

GLOBAL WARMING AND RAINFALL VARIABILITY -
SRI LANKAN SITUATION

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It has been estimated that over the last 100 years, the global mean surface air temperature has increased by $0.3-0.6^{\circ}\text{C}$; and it is predicted that for a "business-as-usual" scenario, the global mean surface air temperature will increase by about 1°C above the present value by the year 2025 and by about 3°C by the end of the next century.

In this paper, the annual mean surface air temperatures and the annual rainfall recorded over a period of more than 100 years at 14 meteorological stations scattered throughout the island have been analysed by filtering the series using the Gaussian low-pass filter.

When the full length of the time series from the 1880's is considered all the series show, in general, alternating increasing and decreasing trends but when the more recent period is considered we find the following:-

- (i). the temperature series at all stations show increasing trends, beginning as early as 1910 at Ratnapura and as late as 1955 at Colombo, Galle, Kandy and Batticaloa.
- (ii). Decreasing trends in annual rainfall are indicated at 9 of the 14 stations considered. This trends has begun as early as 1930 at Nuwara Eliya and as late as 1965 at Hambantota, Batticaloa and Badulla.

A linear regression analysis carried out for the period 1961-1990 show that (a) Anuradhapura has the highest rate of rise in temperature of 0.036°C rise per year and Nuwara Eliya, the least with only 0.0005°C rise per year (b) Colombo has the highest rate of decrease in rainfall of 35.28 mm per year and Nuwara Eliya, the least with a 4.91 mm decrease per year.