Trinidad & Tobago Meteorological Service	**Trinidad & Tobago Meteorological Service**	**Rainfall and Temperature Outlook for Trinidad and Tobago, October to December 2018**

Key Words: below-normal ("less than usual"), near-normal ("usual") or above-normal ("More than usual")

Near Normal Rainfall Most Likely During October to December
Risk of Flooding and Landslide Remains High

Date of Issue: 27/09/2018

Key Messages

- ✓ The months of October and November in the past have produced high impact flooding events
- ✓ Historically, November is known for producing the secondary peak rainfall totals in Trinidad and peak rainfall totals in Tobago.
- ✓ The rainfall outlook for October to December (OND) shows that the period will most likely be as wet as usual with near normal rainfall totals likely (**low confidence)**;
- ✓ The month of October is likely to be just as wet as usual with near average rainfall favoured (**high confidence)**;
- ✓ An outlook with increased chances for the typical wet conditions over the next three months suggests increased potential for flooding;
- ✓ Most of Tobago experienced drier than usual conditions during June, July, August and September. An outlook for near average rainfall in the coming three months suggests significant improvement in rainfall deficit is less likely to occur during the period;
- ✓ The outlook indicates the usual number of excessively wet days **(Medium confidence**);
- ✓ Days and nights are likely to be warmer than average during OND but temperatures are not likely to be excessively uncomfortable except for a few days in October.

Likely Impacts

- ✓ Existing surface wetness is likely to be maintained or enhanced.
- ✓ Flooding and landslide potential associated with heavy rainfall days is enhanced for flood and landslide prone areas;
- ✓ Reduced potential for heat stress in the vulnerable population and small livestock during the period, but especially November and December.

