



Date of Issue: 04/07/2017

## Near to Below Normal Rainfall for July to September: Flooding Potential Remains High

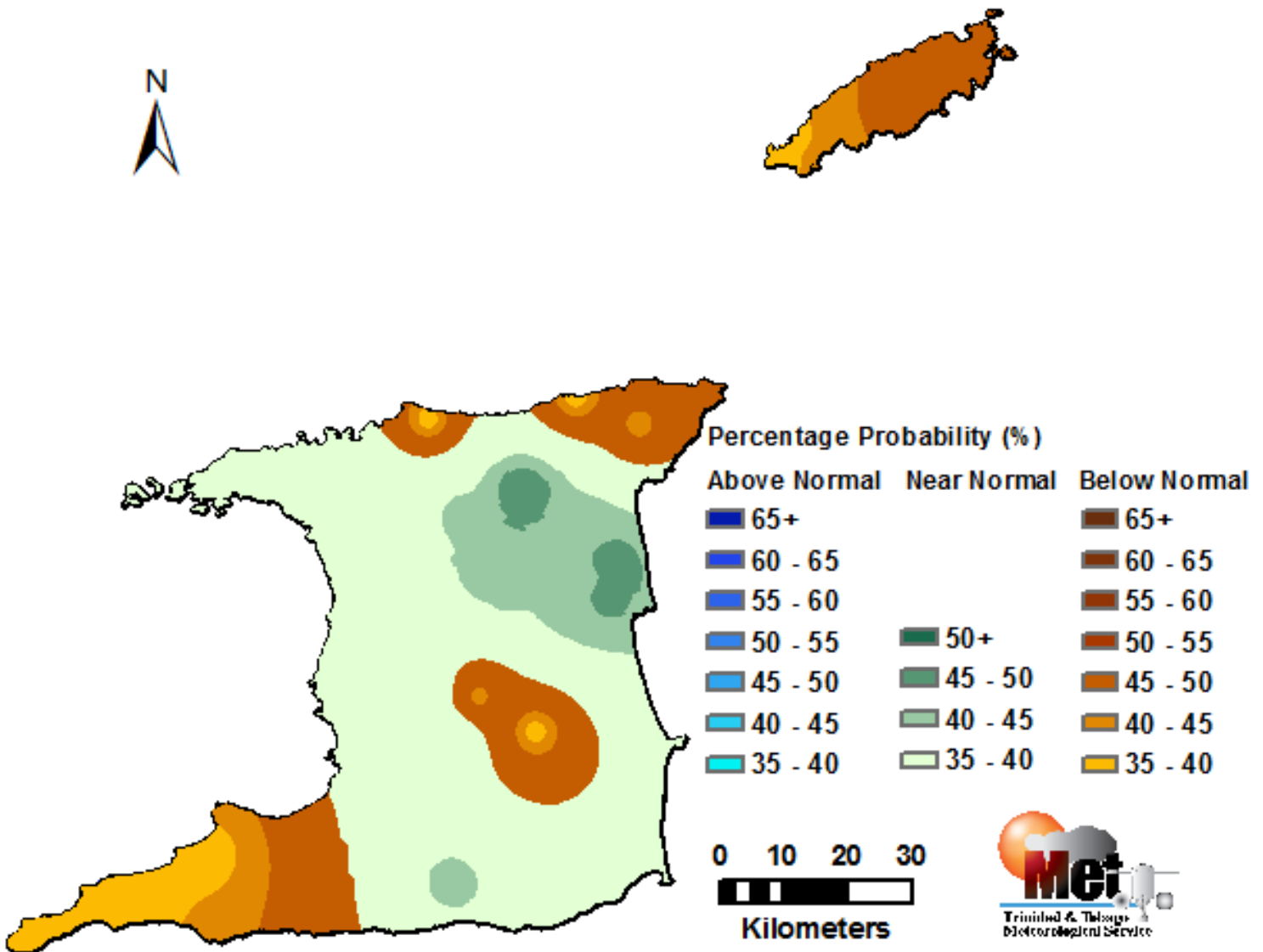
### Key Messages

- ✓ Highest chances exist for near normal to below normal rainfall totals during July to September (JAS) over Trinidad and Tobago;
- ✓ Northern Trinidad and northeast Tobago have much enhanced chances for near normal rainfall;
- ✓ Near normal in the wet-season means the usual wet conditions with abundant rainfall;
- ✓ Slightly enhanced chances for near normal number of extremely wet days (> 25.0 mm) during JAS.
- ✓ July rainfall totals are favoured to be near to above normal;
- ✓ August and September have enhanced chances for below normal rainfall, with September rainfall totals likely to be lower than August totals;
