

## VARIABILITY OF RAINFALL DISTRIBUTION IN COASTAL DISTRICTS OF NAGAPATTINAM AND KANYAKUMARI, TAMIL NADU: A COMPARATIVE ANALYSIS

<sup>1</sup>Thulasimala Dhuruvan and <sup>2</sup>Tilak wijethunga Bandra

Queen Mary's College, Chennai, University of Madras, India  
<sup>2</sup>Department of Geography, Peradhanian University, Sri Lanka

### Introduction

Rainfall is the important element for economy growth of a place. The amount of rainfall varies from heavy to scanty on different parts and there is great regional and temporal variation in the distribution of rainfall in the study area. The average annual or seasonal rainfall at a place does not give sufficient information regarding its capacity to support crop production. Rainfall distribution pattern is the most important. As a country whose economy is heavily dependent on low-productivity, rain fed agriculture, rainfall trends are often cited as one of the more important factors in explaining various socio-economic problems such as food insecurity. Therefore, in order to help policymakers and developers make more informed decisions; this study investigated the temporal dynamics of rainfall and its spatial distribution in Nagapattinam and Kanyakumari district in Tamil Nadu.

For the current study two coastal district have been selected namely Nagapattinam and Kanyakumari. The climate of Nagapattinam District is fairly healthy, though hot and relaxing. The district has recorded maximum and minimum temperature were 34.3° and 22.8° Celsius respectively. November, January and February are the pleasant months in a year with climate full of warm days and cool nights. From March onwards, the climate becomes sultry and the summer shoots and reaches its peak by the end of the May and June depending upon the set of summer rains. The north-east monsoon which sets in middle of October brings complete relief. Rain in these months is beneficial for the Paddy crops. The south-west monsoon sets in June and continues until September. The rainfall during this period is much lower than that of north-east monsoon. In 1999-2000, Nagapattinam District received 1431 mm of rainfall as compared to a normal of 1378.6 mm.

The climate of Kanyakumari is very pleasant. The governing factors that influence the climate of the district are two monsoon winds, the proximity of the sea and the dwindling height of the Western Ghats. During the months of January and February, the atmosphere is mostly dry with slight humidity. In the coastal area, sea breeze provides a soothing effect. Till June, hot sun prevails.

The low height of Western Ghats in these regions does not favour heavy rainfall. But, wind accompanied by occasional showers considerably moderates the dry atmosphere. The monsoon period lasts till mid August and after that the atmosphere becomes dry again. However, the advent of northeast monsoon through the gaps in the Western Ghats and the low height of the mountain ranges enable the district to get fairly heavy showers from October onwards. This maintains the temperature at a low level till March. Due to the lack of high hill ranges there is no heavy rain during the northeast monsoon period (between October and December). The southwest monsoon also brings showers in the months of June and July. This season is locally called as "saaral". The Table below shows the annual rainfall in Kanniyakumari District during 1992 - 1998.

### Methodology

To find out the rainfall variation of these selected districts from the year 2001 to 2010, the data has been collected from IMD (Indian Meteorological Department) Chennai. The data have been collected based on the rain gauge stations, the 10 rain gauge stations in Nagapattinam and 19 rain gauge stations in Kanyakumari. The collected data have been manipulated using SPSS 17 software to find out the coefficient of variation among the rain gauge stations in the study area. The GIS software ArcGIS have been used to find out the spatial variation of rainfall in the study area.

### Discussion and Conclusion

The statistical and spatial analysis retrieved that, there is not huge variation between the years and the amount of received rainfall in Kanyakumari is higher than Nagapattinam district, the reason for high amount of rainfall in Kanyakumari is its location. During the year 2006 both district have received very low amount of rainfall which cause by the failure of monsoon.

The study contacted to find out the rain gauge station wise variation of rainfall in Nagapattinam and Kanyakumari district will help the people those who depends on rainfall, especially the agriculture activities can prepare necessary steps for the further year. The study found that eight rain gauge stations does not have much variation while two have high variation in Nagapattinam district and eleven rain gauge stations have low variation and six stations have moderate variation while two other stations have high variation in Kanyakumari district.

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