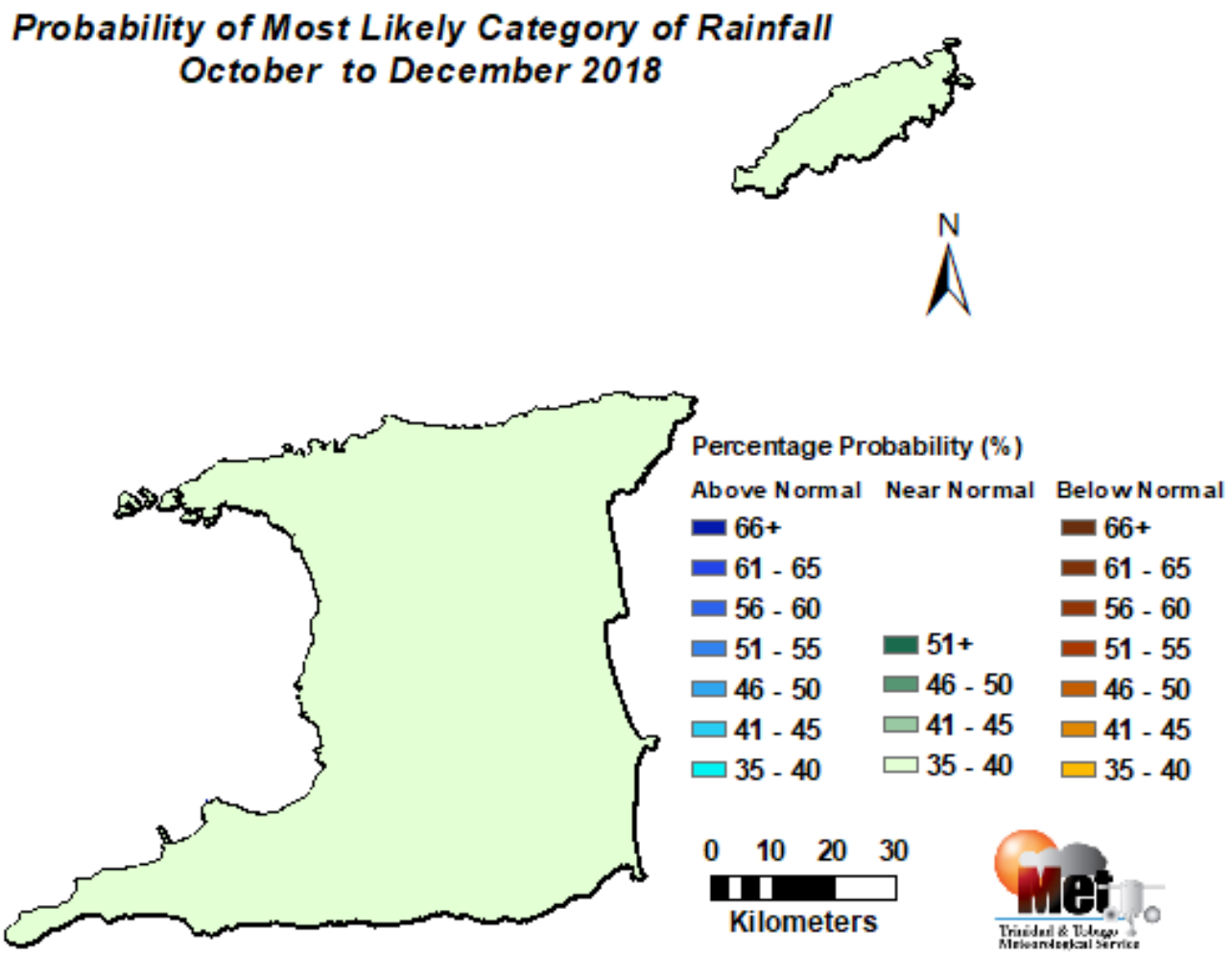

Figure 2: Category of rainfall likely for October to December (OND) 2018 with the highest chance of occurrence expressed as probabilities and colour coded on the map. Blues indicate that it is more likely for above normal rainfall to occur than for below normal or near normal. Browns indicate it is more likely for below normal rainfall, while greens indicate it is more likely for near normal rainfall. Normal is defined by the rainfall that was observed in middle one-third of the OND period rainfall totals during the historical period used to produce the outlook.

- ✓ The October to December 2018 rainfall outlook shows there is no strong indication for the period to be either wetter or drier than usual, but rather both islands can expect the usual rainfall amounts for this period. Accumulated rainfall totals are more favoured to be in the near normal category when compared with the chance for above- or below-normal**. (Low confidence);**

- ✓ Near normal rainfall totals mean areas are likely to receive rainfall totals between 75% and 125% of their long term average for the OND period. For instance, at Piarco, this means an OND rainfall total between 450.5mm and 750.8mm and at Crown Point between 384.4mm and 680.6mm.

