

A Short Review on Impact(S) of Some Meteorological Variables on Aman Rice Production in The Rice Cropping Zone of The Purulia District, West Bengal, India.

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Abstract

Rainfall and temperature pattern, both are changing due to global warming; as a result, this will have an impact on crop productivity especially in "Aman rice" production at Purulia. The objective of this paper is to find out the impact(s) of some climatic variables on Aman rice production in the rice cropping zone of the Purulia district. Aggregated time series data are used for rice crop. Log linear type production function was employed with rice yield as dependent variables and climatic factors like rainfall and temperature are as independent variables. The result of the study shows that temperature has significant effect on the Aman rice production in Purulia. Average minimum temperature during July–August, September–October, and average maximum temperature during September–October are statistically significant. Average minimum temperature during July–August has a negative relation with rice yield; whereas average minimum temperature during September–October is positively related with the rice production. Moreover, rainfall during July–August and September–October is insignificant with rice production.

Key Words: Climatic variables, Purulia, Aman Rice.

Introduction

The major concern of West Bengal is now to increase the growth rate of agriculture and allied sectors particularly to enhance agricultural productivity in the state ^[1]. Agriculture is very crucial sector that may reduce poverty in several ways ^{[2] [3]} like increase in crop productivity directly create more employment opportunities and improve the level of food security. Adverse implications for agricultural productivity may increase incidence of more poverty, which in turn is closely associated with hunger ^[4]. The backbone of the district of Purulia is agriculture. A large percentage of total population engaged in the agricultural sector. Agricultural production depends upon many factors *viz.*, area sprayed, fertilizer used, amount of pesticides used, human labour, amount of capital employed, *etc.* There are also many factors significantly contributing to agricultural productivity. These factors include climatic factors, like temperature and rainfall. Climate change and agriculture are interrelated process both of which takes place on a global scale. High variation in environmental factors such as temperature, rainfall and others get affect to crop growth negatively and certain crops get positively affected due to change in these environmental factors. Thus change in climatic variables may have positive and negative impact on agricultural productivity and food security situation in the economy ^[5]. Despite technological advances such as HYV seeds, use of fertilizers and irrigation systems, still weather is a key factor in agricultural productivity. The occurrences of disasters such as the drought or the floods remind us of the importance of the climate. Researchers and administrators are very much interested in potential costs and benefits that may come into face in future from possible impacts of climatic changes on agriculture that will ultimately affect the national and international policy options, trade patterns, resource use and food security. There are many examples across countries where increase in the possibilities of climate change due to growing population, rapid urbanization,