

A STUDY OF VARIATION IN RAINFALL PATTERNS AROUND DEHRADUN, UTTARAKHAND

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ABSTRACT

Rainfall is an essential part of hydrological cycle. Water resources of India are mainly dependent on rainfall. India receives an average annual rainfall of 1150mm varying from 100mm in northwest to 12000 mm in northeast. (Raju, 2006). Dehradun city is situated in the south western part of Uttarakhand. It lies in Doon Valley which is bounded by Lesser Himalaya in its north and Outer Himalaya in its south. Dehradun experiences a humid tropical monsoon climate. Three seasons are experienced: winter season (October to February), summer season (March to June) and Monsoon season (July to September).

In the present work, rainfall intensity data of about 77 years, collected from Forest Research Institute, Dehradun, is analysed. Analyses suggests that Dehradun gets average annual rainfall of 2013.6 mm. Maximum rainfall of 2968.9 mm is recorded in year 1978 while the minimum of 1288.4mm in the year 1991. The frequency distribution graph of rainfall predicts the range of 1800 to 2000mm to be the most frequent in Dehradun. 85% of the total annual rainfall is received during the months from June to September, with maximum rainfall ranging between 500 - 800 mm. Winter rains starting from the end of December, continue in January and February forms about 8% of the total annual rainfall. April, November and an early part of December months are almost dry months with minimum rainfall recorded from 0.55 to 42 mm.

Annual average rainfall between the year 1931 and 1970 and between the years 1970 to 2007 are 2091.5 mm and 1929.5 mm respectively. A considerable decrease of 84.2 mm (i.e. 4.2%) is observed in the average annual rainfall after 1970 when compared with the general average rainfall of 77 years which is 2013.6mm.

Individual month's annual averages are also showing variations. Decreasing

trend is seen in the months of January, February, July, August, September, October and December after 1970. Decrease percent is high upto 26.3% in the months of September and October while nominal decrease in average rainfall after 1970 is seen in the months of July, August and December. Increased average rainfall after 1970 is also marked in the months of March, April, May, June and November.

It is noteworthy that due to global warming, there should be increase in rainfall intensity but decrease of 4.2% in annual average rainfall after the year 1970 is observed in Dehradun. Paper take up deep insight in to the problem after considering various other factors also.