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Morphometric Analysis of Dhaneri Watershed, Gambhar River Basin, Himachal Pradesh, India

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Abstract

In the present work, the drainage characteristics of Dhaneri watershed of Gambhar River basin, Solan District, Himachal Pradesh, India has been carried out. The study area of Dhaneri watershed has been divided into seven sub-watersheds (I to VII) and investigated with respect to various morphometric aspects. In the north-western part of the study area parallel to sub-parallel drainage pattern are dominant, whereas, the central and south-eastern part is mostly represented by the dendritic drainage pattern. Various morphometric aspects of Dhaneri watershed show good correlation, which indicates that the soil characteristics of the study area are governed by surface erosional phenomena. The variation in sub-watersheds is attributed to differences in their stages of geomorphic development and topography. The linear and shape parameters are important indicators of erodibility indices, hence relative weightage system involving hierarchical rankings to various morphometric aspects have been used to evolve compound values showing low, medium and high land priority zones in the study area. The sub-watersheds 'V' and 'VI' needs formulation of proper development plans for harnessing their natural resources on urgent basis. The overall work stands significant in formulating priority-wise watershed management plans, designing of artificial recharge sites for soil-water conservation measures in the study area.

Keywords: Morphometric analysis, Watershed prioritization, Dhaneri watershed, Gambhar River basin, Himachal Pradesh, India.