

Hydrology of Kathu Watershed - before and after the 1981 Disaster

Jaya S. Bhandari

Department of Hydrology and Meteorology, Bhabhsa, Kathmandu, Nepal

The Kathu Watershed was severely affected by debris flows in 1981. Streamflow data are available from 1963 to 1980. There was no rainfall station before 1984. The study focuses on the management of peak flows and an estimation of the missing annual runoff for the period from 1960 to 1981. The extreme rainfall of 1981 is seen to have been a rather exceptional event (magnitude which occasionally happens in one part of the course of a year).

Part C

Watershed Characteristics

The Kathu Watershed lies in the central mountain region of Nepal. The watershed is very close to the Kathmandu Valley and is located to the south-west of Phulchowki Hill, the peak of which lies at 2,700m. The eastern and western limits of the watershed are surrounded by hills of more than 2,000m in altitude (Fig. 1).

Atmospheric, Hydrologic and Ecological Interaction

The total population in the seven major villages of the watershed over the last 30 years was 19,734 in 1951, 29,707 in 1981, and 31,735 in 1991. The low rate of population growth between 1981 and 1991 is due to outmigration, and the death of people's awareness of the need for small families. The intensification of the Kosi Valley has now been slowly spreading to the villages of the watershed.

The land utilization map prepared in 1984, based on aerial photographs taken in 1978, shows forests - 37.5 per cent, sloping agricultural terraces - 23.8 per cent, fields - 23.8 per cent, and agricultural lands as well as alluvium (including flats, terraces and level terraces) - 14.9 per cent (Fig. 2).

The forest is exploited for fuelwood and construction materials. Bricks and stones from the quarried area are used as construction materials and are mostly taken to the Kathmandu Valley. The stream water is used for irrigation and drinking water supply.