

## Agro-meteorological Bulletin and Assessment for Farmers and Livestock Producers of Trinidad and Tobago for the Third Dekad (21st - 30th) of September, 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 (11<sup>th</sup> – 20<sup>th</sup>) of September, 2019.

Relative dry days occurred particularly on the 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup> in Trinidad while Tobago experienced relative dry days from the 11<sup>th</sup> through the 15<sup>th</sup> of September. In both Trinidad and Tobago relative wet to wet days occurred from the 16<sup>th</sup> through the 19<sup>th</sup> of September. During relatively dry days sweltering temperatures of above 34.0 °C was experienced in Trinidad and above 32.8 °C in Tobago. Additionally, high humidity and light winds added to the discomfort mostly over rural areas of both islands. Some relief came later on in the second dekad where frequent cloudy patches shaded the sun and cool the atmosphere, while light to moderate rainfall fell in most areas. In particular, heavy rainfall fell mostly in western parts of both islands, reports of flooding came in from Chaguanas, Charlieville, Port of Spain and Diego Martin. As of the 19<sup>th</sup> of September, preliminary rainfall totals are as follows: northeastern areas such as Piarco (57.4 mm),

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North Oropouche (133.8 mm), Cumaca (115.0 mm), Hollis (141.2 mm) and Sangre Grande (108.0 mm) had rainfall above the forecasted range 50.0 mm to 70.0 mm. Northwestern areas such as St. Barbara (187.6 mm), St Anns (98.2 mm), Moka (179.2 mm) and Diego Martin (96.2 mm) had rainfall above the forecasted 50.0 mm to 70.0 mm range. Central areas had rainfall totals as follows: Flanagin Town (51.6 mm), Tamana (128.2 mm) and Plum Mitán (85.8 mm) and Navet (48.6 mm) had rainfall mostly above the forecasted 50.0 mm to 70.0 mm range. Southwestern, southern and southeastern areas had the following rainfall amounts: Granville (58.6 mm), Barrackpore (34.2 mm), Penal (45.8 mm), Cats Hill (40.2 mm) and Guayaguayare (14.4 mm) had rainfall mostly below the forecasted 50.0 mm to 70.0 mm range. Tobago experienced rainfall amounts; western areas such as Crown Point had rainfall totals of 50.5 mm and just above the forecasted 40.0 mm to 50.0 mm range.

Trinidad's temperature was within expected range, maximum temperature went up to 34.3 °C, which was within the expected range of 32.7 °C to 35.0 °C. At the same time Tobago's maximum got up to 33.4 °C, within the range expected of 31.8 °C to 33.5 °C. Similarly, lowest temperatures of 23.4 °C were recorded in Trinidad which was below the expected range of 25.0 °C to 23.6 °C. Likewise Tobago's minimum temperature surprisingly got down to 22.9 °C and below the expected range of 26.0 °C to 25.0 °C. The average humidity for Trinidad ranged between 71% to 89% while Tobago's average humidity range between 64% to 88%.

#### **Expected Weather for Third Dekad (21<sup>st</sup> – 30<sup>th</sup>) of September 2019 and Likely Impact on Agriculture.**

The forecast for the third dekad of September indicates that farmers can expect wetter conditions as compared to the second dekad of September. Expect relatively wet days throughout the dekad, except on days 23<sup>rd</sup> and 24<sup>th</sup> where wets days are expected. On relatively wet days, there is a high probability of isolated thundershowers along the western coast of both islands, especially over urban areas of Trinidad during the dekad. On wet days (23<sup>rd</sup> and 24<sup>th</sup>) a possible active tropical cyclone in the vicinity of the windward islands will produce widespread cloudy periods with scattered showers and thundershowers over Trinidad and Tobago. The ten-day period rainfall totals are forecasted to range between 70.0 mm and 100.0 mm in Trinidad and Tobago.

The average daily temperatures across Trinidad and Tobago are likely to range between 28.0 °C and 29.2 °C. Expect the highest maximum temperature over the third dekad to peak near 35.0 °C in **Trinidad**, while the lowest night to early morning minimum temperature could fall below 23.4 °C. While during the third dekad in **Tobago**, the highest maximum temperature will peak near 33.5 °C, while the lowest minimum temperature will be fall below 22.9 °C.

