

Study of Traditional Seasonal Classification System and its Weather Forecasting Potential

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Weather forecasting is becoming a more and more complex exercise even with latest technological achievements. This study was carried out to find the applicability of traditional seasonal classification in defining weather in the dry zone of Sri Lanka. Monthly rainfall data in millimeters for more than 30 years from Mahailuppallama (1953 -2010), Anuradhapura (1870-2010) and Bathalagoda (1897-2009) stations were used to assess the seasonal variability with respect to the traditional seasonal classification which has 6 seasons namely, Hemanta, Sisira, Wasanta, Gimhana, Vassana and Sarath. Rainfall data belong to January and February were summed to obtain the representative rainfall for Hemanta period. Similarly, March and April were added to get the Sisira rainfall. Accordingly, rainfall data pertaining to other seasons were also obtained. Results received that, there is no significant difference among averages obtained for six seasons, 51.10, 56.54, 57.30, 57.09, 56.06, 51.48 for Mahailuppallama (Average 54.93) and 51.21, 56.95, 57.40, 57.37, 56.28, 51.20 for Anuradhapura (Average 55.07) 149.63, 301.94, 267.53, 162.27, 394.33, 434.21 Bathalagoda (Average 284.98) respectively. Bathalagoda shows the binomial distribution clearly and Gimhana season coincides with months of July and August. Furthermore, Anuradhapura and Mahailuppallama shows similar pattern, variation with little increment in Sisira and Wasanta seasons. A little decrease in rainfall in Vassana and Sarath seasons could also be observed.

Study revealed that no significant difference was observed among other weather parameters such as, sun shine hours, relative humidity etc. and intermittent dry spells and rainy days were observed within these traditional seasons. Even though relative humidity and other weather parameters were not changed drought spells became prominent, may be, due to deforestation. This could be justified with the "Biotic pump" phenomenon, where low pressure builds up when "adequate" forest cover exists within the land area enhancing a wind with moisture from the sea towards the land. In addition to that variability of the distance to the moon throughout the year identified as perigee and apogee having distance approximately 360,000 kilometers and 405,000 kilometers respectively. Further research is needed to identify relationships between forest cover and distance to the moon over rainfall events described using traditional seasonal classification and based on the findings more accurate weather forecasting method could be developed to address the changing climate.

Keywords: Weather forecasting, Changing climate, Seasonal Rainfall