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The Impact of the 2007 Hurricane Season Operations for Trinidad and Tobago.

Preamble

The official Atlantic Hurricane Season extends from June 1st to November 30th. Trinidad and Tobago lies on the southern fringe of the Atlantic Basin and there is empirical evidence to suggest that we can be struck by a tropical cyclone at any time during the hurricane season. Tobago though is more vulnerable despite the fact that it is only about 35 km to the northeast of Trinidad. Climatologically, the months of August and September are favored for tropical cyclone activity.

The 2007 Atlantic hurricane season has been a very active one meteorologically. Initial forecasts indicated that the Atlantic Hurricane Basin would experience 17 named storms, 9 to intensify into hurricanes of which 5 will become major hurricanes.

The average seasonal activity (1995-2006) in the North Atlantic basin is 14.8 named storms, 8.2 hurricanes and 3.9 major hurricanes. These values represent an increase over the average of the preceding 25 years (1970-1994) of 8.6 named storms, 5 hurricanes and 1.5 major hurricanes.

The 2007 Atlantic Basin season as of November 20th 2007, had two tropical depressions, 14 named storms, five hurricanes and two major hurricanes, slightly below average for named storms and below average for hurricanes and major hurricanes versus the recent average (1995-2006), but above the long-term Atlantic Basin 25-year average for named storms and near average for hurricanes and major hurricanes.

All tropical cyclones which formed in the Atlantic Basin passed to the north of Trinidad and Tobago, as such there were no direct impact from any cyclones, however spiral bands associated with the passage of Tropical Depression #4 (which later developed into Hurricane Dean) and also cloud masses associated with Hurricane Felix affected Trinidad and Tobago during the month of August, producing minimal damage to properties, widespread flooding and adversely affecting residents in south and central areas of Trinidad.

Trinidad and Tobago Meteorological Service

On the 31st of August a large convective cluster associated with a tropical wave produced torrential downpours and storm-strength wind gusts over Tobago in particular and to a lesser extent Trinidad, which resulted in severe flash/street flooding in several parts of the Islands. There were also reports of minimal landslides/landslips along the Main Ridge of Tobago.

Several other severe weather episodes occurred over Trinidad and Tobago during the hurricane season and can be attributed to the passage of Tropical Waves and ITCZ dominance. Also, the passage of tropical cyclones well to the north of the Islands of the Eastern Caribbean, resulted in a breakdown of the low-mid level wind-field over Trinidad, temperatures soared in excess of 35 degrees Celsius at times, these conditions assisted in the development of west coast convection which produced flooding in Port-of-Spain and environs sporadically during the months of September and October.

Severe weather affecting Trinidad and Tobago during the hurricane season 2007.

The first severe weather occurrence of the season occurred on the 14th of June, cloudy conditions associated with the ITCZ modulated by the passage of a Tropical Wave over Trinidad and Tobago on the 13th and encountering a favorable mid to upper level diffluent wind flow produced torrential rainfall over Trinidad which resulted in street and flash flooding accompanied by gusty winds in excess of 55 km/hr, floodwaters left some motorists in the Diego Martin areas of Trinidad marooned and several residents in low-lying areas of Chaguanas in distress. The roofs of two (2) houses in Diego Martin were blown off. In Tobago, one(1) house roof was blown off and there were several reports of fallen trees and power lines. Rainfall measurements at Piarco for a 24-hour period ending at 2:00 pm on 14th June were in excess of 23 mm.

The ITCZ under a divergent upper level wind pattern, flared up over Trinidad on the 25th of June, producing torrential showers accompanied by gusty winds. Flooding occurred in several areas of Central Trinidad. Newspaper reports indicated that several residents in the Chaguanas area lost their house roofs.

The passage of a Tropical Wave over Trinidad on the 05th July enhanced by moderate to strong upper level speed diffluence assisted in the production of several thunderstorms over Trinidad and Tobago, which produced torrential rainfall. Flash flooding occurred in Roussilac, Port of Spain and Chaguanas. The Crown Point Meteorological Office – Tobago recorded wind gusts in excess of 70 km/hr. Several house roofs were blown off in the Roussilac during the afternoon period. Several reports indicate that some of the main river courses reached bankful; however, there were no overflows.

The warm morning temperatures on July 07th coupled with light low level winds triggered deep convection that favored western areas of Trinidad. Torrential showers in Diego Martin and Port of Spain produced flash/street flooding which left both motorists and pedestrians stranded for at least 2 hours before subsiding. Floodwaters quickly abated and fair conditions returned by nightfall.

