Development of spatial decision support system for water harvesting structures using remote sensing inputs

K.H.V. Durga Rao[1], V. Venkateswara Rao[2], and P.S. Roy[3]
[1]Water Resources Division, National Remote Sensing Agency, Department of Space, Govt. of India, Balanagar, Hyderabad 500 037,
E mail: khvdurgarao@yahoo.com; durgarao_khv@nrsa.gov.in
[2]Department of Geo-engineering, College of Engineering, Andhra University, Visakhapatnam
[3] RS&GIS Applications Area, NRSA, Balanagar, Hyderabad, psr@nrsa.gov.in

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Abstract: Availability of water varies spatially and temporally. Idea of damming the rivers has been facing lot of objections from the environmentalists. In this context, developing water resources by constructing small water conservation structures is gaining momentum in recent years. In the present study, a user interactive Spatial Decision Support System (SDSS) has been developed for identifying suitable sites for water resources development. Basic guidelines provided by the Integrated Mission for Sustainable Development (IMSD) and the technical guidelines suggested by the Indian National Committee on Hydrology (INCOH) for identifying suitable sites for water harvesting structures have been used in the knowledge base of the developed SDSS. Dehradun and its environs have been taken up as a study area to identify suitable sites for water harvesting structures using the developed SDSS. Various resource and thematic maps such as landuse / landcover, soil textural, topographic slopes, etc. have been prepared using remote sensing and GIS techniques. These layers have been fed into the developed SDSS and analysed using the decision rules. Sites for water harvesting structures such as check dams, farm ponds, groundwater recharge, etc. have been identified in the study area.

Keywords: Spatial Decision Support System, Remote Sensing, Geographical Information System, Water Harvesting, Water Resources Development.