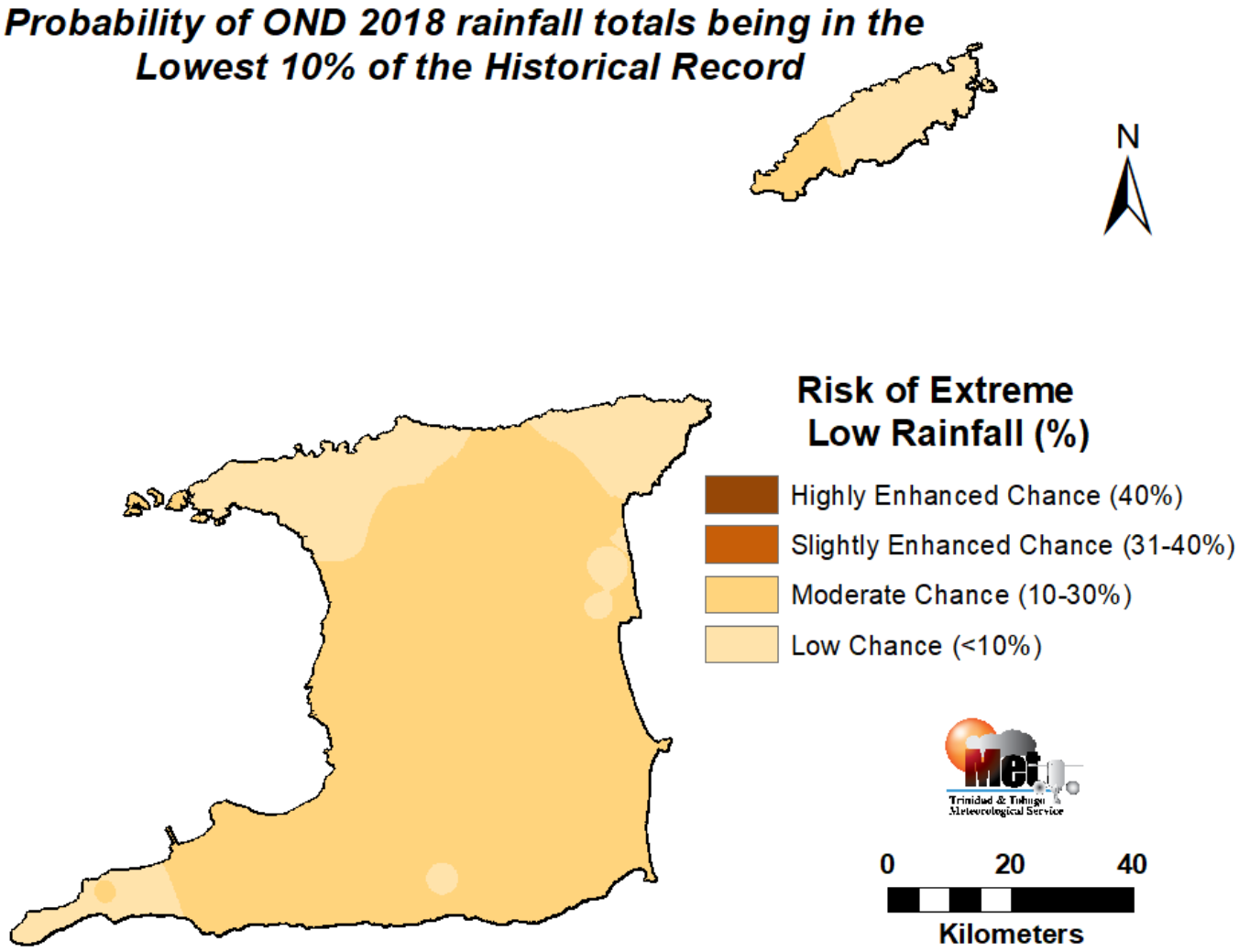

Figure 3: The map shows the chances for extremely dry conditions over the three months ending December. Extreme refers to the lowest 10% of October to December accumulated rainfall in the historical record.

- ✓ The chance for the OND period to be extremely dry is low **(high confidence);**
- ✓ The outlook indicates a 30- 40% chance for at least three 7-day dry spells, during OND, i.e. seven consecutive days with no measurable rainfall.