- ✓ JAS period rainfall totals with highest chance of occurring range between 440-1025mm in Trinidad and between 440-750mm in Tobago;
- ✓ Both day and night temperatures are predicted to be warmer than average for all of Trinidad and Tobago with possibilities for short-duration hot spells in August and September.

### Likely Impacts

- ✓ Near usual rainfall totals during the wet season with enhanced chances for higher than usual number of wet days suggest high potential for flooding still exist;
- ✓ Already soaked grounds and increased water flows, along with wet as usual wet-season conditions, increase the risk of flash and riverine flooding, landslips and landslides;
- ✓ Recent increases in surface water ponding can promote mosquito breeding. This will increase the risk for higher incidences of vector borne diseases especially during August and September;
- ✓ Increased rainfall, mixed with warm and humid conditions tend to promote rapid multiplication of some agricultural pests, diseases and fungal growth.
- ✓ More rainfall than normal is associated with more flies and flies are known to carry and spread diseases such as Gastroenteritis and Salmonella infections.

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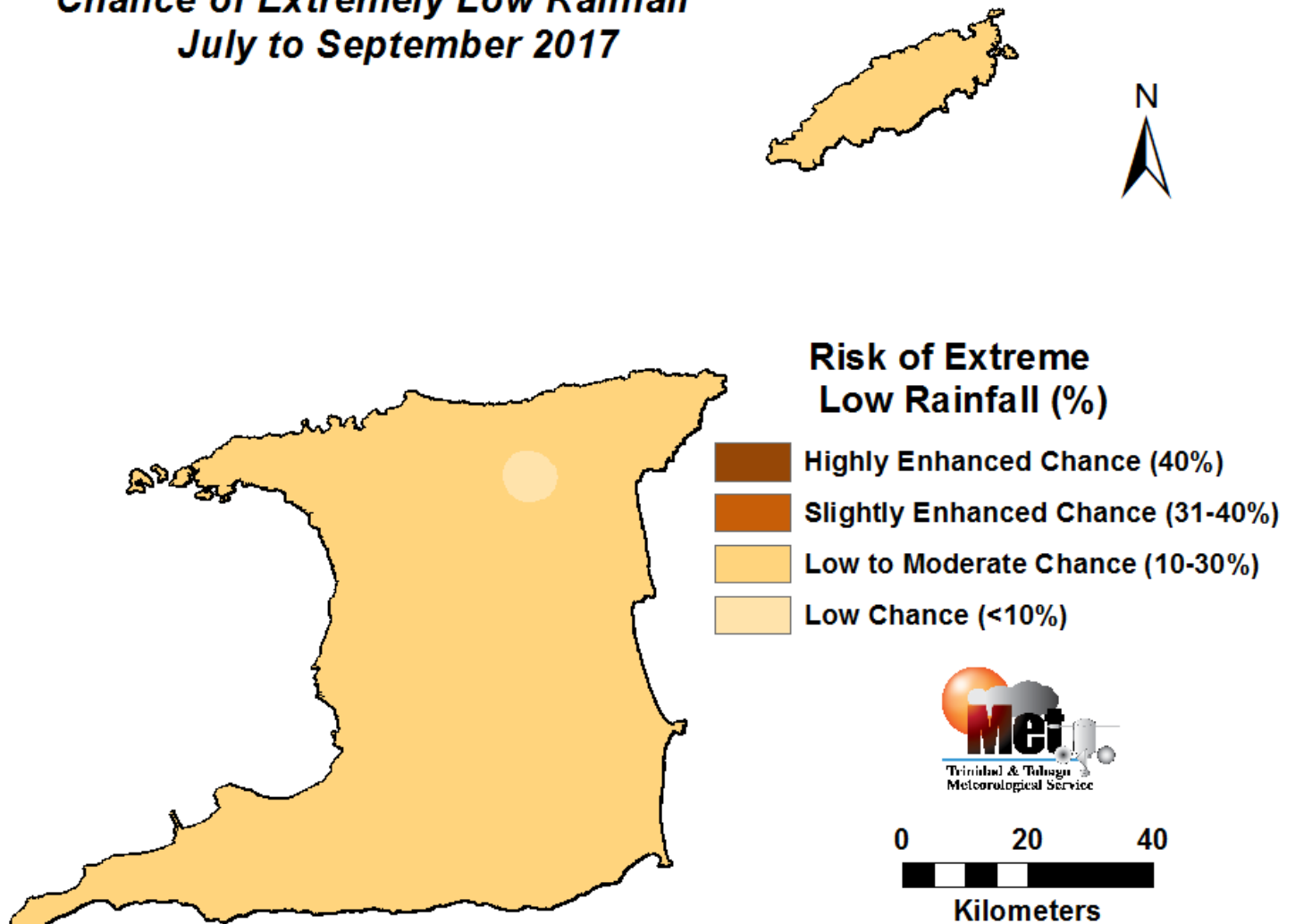
**Figure 1: Category of rainfall likely for JAS (July to September) 2017 with the highest chance of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above normal rainfall, brown areas show an increased chance for below normal rainfall, while green areas show an increased chance for near normal rainfall. Normal is defined by the rainfall that was observed in middle one-third of the JAS period rainfall totals during the historical period used to produce the outlook.**

