

Agro-meteorological Bulletin and Assessment for Farmers and Livestock Producers of Trinidad and Tobago for the Second Dekad (11th - 20th) of December, 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 First Dekad (1st – 10th) of December 2019.

Fewer wet days than expected, occurred during the first dekad of December in Trinidad and Tobago. The rainfall total maps for the period 1st to 10th of December are located below as figure 1 and figure 2.

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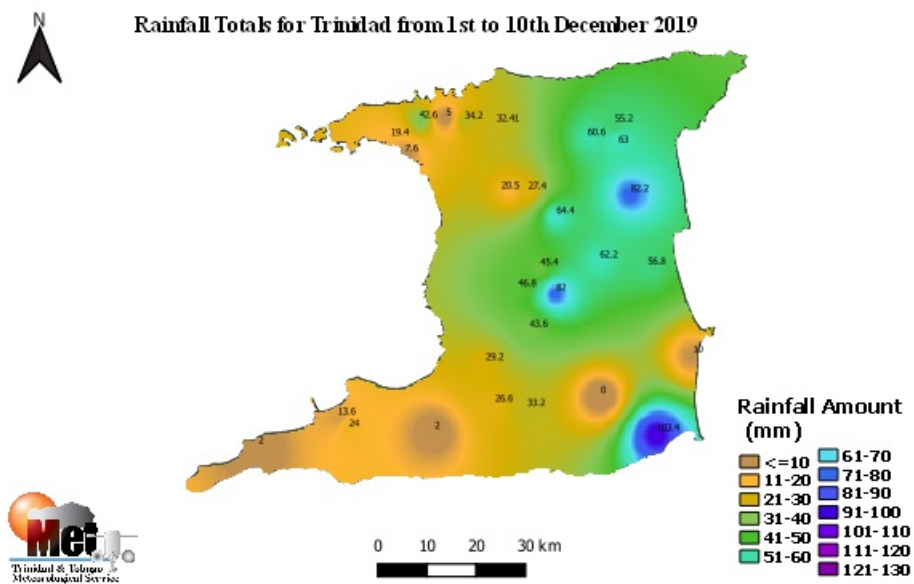
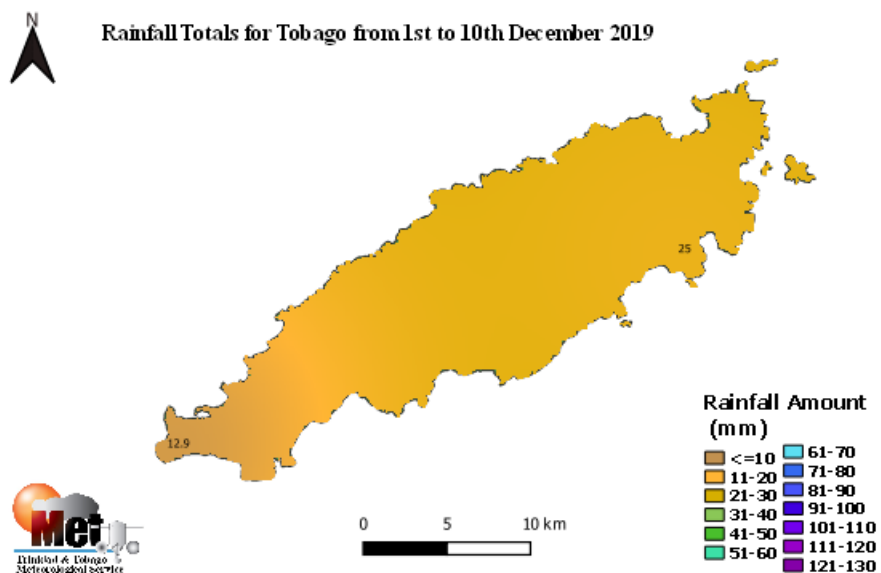


Figure 1. Rainfall map of Trinidad showing measured rainfall totals for varying districts during period 1st to 10th of December 2019.



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Figure 2. Rainfall map of Tobago showing measured rainfall totals for varying districts during period 1st to 10th of December 2019.

The observed Temperatures (maximum/minimum), Average Relative humidity (maximum/minimum) and Long term 10 days (10dys) averages for locations: Piarco International airport and ANR Robinson International airport.

Location	Maximum Temperature °C/ Long term 10 dys average °C	Minimum Temperature °C /Long term 10 dys average °C	Average maximum Relative humidity (%)/ Long term 10 dys average (%)	Average minimum Relative humidity (%)/Long term 10 dys average (%)
Trinidad (Piarco International airport)	32.6/31.0 (1981-2010)	22.5/22.3 (1981-2010)	86/96 (1990-2010)	73/61 (1990-2010)
Tobago (ANR Robinson International airport)	32.2/30.1 (1981-2010)	24.4/23.3 (1981-2000)	83/89 (1990-2010)	71/68 (1990-2010)

The Expected Weather conditions during the Second Dekad (11th – 20th) of December 2019, for Trinidad and Tobago, as seen in table 1.

