

Impact of El Niño Southern Oscillation on Dry-Season Rainfall in Trinidad

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Abstract

The impact of the El Niño Southern Oscillation (ENSO) on dry-season rainfall in Trinidad was investigated using data from four stations on the island for the period 1946-1996. Two statistical procedures were employed, namely, the parametric one-way analysis of variance (ANOVA) and its non-parametric counterpart, the Kruskal-Wallis (K-W) test. At all stations, the order of increasing rainfall (means and medians) was warm phase (El Niño), neutral phase ("Normal") and cold phase (La Niña). However, at three of the stations (two in north and one in central Trinidad), the differences were not statistically significant ($\alpha=0.05$). A statistically significant result was obtained only at the southern station. At this station, the ANOVA indicated that mean El Niño rainfall and La Niña rainfall were significantly different from each other but were not significantly different from mean "Normal" rainfall ($\alpha=0.05$). The (K-W) test, on the other hand, indicated that median La Niña rainfall was significantly different from both median El Niño rainfall and median "Normal" rainfall but the latter two medians were not significantly different from each other ($\alpha=0.05$). These results therefore demonstrate that El Niño's tendency to decrease dry-season rainfall in Trinidad is weak or negligible, and La Niña's tendency to increase dry-season rainfall in north and central Trinidad is weak or negligible but may be significant in the southern part of the island. Consequently, ENSO forecasts are of little or no practical utility to planners and decision-makers in the weather-dependent sectors of the economy for the dry seasons that coincide with the forecasted ENSO events.