AN ECONOMIC ANALYSIS OF TOMATO CULTIVATION IN DINDIGUL DISTRICT OF TAMIL NADU

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Abstract:-

Tomato is an important vegetable crop and it has greater economic importance among the vegetables since it is one of the leading commodities in agricultural exports. The agricultural commodity prices affect the level of living of both consumers and farmers. The main objectives of the research work are to study the cost and returns structure of tomato cultivation for small and large farmers in study area and to analyse the nature of the distribution of per acre net income and the extent of inequalities in the net income per acre of small and large farmers. This work also focuses to identify the determinants of yield and factors causing yield gap with regard to small and large farmers in Palani taluk of Tamil Nadu. This study is based on primary data and secondary data. For primary data collected from 300 sample were collected from the respondents using stratified random sampling method. Secondary data analysis was done through. Agricultural Department Reports, District Statistical Report and various budget documents of Government of Tamil Nadu. This study covered most of the farmers engaged in small agro tomato cultivators industry area. Small farmers are facing many difficulties like loan, climate, market price and fertilizer cost in market. This study gives oriented suggestions for improving the tomato cultivation and marketing information to farmers

Keywords:-

1. INTRODUCTION

India is one of the few countries in the world where practically all types of fruits and vegetables (tropical, sub- tropical and temperature) can be grown in one or the other region. Fruits and vegetables reduce the demand on cereals and are one of the cheapest and richest sources of natural protective foods, contributing much needed proteins, carbohydrates, mineral, salts and vitamins in the human diet. There has been significant and continuous increase in the domestic consumption of fruits and vegetables in our country owing to the general rise in consumer spending on food as a result of the increased per capita income. Tomato is one of the most important "protective foods" both because of its special nutritive value and also of its widespread production. It is the world's largest vegetable crop after potato and sweet potato, but it tops the list of canned vegetables. Tomatoes have been used as food by the inhabitants of Central and South America since pre-historic times. It was cultivated in Peruvian and Mexican regions. It was introduced by the Spanish explorers

in the early sixteenth century. It was perhaps introduced by the Portuguese into India though there is no definite record of when and how it came to India.

2. STATEMENT OF THE PROBLEM

Tomato is an important vegetable crop and it has greater economic importance among the vegetables since it is one of the leading commodities in agricultural exports. The agricultural commodity prices affect the level of living of both consumers and farmers. It is often desirable to increase the returns to farmers in order to help raise the standard of living of both. Low farm incomes discourage the use of modern production technologies and act as disincentives to produce more. Similarly, high retail prices increase the cost of living and set in motion a wage-price spiral. In the conflicting situation, a perfect competitive market ensures a just price, to protect the interests of producers as well as consumers. But this ideal market structure is rarely found in the real world, especially for agricultural commodities.

3. OBJECTIVES OF THE STUDY

The main objectives of the present study are:
1. To study the cost and returns structure of tomato cultivation for small and large farmers in Tamil Nadu. To mato and to evaluate the marketing cost, marketing margin, price-spread and marketing efficiency of different channels in study area.
2. To identify the determinants of yield and factors causing yield gap with regard to small and large farmers in study area.
3. To analyze the existing channels of distribution of tomato and to evaluate the marketing.
4. To offer suitable suggestions for improving the tomato cultivation and marketing of tomato in Tamil Nadu.

4. PATTERN OF THE STUDY

In this research, cultivation of tomato in each of the eight Taluks in Dindigul district was found from the records of the District Statistical Office. Among the eight Taluks, Palani taluk which has the largest area under tomato farming has been selected as the study area for the collection of primary data. Stratified multi-stage random sampling is adopted for the choosing of sample respondents. There are 28 revenue villages in Palani Taluk. These villages contribute to 60 per cent of tomato cultivation in Dindigul district. Proportionate probability sampling technique has been used to select 300 farmers in this study area. came under the group of large farmers. The Analysis of Variance technique was applied to test the homogeneity of the small and large groups of farmers with respect to net income per acre and the results are presented in Table 1.

5. METHOD OF ANALYSIS

Interview method was used to achieve the objectives of the study. Three hundred sample farmers were stratified into two categories, namely small and large. The farms with more than less than five acres were grouped as small farms and farms with five or more acres were grouped as large farms. Out of 300 sample farmers, 237 (79 per cent) came under the category of small farmers and the remaining 63 (21 per cent)

Sources	Total Sum of Squares	Degrees of Freedom	Mean Sum of Squares	Calculated F-value	Table F Value at 5 % level
Between Sample	30271000	1	30271000	2249.18*	4.38
Between Villages	318479.43	14	22748.53	1.69	2.16
Error	188421.36	14	13458.67		
Total	30164193.63	15			

Table 1: Homogeneity Test of Two Categories of Tomato Farmers

Significant One variation is the yield between the samples and between the

villager were tested using ANOVA. In this relation an hypothesis wan formulated that there is no difference in the yield between the samples and between the villager. From estimated results, presented in the table 1, it could be inferred that the difference in the yield among the samples was statistically significant since, the estimated F test was significant at one percent leave. Which this is the case among the samples, the variation in the yield between the villagers was not significant since the calculated 'F' value was statistically insignificant.

