

## **Analysis of Rainfall Pattern over the Iranaimadu Tank during the Last Three Decades**

**S. Lathiscumar\*** and S. Umasuthan

Central Environmental Authority, Northern Provincial Office, Kilinochchi,  
Sri Lanka

\*lathiscumar16@yahoo.com

Iranaimadu tank is one of the major irrigation tanks in Northern Province of Sri Lanka. Water from this tank is used to irrigate agricultural lands in the Northern Province. Predictions on rainfall patterns are useful in planning the irrigation projects. The main objectives of the study are to examine the monthly and seasonal variation of rainfall and the rainfall trends over the Iranaimadu tank. This study was conducted using the monthly rainfall data of the past thirty years (1984 – 2018), which were collected from the Iranaimadu tank weather station. The analysis was carried out using monthly and seasonal mean rainfall data. The past three decades were divided as 1984-1994, 1995-2004 and 2010-2018 for the analysis. Magnitudes of the rainfall trends were derived by using linear regression analysis. The study reveals that the highest monthly rainfall was recorded in November. Further, March, June and July recorded less than 50 mm of mean monthly rainfall. Highest seasonal rainfall (553.8 mm) was recorded in Second Inter-Monsoon (SIM) and this was 40.51% of the total annual rainfall. Further, least seasonal rainfall of 106.2 mm (7.8%) was recorded during the First Inter-Monsoon (FIM). and it was 7.76% of the total annual rainfall. An increasing trend in the average monthly rainfall over the past three decades clearly found through the linear trend analysis,  $R^2$  value is 0.9385 in December, which is statistically significant. Further, decreasing trend in the average monthly rainfall clearly shown in the linear trend analysis, where,  $R^2$  value is 0.9984 in January. FIM and North East-Monsoon showed an increasing trend in the seasonal rainfalls with the  $R^2$  values of the FIM was 0.4910 and 0.4654, respectively. Further, South West-Monsoon and SIM also showed a slightly increasing trend even though the changes were not statistically significant. In addition, average annual rainfall also showed a slightly increasing trend during the last three decades but not statistically significant.

**Keywords:** Iranaimadu tank, Rainfall trends, Regression analysis, Seasonal rainfall