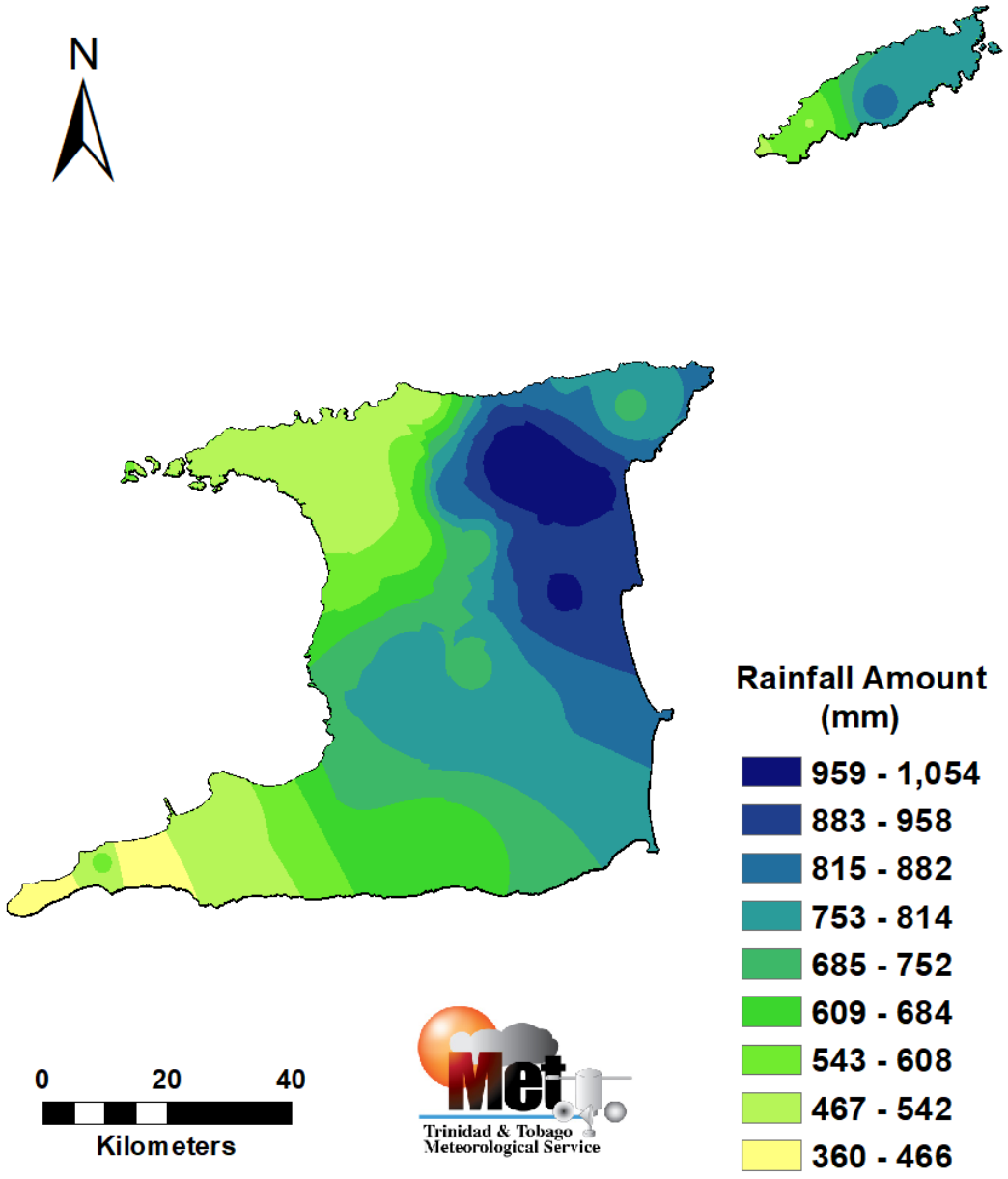

Figure 4: Possible accumulated rainfall totals with the highest chance of occurring during October to December 2018.

Areas in northeast Trinidad, near Sangre Grande, Valencia and environs are likely to receive the largest rainfall accumulated totals close to 1050.0mm, while areas near Chatham, Cedros and Icacos in the southwest are likely to receive the least rainfall totals.

North-eastern Tobago is favoured to receive the highest accumulated rainfall totals, while the smallest totals are likely in vicinity of Mount Irvine and Bon Accord.