Table 1.

Days:	Expected weather:
11 th	Cloudy periods with scattered showers and high probability (90%) of thundershowers over Trinidad and Tobago.
12 th	Few cloudy periods with light showers and moderate probability (75%) of a thundershower over T rinidad and Tobago.
	Few cloudy periods with light showers and moderate probability (60%) of a

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13 th	thundershower over Trinidad and Tobago.
14 th	Mostly cloudy periods with scattered showers and high probability (80%) thundershowers over Trinidad and Tobago.
15 th	Cloudy periods with scattered showers and high probability (90%) thundershowers over Trinidad and Tobago.
16 th	Mostly cloudy periods with scattered showers and high probability (80%) thundershowers over Trinidad and Tobago.
17 th	Few cloudy periods with light showers and moderate probability (60%) a thundershower over Trinidad and Tobago.
18 th	Few cloudy periods with light showers and moderate probability (55%) a thundershower over Trinidad and Tobago.
19 th	Few cloudy periods with light showers and low probability (30%) a thundershower over Trinidad and Tobago.
20 th	Few cloudy periods with light showers and low probability (30%) a thundershower over Trinidad and Tobago.

The expected Temperatures, Humidity and Dust haze days during the Second dekad of December for Piarco, Trinidad as seen in table 2.

Table 2.

Day	Maximum Temperature °C	Minimum Temperature °C	Average Relative humidity (%)	Dust Haze Yes/No
11 th	30.0	23.0	85	No
12 th	32.0	23.6	80	Yes
13 th	32.6	22.0	78	Yes
14 th	31.8	22.0	82	No
15 th	30.0	23.6	86	No
16 th	30.0	23.0	85	No
17 th	32.8	22.0	78	Yes

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18 th	32.9	22.0	78	Yes
19 th	32.9	21.6	76	Yes
20 th	32.9	21.6	76	Yes

The expected Temperatures, Humidity and Dust haze days during the Second dekad of December for Tobago as seen as table 3.

Table3.

Day	Maximum Temperature °C	Minimum Temperature °C	Average Relative humidity (%)	Dust Haze Yes/No
11 th	31.0	23.0	86	No
12 th	32.5	24.2	78	Yes
13 th	32.5	24.2	75	Yes
14 th	31.5	24.0	80	No
15 th	30.0	24.0	85	No
16 th	30.0	24.0	80	No
17 th	31.9	24.0	72	Yes
18 th	32.0	23.6	72	Yes
19 th	32.0	23.4	72	Yes
20 th	32.0	23.6	72	Yes

Trinidad's Mean Daily Rainfall Forecast for the Second Dekad of December (11th–20th) 2019.

Northern & Northwestern areas:

Moderate chance (60%) of mean daily rainfall up to 6.6 mm.

North-Eastern and Eastern areas:

Moderate chance (68%) of mean daily rainfall up to 9.4 mm.

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Central, West-Central and inland areas:

Moderate chance (60%) of mean daily rainfall up to 6.0 mm.

South-Eastern areas:

Moderate chance (68%) of mean daily rainfall up to 9.5 mm.

Southern areas:

Moderate chance (64%) of mean daily rainfall up to 7.8 mm.

South-Western areas:

Moderate chance (60%) of mean daily rainfall up to 6.8 mm.

