

Climate Change and Seasonal Pattern in Bangladesh

Climate change is an extremely crucial problem in Bangladesh and according to National Geographic, as the most vulnerable nation to the climate change impacts in the coming decades Bangladesh is ranked first. Bangladesh is an agriculture-based country, where seasons most importantly determine the agricultural production and cropping pattern. Any change of seasonal pattern and climatic variables due to climatic change would have worst effect on the agricultural production and system of Bangladesh.

Recently, a researcher, Basak of Noakhali Science & Technology University with his two associates conducted a research titled "*Climate Change in Bangladesh: A Historical Analysis of Temperature and Rainfall Data.*" This research provides an analysis of change of climatic variables based on investigation of historical data of rainfall and temperature recorded for the period of 1976-2008 at 34 meteorological stations situated at seven regions in Bangladesh (Basak et al, 2013).

The trend of variation of average maximum temperature annually has been found to be rising at a rate of 0.0186 degree Celsius per year, while the rate was 0.0152 degree Celsius per year. Monthly average maximum temperature analysis also found increasing trend for every month except April and January. The increasing trend was mainly significant for February and May to September. Data of monthly average minimum temperature also found increasing trends for every month except November and January. Rainfall data analysis showed that for most of the stations, the total rainfall observed increasing trend for post-monsoon and monsoon seasons, while decreasing trend was showed for the winter season; there is no significant change in pre-monsoon rainfall pattern (Basak et al, 2013). The study concluded that climate change have noticeable impacts on the rainfall and temperature pattern as well as the seasonal pattern of Bangladesh. These observations are predominantly important for Bangladesh where agriculture is greatly dependent on rainfall and temperature patterns.

The yields from rain-fed agriculture of Bangladesh could be reduced to 50 percent by 2020. For a nation with growing population and hunger, it will have an extremely negative effect on food security. Even though climatic change effects are extremely variable, by 2030, South Asian region could lose 10 percent of maize and rice yields, while neighboring countries like Pakistan could experience a 50 percent reduction in crop yield. Since seasonal pattern plays an important role for the poor people livelihoods, such changes threaten their livelihood security and affect the seasonal production cycle. Poor and marginal farmers with small land holdings or no land (cultivating others land) find it hard to cope with the variations in seasonal patterns as their crop production is declining that increases their food insecurity.

As a result, Bangladesh would need to get ready for long-term adaptation including introducing different species and varieties, changing sowing dates due to variations of seasonal pattern, to

practicing novel irrigation systems and water supply. In essence, we need to identify all existing vulnerabilities and future prospects, adjusting priorities, at times even altering trade and commodity policies in the agricultural sector whereas promoting education and training throughout the masses in all potential spheres.

Reference

Basak, J. K., Titumir, R. A. M. and Dey N.C., 2013. *Climate Change in Bangladesh: A Historical Analysis of Temperature and Rainfall Data*, Journal of Environment (2013), Vol. 02, Issue 02, pp. 41-46.