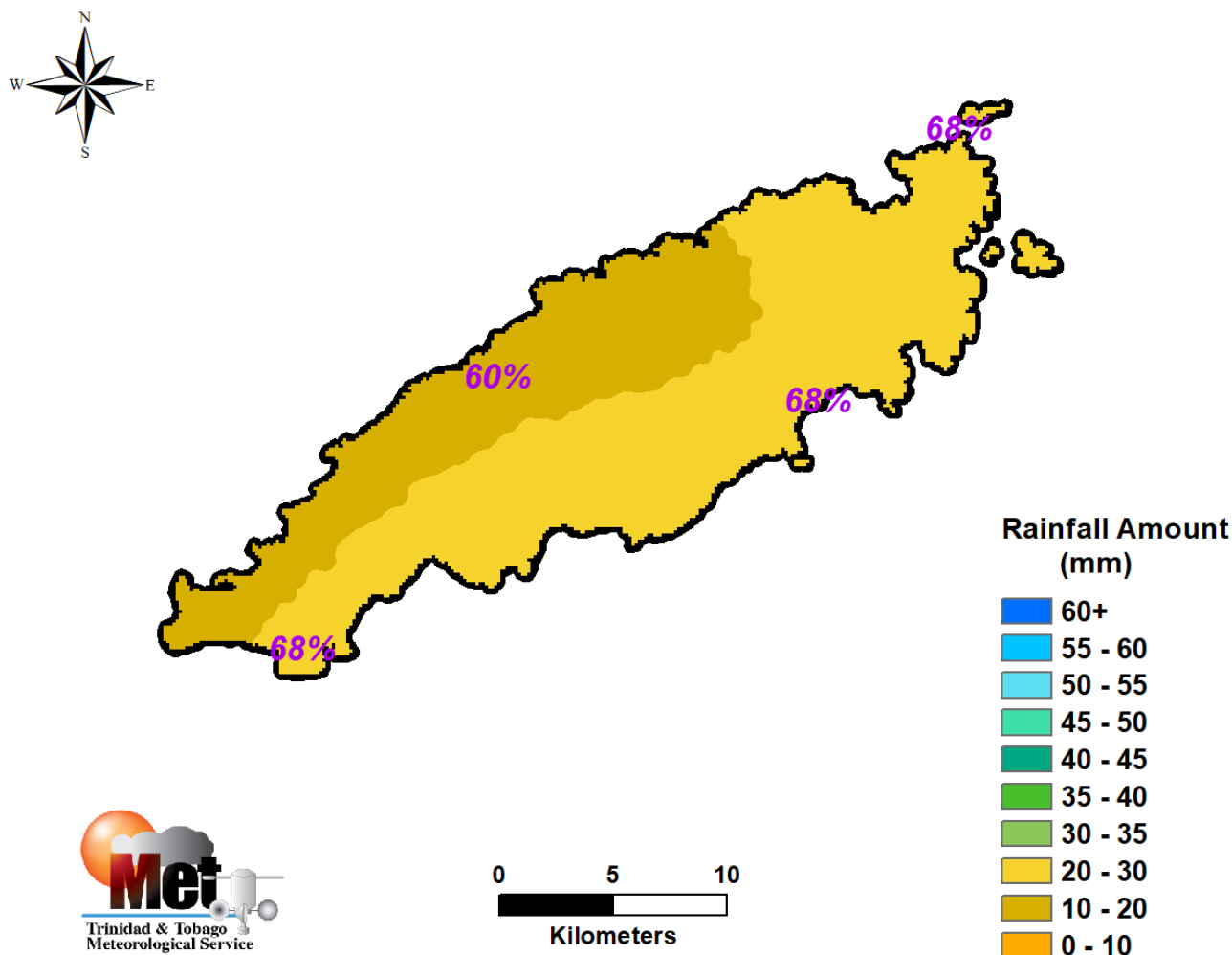


Figure 2. Rainfall Map of Tobago showing possible rainfall totals for varying districts during third dekad of December 2018 and percentage probability of occurrence.

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Temperatures:

Trinidad's Temperature Forecast for the Third Dekad of December (21st–31st) 2018.

Moderate chance (70%) of daily maximum temperatures to exceed 30.8 °C, peaking near 32.9 °C.

Moderate chance (70%) of daily minimum temperatures to be below 22.4 °C, dropping as low as 20.0 °C.

Tobago's Temperature Forecast for the Third Dekad of December (21st–31st) 2018.

Moderate chance (70%) of daily maximum temperatures to exceed 30.1 °C, peaking near 31.0 °C.

Moderate chance (70%) of daily minimum temperatures to be below 23.0 °C, dropping as low as 21.0 °C.

Summary:

The forecast for the third dekad of December indicates that farmers can expect similarly dry conditions as compared to the second dekad of December. Expect relatively dry conditions on days: 21st, 22nd, 23rd, 26th, 27th, 28th and 29th; with relatively wet conditions on days: 24th, 25th, 30th and 31st. During relatively dry days, expect sporadic light rainfall; while during relatively wet days, expect light rainfall over most areas. The ten-day period rainfall totals, forecast to range between 15.0 mm and 40.0 mm in Trinidad and 15.0 mm to 30.0 mm in Tobago.

The average daily temperatures across Trinidad and Tobago are likely to range between 26.0 °C and 26.5 °C. Expect the highest maximum temperature over the dekad to peak near 32.9 °C in **Trinidad**, while the lowest night to early morning minimum temperature could dip below 20.0 °C. Especially along the foothills and valleys during relatively cloud-free nights. Likewise, during the dekad, in **Tobago**, the highest maximum temperature will peak near 31.0 °C, while the lowest minimum temperature will be dip below 21.0 °C, mostly during relatively cloud-free nights.

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