For both Trinidad and Tobago, the daytime relative humidity (RH) is likely to range between 68% and 76%. However, during relatively wet and wet days, RH percentage values will range around 77% to 93%. At the same time, wind speeds are expected to range between 16 km/h and 20 km/h but can gust to 45 km/h in heavy showers or thundershowers. In addition, evaporation rates are expected to range between 2.0 mm/day and 8.0 mm/day.

There is also a moderate (68%) probability of frequent visitation of Saharan dust that will occasionally reduce visibility to less than 11.0 km, particularly during the 25<sup>th</sup> and 26<sup>th</sup>.

#### **Impacts on Agriculture:**

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As a result of the mixed conditions that occurred during the second dekad of September, the soils are damper and vegetation/foliage growth rates will continue at a steady pace. During the third dekad of September, soils moisture will be replenished, which will encourage vegetative growth. Rivers will replenish their waters from flooding and ground water runoff, while shrubs and grass growth will continue at a much faster pace. The expected relatively wet to wet conditions of the third dekad of September, may decrease the need for irrigation during the dekad. Additionally, with the expected high mean temperatures and high relative humidity, there is a moderate (65%) probability of some agricultural insects, pests, fungi and diseases get a foot in and possibly develop and thrive.

#### **Sun and Moon positions in the sky:**

The sun is presently at latitude of approximately 1.5 degrees' north latitude, and with this position, the day length for this dekad will be 11.9 hours. A moderate probability (70%) of frequent episodes of intense solar radiation will occur during the third dekad of September when the sky is generally cloud free. There is moderate probability (70%) 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 phase will be on the 21<sup>st</sup> followed by new moon phase on the 28<sup>th</sup> of September and as a result, there will be mostly low moon illumination over crop fields and livestock at night during the dekad.

#### **Trinidad's Mean Daily Rainfall Forecast for the Third Dekad of September (21<sup>st</sup>–30<sup>th</sup>) 2019.**

##### **Northern & Northwestern areas:**

Moderate chance (65%) of mean daily rainfall up to 7.9 mm.

##### **North-Eastern and Eastern areas:**

Moderate chance (68%) of mean daily rainfall up to 10.0 mm.

##### **Central, West-Central and inland areas:**

Moderate chance (65%) of mean daily rainfall up to 7.0 mm.

##### **South-Eastern areas:**

Moderate chance (68%) of mean daily rainfall up to 8.9 mm.

##### **Southern areas:**

Moderate chance (67%) of mean daily rainfall up to 7.7 mm.

##### **South-Western areas:**

Moderate chance (65%) of mean daily rainfall up to 7.0 mm.

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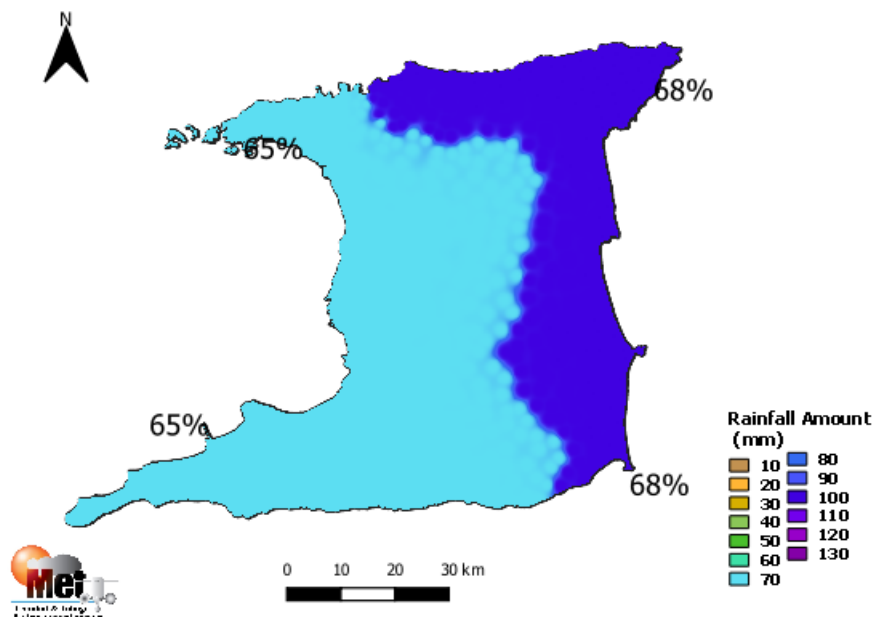


Figure 1. Rainfall Map of Trinidad showing possible rainfall totals for varying districts during third dekad of September 2019 and percentage probability of occurrence.

