

Agro-meteorological Bulletin and Assessment for Farmers and Livestock Producers of Trinidad and Tobago for the Third Dekad (21st - 31st) of August, 2019

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 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 August, 2019.

Mostly mixed conditions dominated Trinidad and Tobago with alternating wet and dry days. Preliminary results of rainfall amounts for Trinidad, showed that north-eastern and eastern areas had rainfall totals as follows: North Oropouche (69.8 mm), Cumaca (44.2 mm) and Sangre Grande (64.8 mm) were just below the forecasted range of 70.0 mm to 90.0 mm. Similarly, northern areas such as Piarco (36.1 mm), and St Anns (34.6 mm) had rainfall amounts mostly below the range 60.0 mm to 70.0 mm. While, north-western areas of Trinidad such as Moka (93.0 mm), St. Barbara (85.8 mm) and Diamond Vale (41.3 mm) were mostly above the forecasted range of 60.0 mm to 70.0 mm.

Central areas had rainfall totals as follows: Arena (75.6 mm), Mamoral (59.0 mm), Flanagin Town (65.6 mm), Tamana (69.2 mm), which were mostly within the range forecasted of 60.0 mm to 80.0 mm. While, southern-western areas had the

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following rainfall amounts: Point Fortin (52.0 mm), Granville (13.6 mm) and Barrackpore (39.4 mm) were below the range forecasted amount of 60.0 mm to 70.0 mm. Similarly, south-eastern areas had the following rainfall amounts: Cats Hill (68.4 mm) and Guayaguayare (56.0 mm) were mostly within the range forecasted of 60.0 mm to 70.0 mm.

Tobago experienced some beneficial rainfall, western areas such as Crown Point had rainfall totals of 27.5 mm, which was below the forecasted range of 60.0 mm to 70.0 mm for south-western Tobago.

Warm temperatures occurred over Trinidad and Tobago, the maximum temperature over Trinidad went up to 32.9 °C, which was within the expected high range of 32.5 °C to 33.5 °C. In fact, on days 11th, 16th, 17th, 18th and 19th temperatures were above 32.0 °C. Tobago's maximum got up to 32.4 °C, within the expected high range of 32.0 °C to 33.0 °C. In fact, during six consecutive days, 11th till 16th, temperatures over in Tobago were above 32.0 °C. Conversely, cool temperatures occurred at night time, lowest temperatures recorded were 22.4 °C in Trinidad and 24.4 °C in Tobago. In Trinidad's case, the minimum temperature was within the expected minimum range of less than 24.0 °C. Similarly, the minimum temperature was within the expected minimum range of less than 25.0 °C for Tobago. The average humidity for Trinidad range between 76% to 89% while Tobago range between 69% to 84% throughout the dekad. The heat index (feel like temperature) may have been higher during high humidity and/or temperature days. Winds were mostly light during the dekad, with speeds in the 4 km/h to 20 km/h, with strong episodes (22 km/h to 35 km/h) during moderate to heavy rainfall events.

Together these conditions of high humidity, warm temperatures and low winds may have encouraged rapid growth of fungi and bacteria on plants and viral diseases on livestock. Livestock may have been stressed under those conditions, where the young, sick and elderly feeling the brunt of it.

Expected Weather for Third Dekad (21st-31st) of August 2019 and Likely Impact on Agriculture.

Relatively dry days on the 21st, 22nd, 23rd, while wet days on 25th, 26th, 27th; followed by relatively wet days on the 28th, 29th, 30th and 31st. During relatively dry days, expect partly cloudy skies at times and a possible light shower; during relatively wet days, expect patchy cloudy to cloudy conditions, with light/moderate rainfall over some areas; while during wet days, expect cloudy to overcast skies with light to moderate rainfall occasionally heavy/thundershowers over most areas. There is a low probability (29% chance) of a Tropical Depression (TD) passing in the vicinity of the islands on the 25th/26th followed by a visit from the Inter Tropical Convergence Zone (ITCZ) on days 27th. Trinidad's ten-day period rainfall totals, forecast to range between 50.0 mm and 70.0 mm, while Tobago's ten-day period rainfall totals, forecast to range between 30.0 mm and 50.0 mm.

The average daily temperatures across Trinidad and Tobago are likely to range between 28.1 °C and 28.4 °C. Expect the highest maximum temperature over the dekad to peak near 34.1 °C in **Trinidad**, while the lowest night to early morning minimum temperature could dip to 22.6 °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 33.1 °C, while the lowest minimum temperature will dip to 23.1 °C, mostly during relatively cloud-free nights.

