

## Agro-meteorological Bulletin and Assessment for Farmers and Livestock Producers of Trinidad and Tobago for the Third Dekad (21st - 30th) of November, 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 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 November, 2018.

Mostly relatively wet-to-wet conditions, dominated Trinidad and Tobago during the dekad, where both islands experienced patchy cloudy to cloudy conditions at times, with mostly moderate to heavy rainfall over most areas. On days 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup> and 17<sup>th</sup> rainfall events were due to the direct influence of the Inter Tropical Convergence Zone (ITCZ), which produced light to moderate, sometimes heavy showers/Thundershowers particularly on days 14<sup>th</sup>, 15<sup>th</sup> and 16<sup>th</sup> of the dekad. Flash floods and high river levels were reported north-eastern, south-eastern and southern Trinidad, particularly in Piarco, Sangre Grande and Penal/Debe. Preliminary results of rainfall amounts are as follows, Northeastern and eastern areas had rainfall totals as follows: Piarco (72.4 mm), Hollis (14.6 mm), Cumaca (39.1 mm) and Sangre Grande (92.4 mm) were mostly within the forecasted range of 50.0 mm to 70.0 mm. Similarly, central areas had rainfall totals as

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follows: Chaguanas (91.0 mm), Flanagin Town (200.5 mm), Navet (199.6 mm), Tamana (227.4 mm) and which were mostly above the range forecasted of 30.0 mm to 70.0 mm. Furthermore, southern areas had the following rainfall amounts: Point Fortin (165.6 mm), Barrackpore (182.4 mm), Penal (179.8 mm), CatsHill (184.8 mm) and Guayaguayare (37.0 mm) which were well above the range forecasted of 50.0 mm to 70.0 mm. Likewise, northern areas such as Caura (115.4 mm), Tunupuna (100.0 mm) and St Anns (95.4 mm) had rainfall amounts well above the range 30.0 mm to 60.0 mm.

Similarly, northwestern areas of Trinidad such as Moka (95.4 mm) and Diamond Vale (73.2 mm) above, the expected range of 40.0 mm to 50.0 mm.

Tobago had experienced heavy rainfall, central areas such as Mt. Pleasant had 113.0 mm while western areas such as Crown Point had rainfall totals around 92.2 mm, and was well above the forecasted amount of 30.0 mm to 70.0 mm.

Trinidad's temperature was generally within expected range, maximum temperature went up to 34.1 °C, which was within the expected range of 31.6 °C to 34.4 °C. At the same time Tobago's maximum got up to 31.2 °C, within the range expected of 30.6 °C to 32.4 °C. Similarly, lowest temperatures recorded were 23.1 °C in Trinidad and 23.3 °C in Tobago. In Trinidad's case, the minimum temperature was within the expected range of 23.4 °C to 21.4 °C. On the contrary, the minimum temperature was below the range of 24.1 °C to 23.6 °C for Tobago. The average humidity for both islands remained in the upper-seventies, falling lower during warm and breezy conditions and raising during cloudy, cool and relatively wet to wet periods. Since mostly relatively wet to wet days occurred during the dekad, frequent irrigation may not have been necessary.

#### **Expected Weather for Third Dekad (21<sup>st</sup>– 30<sup>th</sup>) of November 2018 and Likely Impact on Agriculture.**

The forecast for the third dekad of November indicates that farmers can expect drier conditions as compared to the second dekad of November. Expect relatively wet conditions on days: 21<sup>st</sup>, 22<sup>nd</sup>, 23<sup>rd</sup>, 26<sup>th</sup>, 27<sup>th</sup> and 30<sup>th</sup>; with wet conditions on days: 24<sup>th</sup>, 25<sup>th</sup>, 28<sup>th</sup> and 29<sup>th</sup>. During relatively wet days, expect light to moderate rainfall and a possible thundershower, while during wet days expect moderate to heavy rainfall/Thundershowers which may result in flash flooding, water logged soils and riverine flooding. The ten-day period rainfall totals, forecast to range between 30.0 mm and 70.0 mm in Trinidad and Tobago.

The average daily temperatures across Trinidad and Tobago are likely to range between 27.7 °C and 28.5 °C. Expect the highest maximum temperature over the dekad to peak near 34.3 °C in **Trinidad**, while the lowest night to early morning minimum temperature could dip below 22.1 °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 32.4 °C, while the lowest minimum temperature will be dip below 23.0 °C, mostly during relatively cloud-free nights.