Over the period 17th – 18th July, cloudy conditions associated with a tropical wave produced severe thundershowers over Trinidad. The ITCZ trailing behind the wave then produced widespread rainfall. Flooding occurred in several areas of Trinidad, there were reports of flooding along the Ciperó river Basin.

On the 19th July, rough/choppy seas were reported along the Northern coastlines of Trinidad, there is a report of a sunken pirogue off the Southern coast of Trinidad.

Temperatures reaching 34 degrees Celsius on the 20th of July together with light low-level winds and an abundance of moisture initiated west coast convection. Flash flooding occurred in Central and South Trinidad; reports reaching the Meteorological office indicate that three waterspouts were sighted in the Cedros area around noon.

On the 31st of July, The Meteorological Services began issuing Information Bulletins for an area of disturbed weather associated with a Tropical Wave along 51W; severe weather associated with this wave affected various parts of Trinidad and Tobago on the 01st of August. Torrential showers and resultant flash/street flooding were reported in Penal, Barrackpore, Port of Spain, Diego Martin as well as Tobago.

The maximum temperature soared in excess of 34 degrees Celsius on the 03rd of August; this extreme warming of the atmosphere together with light low-level winds initiated west coast convection. Flash flooding occurred in Petite Valley and Port-of-Spain along South Quay and left commuters stranded.

Temperatures reaching 32 degrees Celsius on the 11th of August together with light low-level winds and an abundance of moisture initiated west coast convection. Flash flooding occurred in Central Trinidad

On the 13th of August, The Meteorological Services began issuing Information Bulletins for Depression #4 over the Central Atlantic Ocean, T.D. #4 eventually intensified into Tropical Storm/Hurricane Dean. While Dean was ploughing through the southern Windward Islands, it modulated the ITCZ over Trinidad and Tobago. Cloudiness associated with the ITCZ produced widespread thundershowers over Trinidad and Tobago which resulted in street/flash flooding in several districts.

The Meteorological Services issued a severe weather bulletin for an area of disturbed weather on the 31st August 2007. Trinidad and Tobago experienced widespread cloudiness and rainfall in excess of 40 mm from this weather event. This system, associated with a Tropical Wave, was upgraded to a Tropical Depression on the 30th and then to Tropical Storm Felix just before affecting Grenada and its Dependencies on the 31st. The TTMS went directly to issuing Tropical Storm Warnings for Grenada and its Dependencies and Tobago from 5.000pm on 31 August 2007 although the system was at the time a Depression but was forecast to intensify to storm strength during the night of the 31st. Warnings were discontinued at 11.00am on the 1st September. Parts of Northern Tobago experienced gusts to storm strength while most of the island and parts of Trinidad received torrential rainfall.

The passage of a Tropical Wave over Trinidad on the 09th September resulted in cloudy conditions associated with the ITCZ modulated by the passage of the wave and encountering favorable mid to upper level diffluent wind flow produced torrential rainfall over Trinidad which resulted in street and flash flooding, floodwaters left some motorists in the Diego Martin and Princess Town stranded. Rainfall accumulations were in excess of 40mm for a 24 hr period ending 8 am on 11th.

Cloudy conditions associated with a Tropical Wave with its axis along 59/60W on the 24th September produced heavy showers and prolonged periods of rainfall. Newspaper reports indicate that several roofs were blown off from strong gusty winds experienced in the Oropouche area

Coastlines of Trinidad and Tobago in particular experienced unusually strong northerly swells on the 28th September; this was attributed to the passage of Tropical Storm Karen well to the NE of the Lesser Antilles.

Over the period 13th to 15th October convective clusters associated with the ITCZ produced torrential rainfall and very strong wind gusts over Trinidad and Tobago, which resulted in severe flash/street flooding in several parts of the Islands. There were also reports of minimal landslides/landslips along the Main Ridge of Tobago. Rainfall accumulations for a 48 hr period ending 15th October were in excess of 60mm.

Over the period 18th to 22nd October the ITCZ modulated by the passage of a low-level trough and encountering a favorable mid to upper level diffluent wind flow produced widespread rainfall over Trinidad and Tobago. Reports indicate that several trees were blown down in South Trinidad. Several areas such as Brasso Seco and other areas in central Trinidad experienced flash flooding.

On the 29th October, Cloudy conditions associated with a Tropical Wave with axis along 59/60W produced heavy showers and prolonged periods of rainfall. Newspaper reports indicate that several areas in South Trinidad such as Debe, Point Fortin and also Tobago experienced flash flooding and strong gusty winds.

The TTMS holds a Media Briefing annually just before the start of the Hurricane Season to alert members of the media of the upcoming season. Weather terms used are explained at this briefing including a forecast for the upcoming season.

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