CONCLUSION

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Chapter 8

CONCLUSION

Kerala is a food deficit state and paddy is its major food crop. Over the past several years paddy sector of the state had shown declining trends both in area and production. Major objectives of this study were to assess the performance of paddy crop in Kerala since its formation and to examine the economic causes for the decline of the crop. The study also aimed to identify the current problems in paddy farming. With these objectives we have examined the growth trends in area, production and productivity of paddy crop, role of major sources of productivity in improving the per hectare yield of paddy in the state, absolute and relative profitabitability of the crop and other factors affecting its performance.

The study is based on three hypotheses, viz., (i) sources of productivity in paddy crop such as HYV coverage, annual rainfall and proportion of irrigated paddy area, extent of fertilizer use and plant protection measures have not significantly helped to improve paddy productivity in the state, (ii) low level of per hectare profit in paddy cultivation and low profitability of paddy compared to its alternative crops had resulted in the decline of area under paddy and (iii) other factors like the role of public distribution system in stabilising paddy prices, growing pressure on land, land price differentials, shortage of labour and capital, absentee land ownership, extensive use of paddy lands for non agricultural purposes and changing attitude of younger generation towards paddy farming have also contributed to the decline of paddy cultivation in the state.

This study is primarily based on secondary data collected from sources like the publications of the Department of Economics and Statistics, State Planning Board, Land Use Board etc. Primary data collected through a field survey conducted in Kuttanad region in which one hundred sample farmers were interviewed, were used to examine the current problems of paddy cultivation.

Considering the availability of reliable secondary data, period of the study begins from 1960-61 onwards. Overall performance of paddy crop is assessed by examining the growth rates in output and its components - area and productivity. For decomposition of changes in output an additive model in which area and productivity are taken as the pure components is used. Disaggregation is attempted both district wise and season wise. Absolute per hectare profits are estimated as the difference between per hectare value of out put and cost of cultivation. Cost of cultivation is estimated by adding the imputed value of household labour to paid out costs and profitability is estimated as the ratio of profit and cost.

Analysis of the sector wise growth rates in the State Domestic Product shows that the performance of primary sector had been comparatively poor in Kerala during the period 1960-61 to 1991-92. All the major indicators of agricultural development such as the changes in land use pattern and growth rates in area, production and productivity shows that the agricultural sector of the state economy had passed through three distinct stages corresponding to three different periods. During the first period (1960-61 to 1975-76) all the indicators of agricultural development had shown positive growth rates. During the second period (1975-76 to 1985-86) agricultural growth rates turned to be negative. The third period (1985-86 to 1991-92) is one of recovery and positive growth trends. Analysis of changes in cropping pattern shows that since early seventies, there had been a shift in area in favour of commercial crops at the expense of food crops.

Based on the growth trends in the performance of paddy crop, period of this study is divided into Period I (1960-61 to 1974-75) and Period II (1975-76 to 1991-92). During the first period growth rates in area, production and productivity of paddy crop in the state had been positive. Eventhough average annual growth rate in productivity continued to be positive, area under paddy and its production declined substantially during the second period. Disaggrgate analysis at the district level shows that the performance of Northern and Southern districts had been comparatively poor both in terms of the growth rates in area and production of paddy. Season wise analysis shows that during the last three decades, proportion of area under Autumn paddy and its relative share in total output had declined.

Decomposition of changes in output shows that the positive contribution of increase in area had been higher than the yield effect in increasing paddy production in the state during the first period. Eventhough the yield effect continued to be positive during the second period, a relatively higher negative area effect had resulted in the decline of total paddy production.

At the state level none of the major sources of productivity that we have examined had any significant role in enhancing paddy productivity. Area under HYV paddy in Kerala reached its peak level in the year 1977-78 and thereafter it began to decline. Inspite of a decline in area under HYV seeds, average annual growth rate in paddy productivity is found to be comparatively higher during the subsequent years. Rank correlation coefficient of the proportion of area under HYV coverage and per hectare productivity of paddy during the period 1978-79 to 1985-86 is estimated to be 0.1 which is not statistically significant both at 1 per cent and 5 percent level of significance.

