

Rainfall Variations in Kandy District of Sri Lanka

U.S. Meegahakotuwa^{1*} and K.W.G. Rekha Nianthi¹

¹*Department of Geography, University of Peradeniya, Peradeniya, Sri Lanka*

Rainfall of Sri Lanka is of multiple origins, including monsoonal, convectional and depression. In the rainfall calendar of Sri Lanka, four rainfall seasons have been recognized. They are the First Inter-Monsoon (FIM), South West Monsoon (SWM), Second Inter-Monsoon (SIM) and North East Monsoon (NEM). Rainfall variability over space and time must be regarded as the most significant aspect of the monsoon climate over Sri Lanka. The main objective of this study was to identify the spatial distribution of annual and seasonal rainfall in Kandy District (KD). The monthly rainfall data have been collected from 19 rainfall stations in KD from 2005 to 2014. The data were obtained from the Department of Meteorology and other relevant institutions. Spatial interpolation was done to prepare the isohyet maps for KD using Radial Basis Functions Method in ArcGIS 10.2. The analysis shows that the highest annual average rainfall (5,660 mm) has been recorded at Galamuduna Estate in Dolosbage, and the lowest is recorded at Kundasale (1,594 mm) during the study period. From 2001 to 2014 the Galamuduna annual average rainfall was 5,176 mm. According to the seasonal rainfall, during the FIM period (March-April) the rainfall varies from 700 mm (Craighead Estate) to 241 mm (Minipe). Rainfall during SWM period (May to September) varied from 3,436 mm at Galamuduna to 174 mm at Minipe. The southwestern windward side received the highest rainfall while the Eastern leeward side received the lowest during SWM season. The Galamuduna Estate is situated in highest rainfall region of Wet Zone Up-Country of Sri Lanka. The SIM period (October to November) showed most evenly distributed rainfall over the Kandy District. During the NEM period in December to February, the highest rainfall was recorded in the Eastern side of the KD. The highest rainfall (700 mm-1,000 mm) is recorded in and around Minipe station during this season. Kandy Plateau area received a lower rainfall in the NEM season. The study revealed that the annual and seasonal distribution of rainfall over Kandy District has considerable differences. Based on the annual average rainfall, the wettest place of the Kandy District was the Galamuduna Estate and the driest places were recorded as Kundasale and Minipe. The month of June was recorded as the wettest month (777 mm) in Galamuduna and the same month, Minipe (5 mm) was noticed as the driest during the study period.

Keywords: Rainfall, Isohyet map, Interpolation, Windward side, Leeward side