Devastating rainstorm of June-2013 in Uttarakhand

SURINDER KAUR and P. K. GUPTA

India Meteorological Department, New Delhi – 110 003, India

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e mail: surinderkaur.imd@gmail.com

ABSTRACT. The state of Uttarakhand is prone to floods and landslides due to its topographic location. The state of Uttarakhand and neighbouring states experienced heavy to very heavy rainfall during 15-18 June, 2013. The analysis of this rainstorm is important because it caused severe floods, landslides, loss of thousands of lives, property etc. During this period, many stations reported very heavy rainfall with a few extremely heavy rainfall (more than 24.5 cm in a day) in Uttarakhand and also in the neighbouring states of Himachal Pradesh, Haryana and Punjab. Most part of the state of Uttarakhand lies in the Greater Himalayan region. For safety from floods, one of the methods is to store water in hydraulic structures. For planning and designing of hydraulic structures, the estimation of design storm is the primary and the basic input for the computation of design flood. In the estimation of design storm, all the heavy rainstorms occurred over or near the area have to be analysed. In this paper, this rainstorm and other heavy rainstorms over a wide area has been analysed for the purpose of computation of Design storm estimates of hydraulic structures in that area. The rainstorm of June 2013 is compared with the earlier historical heaviest rainstorm of 28th to 30th September, 1924 at Lansdowne and it is observed that the rainstorm of June 2013 has contributed more rainfall than the rainstorm of September 1924 rainstorm for an area up to 5000 km2 for 1-day duration, while the DAD estimates for two day and three day duration of rainstorm of September 1924 are higher than the rainstorm of June 2013 for area up to 20,000 km2.

Key words – Rainstorm, Heavy rainfall, Uttarakhand, PMP, GIS.