For both Trinidad and Tobago, the daytime relative humidity (RH) is likely to range between 68% and 79%. However, during relatively wet to wet days, RH percentage values will range around 80% to 100%. At the same time, wind speeds

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are expected to range between 20 km/h and 28 km/h but can gust to 60 km/h especially during heavy downpours. In addition, evaporation rates are expected to range between 2.0 mm/day and 10.0 mm/day.

There is also a moderate (70%) probability of visitation of Saharan dust/haze that will occasionally reduce visibility to less than 10.0 km, particularly during days: 21st, 22nd, 23rd and 29th.

Impacts on Agriculture:

As a result of the past rainfall episodes that occurred during the last dekad, the soils are moist and vegetation/foilage are growing rapidly. During this dekad, soils will continue to retain a high moisture content as a result of additional rainfall and this will encourage increase vegetative growth. Crop cultivation will become less tedious. Signs of ponding water and water-logged soils in low lying areas across Trinidad and Tobago will continue. Rivers have and will continue to replenish their waters from surface/soil runoff, while scrub and grass growth will continue at a fast pace. Possible flash flooding in low-lying areas so prone will occur. The need to engage in frequent irrigation of crops will become less or at times unnecessary as the rainy season progress.

Sun and Moon positions in the sky:

The sun is presently at latitude of 12.6 degrees' north latitude, and with this position, the day length for this dekad will be 12.3 hours. A moderate probability of frequent episodes of intense solar radiation will occur during this dekad when the sky is generally cloud free. There is moderate probability (60%) of heat stress on certain variety plant seedlings and young/sick/elderly animals from direct exposure to solar radiation and high temperatures. Additionally, the moon's third quarter will be on the 23rd while, new moon phase will be on the 30th, as a result, there will be mostly low moon illumination over crops fields and livestock at night during the dekad.

Trinidad's Mean Daily Rainfall Forecast for the Third Dekad of August (21st-31st) 2019.

Northern & Northwestern areas:

Moderate chance (60%) of mean daily rainfall up to 5.1 mm.

North-Eastern and Eastern areas:

Moderate chance (68%) of mean daily rainfall up to 6.9 mm.

Central, West-Central and inland areas:

Moderate chance (60%) of mean daily rainfall up to 5.0 mm.

South-Eastern areas:

Moderate chance (68%) of mean daily rainfall up to 6.9 mm.

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Southern areas:

Moderate chance (64%) of mean daily rainfall up to 5.8 mm.

South-Western areas:

Moderate chance (60%) of mean daily rainfall up to 5.1 mm.

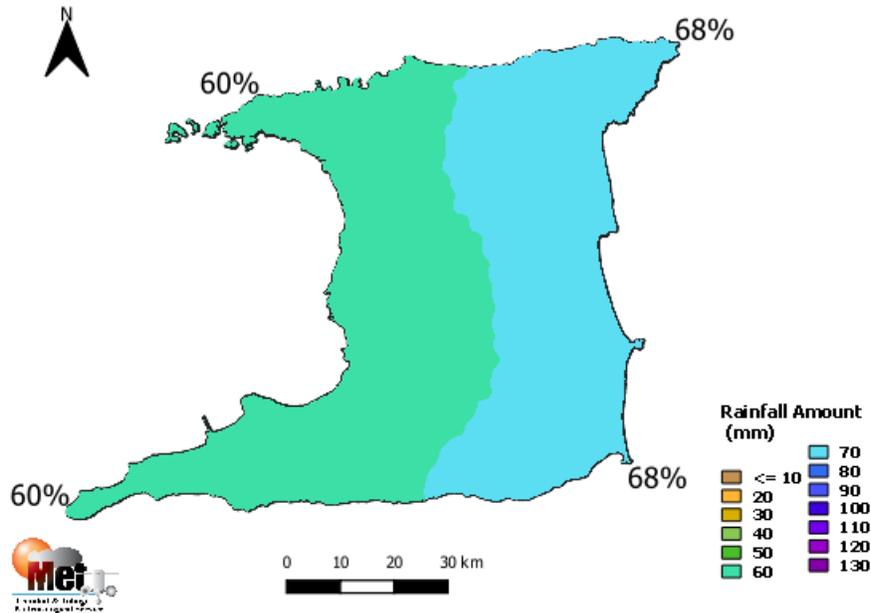


Figure 1. Rainfall Map of Trinidad showing possible rainfall totals for varying districts during third dekad of August 2019 and percentage probability of occurrence.

