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Page 1 of 10

### Agro-meteorological Bulletin and Assessment for Farmers and Livestock Producers of Trinidad and Tobago for the Third Dekad (21st - 31st) of July, 2022

#### 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 Rainfa	I	Rainfall below 50% of the average				
Much Above Normal Rainfa	II	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 Bulletin for Farmers and Livestock Producers of Trinidad and Tobago for the 15-day period (21<sup>st</sup>– 04<sup>th</sup>) of July/August 2022.

Date	Weather	Temperature	Heat Real Feel	Day Moisture (Relative) (Humidity)	Wind

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F750.04.05

Page 2 of 10

21 <sup>st</sup>	68% chance of showers	10.0 to 15.0 mm of rainfall is possible	showers	Warm  Max/Min  Temperatures °C  31.0/24.0	Feels like 35- 41°C	71-80%	Moderate easterly 20 km/h Gust 30 km/h
22 <sup>nd</sup>	40% chance of showers	1.0 to 2.0 mm of rainfall is possible	Partly cloudy with one or two showers		Feels like 35- 38°C	62-66%	Weak north- easterly 15 km/h Gust 25 km/h
23 <sup>rd</sup>	40% chance of showers	1.0 to 2.0 mm of rainfall is possible	Partly cloudy with one or two showers		Feels like 38- 40°C	64-68%	Weak south- easterly 15 km/h Gust 25 km/h
24 <sup>th</sup>	65% chance of showers	1.0 to 5.0 mm of rainfall is possible	Partly cloudy with a few showers	Warm  Max/Min  Temperatures °C 32.5/23.5	Feels like 36- 39°C	51-61%	Weak easterly 10 km/h Gust 15 km/h
25 <sup>th</sup>	65% chance	1.0 to 3.0 mm of rainfall is	Partly cloudy with a few	Warm	Feels like		Weak easterly 10 km/h



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F750.04.05

Page 3 of 10

	of showers	possible	showers	Max/Min Temperatures °C 32.5/23.0	38- 40°C	58-65%	Gust 15 km/h
26 <sup>th</sup>	65% chance of showers	1.0 to 5.0 mm of rainfall is possible	Partly cloudy with a few showers	Warm  Max/Min  Temperatures °C  32.0/23.0	Feels like 36- 41°C	55-89%	Weak easterly 10 km/h Gust 15 km/h
27 <sup>th</sup>	65% chance of showers	1.0 to 3.0 mm of rainfall is possible	Partly cloudy with a few showers	Warm  Max/Min  Temperatures °C  32.5/24.0	Feels like 38- 44°C	55-89%	Weak easterly 10 km/h Gust 15 km/h
28 <sup>th</sup>	65% chance of showers	1.0 to 5.0 mm of rainfall is possible	Partly cloudy with a few showers	Warm  Max/Min  Temperatures °C 32.5/23.5	Feels like 36- 39°C	51-61%	Moderate easterly 20 km/h Gust 30 km/h
29 <sup>th</sup>	45% chance of showers	1.0 to 3.0 mm of rainfall is possible	Partly cloudy with a few showers	Warm  Max/Min  Temperatures °C 32.5/23.5	Feels like 37- 41°C	55-68%	Weak easterly 10 km/h Gust 15 km/h
				Warm			

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F750.04.05

Page 4 of 10

30 <sup>th</sup>	40% chance of showers	1.0 to 2.0 mm of rainfall is possible	Partly cloudy with one or two showers		Feels like 38- 44°C	55-70%	Weak easterly 10 km/h Gust 15 km/h
31 <sup>st</sup>		10.0 to 15.0 mm of rainfall is possible	lshowers	Warm  Max/Min  Temperatures °C  32.0/24.0	Feels like 39- 42°C	65-73%	Weak south- easterly 20 km/h Gust 30 km/h
1 <sup>st</sup>	65% chance of showers	1.0 to 5.0 mm of rainfall is possible	Partly cloudy with few showers	Warm  Max/Min  Temperatures °C 32.0/24.5	Feels like 39- 43°C	62-76%	Weak north- easterly 15 km/h Gust 25 km/h
2 <sup>nd</sup>	40% chance of showers	1.0 to 2.0 mm of rainfall is possible	Partly cloudy with one or two showers		Feels like 36- 39°C	54-59%	Moderate easterly 20 km/h Gust 30 km/h
3 <sup>rd</sup>	65% chance	1.0 to 5.0 mm of rainfall is	Partly cloudy with few showers	Warm  Disclaimer	Feels like		Moderate easterly 20 km/h



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F750.04.05

Page 5 of 10

	of showers	possible		Max/Min Temperatures °C 32.0/24.0	35- 38°C	54-64%	Gust 30 km/h
4 <sup>th</sup>	68% chance of showers	15.0 mm	showers	Warm  Max/Min  Temperatures °C  31.0/24.0	Feels like 35- 38°C	54-64%	Moderate easterly 20 km/h Gust 30 km/h

Trinidad Rainfall Forecast for the 15-Day period of July/August (21st -4th) 2022.

