

Relating Hydrological Extremes with Area – A Case on Extreme Floods in South Central Nepal

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ABSTRACT

Flash floods, debris flows and landslide disaster on the steep sloping terraces of hilly region are so challenging that even a real time hydro-meteorological forecasting system would not be applicable for all cases in Nepal. Flash floods are localized in short ranges with respect to time and distance; and it is very difficult to measure these flash floods in time. On the other hand, such phenomena need to be assessed for sustainable design of hydro- structures and for relocating the settlements from risk areas. A study was carried out to find the suitable relationship between area and extreme flood as well as area and extreme rainfall depth. Analysis is mainly based on the case of torrential rains in July 1993 over south central Nepal, which caused floods and debris torrents those were probably the worst in the disaster history of Nepal damaging lives and properties in Nepal during the 20th century. A relation for rainfall depth and other relation for specific flood are presented in this paper.

Keywords: South-central Nepal, specific discharge, rainfall intensity, depth area duration.