

1077. Samra, J.S. and Agnihotri, Y. 1995. Torrent management in Shiwaliks. In:

Torrent Menace: Challenges and Opportunities (Eds.) G.Sastry, V.N.Sharda, G.P.Juyal and J.S.Samra, CSWCRTI, Dehradun: 146-155.

Over-exploitation of biomass, excessive grazing due to ever increasing livestock and human population have accentuated problems of environmental degradation by torrents. The National Commission on Agriculture (1976) and later the Ministry of Agriculture, Govt. of India (1985) estimated that 2.5 and 2.73 m ha area respectively were affected by flash floods in India. In Hoshiarpur Shiwaliks alone, area damaged by torrents has increased from 15,713 ha in 1900 to 3,00,000 ha in 1988. Experimentation with closure to biotic interference of a small watershed proved that the sediment yield could be brought down from 140 t/ha to 1 t/ha by adopting integrated soil conservation measures. Comparison of an agricultural watershed of 4.6 ha and 1% overland slope with a forested watershed of 4.3 ha and 25% overland slope revealed that runoff from the agricultural watershed fluctuated around 25% and that from the forested watershed stabilized around 10%. Experience with a relatively larger watershed (4207 ha) of Sukhna lake catchment brought out that monsoon water yield of 295 mm in the pre-treatment period reduced to 65 mm after the treatment. Similarly, the sediment yield decreased from 140 to 19 t/ha after management of the torrents by adopting suitable mechanical cum vegetative measures. The bio-remediation of torrents not only resulted in drastic reduction of runoff and sediment yield but also increased production of commercial and fodder grasses manifold. Integrated management of torrents was found to be economically viable on sustainable basis.