- ✓ Enhanced chances exist for near normal rainfall totals over large parts of Trinidad during JAS;
- ✓ Chances are most enhanced for near normal rainfall in northeastern Trinidad;
- ✓ Below normal rainfall totals are most likely in Tobago, southwest and extreme northeast Trinidad, small parts of north and south Trinidad;
- ✓ Chances are highest for the usual number of extremely wet days (> 25.0 mm) for JAS; i.e. expect between 4 - 10 extremely wet days in Trinidad and 3-6 in Tobago during the period.

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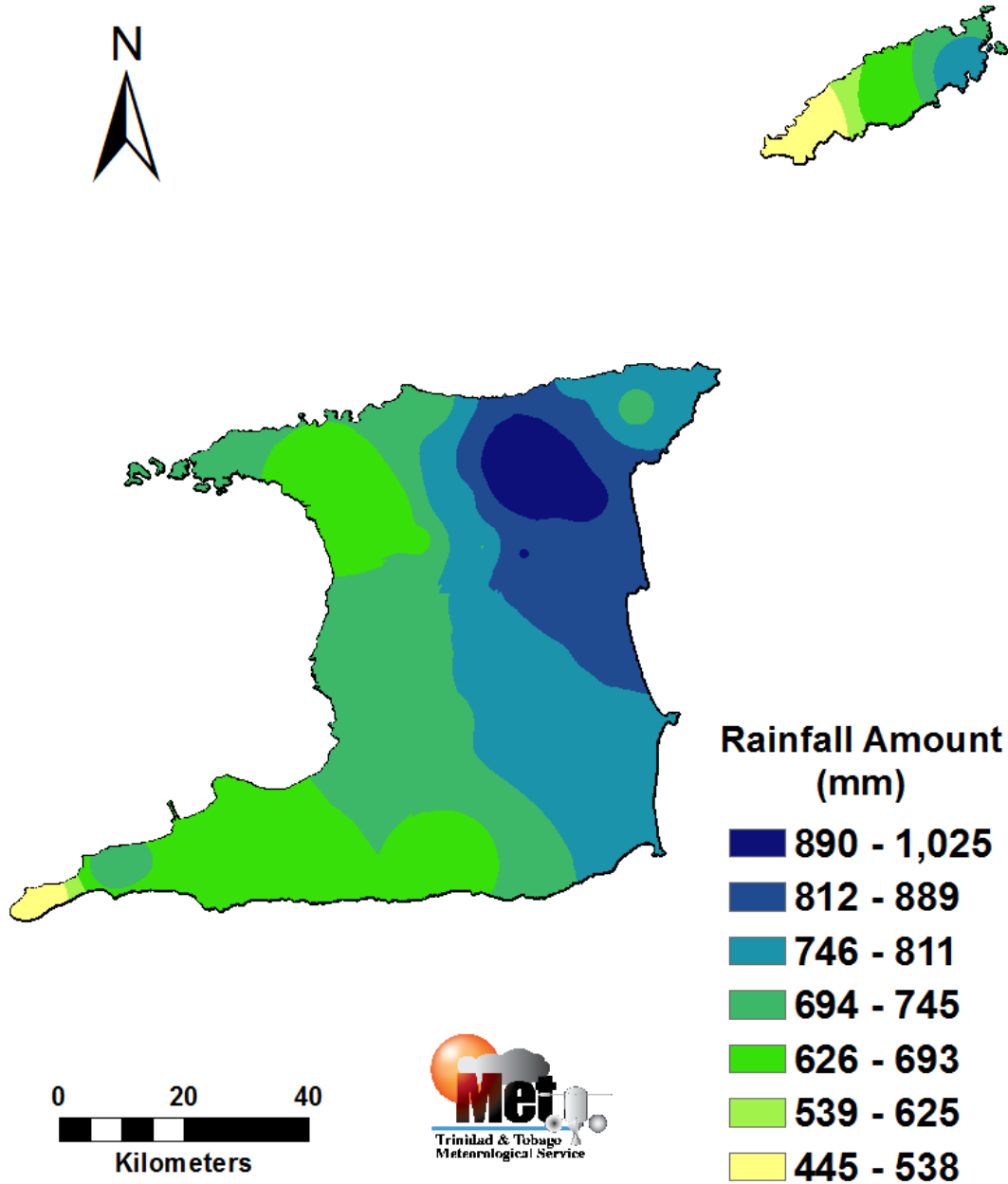
## Chance of Extremely Low Rainfall July to September 2017



**Figure 2: Risk of the JAS being extremely drier than normal (within the lowest 10% on record).**

- ✓ The risk of extremely drier than normal conditions is low to moderate (10 - 19%) over both islands;
- ✓ Most significant dryness likely to occur in September.

