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Drought analysis in Bangladesh from RegCM simulated rainfall

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This study analyzed drought over Bangladesh. Emphasis is given to analyze meteorological drought from the monthly rainfall data of Bangladesh Meteorological Department (BMD) and Regional Climate Model (RegCM) using Standardized Precipitation Index (SPI) during 1961-1990. The historical records of drought events obtained from Bangladesh Bureau of Statistics and International Disaster Database are used to verify the SPI results. The SPI is calculated at 27 BMD stations location and calculated at 4 sub-regions over the country. It is found that regional information is better in drought diagnosis compared to point information. The regional analysis is able to detect about 87 per cent (13 out of 15) of the drought events occurred during the study period. This study disclosed that the frequency of moderate drought is higher for all over the country. The central, northern, and southwestern regions are the most severe drought prone area over Bangladesh. In addition, RegCM output may useful to detect 3 to 6 month length (monthly to seasonal) moderate drought events over a region. This infers that RegCM simulated rainfall data may be useful to detect drought that may be helpful to reduce the impacts of drought in the agricultural and water resources sectors.