For both Trinidad and Tobago, the daytime relative humidity (RH) is likely to range between 65% and 86%. However, during relatively wet days, RH percentage values will range around 87% to 100%. At the same time, wind speeds are expected to range between 18 km/h and 30 km/h but can gust to 40 km/h. In addition, evaporation rates are expected to range between 3.0 mm/day and 10.0 mm/day, but can be slightly more during warmer and windier periods and slightly less during relatively wet days. The mostly relatively wet to wet days during the dekad, may warrant less frequent irrigation during the dekad.

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### **Impacts on Agriculture:**

There is a moderate chance (65%) of relatively wet days on the: 21<sup>st</sup>, 22<sup>nd</sup>, 23<sup>rd</sup>, 26<sup>th</sup>, 27<sup>th</sup> and 30<sup>th</sup>. And a moderate chance (68%) on days: 24<sup>th</sup>, 25<sup>th</sup>, 28<sup>th</sup> and 29<sup>th</sup>, lightning strikes, heavy down-pours, water logged soils, flash flooding and riverine flooding is possible in some areas. There is also a moderate (58%) probability of visitation of Saharan dust that will occasionally reduce visibility to less than 14.0 km, particularly during days: 21<sup>st</sup> and 22<sup>nd</sup>.

Additionally, during the dekad, there is a moderate (68%) probability of some agricultural insects, pests, fungi and diseases to get a foot in and possibly develop and thrive. Moreover, the expected daytime wind speeds and specifically during down drafts from cloud clusters, together with the funnelling effect of wind along narrow paths and undulating landscapes, may affect some seedlings negatively by causing seedlings' stems and leaves to be damaged. In addition, possible strong winds and high intensity rainfall may hamper some types of fertilizer, fungicide and insecticide application and retention.

### **Sun, Moon and bright objects in the sky:**

The sun is presently at a latitude of 19.5 degrees south latitude and as a consequence of its position, the day length will range from 11.5 hours to 11.4 hours but more important than this, the intense solar irradiance episodes will decrease even further during daytimes when the sky is generally cloud free. There is low probability of heat stress on certain variety plant seedlings and animals from direct exposure to solar radiation and hot temperatures. Additionally, full moon or Beaver moon will be on the 23<sup>rd</sup>, this will result in illumination over fields and livestock at night followed by the moon's third quarter phase, on the 29<sup>th</sup> and will result in half as much illumination. As the sun sets in the west, planet Venus will be seen brightest in the dawn sky on the 27<sup>th</sup>.

### **Trinidad's Mean Daily Rainfall Forecast for the Third Dekad of November (21<sup>st</sup>-30<sup>th</sup>) 2018.**

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

Moderate chance (66%) of mean daily rainfall up to 4.5 mm.

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

Moderate chance (68%) of mean daily rainfall up to 6.7 mm.

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

Moderate chance (66%) of mean daily rainfall up to 4.2 mm.

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

Moderate chance (68%) of mean daily rainfall up to 6.7 mm.

#### **Southern areas:**

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Moderate chance (66%) of mean daily rainfall up to 5.4 mm.

**South-Western areas:**

Moderate chance (65%) of mean daily rainfall up to 4.6 mm.