Tobago's Mean Daily Rainfall Forecast for the Third Dekad of August (21st-31st) 2019.

Northeastern areas:

Moderate chance (68%) of mean daily rainfall up to 5.0 mm.

South-Western areas:

Moderate chance (65%) of mean daily rainfall up to 3.9 mm.

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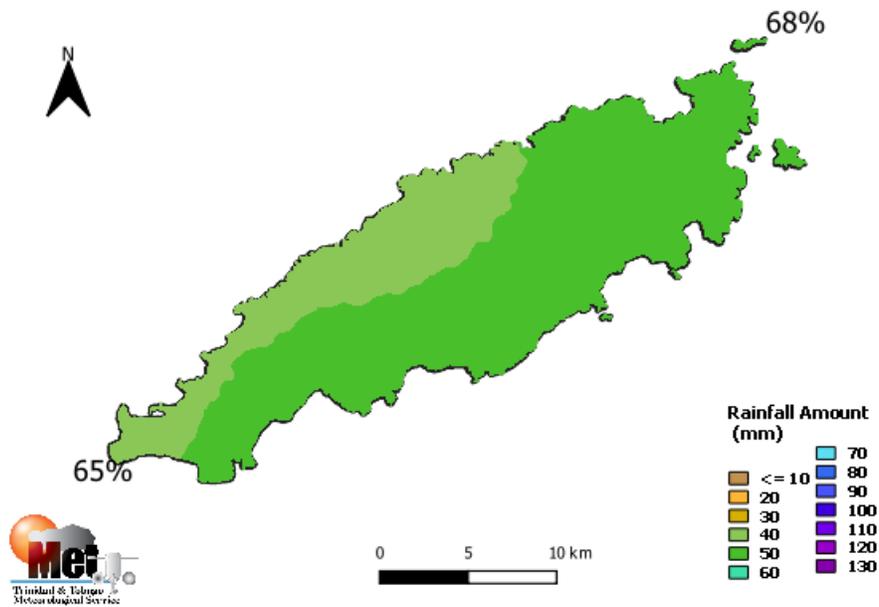


Figure 2. Rainfall Map of Tobago showing possible rainfall totals for varying districts during third dekad of August 2019 and percentage probability of occurrence.

Temperatures:

Trinidad's Temperature Forecast for the Third Dekad of August (21st-31st) 2019.

Moderate chance (70%) of daily maximum temperatures to exceed 32.7 °C, peaking near 34.1 °C.

Moderate chance (70%) of daily minimum temperatures to be below 23.6 °C, dropping as low as 22.6 °C.

Tobago's Temperature Forecast for the Third Dekad of August (21st-31st) 2019.

Moderate chance (70%) of daily maximum temperatures to exceed 30.9 °C, peaking near 33.1 °C.

Moderate chance (70%) of daily minimum temperatures to be below 24.7 °C, dropping as low as 23.1 °C.

Summary

Expected Weather for Third Dekad (21st-31st) of August 2019 and Likely Impact on Agriculture. Relatively dry days on the 21st, 22nd, 23rd, while wet days on 25th, 26th, 27th; followed by relatively wet days on the 28th, 29th, 30th and 31st.

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During relatively dry days, expect partly cloudy skies at times and a possible light shower; during relatively wet days, expect patchy cloudy to cloudy conditions, with light/moderate rainfall over some areas; while during wet days, expect cloudy to overcast skies with light to moderate rainfall occasionally heavy/Thundershowers over most areas. There is a low probability of (29% chance) of a Tropical depression passing in the vicinity of the islands on the 25th/26th followed by a visit from the Inter Tropical Convergence Zone (ITCZ) on days 27th. Trinidad's ten-day period rainfall totals, forecast to range between 50.0 mm and 70.0 mm, while Tobago's ten-day period rainfall totals, forecast to range between 30.0 mm and 50.0 mm. The average daily temperatures across Trinidad and Tobago are likely to range between 28.1 0C and 28.4 0C. Expect the highest maximum temperature over the dekad to peak near 34.1 0C in Trinidad, while the lowest night to early morning minimum temperature could dip to 22.6 0C. Especially along the foothills and valleys during relatively cloud-free nights. Likewise, during the dekad, in Tobago, the highest maximum temperature will peak near 33.1 0C, while the lowest minimum temperature will dip to 23.1 0C, mostly during relatively cloud-free nights.

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