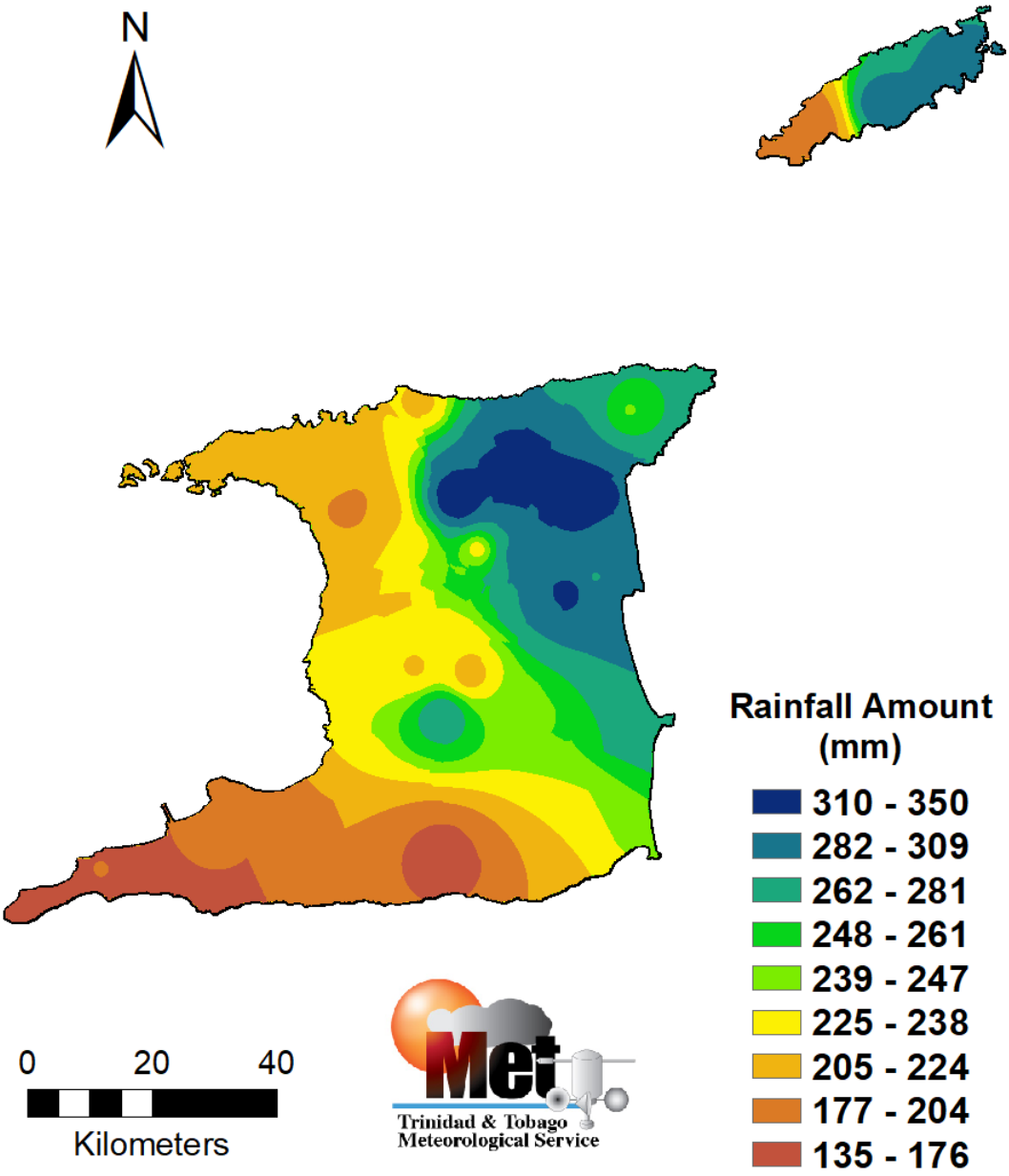

Figure 5: Possible rainfall totals with the highest chance of occurring during October 2018.

October is likely to be just as wet as usual with a greater than 45% chance in most areas for rainfall totals in the near normal category **(high confidence)**.

Possible rainfall totals range between 135.0 mm and 322.0 mm across the islands.

