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AGRICULTURAL PRODUCTION AND FACTORS AFFECTING IT

Shelly Gupta

Abstract:-Agriculture in India has a significant history. Today, India ranks second worldwide in farm output. Agriculture and allied sectors like forestry and fisheries accounted for 13.7% of the GDP in 2012-13 about 47% of the total workforce. The economic contribution of agriculture to India's GDP is steadily declining with the country's broad-based economic growth. Still, agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India.

Everyone today knows that agriculture in any country is a combination of physical and economic factors. But to what degree has it been dependent on these factors in India in the past 20 years in the motive of this project. This research focuses on the production of major commercial crops produced in India and how factors like government expenditure, annual rainfall and area under production affect it. The project contains statistical data on all such factors from 1991-2011.

INTRODUCTION

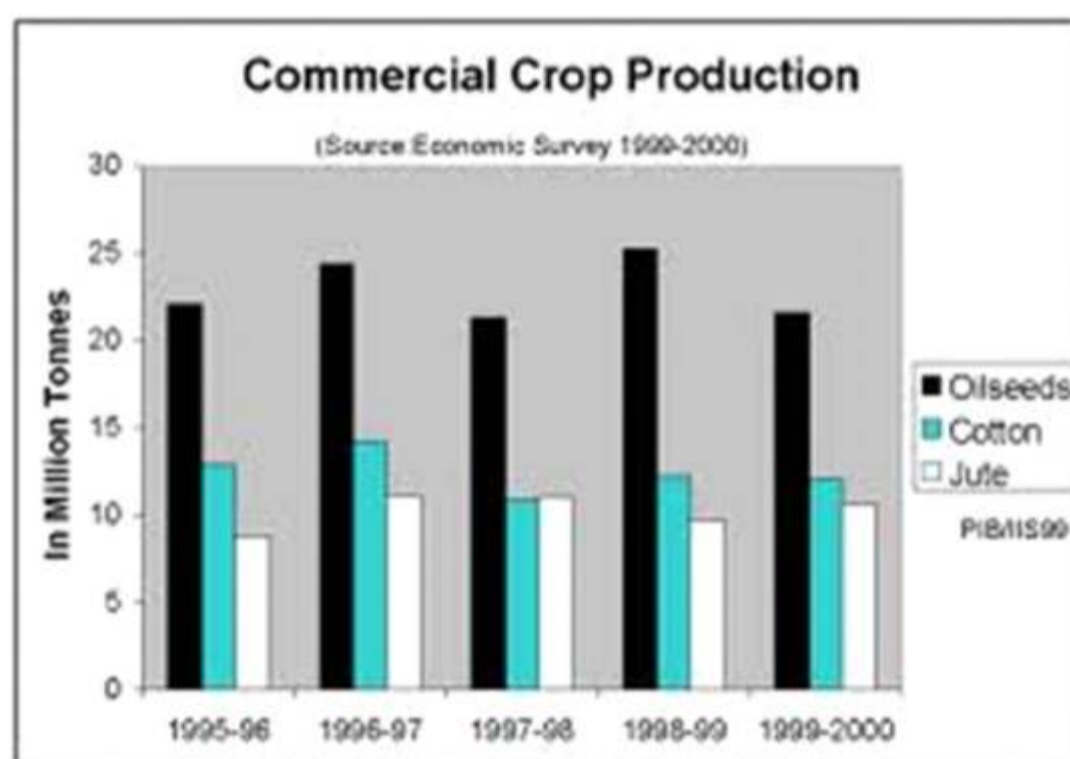
India has notably made very impressive strides on the agricultural front during the past three decades. The credit for this success goes to the several million small farming families that form the backbone of Indian agriculture and Indian economy. Other factors such as policy support, production strategies, public investment in infrastructure, research and extension for crop, livestock and fisheries etc. have significantly helped in increasing the agricultural productivity, food production and its availability. India has experienced considerable changes in the crop mix, yield and production since the dawn of the Green Revolution.

The study focuses on the production of commercial crops in India. A commercial crop is a crop **which is grown for money**. The term is used to differentiate from subsistence crops, which are those fed to the producer's own livestock or grown as food for the producer's family. Commercial crops include oilseeds, sugarcane, condiments and spices, cotton, jute, tobacco etc.

In a commercial based agriculture, crops are raised in large scale plantations or estates and shipped off to other countries for money. These systems are common in sparsely populated areas such as Gujarat, Punjab, Haryana, and Maharashtra.

Oilseeds, cotton, jute, sugarcane, tobacco are the five crops considered among major commercial crops in India and hence included in the study.

The above bar diagram shows the comparison between the commercial crops- Oil Seeds, Cotton and Jute- from the period 1995-1996 to 1999-2000.



The project contains statistical data on all such factors from 1991-2011. The study traces various conclusions that have been drawn by using SPSS and excel.

RESULTS:

We estimate the model in linear form as: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$

Where Y= Value of Production

β_0 = Constant/Intercept

X1= Area under Cultivation

X2= Yield per Hectare

X3= Government Expenditure

X4= Rainfall

The results of OLS regression using SPSS were found as follows:

$$Y = -323.085 - .482(\text{Area under Cultivation}) + 0.007(\text{yield per hectare}) + 0.008(\text{government expenditure}) + .153(\text{rainfall})$$

From the above regression, a unit increase in area under cultivation leads to 0.482 units in production of commercial crops. Similarly, a unit increase in yield per hectare, government expenditure and rainfall leads to 0.007, 0.008 and 0.153 units increase in production respectively. All the coefficients were found to be statistically significant (at least at 10percent level of significance) except for area under cultivation.

The R2 value of 0.722 means that 72% of the variation in production can be explained by our four independent variables. This shows that majority of the variation is explained by these four variables. However, there are innumerable other variables which affect the production levels of agriculture crops.

CONCLUSION:

The above research dissects which variables lead to changes in production of commercial crops. Since commercial crops are grown for money as discussed earlier, any changes might have substantial effect on the livelihood of farmers. This will also help government in focusing on areas which are most important in affecting production.

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