Similarly, per hectare application of chemical fertilizers had drastically declined in the state since the substantial increase in its prices in 1991. However, in

subsequent years paddy productivity has shown positive annual growth rates. It is also observed that during the last decade, eventhough the average rate of fertilizer use in Winter season had been comparatively higher, average per hectare productivity of Winter crop is found to be relatively lower. It shows that the role of fertilizer application in improving paddy productivity at the state level is insignificant.

Again it is seen that variations in the amount of annual rainfall had not much affected paddy productivity in the state. Correlation coefficient estimated from the two variables for the period 1971 to 1991 is found to be 0.08 which is statistically insignificant. Like wise the proportion of irrigated paddy area in different districts of the state and district wise per hectare paddy productivity also do not indicate any significant positive relationship. Rank correlation coefficient estimated from the district wise proportion of irrigated paddy area and paddy productivity is found to be 0.21 which is not statistically significant at 1 percent and 5 percent level of significance.

While examining the relationship between the extent of the adoption of plant protection measures and paddy productivity in the state, it is observed that inspite of an average annual negative growth rate of (-)3.57 percent in the per hectare application of pesticides and insecticides during the period 1980-81 to 1992-93, paddy productivity has shown a positive growth rate of 2.02 percent. Similarly, eventhough plant protection costs for Winter crop had been comparatively higher than that of Autumn crop during the period 1980-81 to 1989-90, per hectare productivity of Autumn crop is found to be higher. It shows that an increase in the use of pesticides and insecticides in paddy cultivation need not result in an improvement in its productivity.

Thus, the findings of this study vindicate our hypothesis that none of the different sources of productivity had affected the per hectare yield of paddy in the

state in a significant way. Therefore the increase in paddy productivity observed in Kerala since mid seventies can be attributed to the sustained decline in area under paddy, a process in which marginal paddy lands with comparatively lesser productivity had been going out of cultivation.

Low level of absolute per hectare profits and profitability of paddy crop have played a key role in bringing down the area under the crop in the state. Labour costs, fertilizer costs and costs on seeds and seedlings are the major components in the per hectare cost of cultivation of paddy. Since paddy crop is highly labour intensive, labour costs alone constitute nearly two-third of its total costs. Due to the abnormal increase in the wages of farm labourers, during the last decade annual growth rates in labour costs had been higher than the growth rates in total costs. Season wise analysis shows that compared to Autumn and Winter crops, cost of cultivation had been higher for the Summer crop. Average per hectare value of output is also found to be higher during this season.

Per hectare profit and profitability of paddy crop had been positive in all the three seasons during the period 1980-81 to 1989-90. However, annual growth rates in profits and profitability of Autumn paddy are found to be declining while the respective growth rates for Winter and Summer crops had been positive. Instability in per hectare profit is also found to be higher for the Autumn crop. Eventhough area under paddy in all seasons had declined in the state during this period, rate of decline in area had been more acute during the Autumn season. It supports our hypothesis that the rate of decline in area under paddy crop in Kerala is related to the absolute profit and profitiability of the crop.

Comparative analysis of profit and profitability of paddy with some of its alternative crops shows that paddy cultivation is less remunerative in Kerala. During the period 1980-81 to 1989-90, per hectare average annual profit of coconut, banana

and tapioca crops are found to be much higher than that of paddy. Profitability of alternative crops are also found to be relatively higher. Meanwhile profits had shown greater instability in paddy crop that made its cultivation more risky for the farmers. All these factors have resulted in the conversion of paddy fields for the cultivation of alternative crops in the state.

Public distribution system had acted as a stabilising factor of paddy prices in the state by affecting the supply side. In Kerala annual import of rice on state account far exceeds the availability of rice from domestic production. As a result of it while the whole sale prices of all other major agricultural products in the state had increased more than three-fold within the period 1979 to 1992, overall increase in paddy prices was only two-fold making its cultivation less remunerative. Thus the public distribution system has played major role in the decline of paddy cultivation in the state.

