APPLICATION OF A MODELLING TECHNIQUE IN THE STUDY OF CHANGES IN RAINFALL PATTERNS

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During the recent past the topic of short term climatic fluctuation has been receiving a great deal of attention. This phenomenon stems mainly from the realization that drastic climatic fluctuations could adversely affect the agricultural activity of Sri Lanka, especially in the drought-prone areas of the dry zone.

The diagramatic approach (Sooriyarachchi et al, 1987) was useful in establishing changes in rainfall patterns. However difficulties in the following areas constitute two major limitations in this procedure:

(i) Representation of rainfall characteristics of more than two periods diagramatically.
(ii) Determination whether changes are large enough, so as not to be attributed entirely to 'chance' fluctuations.

This paper outlines, the use of a modelling approach as an alternative method of studying changes in rainfall patterns and highlights its advantages over the former method.

The model used consists of two parts.

(i) A model for the chance of rain
(ii) A model for the amounts of rain

Changes were studied at five sites in the dry zone over the three, 12 year periods 1951-1962, 1963-1974, 1975-1986.

This analysis revealed some significant changes in both characteristics considered, in some parts of the dry zone. Major changes were evident in the North Central Province site Madawachchiya. The sites in the other provinces showed little change. At most sites the changes in patterns had occurred mainly during the Maha season and to a lesser extent during the Yala season, in the case of both characteristics concerned. These findings were fairly consistent with those of the diagramatic approach.

References:

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