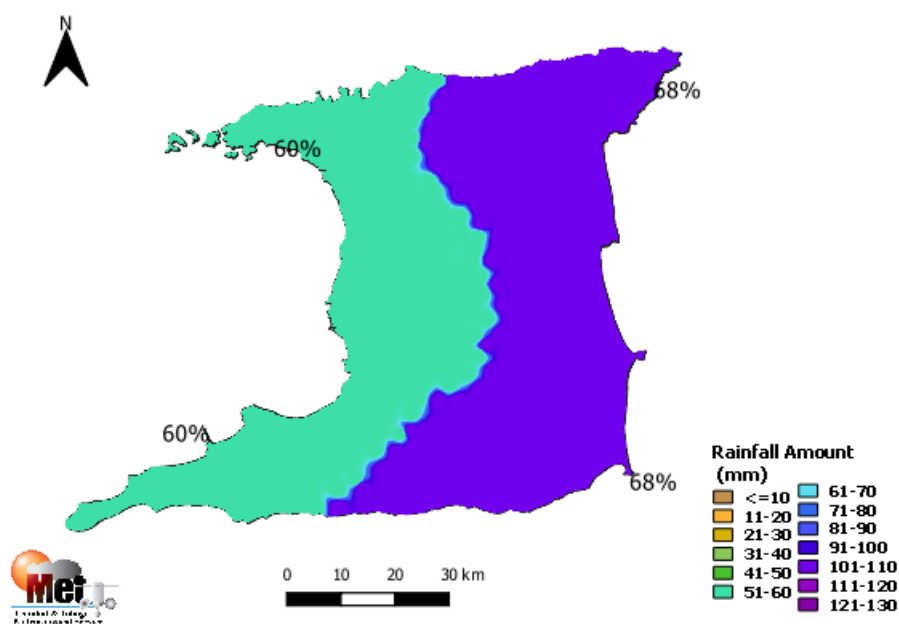


Figure 3. Rainfall map of Trinidad showing possible rainfall totals for varying districts during second dekad of December 2019 and percentage probability of occurrence.

Tobago's Mean Daily Rainfall Forecast for the Second Dekad of December (11th–20th) 2019.

Northeastern areas:

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Moderate chance (68%) of mean daily rainfall up to 9.1 mm.

South-Western areas:

Moderate chance (60%) of mean daily rainfall up to 8.3 mm.

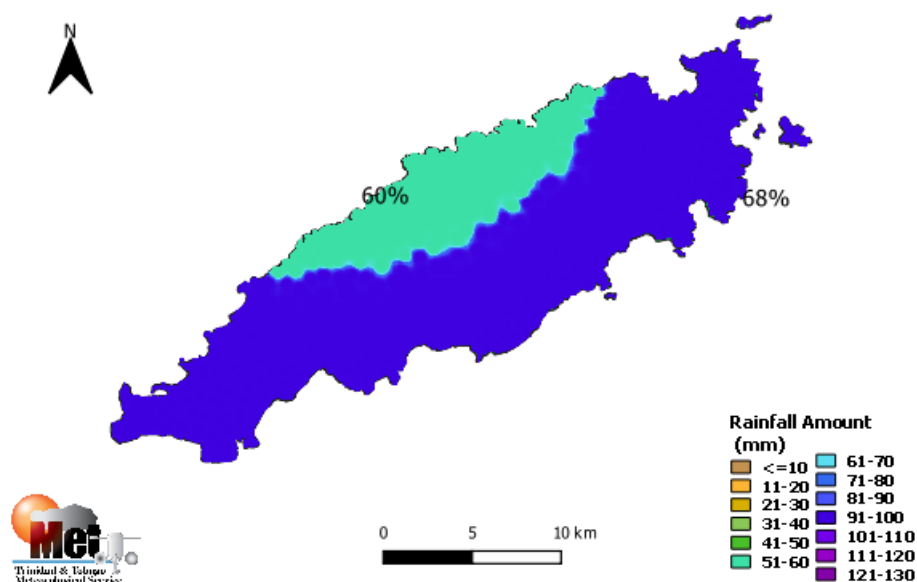


Figure 4. Rainfall map of Tobago showing possible rainfall totals for varying districts during second dekad of December 2019 and percentage probability of occurrence.

Impacts on Agriculture:

Drier conditions than expected occurred during the first dekad of December, the soils have lost some moisture. Vegetation/foilage growth may have slowed a little, but areas that had water logged soils have dried somewhat. During the Second dekad of December, soil moisture will increase across Trinidad and Tobago during the first half of the dekad. Some areas may return to waterlogged soils, while other areas may experience flash floods owing to the wetter conditions later in the second dekad. Rivers will replenish their waters from surface runoff and ground water flow, while shrubs and grass growth will continue at a steady pace. The expected wet to relatively wet conditions of the second dekad of December may require very little irrigation. Additionally, with the expected lowering mean temperatures and high relative humidity; as expected at this time of the year, there is a moderate (60%) probability of some agricultural insects, pests, fungi and diseases get a foot in and possibly develop.

Sun and Moon positions in the sky:

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The sun is presently at latitude of approximately 22.8 degrees south latitude, and with this position, the day length for this dekad will be 11.4 hours. A low probability (30%) of frequent episodes of intense solar radiation will occur during the third dekad of November when the sky is generally cloud free. There is low probability (30%) 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 full phase will be on the 12th and as a result, there will be medium to high moon illumination over crop fields and livestock at night during the dekad.

Summary

The forecast for the Second dekad of December indicates that farmers can expect similarly mixed conditions as compared to the first dekad of December 2019. Expect wet days on days 11th, 14th, 15th, 16th and relative dry days on the 12th, 13th, 17th, 18th, 19th and 20th. On relatively wet days, expect few cloudy periods, light to moderate rainfall and a moderate probability of isolated thundershowers along the western coast of both islands, especially over urban areas of Trinidad during the dekad. On wet days, an induced surface trough will produce cloudy periods with scattered showers and thundershowers over Trinidad and Tobago.

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