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Flood disaster studies and damage mitigation - an application of remote sensing and spatial information systems

K.H.V. Durga Rao, Parama Bhattacharya [a], and Madhubanti Bhattacharya [b]

Water Resources Division, National Remote Sensing Agency, Department of Space, Balanagar, Hyderabad 500 037, India,
durgarao_khv@nrsa.gov.in ; khvdurgarao@yahoo.com

[a] Civil Engineering Department, I.I.T. Kharagpur, India.
[b] Department of Science and Technology, Kolkata, West Bengal, India.

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Abstract: Damage caused by floods has increased manifold in recent decades. Labhpur in West Bengal state of India is one of the blocks severely affected by floods very frequently. A micro level study has been carried out in the block using satellite remote sensing data, geographic information system (GIS), and hydrological data. Causes of the floods have been studied. Flood routing has been done at reservoir and barrage sites located in the upstream side of the block to study its role during the floods. Different structural and non-structural methods have been suggested to reduce the flood damage. A flood risk zone map has been prepared using satellite remote sensing data. Proximity to different rescue centres, health centres, and helipads for each village has been computed. A spatial information system has been developed to help in mitigating the damage and for rescue and relief operations during the disaster events.

Keywords: Causes of floods; Flood routing; Risk zone mapping; Spatial database; Damage control.