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F750.04.05

Page 6 of 10

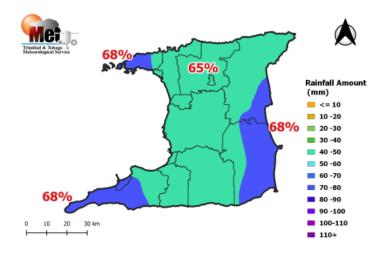


Figure 1. Rainfall map of Trinidad showing expected mean rainfall totals for districts across Trinidad during the 15-day period (21<sup>st</sup>-4<sup>th</sup>) July/August 2022 and percentage probability of occurrence.

#### Eastern, and North-Eastern areas

Moderate chance (65%) of mean daily rainfall up to 5.6 mm.

#### South-Eastern areas

Moderate chance (68%) of mean daily rainfall up to 7.5 mm.

#### Southern areas

Moderate chance (65%) of mean daily rainfall up to 6.4 mm.

#### South-Western areas

Moderate chance (68%) of mean daily rainfall up to 6.4 mm.

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

Moderate chance (65%) of mean daily rainfall up to 4.5 mm.

#### Northern, North-Western areas

Moderate chance (68%) of mean daily rainfall up to 5.7 mm.

Tobago Rainfall Forecast for the 15-Day period of July/August (21st -4th) 2022.

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Page 7 of 10

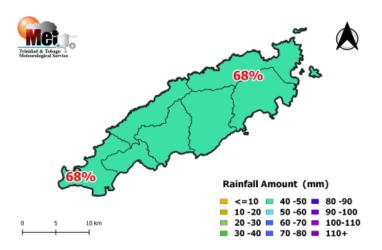


Figure 2. Rainfall map of Tobago showing expected mean rainfall totals for districts across Tobago during the 15-day period (21<sup>st</sup>-4<sup>th</sup>) July/August 2022 and percentage probability of occurrence.

#### **North-Eastern areas**

Moderate chance (68%) of mean daily rainfall up to 4.5 mm.

#### South-Western areas

Moderate chance (68%) of mean daily rainfall up to 4.5 mm.

#### Sun and Moon Positions in the Sky July/August (21st -4th) 2022.

The sun is presently at 20.75 degrees North latitude and with this position, the day-length or number of sunlight hours in Trinidad and Tobago from July 21 st will be 12 hours and 39 minutes, decreasing slightly to 12 hours and 34 minutes by 4<sup>th</sup> August 2022. According to the moon's phases, the 25<sup>th</sup>-27<sup>th</sup> of July and 2<sup>nd</sup>-4<sup>th</sup> of August are good days for planting aboveground crops while the 21<sup>st</sup>-22<sup>nd</sup> and 25<sup>th</sup> are good days for planting belowground crops. However, the 23<sup>rd</sup>-24<sup>th</sup>, 28<sup>th</sup>-31<sup>st</sup> of July and 1<sup>st</sup> of August, are poor planting days. These days should be used for removing weeds, clearing land and ploughing fields.

#### Highlighted Possible Impacts on Agriculture:

During this third 15-day forecast period of (21<sup>st</sup> to 4<sup>th</sup>) July/August 2022, expect drier conditions to occur as compared to the last four consecutive 15-day forecast periods. There is a moderate probability (60%) chance for crop irrigation measures to take place owing to the expected drying of soils and low to moderate rains during this forecast period. However, livestock should be provided with fresh cool water during this forecast period to rehydrate particularly during warmer and drier periods. During drier days, there is a moderate probability (60%) chance of heat stress in young

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F750.04.05

Page 8 of 10

livestock, newly germinated and transplanted seedlings onto fields due to intermittent cloud cover and warm temperatures. However, there is a moderate probability (20%) chance for strong wind events that may cause damage to crops and farm infrastructure, especially on those three wet days. There is also a moderate probability (65%) chance for fungi spread, insect pests and warm weather diseases to develop in crop beds. River levels will remain generally at low levels during this forecast period but will become moderate at times during the  $21^{st}$ ,  $31^{st}$  of July and  $4^{th}$  of August. There is a moderate risk of flooding events, during this forecast period. Farmers should be proactive and store seeds, animals and machinery in elevated locations to minimize losses in the event of flooding.

#### Weather Assessment for the period July (11th-19th) 2022

Wet days occurred on the  $13^{th}$ ,  $15^{th}$ ,  $16^{th}$ ,  $18^{th}$  and  $19^{th}$  of July over Trinidad and Tobago. The torrential rainfall amounts that occurred across the islands allowed for moderate to high moisture content in soils, moderate to high river levels and flash/riverine flooding events. Crop growth and development rates may have varied across agricultural lands owing to heavy rainfall events and waterlogged soils. The rainfall totals maps for the period,  $11^{th}$  to  $19^{th}$  of July for Trinidad and Tobago are located below in figure 1 and figure 2.