Tobago's Mean Daily Rainfall Forecast for the Third Dekad of September (21<sup>st</sup>–30<sup>th</sup>) 2019.

**Northeastern areas:**

Moderate chance (68%) of mean daily rainfall up to 10.0 mm.

**South-Western areas:**

Moderate chance (65%) of mean daily rainfall up to 7.5 mm.

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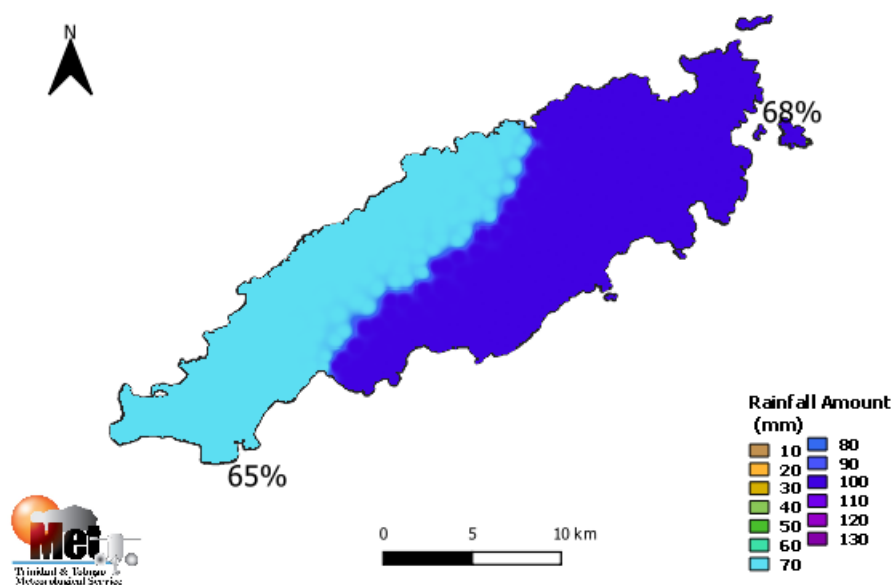


Figure 2. Rainfall Map of Tobago showing possible rainfall totals for varying districts during third dekad of September 2019 and percentage probability of occurrence.

## Temperatures:

### Trinidad's Temperature Forecast for the Third Dekad of September (21<sup>st</sup>–30<sup>th</sup>) 2019.

Moderate chance (70%) of daily maximum temperatures to exceed 32.7 °C, peaking near 35.0 °C.

Moderate chance (70%) of daily minimum temperatures to be below 24.0 °C, dropping as low as 22.9 °C.

### Tobago's Temperature Forecast for the Third Dekad of September (21<sup>st</sup>–30<sup>th</sup>) 2019.

Moderate chance (70%) of daily maximum temperatures to exceed 31.8 °C, peaking near 33.4 °C.

Moderate chance (70%) of daily minimum temperatures to be below 25.0 °C, dropping as low as 22.9 °C.

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Summary:

**Expected Weather for Third Dekad (21<sup>st</sup> – 30<sup>th</sup>) of September 2019 and Likely Impact on Agriculture.**

The forecast for the third dekad of September indicates that farmers can expect wetter conditions as compared to the second dekad of September. Expect relatively wet days throughout the dekad, except on days 23<sup>rd</sup> and 24<sup>th</sup> where wets days are expected. On relatively wet days, there is a high probability of isolated thundershowers along the western coast of both islands, especially over urban areas of Trinidad during the dekad. On wet days (23<sup>rd</sup> and 24<sup>th</sup>) a possible active tropical cyclone in the vicinity of the windward islands will produce widespread cloudy periods with scattered showers and thundershowers over Trinidad and Tobago. The ten-day period rainfall totals are forecasted to range between 70.0 mm and 100.0 mm in Trinidad and Tobago.

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