RECENT TRENDS IN RAINFALL OF CENTRAL SRI LANKA

UDITHA RATNAYAKE

Department of Civil Engineering ,Faculty of Engineering, University of Peradeniya, Peradeniya

Analysis of rainfall-time series of central Sri Lanka shows a significant decrease of rainfall received from 1978 onwards compared to the trend before. To assess this trend variation of rainfall a time series analysis was made based on 30 years of daily data of 60 gauging stations.

Two main features of an observed rainfall are the quantity of rainfall and the duration of the spell. The change of trend in the rainfall time series could be due to the change in one or both of these features. In order to investigate this, three series are derived from the time series of the observed rainfalls, one to show the duration of rain spells, another to show the duration of dry spells and a third series giving the amounts of rainfall received in each rain spell. The trend changes of these series were analyzed.

The analysis showed a decreasing trend in the rainfall received with time, affecting a major portion of the central hill country while only a smaller area showed an increasing trend (see Figure 1a and 1b). When compared with the trends prior to 1978 it can be seen that a major area is shifted towards a drier climate with longer duration of dry weather and shorter duration of rainy weather. However, almost all the area showed an increasing trend in the rainfall intensity. The decreasing trend of rainfall, in spite of the increased intensity, indicates that the reduction in the rain duration is the predominant factor.

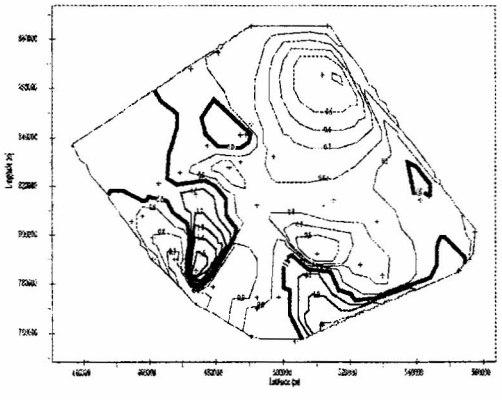

Figure 1a. Changes in rain spell length

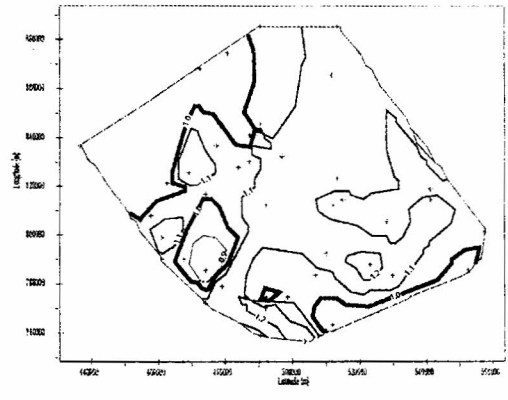

Figure 1b. Changes in dry spell length