

TIME SERIES DROUGHT VULNERABILITY MAPPING IN PALAKKAD DISTRICT, INDIA- USING GEOINFORMATION SCIENCE AND TECHNOLOGY

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ABSTRACT

Drought is one of the major environmental disasters, which have been occurring in almost all climatic zones and damage to the environment and economies of several countries has been extensive and death toll of livestock unprecedented. Drought damages are more pronounced or prominent in areas where there is a direct threat to livelihoods. The advanced technologies like remote sensing and geographical information system are very essential to identify the drought condition. Remote sensing and geographic information system have significantly aided identification of drought vulnerable areas in the recent past. Drought is one of the natural disasters having an impact on both the economy and the society, with its long-standing problems. Drought by nature is a result of inter-related parameters. The study is based on the concept that the severity of the drought is a function of rainfall, hydrological and physical aspects of the landscape. In the present study a Geographic Information Systems (GIS) and remote sensing based tool for drought vulnerability assessment at a micro level has been developed. Drought vulnerability is a concept which shows the likelihood of damages from hazard in a particular place by focusing on the system status prior to the disaster. Drought vulnerability has been viewed as a potential for losses in the region due to water deficiency at the time of drought. In this study the vulnerability of drought in Palakkad district (2008 to 2018) is investigated by providing vulnerability maps which demonstrates spatial characteristics of drought vulnerability.

Key words: *Drought, Geographic Information System, Remote Sensing, Vulnerability Maps*

INTRODUCTION

Drought is one the climatic as well as natural disasters common all over the world. Droughts have disastrous impact on the economy and can affect the largest segment of the society, which may last for months and in some cases several years (Reza, 2010). Drought is more often like a cancer on the land, mute but sure assaulter that seems to have no marked beginning or ending; a malaise slowly engulfing the community and often leaves just as gradually (Sergio,2007). Drought may be categorized as continuing disasters and as the time passes, the situation may further deteriorate. The continuing disasters include prolonged droughts and crop failure (Vasanthavigar et al, 2011). These continuing disasters or drought affects a very large area. The droughts may compound longstanding problems of deforestation, encroaching desertification, soil erosion, forced migration, malnutrition, epidemics and loss of life over