Original Research Paper
Economics

A STUDY ON SELECTED COMMERCIAL CROPS YIELD IN KADAPA AND KURNOOL DISTRICTS OF RAYALASEEMA REGION
Note that the second content of the se

Districts of Rayalaseema region The study revealed that growing commercial crops in the Rayalaseema region where, groundnut is a major crop is good pattern. Crop diversification gives good yields along with crop rotation in these districts. There is a need to provide water facility for huge productivity of sugarcane and groundnut and other commercial crops. the farmers should be awared and provided new methods of agriculture for commercial crops to fulfil the targets of productivity.

KEYWORDS: Commercial crops, Crop Diversification, Rayalaseema,

INTRODUCTION

Agriculture as a primary industry plays a significant role in the process of the economic development of a country. In the early stages agriculture is the major contributor to national income and it provides employment to a majority of people. At later stages of a fairly high level of economic progress, the importance of agriculture gradually declines. About 65 to 70 per cent of our people depend on agriculture for their live hood. In the name of New Economic Reforms (1991) a structural change took place at the national as well as state level. However, during the post-economic reform period the issues were to raise the productivity, increase the cultivable area of pulses and commercial crops, effective utilization of irrigation facility and development of rural market for the improvement of the agriculture to achieve agriculture a growth of not less than 4 per cent. Now it is around 2 per cent and is declining. The output index of all crops increased at 3.4 per cent per year in the 1980s as well as in the early 1990s. The growth rate of GDP from agriculture declined from 4.2 per cent in the 1980s to 3.7 percent per annum in the 1991s. The growth

Review of literature

I.V.Y. Rama Rao(2012) in his study shown that the value of BCR is higher for plant crop in irrigated (1.49%) than in rain fed (1.43%) regions. The yield gap between irrigated and rain fed regions has been found to be 67.00%, in which input usage had a higher (41.86%) effect than cultural practices (25.93%). Murali P., Balakrishnan R. (2011) found that The study has found the mechanical operations to be superior to manual operations in sugarcane cultivation. These have reduced cost of production and have enabled efficient utilization of resources with better work output. A. Jothirajan (2005) studied an analysis of the cost and returns structure, per acre net income distribution among different group of farmers. It identified the important determinants of yield, yield gap and yield constraints and also analyses the marketable surplus, market structure and marketing channels. Patel Arun S. (2006) was observed in this book "Review of State Agriculture Policy in Gujarat" that during 1949-96 the productivity annual growth rate was higher than 2.50 per cent in respect of all food grains including chilies, potatoes, castor, mustard and tobacco but the growth rate of groundnut was very poor which covering around 17 per cent of gross cropped area in the TE 2000-01. The yield improvement is not observed to any significant extent mainly due to rain effect. Beside, the HYVs have shown a moderate impact also.

OBJECTIVES

The present study has been designed to look into the following objectives.

 To determine the growth and instability of selected commercial crops Sugarcane and Groundnut in Kadapa and Kurnool districts of Rayalaseema Region.

- 2. To examine the hectarage response of farmers of selected crops in two selected district.
- 3. To suggest the measures to improve the productivity of Sugarcane and Groundnut crops in selected district.

METHODOLOGY

To fulfil the first objective, to analyze the trends, growth and instability in cropping area, production and yield of the selected commercial crops sugarcane groundnut & in Kadapa and Kurnool districts. Both the linear and compound growth models were estimated. Due to outcomes of both the linear and compound growth models are same; the analysis was carried out only for linear model. But graphical representation was given along with compound growth model.

The modest linear model was used. The model was Y=A+Bt ------(1)

To determine the LGR, the form of function is

$$LGR = \frac{B}{\overline{v}} \times 100 \quad -----(2)$$

To describe the compound growth rate CGR, the exponential function of form is $Y=A^*B^t$ ------(3)

Where,

Y=area/production/yield, t=time and A, B are the constant factors to be resolute. The percentage of CGR iscalculated by the following formula -CGR=(B-1) x 100 -------(4)

The coefficient of time (B) was tested by t-test statistic

$$t = \frac{B}{SEof\hat{B}}$$
$$SEof\hat{B} = \sqrt{\frac{\sum(Y - \bar{Y})^2}{N}}$$

Data

The study of objectives is based on secondary data. The relevant data was collected from various issues of "Seasons and Crop Report of A.P." and "Statistical Abstract of Andhra Pradesh" issued by the Directorate of Economics and Statistics, Government of Andhra Pradesh, www.apdes.ap.gov.in.

