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# Remote Sensing and GIS Applications in Zonation of Waterlogging in Irrigation Command

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## ABSTRACT

Waterlogging is one of the major land degradation processes that restrict the economic and efficient utilization of soil and land resources in command areas. The natural land physiography, climate and geomorphology play important roles in the developments of these problems, independently or in combination. The application of excess irrigation and recharge from irrigation distribution network causes gradual rise of ground water table and creates waterlogging. The excess soil moisture (waterlogging conditions) affects crop growth because of deficient aeration. Reliable and accurate mapping of areas affected by these processes with their location and extent can be extremely useful in chalking out suitable water management strategies and also to undertake remedial measures to prevent their advancement.

To asses waterlogging in command areas, multispectral and multi temporal imagery are very useful. Remote sensing technique is cost and time effective. The satellite data thus provide a quick and more reliable delineation of the water-logged areas and standing water. Keeping this in view, in the present study waterlogging area zonation was carried for a part of command area falling in Rohtak and Jhajjhar districts. For this study, IRS LISS III data of pre and post monsoon season have been used. Survey of India toposheets has been used to see the topography of the area. Ground water level has been collected and condition of ground water level was depicted. On the basis of results of remote sensing data, DEM and ground water data seasonal and permanent waterlogged area have been delineated and the results obtained have been discussed.