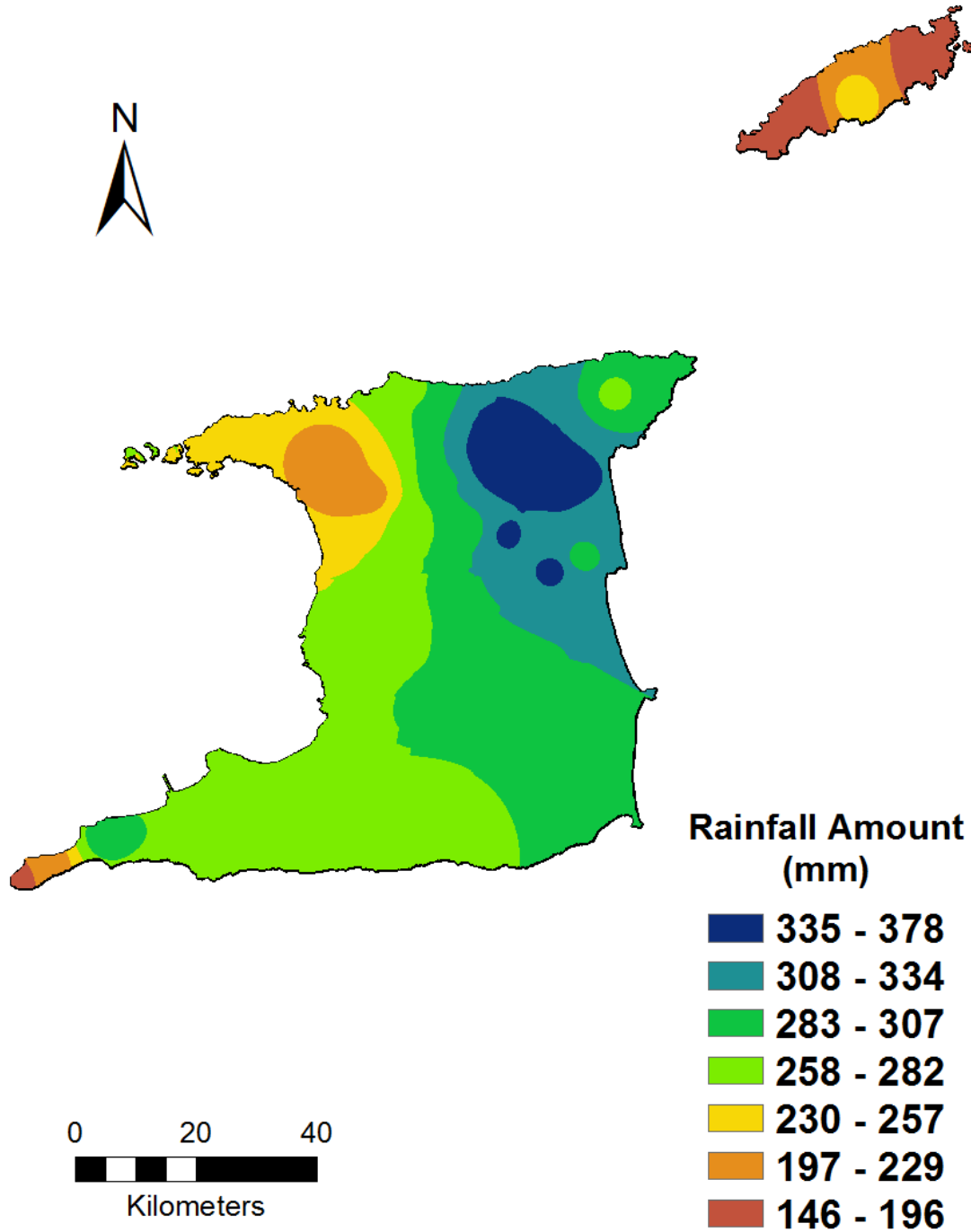
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**Figure 3: Outlook of possible rainfall accumulated totals for July to September 2017, with the highest chance of occurring.**

Largest rainfall accumulated totals for JAS are likely to be as high as 1025mm in areas such as Valencia, Sangre Grande and Plum Mitan in east Trinidad; and near 750 mm in the Belle Garden, Roxborough, Delaford and environs in northeast Tobago.

