DROUGHT IDENTIFICATION AND MONITORING IN KURUNEGALA DISTRICT USING STANDARDIZED PRECIPITATION INDEX

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Abstract

As a result of climatic change associated with global warming, drought is an increasing problem in many parts of the world, including Sri Lanka. Significant drought conditions were observed during 1986/1987, 1992, 1996 and 2001 and 2004 in the country. The country's agricultural sector and water resources have been under severe constraints from the recurrent droughts. The study is focused on Kurunegala district in Northwestern province in Sri Lanka and this report clarifies the concept of drought, and discusses the concept of Standard Precipitation Index (SPI) as a drought index and measures its appropriateness as a drought monitoring tool. In this study, the production decline of paddy which is the staple food in Sri Lanka was considered to see the impact of drought. As used here; SPI is calculated as the difference between seasonal precipitation and the seasonal mean in standard deviation units. Rainfall data from four stations in Kurunegala, Wariyapola, Patregalla and Egodagama Ela were analyzed for the period 1971-2000, to show long-term trends, seasonal changes, and the incidence and severity of droughts comparing with the production decline. This study also examines the risk of drought spreading, and stresses improvements to the water management strategies for agriculture in the district.

Keywords:

Sri Lanka, Kurunegala, rainfall, drought, SPI, agriculture, rice