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Hydrological Investigations and Instrumentation in a Small Watershed in Garhwal Himalayas

V. C. Goyal and Sudhir Kumar

ABSTRACT

The report presents the preliminary results of a hydrological study in a small hilly watershed located in Tehri-Garhwal District (U.P.), representative of the mountainous subhumid agro-ecological region in the Western Himalayas. The watershed is of 1,000 ha area approx., and has not received any treatment.

Using an integrated approach of hydrologic instrumentation, field investigations, and remote sensing and GIS, the study proposed to evolve appropriate model for integrated and sustainable development in the watershed. The specific objectives proposed to be fulfilled through the present watershed study include the following major indicators, besides being aimed as a pilot project for demonstration to the interested users (e.g. students, academicians, researchers, administrators, NGOs) : (1) Erosion and Sediment Control Strategies, (2) Changes in Land Use and Vegetative Cover, (3) Rainfall-runoff Studies, (4) Soil and Water Conservation (including springs rejuvenation) Strategies, (5) Hydrologic Modelling, and (6) Devise mechanism for people's participation in sustainable development of small watersheds.

Hydrological investigations have been carried out in the Danda watershed in the Garhwal Himalayas (Hindolakhal Block, Devprayag Tehsil, Tehri-Garhwal Distt.). Some basic instruments and devices (e.g. SRRG, ORG, water stage recorder, V-notch, thermo-hygrograph) have been installed at site for monitoring the hydro meteorological and meteorological parameters. A Digital Elevation Model (DEM) of the area has been prepared using 1:50,000 Survey of India toposheet and a GIS package (ILWIS).