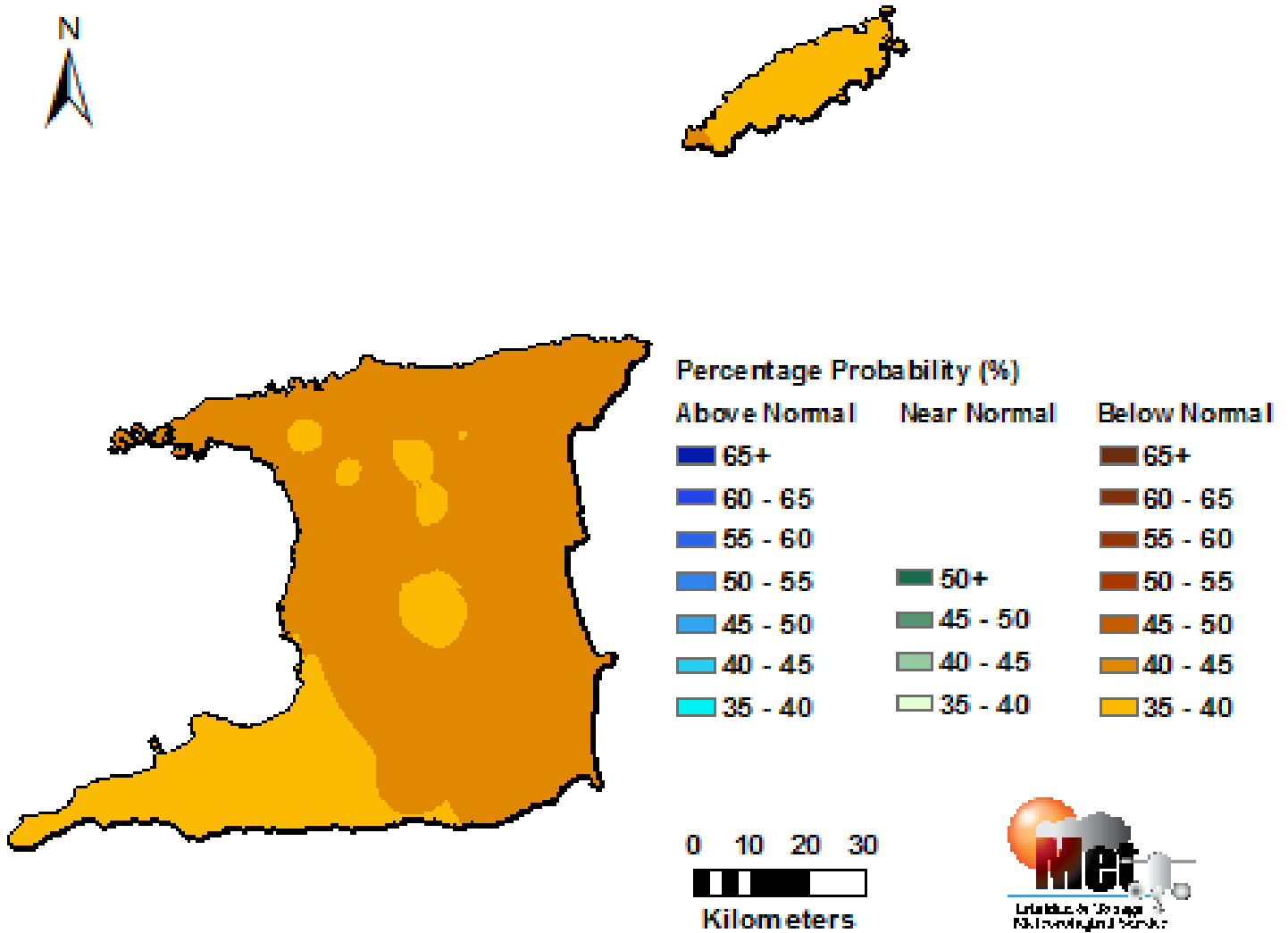
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**Figure 3: Outlook of possible rainfall accumulated totals for July 2017, with the highest chance of occurring.**

- ✓ July rainfall with highest chance of occurring range from about 150-378 mm in Trinidad and 150-250mm in Tobago.

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**Figure 2: Category of rainfall likely for October to December (OND) 2017 with the highest chance of occurrence expressed as probabilities represented on the map. Blue areas indicate places with an increased chance for above normal rainfall, brown areas show an increased chance for below normal rainfall, while green areas show an increased chance for near normal rainfall. Normal is defined by the rainfall that was observed in middle one-third of the JJA seasons during the historical period used to produce the outlook.**

- ✓ OND rainfall totals are likely to be below normal with the strongest enhanced chances over large areas of Trinidad;
- ✓ Most significant dryness likely to occur during October.

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### The Temperature Outlook Favours Warmer than Normal Temperatures for July to September 2017

- ✓ Both daytime and night temperatures are likely to be warmer than average over both islands;
- ✓ Chances of warmer than average days are highest in Trinidad where there is a 57 % chance of warmer than average days; while there is a 52% chance for Tobago;
- ✓ Chances of warmer than average nights are highest in Trinidad where there is 52% chance; while Tobago has a 47% chance;
- ✓ A reasonably good chance (45%) exist for short duration hot spells in August and September (maximum temperature greater than 34.0 °C in Trinidad, greater than 32.0°C in Tobago);
- ✓ Historically, September is the warmest month of JAS when maximum temperatures can get as high as 36.5°C in Trinidad and as high as 34.2 °C in Tobago.

