



## **Regional Scale Climatic Attributes and Pan Evaporation Paradox – A Case Study of Pothwar Region Pakistan**

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Evaporation is the key controlling factor of hydrological cycle. The global temperature is increasing and the expected results on evaporation should be positive. However, the pan evaporation is decreasing all over the world in last 50 years. This indicated the existence of pan evaporation paradox. Keeping in view the global issue, the annual and seasonal trends in pan evaporation along with other climatic factors were analysed in Pothwar region of Pakistan. The results indicated that, the annual maximum air temperature is increasing ( $0.05^{\circ}$  per year) over the last 25 years (1990-2015) while the annual pan evaporation has steadily declined at an average rate of 8.0 mm per year. Thus, the pan evaporation paradox on annual basis exist in the Pothwar region. The seasonal trends variations are different according to the weather stations. In Chakwal district, there exist no pan evaporation paradox in four seasons (winter, spring, summer, autumn). Rawalpindi district indicated the existence in all seasons while, Jhelum district showed only in winter and autumn season. Attock district indicated existence only in summer season. The trends of other climatic factors such as solar radiation, wind speed, relative humidity and precipitation were also observed. The solar radiation and wind speed showed significant decreasing trend and discovered as the primary cause of decrease in pan evaporation.