



Urbanization on Agriculture: India

Chanchal Pramanik*

Tata Consultancy Services, Vadodara, India – cpramanik@gmail.com

Suhrit K Dey

Eastern Illinois University, USA – skdey@eiu.edu

Present study on India is concerned with effect of urbanization, population growth and total cropped area on total food grain production based on 60 years of data (1950-61 to 2008-09). Multiple Linear Regression has been explored to explain the relationship between total food grain production and urbanized area, population growth and total cropped area. Autoregressive Integrated Moving Average (ARIMA) models have been used to develop forecasting models and to forecast the variables involved in the study up to 2020. Later the multiple linear regression equation has been used to forecast the possible total food grain production based on the forecasted figures of the urbanized area, population growth and total cropped area. Separate forecast obtained for the total food grain production from the ARIMA model based on the trend is the expected total food grain production. Differences between possible and expected total food grain productions are obtained for the years 2010-11 to 2020-21. It has been observed that differences have a steep downward linear trend. This is an alert for Indian agriculture, in distant future. Similar results have been found for India with the help of Markov chain modeling.

Keywords: Multiple Linear Regression, ARIMA, Markov Chain Modelling