

# **S.S.e.14. THRESSIAMMA, K.V.–Movement of input and output prices of rice in Kerala and its impact on area, yield and output–1988–Dr. K.C. Sankaranarayanan.**

## **Statement of the Problem**

The third world countries show an increasing trend of commercialisation of their agricultural sector. But the fact is that they do not produce enough food to meet their own requirements. This is true in the case of Kerala also. Available data indicate that area under rice in the state has been declining over the years both in absolute and relative terms. The declining trend in area under rice witnessed in recent years needs special investigation. The study tries to find out the reasons for the declining trend in area under rice in Kerala especially after 1974-75.

## **Objectives of the Study**

The specific objectives of the study are

- (i) to analyse the trends in area, yield and total production of rice during the three seasons in the state, districts and taluks,
- (ii) to study the trends in input and output prices on area, yield and total output of rice in the state, districts and selected taluks,
- (iii) to estimate the impact of input and output prices on area, yield and total

- output of rice in the state, districts and selected taluks,
- (iv) to examine conversion of paddy field, into coconut gardens and rubber plantations,
  - (v) to study the nature of price control and public distribution system in Kerala and to analyse the agricultural price policy of the Government in general

### **Hypotheses**

Input and output prices are important factors which influence farmers' decision to change area, productivity and production of paddy in the state.

The area under rice in the state has been progressively declining due to faster rise in wage rate, farm price of coconut and fertiliser price. There has been conversion of rice fields into coconut garden and coconut garden to rubber plantation.

The total production of rice in the state also has been declining mostly due to very rapid decline in area. Again, increase in productivity has been only marginal mainly because of lesser coverage under punja crop and high-yielding varieties of seeds, slow growth of irrigation facilities and paucity of fertiliser consumption.

### **Methodology and Data Collection**

The data for the study were collected primarily from secondary sources. For convenience, the period of the study is divided into three sub-periods, viz. (i) 1960-61 to 1968-69; (ii) 1960-61 to 1974-75 and (iii) 1974-75 to 1985-86. Again, the whole period is analysed under the title combined period.

Statistical techniques such as ratios, coefficient of variance,  $R^2$  values, 't' statistics, multiple regression etc. are used to analyse the various aspects of the problem pauced in the study.

### **Scheme of the Study**

The study is organised under seven chapters. The first chapter provides a brief introduction to the study. It also includes the statement of the problem, objectives, hypotheses, methodology and a brief review of the available literature on the subject. Chapter two discusses the cropping pattern in the state and the districts from 1960-61 to 1985-86. It also contains an analysis of the growth rates of area under coconut and rubber and the shift of acreage from rice to cash crops.

A discussion on the trends in growth rates of area, yield and output of rice in the state at different intervals forms the content of chapter three. Chapter four presents the trends and growth rates of input and output prices or rice and coconut at the state, district and taluk levels. The variables used in the multiple regression models is dealt with in chapter five. It also throws light on the supply response co-efficient obtained by applying multiple regression model to the data relation to rice crop.

Price control and public distribution system in Kerala, rationale of an agricultural price policy, critical estimate of the price policy and need of an integrated price policy are described in chapter six.

The concluding chapter, besides dealing with the summary of the study, highlights some of the policy implications emerging from the study.

## CONCLUSIONS EMRGING FROM THE STUDY

### 1. Changes in Cropping Pattern

The study clearly indicates the shift of land area in favour of plantation crops such as coffee, cardamom, rubber, cashewnut and banana and other plantations. Positive change in the yield of rice and tea was not sufficient to offset the decline in area and hence decline in production also.

### 2. Trends in Area, Yield and Total Production of Rice: Third Period

- 2.1. All the districts and the state have positive growth rates with reference to yield and negative growth rates with reference to area and production. Quilon and Ernakulam are exceptions with regard to production.
- 2.2. While all the districts and the state are having positive growth rates of yield, 13 taluks are having negative growth rates of yield.
- 2.3. Seventeen taluks are having positive growth rates of production, whereas only two districts are having positive growth rates of production.
- 2.4. While all the districts and the state indicate only negative growth rates of area, nine taluks show positive growth rates of area.
- 2.5. Seven taluks are having positive growth rates of area, yield and production.
- 2.6. Ten taluks have negative growth rates of area, yield and output.
- 2.7. Fortysix out of 57 taluks have less than two per cent growth rate of output and yield.
- 2.8. Of the 57 taluks, 31 have yield above state average.
- 2.9. Yield level of rice is higher in South Kerala compared to North Kerala.
- 2.10. Twelve taluks have positive growth rates with reference to area, whereas all the districts and the state have negative growth rates of area during winter season.
- 2.11. Quilon, Kottayam and Palghat districts have positive growth rates of area, production and yield under high-yielding varieties of rice.
- 2.12. All the districts and the state as a whole except Trivandrum have positive growth rates of yield under high-yielding and local varieties of rice.