### Likely Implications for Near to Below Normal Rainfall and Warmer than Normal Temperatures

- ✓ Near usual rainfall totals during the wet season with enhanced chances for higher than usual number of wet days suggest high potential for flooding still exist;
- ✓ Most areas in Trinidad are already soaked and water levels are high. With the usual amount of JAS rainfall expected, there is increased risk of flash and riverine flooding, landslips and landslides;
- ✓ Recent increases in surface water ponding can promote mosquito breeding. This suggests increased risk for higher incidences of vector borne diseases especially during August and September;
- ✓ Increased rainfall, mixed with warm and humid conditions tend to promote rapid multiplication of some agricultural pests, diseases and fungal growth;
- ✓ More rainfall than normal is associated with more flies and flies are known to carry and spread diseases such as Gastroenteritis and Salmonella infection;
- ✓ Recent abundant rainfall would have increased water reservoir levels, ground water recharge and surface water flows; however, high stream and surface water levels increases flood potential;
- ✓ Normal rainfall during JAS could lead to reduced traffic flows, disruptions in localized travel, longer travelling times and increased disruption of outdoor activities;
- ✓ Above normal temperatures can aid more intense showers which will increase the risk for flash floods, especially in the cities and built-up areas.

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**How Should You Respond?**

**Take Early Action!**

**Health Sector:**

- ✓ Clear bushes, open drainage systems, fumigate in and around residences;
- ✓ Revisit contingency plans to manage spike in vector borne incidences and rainfall related infections.

**Disaster Risk Management Sector:**

- ✓ Sensitize communities on the forecast and its negative impacts;
- ✓ Revisit early warning information dissemination channels;
- ✓ Alert communities in low lying areas (flood prone) to act early;
- ✓ Alert at risk residence and communities that are still prone to landslide and slip.

**Agriculture & Food Security Sector**

- ✓ Practice soil moisture conservation like mulching and trenches;
- ✓ Put in place disease control measures.

**Water, Drainage and Energy sector**

- ✓ Implement water harvesting, storage and proper usage for anticipated dryness later in the season;
- ✓ Conduct routine de-silting of water channels, canals and reservoirs;
- ✓ Remove dry branches, trees and overhang near electrical wires.

**General Public**

- ✓ Proper preparation especially for persons in at risk areas;
- ✓ Clean drains and surrounding areas of debris, be sand-bag ready;
- ✓ Conserve, store and manage water in a safe and adequate manner;
- ✓ Be watchful for extreme rainfall events especially on extremely hot days;
- ✓ Take measures to lessen the potential impacts from the expected increased rainfall and warmer than average temperatures.

Be vigilant and visit the Met Service website regularly to keep up to date on local weather changes daily at [www.metoffice.gov.tt](http://www.metoffice.gov.tt) or download our mobile app on Google Play Store or Apple iStore.

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### **Climatic Influencers and Context of the Outlook**

- ✓ Currently, sea surface temperatures (SSTs) in waters surrounding Trinidad and Tobago and further east of the islands are mostly warmer than average. Climate models surveyed mostly favour these conditions to persist during JAS.
- ✓ ENSO-neutral favoured during JAS 2017 with chances for El Niño development currently at 40-45%. SSTs in the Niño 3.4 region used to monitor El Niño are warmer than average, and have strengthened during the last 4 weeks. Historically, ENSO-neutral and El Niño conditions have been associated with the suppression of local rainfall, but not always.
- ✓ The month of May and the first two weeks of June were characterised by a negative phase of the North Atlantic Oscillation (NAO), but since mid-June the NAO been in a weak positive phase which is likely to continue for the rest of July. The overall influence should be a positive one on local rainfall.
- ✓ Models indicate a weak, incoherent Madden Julian Oscillation (MJO) signal during early July then the potential re-emergence of a more substantial sub-seasonal signal by the end of the second week with the rainfall enhanced phase likely to encroach on the region. This can have a positive influence on July rainfall.
- ✓ Strong wind- shear values over much of the main development region, in addition to widespread presence of mid-latitude dry air and Saharan dust during the first two weeks of July likely to suppress deep convection.

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