VOLUME-7, ISSUE-10, OCTOBER-2018 • PRINT ISSN No 2277 - 8160

Limitations

The study is confined to the districts of Kadapa and Kurnool of Rayalaseema region, Andhra Pradesh only. The study is limited to the trends, growth production and yield of the selected commercial crops sugarcane and groundnut.

BRIEF OF RAYALASEEMA - PERFORMANCE OF CROPS

Rāyalasīma is a geographic region in the Indian state of Andhra Pradesh. It comprises four districts of the state namely, Anantapur, Chittoor, Kadapa and Kurnool. As of 2011 census of India, the region with four districts had a population of 15,184,908 and covers an area of 67,526 km2 (26,072 sq mi). Of the total geographical (6.72 million ha) area of the Rayalaseema region, only 39.8% (2.67 million ha) is the net area sown (including fish and prawn culture) under different crops. Only 4% of the total geographical area (0.26 million ha) is sown more than once. In this region in the state growing food crops like paddy, jowar commercial crops like sugarcane, cotton, and oil seed crops like Groundnut, and Sunflower. The demand for these crops is increasing day-to-day. All these crops are grown in both Kharif and Rabi seasons. During the plan periods the growth of these crops are increasing due to the adoption of green revolution. The total area under crops in Rayalaseema during 2014-15 is 28.54 lakh hectares where as it is 67.39 lakh hectares in the year 2014-15.

GROUNDNUT

Groundnut is generally shown under rain fed conditions. The area cultivated under this crop is 8.32 lakh hectares in 2014-15, as against 11.10 lakh hectare in 2013-14, which shows a decrease of 27.8 percent. The production of Groundnut was 83.23 lakh tonns during 2014-15 as against 7.39 lakh tonns in 2013-14, marginally an increase of 3.90 percent due to an decrease in the area and productivity in the year 2014-15. The average yield rate of Groundnut was 470 kgs/hectare in 2014-15 as against 660 kgs per hectare in 2013-14 revealing an increase of 26.8 percent.

SUGARCANE

Sugarcane crop is mostly grown in Chittoor and Kadapa districts. This crop accounted for 5.4 percent of the total cropped area in the state during 2014-15. Chittoor district is above 45 percent of share to total area under this crop. The area under sugarcane was 12.44 lakh hectares during 2014-15 as against 27.42lakh hectares in 2013-14, which shows an decrease 55 percent, due to favourable seasonal conditions. The production of canewas22.05lakh tonns during 2014-15 as against 27.52 lakh tonns in 2013-14, recording an increase by 10.26 percent. The average yield rate of sugarcane was 860 kgs per hectare in 2014-15 against 720 kgs in 2013-14, showing an increase by 15.2 percent.

ANALYSIS

In this paper trends, growth and instability in cropping area, production and yield of the selected commercial (sugarcane & groundnut) crops' in Rayalaseema region with special reference to Kadapa, Kurnool districts .To examine the growth and instability, both the linear model and log-linear models (i.e., exponential) are adopted. To find average annual growth rates in all aspects (area, production and yield) the linear growth (LGR) and log-linear growth (CGR) models are adopted. T-test of statistic carried out (given in methodology) to test the significance in growth.

Kadapa District

Sugarcane-Yield:

The estimated equation of linear regression for sugarcane yield in Kadapa districtis

From the above equation, the estimated value of 'b' is -1187.991. The positive value of 'b' reveals that there is andecreasing trend in the yield of sugarcane in Kadapa district. This value reveals that on average, 1188 kilograms are decreasing every year during the study

period. It is a significant decrease in sugarcane yield. The linear growth rate is found as 1.554 percent. This rate shows that the average annual growth in yield of sugarcane in the district is 1.5 percent. The value of the intercept term i.e., 'a' is 91897.6. The coefficient of variation is 26.299 percent.

