EMS Annual Meeting Abstracts
Vol. 14, EMS2017-57-1, 2017

The atmospheric conditions associated with Hurricane Lenny of 1999 and its vulnerability and impacts on Antigua

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In 1999, 'wrong way' Atlantic hurricane Lenny exhibited an abnormal formation, intensity and movement throughout the Caribbean Region in comparison to other Atlantic storms, causing a billion dollar in damages to lives and infrastructures throughout its path. We will discuss and prove that the atmospheric conditions during that time, contributed to such phenomenon and assess its impact on Antigua. Warm sea surface temperatures (SSTs) and light winds in the upper air during the month of November of 1999, created the perfect ingredients for the genesis of such a storm. 1-minute sustained winds peaked at 155 mph (135 kt) making it the strongest Atlantic hurricane at the time ever in the month of November but that record was later replaced by Wilma in 2005. Not only was the strength historical, but also was the track, which took an unprecedented west-eastward movement throughout its lifespan; opposite from the typical east-westward motion we see in past storm within the region. Lenny was responsible for 17 deaths throughout its path and $1.2 billion USD in damages. On Antigua it was responsible for one death and 51.3 million dollars in damages (USAID/J-CAR, 2000), due mostly to the record breaking rainfall total of 18.32 inches (465.32 mm) recorded at the V.C. Bird International Airport with excess amount of 25 inches (635 mm) in the southern portion of the island (Guiney, 1999). Thus, it should be noted that each storm is dynamic in its own way as atmospheric conditions differ from one storm to the next.

A general questionnaire comprised of 26 questions, which dealt with personal background, education, awareness, preparedness, prevention and mitigation. The survey concluded with 38 respondents from 53 copies that were distributed; a percentage of 71.7% response. Also, an interview consisted of 15 structured questions was conducted with the Director of Meteorology from the Antigua and Barbuda Meteorological Service; Mr. Keithley Meade, related to the atmospheric conditions that was associated with hurricane Lenny, the awareness, preparedness, risk assessment/management and impacts on Antigua.

Both methods were aimed to identify strategies employed by the Government of Antigua to best deal with risk management, assess of the public's awareness of hurricane vulnerability, effects and risks and finally to make recommendations in reducing hurricane risk and related hazards to the island.