A STUDY ON CLIMATIC REGIONS OF SRI LANKA UNDER CHANGING CLIMATE

by

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ABSTRACT

Sri Lanka is an island nation in the Indian Ocean located about 80 km to the Southeast of the Indian sub –continent. It comprises mainland of area65, 610 km^2 the climate of the country depends largely on the monsoon wind patterns. The annual mean surface temperature has an average of about 27^0C in the low lands and an annual mean temperature of about 15^0C in the highlands. The annual rainfall of the country is traditionally considered as ranging between 1000mm in the driest parts to more than 5000 mm in the wettest parts. There is a marked spatial pattern associated with the mean annual rainfall over Sri Lanka. Domroes has specified that "in spite of the unequal length of the seasons-an unevenly-balanced, seasonally greatly varying distribution of rainfall throughout the year can be derived for the entire island of Ceylon." Based on the annual rainfall received, the country is divided in to three climatic zones wet, intermediate and dry zone. the wet zone covering approximately the south western quadrant, receives an annual rainfall in the range 2500 mm5000mm while the dry zone covering the north, eastern and most part of the north central provinces receives an annual rainfall below 1750 mm. The intermediate zone lying between the wet and dry zones receives annually rainfall between 1750 mm-2500mm.The Southwest monsoon winds bring rainfall mainly to the wet zone while the northeast monsoon brings rainfall mainly to the dry and intermediate zones. The two inter monsoon periods bring rain spread over the entire country. In addition ,two relatively small regions lying at the extreme Northwest and Southeast ends of the country receiving below 100 mm of rainfall annually are referred to as the Arid zones.

Sri Lanka has been collecting climatic data from 1861 at 22 meteorological stations locate in all districts of the country. Climatic data for randomly selected stations from each climatic zone has been used for the purpose of this study. In this case, average temperature and rainfall data were analyzed for the 30 year period from 1869 to 1980.

In this paper Least Significant Difference (LSD) technique has used for each station in the different zones in the island. The study find that the difference of temperature has increased within the selected stations and trends to reach the drier condition than wet condition .Further there are significant decrease of the rainfall respect to year from the 1869 to year 1898 in all the stations. Badulla and NuwaraEliya are governing stations in the wet zone in the island and if any deviations of the climatic parameters which can be affected on whole the country climate. Therefore it caused to lack of characteristic of the wet zone.

Kandy and Kurunegala are the major metrological stations in the intermediate zone. According to the LSD test, there are highlighted that the increase of temperature after the colonial era and decrease of rainwater during the time periods. Further intermediate zone has trend to drier condition than wetter condition because of recent climatic change. Overall climate change

(Temperature and Rainfall variation) has effect on entire the country. In this paper, rainfall of wet zone reduced than earlier and temperature increased of that time. Also intermediate zone is getting dry conditions periodically according to the climate variations while dry zone is drier more than comparing with the reference interval 1869-1898.However this is negligible situation comparing with the wet zone variation. Hence researchers can be identified wet zone and intermediate zones as a "Microclimatic Zones" while dry zone can be identified as a "Macroclimatic Zone" instead of traditionally generalized term in future.