

# Some aspects of Monsoon rainfall in relation to Monsoon failures in Bangladesh

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## **ABSTRACT:**

Rainfall data of 34 stations of Bangladesh Meteorological Department (BMD) for the months of June through September during the period 1970 through 2003 have been utilized to study the deficit rainfall conditions in Bangladesh. The spatial distributions of the deviation of monthly and seasonal rainfall from the corresponding normals have been studied especially for some years of deficit rainfall such as 1972, 1979, 1994, 2001 and 2003. Surface and upper air charts and satellite pictures have also been used to explain the possible causes of deficit rainfall in Bangladesh. The effect of El Niño/La Nina on monsoon rainfall has been critically examined. It has been found that extreme drought conditions prevailed over the country in 1972, 1979, 1994, 2001 and 2003 during the southwest monsoon season. Throughout the monsoon months, the rainfall in Bangladesh was significantly below normal in the above-mentioned years. The axis of the monsoon low was significantly south of the normal position during these years and north-south oscillation of the monsoon axis was not frequent i.e. the monsoon axis remained over the area much south of the normal position especially along Orissa-Madhya Pradesh region of India almost throughout monsoon season in those years. From the study of divergence field, it was found that the convergence at the lower level in conjunction with the divergence at the upper level is favourable for good rainfall activity and vice-versa. Negative temperature anomaly at 300 hPa over Bangladesh and adjoining west Bengal has been found to be associated with deficient rainfall. There is no one-to-one correlation between SOI and rainfall in Bangladesh. Monthly rainfall during the monsoon season has partial correlation with the SOI of some months during January-June.

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