Determinants of Yield of Tomato Farming in Palani Taluk

This log linear regression model helps to identify the major determinants of yield of tomato with respect to small, large and pooled categories of farmers selected for the present study. The structural differences are to be examined between small and large farmers. In this regression model, yield is treated as a dependent variable and input factors, namely human labour (X_1), bullock labour (X_2), fertilizer (X_3), farm yard manure (X_4), pesticide (X_5) and capital flow (X_6) are included as independent variables.

Variable	Parameter Estimate		
	Small Farmer	Large Farmer	Pooled Category
Intercept	2.8213	3.7948	2.3541
log X1	0.2891* (3.7243)	0.2443* (5.1009)	0.2651* (2.0651)
log X2	0.0722 (0.0068)	0.0430 (0.0102)	0.0616 (0.0421)
log X3	0.1898* (4.4214)	0.1614* (0.0414)	0.1617* (2.9416)
log X4	0.1141* (3.66314	0.1218* (2.7244)	0.1124* (3.0122)
log X5	0.0945 (0.1005)	0.0653 (0.0614)	0.0704 (0.0393)
log X6	0.3348* (2.7341)	0.4141* (3.0818)	0.3927* (2.7694)
R^2	0.7828	0.7943	0.7726
F- value	19.8314	26.1621	26.3341
Residual sum of Squares – e^2	0.0788	0.0463	0.3206
No. of observations	237	63	300

Table 2: Estimated Regression Results of Factor Influencing the Yield of Small and Large Farmers Cultivating Tomato

Indicates that the coefficients are statistically significant at 5 per cent level (Figures in parentheses are t-values) There are several remedies suggested in the farming of tomato cultivation. Since the ordinary least square estimators are as long as cool linearity is perfect, it is often suggested that the best remedy is to go for organic farming of tomato cultivation. The results of the factors influencing the yield of small and large farmers cultivating tomato are given in the table 2. Most of the variables are now statistically significant at 10 per cent or lower level of significance and to make economic sense, the exception being yield of tomato, which is significant at about 11 per cent level of significance. Among the variable considered, the coefficients of the variable x1 (human labour) x3 (Fertilizer) X4 farm manure and X6 (capital) were found statistically significant in determining the tomato yield of both small and large faramers.

6. FINDINGS

The following are some of the specific findings in this research work.

1. As per the findings, 58 per cent of the farmers attended training conducted by Indian Council of Agricultural Research.

2. 64 per cent of the respondents are earning more than Rs. 7,000 per month.

3. This research reveals that 72 per cent of the respondents are illiterates and 28 per cent of them are literates, but they have studied up to higher secondary education level.

4. In our study area, 85 per cent of the respondents received loan from money lenders for farming needs.

5. All the farmers are facing the problems of environmental effects, soil erosion and failure in crop yielding.

7. SUGGESTIONS

The following suggestions are made on a pragmatic basis and with a view to

provide a new base-line of action.

1. The outbreak of pests and diseases played a major role in reducing the yield of tomato and the profit margin. Therefore, it is necessary to develop pest and disease resistant varieties of tomato by research agencies.

2. Government of Tamil Nadu should establish disease forecasting centre in major tomato cultivation areas.

3. Exploitation of farmers by village merchants who take more profit constitutes another major problem. This could be eliminated by producers who would sell their produce in the regulated market through a co-operative marketing society. Hence, primary co-operative societies should be encouraged to arrange for sale of produce of its members in the regulated market through Taluka Agricultural Produce Co-operate Marketing Society (TAPCMS) via a system of pooling.

4. Lack of technical knowledge in tomato cultivation is an important lacuna. Therefore, the Agriculture department should arrange for periodical training programme for tomato cultivators in order to disseminate technical know-how of recently developed research in tomato and improve their knowledge.

5. The government have to give support to the tomato cultivators by providing subsidies, proper prices and market facilities.

CONCLUSION

Tomato farming is based on an integrated relationship among soil, mineral, water, plants, micro flora, insects animals and human beings. Tomato farming management relies on local human resources and knowledge to enhance natural resource processes, respecting ecological carry capacities. By reducing dependence on off-farm inputs and creating more balanced nutrient and energy flows, ecosystem resilience is strengthened food security is increased and additional incomes are generated. Organic farming respondents positively subscribe to all sustainable agriculture with a rural development objective and help in maintaining soil fertility, improve tomato production and socio-economic conditions of the farmers.

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