### 3. Trends in Input and Output Prices of Rice

- 3.1. The general trend in coconut price is a continuous rise from 1960-61 to 1985-86.
- 3.2. Among the districts the Northern districts of Cannanore, Kozhikode and palghat show the maximum increase in coconut prices followed by Ernakulam and Trichur in the various periods.
- 3.3. The relative price of rice to coconut moved in favour of rice till 1967-68 and then moved in favour of coconut. This resulted in increases in rice area until 1967-68 as the relative price moved in favour of it, but then began to stagnate and started falling after 1975-76 as the relative price began to move in favour of coconut after 1967-68.
- 3.4. In the case of coconut, price increased steadily almost throughout the period from 1960-61 to 1985-86. But the relative price of coconut fluctuated erratically, which indicated that rice is not the only substitute for coconut. The consistent rise in coconut prices led to the buoyancy of coconut cultivation and the area under coconut increased continuously until 1975-76.

Thereafter the trend changed in favour of rubber, coffee, cardamom, cashewnut and banana and other plantains.

- 3.5. The compound growth rate of the variables can be ranked first as wage rate, then farm price of coconut, third fertiliser price and last farm price of paddy. Farm price of paddy was much lower than the growth rate of the other three variables.
- 3.6. The profitability of paddy reduced further after 1974-75 because of the steep rise in the wage rate, fertiliser price and comparatively low price of paddy.

#### **4. Area, Yield and Production Response**

- 4.1. Acreage responses are higher than both the production and the yield responses.
- 4.2. Area, yield and production are more responsive to current year regressors than to previous year regressors.
- 4.3. Wage rate can be considered as the single and strong regressor in both the estimates, current year and previous year.
- 4.4. Twentyseven relationships out of 30 indicated negative response of acreage with wage rate, 22 with farm price of coconut and 20 with fertiliser price. But out of 30 relationships, 23 explained positive relationship between farm price of paddy and acreage. It is evident from the above description that high rate of wage, fertiliser price, coconut price and very low paddy price led to the decline in acreage under paddy during the third period.
- 4.5. The responsiveness of acreage to wage rate was negatively correlated during the third and the combined periods. This indicates the inverse relationship between acreage and wage rate.
- 4.6. The four regressors shared 52 to 97 per cent variation in acreage under paddy. The estimates were having very high value of 'F' ratio. Hence our conclusions regarding acreage response are highly reliable.
- 4.7. Only during combined period fertiliser price ranked first in the order of supply shifters in 't-1' estimates and the second one in 't' estimates. In all the other periods wage rate ranked first in the order of supply shifters. The main difference is because of more number of significant yield response related to fertiliser price rather than acreage and production responses.
- 4.8. Yield has more impact on production than on acreage.
- 4.9. Coconut area has greater impact on paddy area than rubber area.
- 4.10. The second period indicates the highest acreage and production response when we take each regressor separately and calculate regression co-efficients, R values and value of 'F' ratios. It is clear from the above results that more positive responses of production and acreage can be seen upto the second period and yield response after the second period, ie, yield increased during the third period compared to the first and the second periods which may be due to the progression technological development. The results show the concentration of the highest area and production responses during the second period and yield responses during the third period.

#### **RECOMMENDATIONS**

Whether Kerala should be self-sufficient in rice production is a matter for

debate. Yet the fact remains that we never reached the set targets of production in paddy in our plans. To reduce the gap between the internal requirement and the production of rice through effective planning and execution of programmes we should consider the following measures.

1. To increase the coverage of the high-yielding varieties in all seasons and to study the slow progress in this regard, a constraint analysis may be undertaken to throw light on policy issues to be tackled.
2. Irrigation facilities should be increased, so that more area can be brought under punja crop (summer.)
3. The variation in productivity in and between taluks in respect of all the crop seasons should be analysed and studied in order to raise productivity in areas where now it is relatively low.
4. The rate of growth of price of paddy is very low compared to the rate of growth of wage rate, price of coconut, price of fertiliser etc.. Hence to increase production of paddy, the price should be increased according to the rate of increase in other output and input prices over time.

There is another fundamental question of cost and price factors relating to the economics of rice production. We are in a blind 'fix' since the labour cost has been rising steeply the role of other factors, viz. land, capital and entrepreneurship and their remuneration have not received adequate attention in the discussion relating to cultivation costs. It is, therefore, necessary to re-examine the share of land, labour, capital and entrepreneurship in rice production.

Again, the present ad hoc agricultural price policy should be changed to a well integrated policy, so that the problems related to price and cost factors can be avoided.