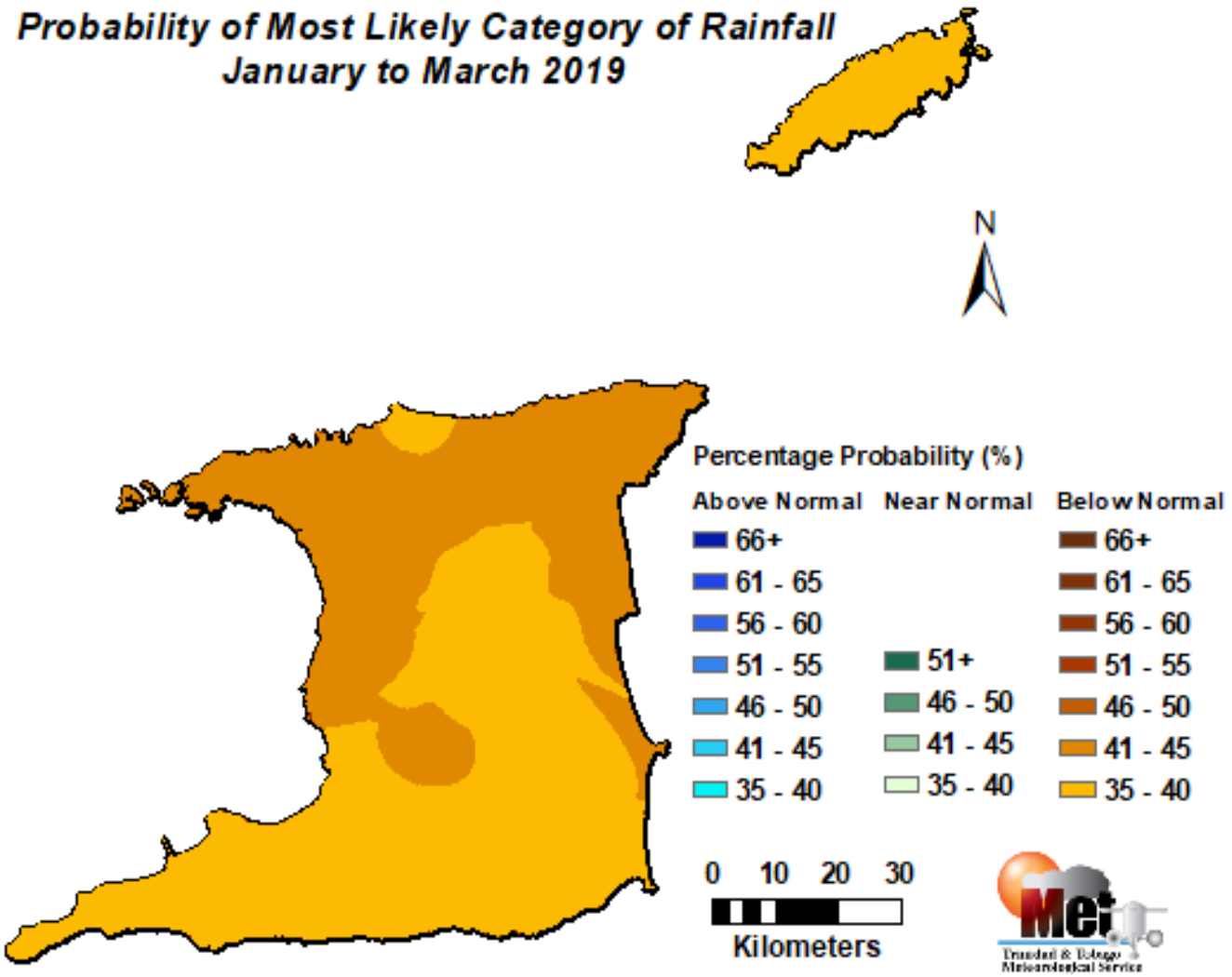

Figure 6: Category of rainfall most likely for January to March 2019 (JFM) with the highest chance of occurrence expressed as probabilities and colour coded on the map. Blues indicate that it is more likely for above normal rainfall to occur than for below normal or near normal. Browns indicate it is more likely for below normal rainfall; while greens indicate it is more likely for near normal rainfall. Normal is defined by the rainfall that was observed in middle one-third of the JFM period rainfall totals during the historical period used to produce the outlook.

- ✓ Most of Trinidad and Tobago is likely to be drier than average during January to March (JFM) 2019 with greater than 40 % chance in most places for accumulated rainfall totals in the below normal category (**moderate confidence**);

  This suggests increased chances for the development of dry-spell/drought-like conditions during the 2019 dry season.

Temperature Outlook:

- ✓ October is usually the last month of the second local heat season in Trinidad and Tobago and warmer than average daily temperatures are likely during October 2018;
- ✓ There is a greater than 75% chance for October to December days and nights to be warmer than average with October days and nights likely to be the warmest;
- ✓ Although warmer than usual conditions are in the forecast, apart from a few days in October, uncomfortably high temperatures are not likely during November and December.