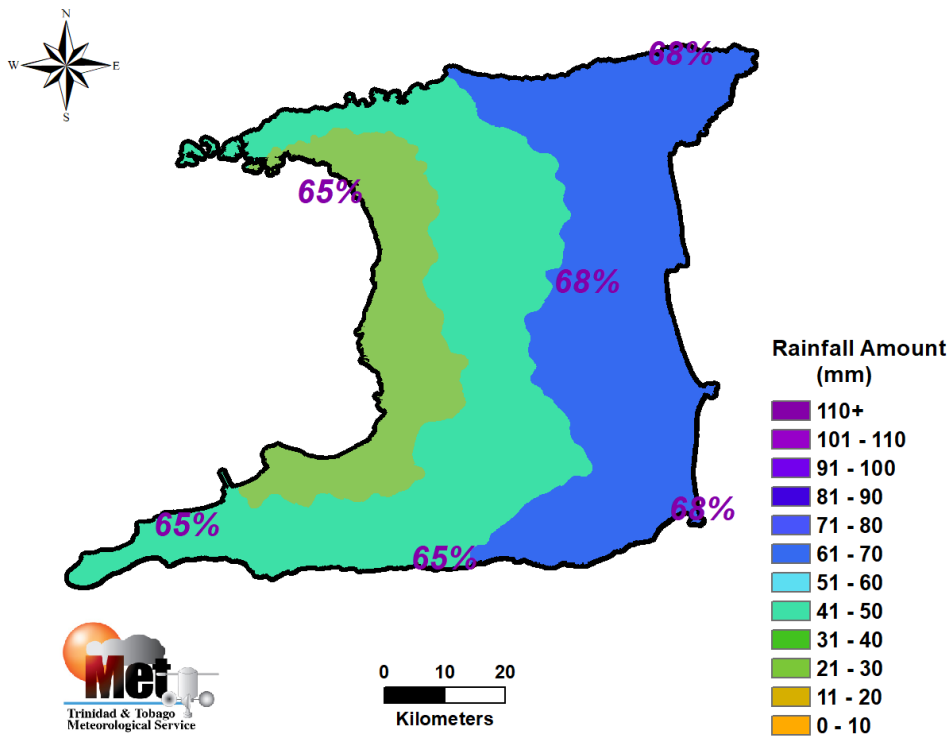


Figure 1. Rainfall Map of Trinidad showing possible rainfall totals for varying districts during third dekad of November 2018 and percentage probability of occurrence.

**Tobago's Mean Daily Rainfall Forecast for the Third Dekad of November (21<sup>st</sup>-30<sup>th</sup>) 2018.**

**Northeastern areas:**

Moderate chance (68%) of mean daily rainfall up to 7.0 mm.

**South-Western areas:**

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Moderate chance (62%) of mean daily rainfall up to 3.8 mm.

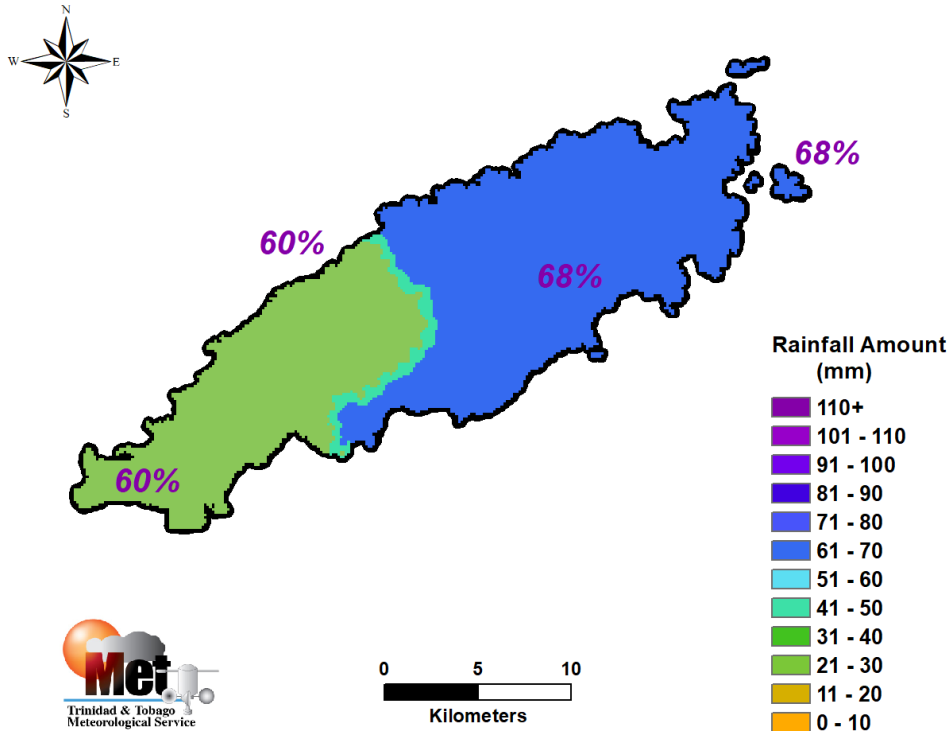


Figure 2. Rainfall Map of Tobago showing possible rainfall totals for varying districts during third dekad of November 2018 and percentage probability of occurrence.

**Temperatures:**

**Trinidad’s Temperature Forecast for the Third Dekad of November (21<sup>st</sup>-30<sup>th</sup>) 2018.**

Moderate chance (70%) of daily maximum temperatures to exceed 32.2<sup>o</sup>C, peaking near 34.3<sup>o</sup>C.

Moderate chance (70%) of daily minimum temperatures to be below 23.5<sup>o</sup>C, dropping as low as 22.1<sup>o</sup>C.

**Tobago’s Temperature Forecast for the Third Dekad of November (21<sup>st</sup>-30<sup>th</sup>) 2018.**

Moderate chance (70%) of daily maximum temperatures to exceed 30.9<sup>o</sup>C, peaking near 32.4<sup>o</sup>C.

Moderate chance (70%) of daily minimum temperatures to be below 24.3<sup>o</sup>C, dropping as low as 23.0<sup>o</sup>C.

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