



CLIMATE CHANGE AND DENGUE PREVALENCE TRENDS ACROSS

ALL CLIMATIC ZONES IN SRI LANKA

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ABSTRACT

Climate change which is the ultimate outcome of global warming is now universally recognized as the fundamental human development challenge of the 21st century. Being a developing island nation subject to tropical climate patterns, Sri Lanka is highly vulnerable to climate change impacts. Arthropods are exquisitely sensitive to climate. Throughout this century public health researchers have understood that climate circumscribes the distribution of mosquito-borne diseases, while weather affects the timing and intensity of outbreaks. The *Aedes* mosquito vector of dengue fever is highly sensitive to climate conditions; and studies suggest that climate change is likely to continue to increase exposure to dengue. There are a few reasons why climate change may increase Dengue risk. First, the incubation period of the virus shortens in warmer temperatures, which means a mosquito doesn't have to survive as long to have a chance of becoming infectious. Second, the range of the mosquito is increasing due to global warming. In general, climate is a key factor controlling where a species can live. When climate changes, individuals move to stay in a suitable habitat. The main objective of this study is to investigate the possibility to use the dengue prevalence as an evidence of climate change in Sri Lanka by establishing correlation of climate factors and dengue incidence. Seven districts were randomly selected across all climatic zones. Dengue incidence, rainfall, and temperature statistics of last 10 years were collected from relevant governmental institutions. Data analysis was done using Minitab statistical software. The study revealed that significant correlations were found between mean annual temperature and dengue incidence in Colombo, Gampaha, Ratnapura districts while the correlations were not significant in Kurunegala, Batticaloa, Kandy and Nuwara Eliya. Except for Ratnapura, Batticaloa and Kandy the other districts showed negative correlation between rainfall and dengue incidence.

Keywords: Climate change, Correlation, Dengue fever