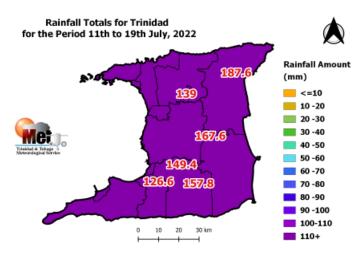


Figure 1. Rainfall map of Trinidad showing measured rainfall totals for varying districts during period 11<sup>th</sup> to 19<sup>th</sup> July 2022.

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F750.04.05

Page 9 of 10

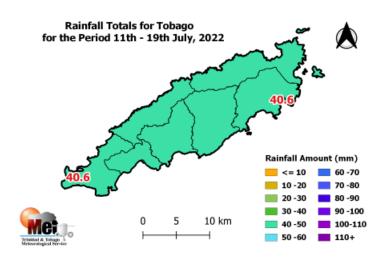


Figure 2. Rainfall map of Tobago showing measured rainfall totals for varying districts during period 11<sup>th</sup> to 19<sup>th</sup> July 2022.

#### **Temperatures:**

Temperatures were cool to warm during the period  $11^{th}$  to  $19^{th}$  July, as the minimum nighttime temperature fell to  $22.6\,^{\circ}$ C and the maximum daytime temperature rose to  $32.8\,^{\circ}$ C, in Trinidad.

Similarly, Tobago temperatures were cool to warm during the period  $11^{th}$  to  $19^{th}$  July, with the minimum nighttime temperature falling to  $24.1\,^{o}$ C and the maximum daytime temperature rising to  $31.6\,^{o}$ C.

#### **Summary**

#### **Summary of Expected Weather:**

#### Few wet days are expected during this fifteen-day forecast period.

Three wet days with rainfall amounts of 10.0 mm and 15.0 mm are expected on the  $21^{st}$  and  $31^{st}$  of July and  $4^{th}$  of August while, rainfall amounts less than 5.0 mm are expected on the  $22^{nd}$ - $30^{th}$  July and  $1^{st}$ - $3^{rd}$  of August 2022.

#### Trinidad:

Rainfall amounts ranging between 10.0 mm and 15.0 mm are expected on the  $21^{st}$  and  $31^{st}$  of July and  $4^{th}$  of August while, rainfall amounts less than 5.0 mm are expected on the  $22^{nd}$ - $30^{th}$  July and  $1^{st}$ - $3^{rd}$  of August. The daily rainfall totals are forecast to range between 1.0 mm to 15.0 mm across different farmlands, with fifteen-day rainfall totals ranging between 45.0 mm and 75.0 mm. The few impactful rainfall events will mostly occur across the northeastern, eastern, southeastern, southwestern and northwestern parts of Trinidad. There is a moderate (68%) probability that flash and riverine flooding will occur during/after heavy rainfall events.

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F750.04.05

Page 10 of 10

#### Tobago:

Tobago will experience similar rainfall amounts as compared to most of Trinidad. Wet days with rainfall amounts ranging between 10.0 mm and 15.0 mm are expected on the  $21^{st}$  and  $31^{st}$  of July and  $4^{th}$  of August while, rainfall amounts less than 5.0 mm are expected on the  $22^{nd}$ - $30^{th}$  July and  $1^{st}$ - $3^{rd}$  of August The daily rainfall totals are forecast to range between 1.0 mm to 15.0 mm across different farmlands particularly southwestern areas, with fifteen-day rainfall totals average around 45.0 mm.

#### Temperatures & Winds:

The maximum temperatures are expected to remain warm, with temperatures ranging between  $31.0^{\circ}$ C to  $33.0^{\circ}$ C throughout the period. However, temperatures are expected to have a real-feel or feels-like between  $35.0^{\circ}$ C to  $44.0^{\circ}$ C on most days. The minimum temperatures will range between  $23.0^{\circ}$ C to  $24.5^{\circ}$ C during most nights/early mornings, dropping lower in rural areas and valleys.

Mostly weak south-easterly and easterly winds with an average speed of 10 km/h are expected, with gusts of 20-30 km/h at times. Moderate to low rainfall totals, mostly low wind speeds, warm days and warm feels-like temperatures will sustain average evapotranspiration rates in crops ranging between 4.0 to 10.0 millimeters per day.

#### Moisture levels:

Over the fifteen-day period across Trinidad and Tobago, moisture levels are expected to be moderate to low, with average daytime relative humidity values in the lower-50s to lower-80s, in terms of percentage.

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