Likely Implications

- ✓ Warmer than average temperatures can aid more intense showers, which will increase the risk for flash floods on hot days, especially in the cities and built-up areas;
- ✓ Risk of flash and riverine flooding, landslips and landslides on heavy rainfall days and prolonged wet spells, remains relatively high;
- ✓ Increase in recharge rates at water reservoirs associated with wetter than usual conditions. Slower than usual recharge rates at water reservoirs in areas with recent drier than usual conditions.
- ✓ Increase in surface water ponding can promote mosquito breeding, which can lead to higher risk for spikes in vector borne diseases;
- ✓ Increased rainfall, mixed with warm and humid conditions tend to promote rapid multiplication of some agricultural pests, diseases and fungal growth;
- ✓ Increased rainfall could lead to reduced traffic flows, disruptions in localized travel, longer travelling times and increased disruption of outdoor activities;

How Should You Respond? **Don't be vulnerable. Be sensible! Act now and prepare for heavy rainfall, flood, high-wind, hot spells and spikes in dengue cases.**

Drainage

- ✓ Continue de-silting and cleaning of drainage systems, canals, drains, outlets and river mouths;
- ✓ Clean and clear choked surface drains to allow fast drainage and to reduce flash flooding.

Waste Management Sector

- ✓ Continue efforts to prevent waste from entering drains and water courses in order to reduce flooding;
- ✓ Implement anti-litter activities to raise awareness on the impacts of poor solid waste management.

Health Sector

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

Disaster Risk Management Sector

- ✓ Sensitize communities on the forecast and its negative impacts;
- ✓ Revisit early warning information dissemination channels;
- ✓ Alert communities and citizens in flood and landslide prone areas to act early.

Agriculture & Food Security Sector

- ✓ Put in place disease control measures; ready pumps for clearing waterlogged drainage;
- ✓ Clear or clean poorly maintained and choked surface drains to prevent waterlogging;
- ✓ Initiate contingency planning for the likely drier than usual start to the upcoming dry season.

Water and Energy sector

- ✓ Conduct routine de-silting of reservoirs and riverine flooding channels;
- ✓ Remove dry branches, trees and overhang near electrical wires, especially in landslip prone areas.
- ✓ Harvest excess rainfall now and revisit contingency plans for drier than usual JFM.

General Public

- ✓ Continue proper preparation especially for persons in at risk areas. Stock up on emergency supplies for 3-7 days;
- ✓ Clean drains and canals; Conserve, store and manage water in a safe and adequate manner;
- ✓ Take measures to lessen impacts from flooding. Be sand-bag ready;

Be vigilant and visit the Met. Service website at www.metoffice.gov.tt regularly to keep up to date with local weather changes and follow us on social media.

Climatic Influencers and Context of the Outlook

- ✓ Waters in, and around Trinidad and Tobago continued to warm during August and are now warmer than average, with positive sea surface temperatures (SSTs) departures in most areas. Some cooling is forecasted during October to December but SSTs are predicted to remain in the near to above average category.

- ✓ El Niño–Southern Oscillation (ENSO)-neutral conditions (neither El Niño nor La Niña) continue to exist but expert opinion, observations and model outlooks still show a good chance for El Niño developing during October to December 2018. This chance has however been reduced to 50-55% during October to November and to 68% during December, compared to earlier.

- ✓ ENSO-neutral conditions usually have limited control on local rainfall. However, oftentimes when a trend towards El Niño is present, Trinidad and Tobago tends to experience below average rainfall during December to February with warmer than usual days and nights.

- ✓ The North Atlantic Oscillation (NAO) remained in its positive phase during August to September is likely to persist in its positive phase for most of October. A positive NAO tends to aid in cooling SSTs in waters around Trinidad and Tobago, which tends to suppress rainfall.

- ✓ The Madden Julian Oscillation (MJO) is the main climate driver usually influencing fluctuation in the local weather on the sub-seasonal scale (weekly to monthly timescales). The MJO is likely to be in a favourable phase to influence local rainfall during the first half of October.

The precipitation and temperature outlook is based on statistical and dynamical seasonal climate models output and known seasonal climate influencers. Multiple competing climatic factors are at play but waters in and around Trinidad and Tobago are likely to dominate. The current outlook reflects this.