

SPATIAL AND TEMPORAL VARIATION IN PRECIPITATION IN PANCHASE REGION OF NEPAL

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ABSTRACT

Time series statistical tests were applied to examine the spatial and temporal trends and four seasons (Pre-monsoon; Monsoon; Post-Monsoon and Winter) during the period 1979–2013 in Panchase region. Pre-monsoon, Monsoon and Post-monsoon rainfall was observed to follow positive trends where as the winter rainfall depicts negative trend. The non-parametric Mann-Kendall test was used to determine whether there is a positive or negative trend in data with statistical significance. The test, applied on a seasonal basis to the precipitation revealed no statistically significant trends over the past 33 years. The 24 hours rainfall analysis indicates the increasing trend but not statistically significant. The extreme event analysis for >100mm was performed in two segments (1979-1990, 1991-2009). The result shows increasing trend in later segment 1991-2009. The results highlighted a mix of positive (increasing) and negative (decreasing) trends in monthly, seasonal, and annual precipitation. The study provides major evidence that rainfall is highly variable within local settings. The findings were use in resilience planning at local level in which the community members envisioned future scenario. The scenarios emphasised in proposing ecosystem based adaptation measures.

KEYWORDS: Panchase, Rainfall, Trend Analysis, Mann Kendall