"DROUGHT RISK ASSESSMENT USING REMOTE SENSING & GIS"

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Submitted by
MAGDHUMBASHA M
1BM10CEE06

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Under the guidance of

Dr. M.C. Sampathkumar
Dept. of Civil Engineering

Department of Civil Engineering,
B.M.S College of Engineering
Bull Temple Road
Bangalore – 560019

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ABSTRACT

Drought is the most complex but least understood of all natural hazards. It is broadly defined as "severe water shortage". Low rainfall and fall in agricultural production has mainly caused droughts. Impact of a drought will result in loss of life, human suffering and damage to economy and environment. Droughts have been a recurring feature of the Kolar area therefore study of Historical droughts may help in the delineation of major areas facing drought risk in that area and thereby management plans can be formulated by the government authorities to cope with the disastrous effects of this hazard.

In recent years, Geographic Information Science (GIS) and Remote Sensing (RS) have played a key role in studying different types of hazards either natural or man-made. This study stresses upon the use of RS and GIS in the field of Drought risk Assessment. In the present work an effort has been made to derive drought risk areas facing agricultural as well as meteorological drought by use of temporal images from Landsat and LISS-III based Normalized Difference Vegetation Index (NDVI) (2001, 2008, 2009. 2011) and meteorological based Standardized Precipitation Index (SPI).

It was evident from the study that major parts of the Kolar taluk are more prone to drought either agricultural or meteorological. The research shows motivating results that can be used in taking corrective measures timely to minimize the reduction in agricultural production in drought prone areas.

From the analysis, it is concluded that two hobbilies have been identified as very high risk areas and they are Vernagal and Vokkaleri which constitute 22.82% of total geographical area of the study area. Three hobbilies Kolar, Narasapur and Holur are identified as high risk areas, which together constitute 63.05% of total geographical area. Two hobbilies are identified as moderate risk areas which are Sugatoor, Huthur which constitute 14.14% of total study area. However there are no areas with no risk or slight risk which highlights the importance of drought management.

The results obtained provide objective information on prevalence, severity level and persistence of drought conditions, which will be helpful to the resource managers in optimally allocating scarce resources.