

## METHODS OF ANALYSIS OF SPATIAL RAINFALL PATTERNS

A.Opeitum, E.K. Seneviratne

Dept. of Statistics &amp; Computer Science, University of Colombo.

Analysis of variations in crop yields by agroclimatic researchers has invariably been associated with occurrences of rainfall events measured at single sites, crop yields being traditionally recorded for specific regions. This paper examines methods of checking the validity of the inherent assumption that spatial variation within the neighbourhood of a single site is negligible.

To demonstrate the methods, spatial patterns were constructed for 30 sites evenly spread over the whole Island using a single event E based on the risk of a long dry spell within the next 30 days. Classification of these patterns revealed that the chances of event E occurring became increasingly higher as one moved from the extreme South-West towards the North-Eastern and Eastern directions, during the early part of the rainy seasons, but was relatively stationary for the rest of the year. This pattern was confirmed by contouring event E for a cross section of five dry zone sites.

A method for the direct comparison of characteristics of adjacent sites to check for period differences was illustrated using two adjacent dry zone sites.

*References*

- Cliff, A.D and Ord. J.K. (1975): Model building and analysis of spatial patterns in human geography. J.R.S.S. 37:3
- Domros, M (1981) Dry years and their relationship to crop production in Sri. Lanka. Geo., Journal, 5 (2); 133-138
- Haggett P. (1965) Locational analysis in human geography
- Franklin, J. (1982) The Spatial analysis of rainfall, MSc thesis, University of Reading.
- Stern R.D. Dennett, M.D. and Dale I.C (1982) Analysis of daily rainfall measurements to give agronomically useful results  
I.Direct methods. Expl.Agric. 81: 223-36

09th Dec. 1987 (Wednesday) 09.45 a.m. -10.00 a.m.