

A Study on the Trends of Rainfall Patterns in the Intermediate and Dry Zones of Sri Lanka: A Comparative Study for the Periods Ranging from 1941-1970 and 1971-2000

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Since Sri Lanka is a tropical island unstable nature of the tropics has made several temporal and spatial variations in rainfall throughout the island. Rainfall is one of the principal factors that has been used to identify the three broad climatic zones in Sri Lanka, namely the Wet zone, Intermediate zone and Dry zone. Much of the scientific researches on the rainfall pattern in Sri Lanka have revealed that most of the meteorological stations had recorded decreasing trends of rainfall during the past 100 years. The present study attempts to ascertain the validity of these findings with reference to the study area of Intermediate and Dry zones of Sri Lanka (hereafter referred to as the Intermediate and Dry zones). Considering the agricultural economy, the Dry and the Intermediate zones have been contributing towards more than 90% of the island's paddy. However, these two climatic zones show water surpluses in only three months (October to December) of the year. With this brief background, the present study aims to identify the trends in rainfall in the Intermediate and the Dry Zones.

Micro level framework is used for the selection of rainfall reporting stations and agro-ecological regions of these two zones. Accordingly 14 rainfall reporting stations have selected for the study. Further, this is a comparative study of two 30 year periods ranging from 1941-1970 (1st period) and 1971-2000 (2nd period) and its seasons (First Inter Monsoon (FIM), South West Monsoon (SEM), Second Inter Monsoon (SIM) and North East Monsoon (NEM). Time series analysis is employed for the identification of any positive or negative trends of rainfall and the analysis is done on annual and seasonal basis.

The results obtained from the analysis revealed that the highest and the lowest positive trends belong to the 2nd period. It is clear that both highest and lowest negative trends are apparent in the 1st period. All positive trends of the FIM in the 1st period have changed into negative trends in the 2nd period. During the SWM, the highest positive trend is showed in the 2nd period.

***Keywords:** Rainfall Pattern, Intermediate Zone, Dry Zone, Positive Trend, Negative Trend*