P4 **[64]**

INFLUENCE OF SEASONS ON EXTREME TEMPERATURE AND RAINFALL IN THE WET ZONE OF SRI LANKA

G. Naveendrakumar[1,2], M. Vithanage[3], S. Meneripitiya[4], J. Obeysekera[5], M.C.M. Iqbal[6] and S. Pathmarajah[7]

[1]*Faculty of Applied Science, Vavuniya Campus of The University of Jaffna, Sri Lanka*

[2]*Postgraduate Institute of Science (PGIS), University of Peradeniya, Sri Lanka*

[3]*Faculty of Applied Science, University of Sri Jayewardenepura, Sri Lanka*

[4]*National Science Foundation (NSF), Maitland Place, Colombo 7, Sri Lanka*

[5]*South Florida Water Management District (SFWMD), West Palm Beach, Florida, USA*

[6]*National Institute of Fundamental Studies (NIFS), Kandy, Sri Lanka*

[7]*Department of Agricultural Engineering, Faculty of Agriculture, University of Peradeniya, Sri Lanka*

ABSTRACT

Because of the departures from the normal rainfall and extreme ambient temperatures, Sri Lanka is vulnerable to the extreme climate. This paper analyzes the consistency in trends of extreme rainfall and temperature events in wet zone of Sri Lanka with special emphasis on the influence of four monsoonal seasons. The data analyzed consists of the daily temperature and rainfall records (1961-2015) at 7 stations distributed throughout the wet zone of Sri Lanka. The non-parametric Mann-Kendall and Sen-Theil statistical methods were used for the investigation which is appropriate for the non-normal data with missing or censored records. To test the data with seasons, modified seasonal Mann-Kendall trend test was used. The pre-whitening method was applied to remove autocorrelation from the time series. Though, the results show a decreasing rainfall in general, the number of wet days during the Second Inter-Monsoon has increased. It is noteworthy that during the month of May, the rainfall reduced drastically with time in which South West Monsoon is in control. In contrast, an overall increasing trend in temperature of wet zone in Sri Lanka was detected. In terms of maximum temperature (T_{max}), at least five stations with significantly increasing statistical trend was observed during the consecutive months of MJJA (May-Aug) in which South West Monsoon is at its most influence in the wet zone of Sri Lanka. At least two stations were detected with significantly increasing extreme T_{max} during South West Monsoon, First Inter-Monsoon and Second Inter-Monsoon. The findings of extremes in temperature and rainfall of wet zone are helpful in speculating the big picture of weather departures during monsoonal seasons in Sri Lanka.

Keywords: Extreme Analysis, Mann-Kendall, Monsoon Rainfall, Non-Normal, Trend Analysis