

## A Longitudinal Analysis of Rainfall of Watawala: Watershed of the Mahaweli River Basin

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Watawala is located on the western slope of the Central Highland and receives the highest annual rainfall in Sri Lanka. It is part of the watershed of the Mahaweli River Basin, which is the river basin on the largest river in Sri Lanka. The main objective of this study was to compare Watawala rainfall during the years 1958-1987 and 1988-2017 and to examine the trend of rainfall from 1911 to 2017. The rainfall trends were estimated using a linear regression model. The Mann-Kendall statistical test was applied to identify significant or non-significant monotonic trends. The results revealed that the total annual rainfall has decreased at the rate of 11.5 mm/per year from 1911 to 2017. Out of total annual rainfall, 65% rainfall is received from the South West Monsoon (SWM), which shows a statistically significant decreasing trend (9.3 mm/per year) during this period ( $P < 0.05$ ). Annual average rainfall has decreased by 337 mm (6.7%), and SWM rainfall has decreased by 219 mm (6.9%) during the 1988-2017 period compared to 1958-1987. If the decreasing trend of annual and SWM rainfall continues, there could be negative consequences for Mahaweli irrigation water supply and hydropower generation.

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