Spatial and Temporal Variation of Flood Affected People in Ratnapura District

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The flood is one of the hydro-meteorological disasters frequently occurred in the Ratnapura District. The Ratnapura District has 3275 km^2 in land. The highest land cover is occupied by the Kalu Ganga Basin. Kalu Ganga is the second largest river basin in Sri Lanka which receives the high amount of rainfall and volume of river discharge. Due to its hydrological and topographical characteristics, people in the lower plain suffer from frequent floods. The aim of this study is to identify the spatial and temporal variation in relation to People Affected (PA) by Flood in the Ratnapura District. The analysis was mainly based on publicly available data obtained from the Disaster Management Centre (DMC) and District Secretarial Office in Ratnapura for the period from 1987 to 2016. ArcGIS 10.2 techniques were used to create the Choropleth Maps, and the Excel software was used for data analysis and interpretation. A larger number of people are affected in the northwestern quarter of the District and it was high in Ratnapura DSD out of total 17. The other cluster has been identified in Elapatha, Kuruwita, Kiriella, Nivithigala, Pelmadulla and Ayagama DSD. These flood areas are located towards the lower plain in Kalu Ganga Basin and are heavily populated when compared with the other areas of the District. DSDs in the Eastern part of the District have a lower number of PA by flood. 76% of the people have been affected by floods during the southwest monsoon season. The month of May is identified as the peak month in term of PA. This peak has a direct correlation with the climatic seasons in Sri Lanka. The number of people affected by flood in the Ratnapura District has been increased by 137,224 (about 47%) in the recent period of 2002 - 2016 compared to 1987 - 2001. The reason for the increase of PA by Flood in Ratnapura District was identified as the increases of improper land use practices, irrigation management issues, extreme and high intensity of rainfall. This situation will negatively affect the socio-economic condition of the society and water discharge processes of the entire Basin.

Keywords: Spatial, Temporal, Variation, Flood, Affected People