Spatial and Temporal Variation of Drought Hazard in the North Central Province of Sri Lanka

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Drought is the deficiency of water for various purposes or shortage of rainfall within the expected period of time. There is no universal accepted definition for drought because it is vary from region to region. But impacts of drought are higher than other natural hazards because drought can be extended large geographical area. Sri Lanka is one of the countries which is highly prone to drought hazard. Especially, North Central Province (NCP) is wholly situated in the Dry Zone of Sri Lanka which receives less than 1750mm annual average rainfall therefore more vulnerable for drought. More than 95% of people in the NCP are depend on agriculture. Due to the frequent drought events they losses their agricultural production causing many socio-economic and environmental issues.

The study was aimed at to identify spatial and temporal variation of drought in the NCP using Standardized Precipitation Index (SPI) and Geographical Information System (GIS). Both primary and secondary data were used for this research. Primary data were collected using questionnaire, group discussion, interviews. Secondary data were collected from the Department of Meteorology. Nine meteorological stations covering last 60 years and the NCP selected for the study. GIS interpolation technique used to identify spatial distribution of rainfall over NCP. Time series analysis and calculating SPI were used to identify temporal distribution of drought in the NCP. Results highlighted there is a significant variation of spatial distribution of rainfall in the area. Negative SPI values clearly indicate drought events is frequent and increasing during the past six decades. It was evident that the farmers have been adopting different techniques to face the challengers of drought hazards.

Key words: Drought, Standardized Precipitation Index, Geographic Information system.

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