Growing pressure on land and the resultant hike in land prices also lead to the decline of paddy growing areas. In Kerala land is not only regarded as a means of production but also as an asset that can be used for speculative investment. Therefore many speculative investors without any farming interest enter the land market as buyers, only to sell it later at higher margins. Since paddy land prices are comparatively low, conversion of it for the cultivation of alternative crops in itself increases the property value of farmers. Due to the same reason, paddy lands are extensively used for non agricultural purposes. Again as paddy cultivation needs much personal care and supervision, absentee land owners who are employed in other sectors and still possess paddy fields prefer to keep it fallow or convert it for the cultivation of perennial crops which need lesser care and personal supervision. Thus the above findings are in confirmation with our hypothesis that the growing pressure on land, land price differentials and use of paddy lands for non agricultural purposes have resulted in the decline of area under paddy in the state.

Our field investigation shows that nearly two-third of the paddy farmers in Kuttanad region are medium farmers who cultivate 0.4 hectares to 2 hectares of land. Labour costs constitute a major proportion of the cost of cultivation of paddy. More than 90 percent of labour hours needed in paddy farming in the study area are required for the preparation of soil, weeding and harvesting and the proportion of the female labour requirements is found to be much higher than that of male labour requirements. Mechanisation is widely adopted in operations like dewatering, ploughing and threshing. For harvesting wages are given in kind as a fixed proportion of the harvested crop.

All of the sample farmers in the study area are using HYV seeds in their paddy fields. Nearly all of them use chemical fertilizers while a small minority are using organic manures along with chemical fertilizers. Per hectare cost of cultivation during the Varsha (Autumn) crop season in 1995 amounted to more than ten thousand rupees and average value of product is found to be much higher. For their capital requirements a considerable portion of paddy farmers in the study area depend on village money lenders and indigenous bankers. A vast majority of farmers believe that the profitability of paddy cultivation in Kuttanad region has been declining over the past years.

The most important problem involved in paddy cultivation in the study area is the shortage of farm labourers. Growing employment opportunities for the rural work force in other sectors, self employment opportunities, comparatively lower wage rates and poor work conditions of farm labourers, general improvement in the economic status of rural households, growing aversion of younger generation to farm works, implementation of land reforms and the resultant distribution of paddy fields to landless labourers etc., are found to be the major causes for labour shortage in the farm sector.

This study shows that for majority of paddy farmers in the study area, paddy cultivation is only a subsidiary occupation. Many of the sample farmers are engaged in business or are employed in government or private services. Since they are not full time farmers, often they lack genuine interest in paddy farming. Growing aversion of the younger generation from farmer households also adversely affects the prospects of paddy cultivation in the study area. It is observed that 86 percent of the sample farmers fall in the age group of 40 years or above and 13 percent of them are more than 65 years old.

The prevailing system of giving out land on lease is another problem involved in paddy cultivation in Kuttanad region. Nearly one-third of the sample farmers are cultivating in paddy lands taken on lease. Since lands are given for a single crop season, paddy cultivators are reluctant to undertake any permanent development measures in leased lands. It leads to declining productivity in subsequent seasons. Abnormal increase in input prices, high rate of crop failures, hesitation of farmers to raise a second crop from their fields, inadequate infrastructural facilities and lack of a proper system of marketing are some of the other important problems in paddy cultivation in the study area.

Moreover, agricultural research programmes in the state had not been very successful as far as the requirements of paddy farmers in the study area are concerned. Since the introduction of the HYV seed "Jyothi" in 1972, so far no better varieties of seeds were developed by any of the research institutions in the state. Many plant diseases and pests that ruin paddy plants could not be effectively controlled. Menace of weeds like salvinia and sedges also create problems to the paddy farmers. Absence of an effective agency to co-ordinate and supervise the farming operations in Kuttanad region and the strained farmer-labour relations that exists in some parts of the study area also adversely affect the prospects of paddy farming in this region.

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