Sugarcane Yield in Kadapa District



Kurnool District

Sugarcane-Yield:

The assessed equation of linear regression for sugarcane yield in Kurnool districtis

Y = 50942.13 +1148.51*t L.G.R = 1.744% C.V = 38.927%

From the above equation, the expected value of 'b' is 1148.51. The positive value of 'b' reveals that there is an increasing trend in the yield of sugarcane in Kurnool district. This value reveals that on average, 1148.5 kilograms are increasing every year during the study period. It is a significant increase in sugarcane yield. The linear growth rate is found as 1.744 percent. This rate shows that the average annual growth in yield of sugarcane in the districtis 1.7 percent. The value of the intercept term i.e., 'a' is 50942.13. The coefficient of variation reveals that 38.927 percent of variation is in production of sugarcane.

Sugarcane Yield in Kurnool District



Kadapa District

Groundnut-Yield:

The estimated equation of linear regression for groundnut yield in Kadapadistrict is

|--|

From the above equation, the estimated value of 'b' is -2.599. This negative value of 'b' reveals that there is an decreasing trend in the yield of groundnut in Kadapadistrict. This value reveals that on average, 2.6 kilograms are decreasing every year during the study period. It is an insignificant decrease in groundnut yield. The linear growth rate is found as -0.344 percent. This rate shows that the average annual decline in yield of groundnut in the district is 0.34 percent. The value of the intercept term i.e., 'a' is 788.11. The coefficient of variation is 44.588percent.

Ground nut Yield in Kadapa District



Kurnool District

Groundnut-Yield:

The estimated equation of linear regression for groundnut yield in Kurnool district is



Information busined

Information busin

From the above equation, the estimated value of 'b' is 4.126. The positive value of 'b' reveals that there is an increasing trend in the yield of groundnut in Kurnool district. This value reveals that on average, 4 kilograms are increasing every year during the study period. It is an insignificant increase. The linear growth rate is found as 0.46 percent. This rate shows that the average annual growth in yield of groundnut in the district is 0.46 percent. The value of the intercept term i.e., 'a' is 843.32. The coefficient of variation is 26.154 percent.

MEASURES TO IMPROVE PRODUCTIVITY

- 1. Moving surplus water into the tanks that ensures farmers can continue crop like sugar cane and ground nuts.
- The overall growth pattern of groundnut yield indicated a downward trend, so improving technologies are to be introduced in these districts.
- 3. Incentives for groundnut can be increased to move the farmers' attitude towards groundnut cultivation.
- An understanding of the long run price elasticities facilitates the formulation of an appropriate agricultural price policy for growth and stability.
- 5. To improve the productivity of sugarcane modern hybrid methods in agriculture to be introduced.

CONCLUSION:

Though the region is rainfed, by transforming the water from surpus tanks to scarcity tanks, farmers can be enabled to increase the productivity of commercial crops in this region. For this awareness among farmers and government proper implementation of policies and review and revision is needed from time to time.

REFERENCES

- 1. Dutta, S. (2012). A Spatio temporal Analysis of Crop Diversification in Hugli District. West Bengal. Geo-Analyst, 2 (1).
- Mishra, S.N. and Chand, R. (1995). "Private and Public Capital Formation in Indian Agriculture: Comments onComplementarity Hypothesis and Others". Economic and Political Weekly, 30, (24):64-79.

VOLUME-7, ISSUE-10, OCTOBER-2018 • PRINT ISSN No 2277 - 8160

- Pingali, P.L. and Rosegrant, M.W. (1995). Agricultural commercialization and diversification: Processes and policies. FoodPolicy, 20(3):644-651.
- Tripathy S and Srinivasa Gowda M V 1993 An analysis of growth instability and area response of groundnut in Orissa. Indian Journal of Agricultural Economics 48 (3) : 345-350.
- 5. https://www.nabard.org
- 6. www.fao.org

Groundnut Yield in Kurnool District