A summary of conclusions
CHAPTER VIII
A SUMMARY OF CONCLUSIONS

The growth of population and per capita income demand a fast increase in supply of foodgrains in India. The supply of foodgrains could mainly be increased by increasing their production. This could also be done to a limited extent by importing foodgrains and by making greater effort for mobilising and mopping up marketable surplus from the farmers. This study has mainly been concerned with the examination of issues relating to increase in productivity and marketable surplus by size of farms in a predominantly paddy growing district, Thanjavur in South India. To be more specific, the aspects examined in this study are as follows:

I. the relationship between farm-size, productivity and marketable surplus,

II. the relationship between farm-size, input use and productivity efficiency; and

III. the behaviour of marketable surplus over time and the effect of procurement policy on marketable surplus.

1 for consumption of urban population
The choice of the district falls on Thanjavur as the economy of the district has been mainly dependent on agriculture and paddy is the most important crop in about 75 per cent of the cultivated area. Besides it was one of the principally chosen IADP districts and as such could help to study the effect of large investment in agriculture.

For the time series analysis, secondary data from different published sources, were used. For the cross-section analysis, data were collected from the schedules of Farm Management Study of Thanjavur district pertaining to the year 1969-70. To facilitate comparison of cross-section analysis over the years, 150 farmers of the Farm Management Study were resurveyed for the year 1975-76.

The study of productivity and marketable aspect both over time and at the cross-sectional level was based on tabular presentation of data as well as regression analysis. Time series analyses, (a) on production offers a detailed analysis of growth in the productivity, area, production and input use of paddy
cultivation; and (b) on marketable surplus brings out the response of marketable surplus to production as well as procurement policy. This provides for a link between policy and empirical facts. Cross-section analyses of the basic data of the Farm Management Survey and repeat survey of the same sample farmers helps to identify the changes that have taken place in the farm-size productivity relationship and as well as marketable surplus relationship by individual farms.

To facilitate the logical comparison, constant prices have been used to value the output and input factors. Besides the debate on the inverse relationship between farm size and productivity and factors contributing to the relationship and postulated positive relationship between farm-size and marketable surplus, the distinction has been made between marketable and marketed surplus.

Apart from the usual analysis on the available data on marketed surplus, marketable surplus for individual farm has been estimated by making deductions for total kind expenditure comprising
of consumption, wage, seed, rent, customary payments etc. from the total grain output of paddy. This has been done to know the marketable potential of the farmers. Effect of tenancy on marketable surplus has also been examined. A new feature of the study is the weighted average price which has been worked out for each of the sample farmers.

Although the total output of paddy has increased, the rate of growth of paddy output has decelerated during recent periods in Thanjavur. The reason for this deceleration was found to be substantial decline in the rate of growth of area. The slower rate of growth of output has taken place in spite of considerable increase in fertiliser consumption per hectare and more or less the whole of paddy area being under high yielding varieties. This could be attributed to the decline in soil fertility as a result of continuous cultivation of paddy for a long time period and decline in the marginal productivity of fertiliser. Besides it may also be the result of excessive/inadequate irrigation affecting the output response of
fertiliser. As increasing production by bringing more area under paddy seems to be limited, production could be increased only by increasing productivity. Therefore, to increase productivity steps may be taken:

(a) to develop other sources of irrigation to supplement canal irrigation, and

(b) to improve the drainage system at the field level to avoid the problem of water logging during North-east monsoon.

Further, the deceleration in the rate of growth of output has also to be viewed against the achievement of substantially high level of yield per hectare of rice according to Indian standards in Thanjavur around early sixties. It is, therefore, understandable that the rate of increase of yield could have been slower from a high base yield.

The question of inverse relationship between farm-size and productivity per hectare of cultivated area could not be conclusively established either way for the year 1969-70 for aggregate of crops, although the productivity on small and medium size farms was higher than large size farms. However, in 1975-76, the
relationship between farm-size and productivity was observed to be inverse. This was also supported by the regression analysis when output per hectare of cultivated area was regressed on the size of individual farms.

Among the factors affecting productivity of land of paddy crop, land, labour and capital have been found to be explaining the variations in productivity. However, labour and land including the effect of irrigation appear to be more important. The sum of elasticity coefficients were found to be not significantly different from unity at both the points of time. It may, therefore, be concluded from the analysis that the returns to scale appear to be constant for paddy cultivation in Thanjavur District.

The relationship between farm-size and marketable surplus as well as marketed surplus of paddy was found to be positive for both the years under study. The proportion of marketable surplus to total output has increased in 1975-76 over that of 1969-70. Such increase was observed to be more in the case of small farms. In the case of very small farms, the marketable surplus has been
negative. The increase in marketable surplus could be attributed to the reduction in wage component of kind expenditures. Expenditure on consumption and seed has remained more or less the same at both the points of time. Kind rent component of total output has remained unchanged for medium, large and small farms. In the case of small farms there was fifty per cent decline in kind rent proportion in 1975-76 over 1969-70.

The share of small farms in total marketable surplus has shown an increase whereas the share of large farms has shown a decline. The share of medium farm has more or less remained unchanged.

The percentage difference between marketable and marketed surplus has remained unchanged over the years, whereas percentage of retention out of current production has declined nearly by one half. In regard to factors explaining the behaviour of marketable surplus, production and kind expenditure are found to be significant determinants. Family size and price turned out to be not significant.

With increase in output, marketable surplus also showed an increase. The main factor responsible for significantly affecting the marketable
surplus of paddy was found to be yield per hectare. Both productivity and farm-size were observed to be positively related to farm-size. Area and price factors have not exerted significant influence on marketable surplus. Even at the individual farm level, price has not been observed to have any significant influence. It may be pertinent to mention that in view of strict zonal restrictions on the movement of paddy from the district on private account and attempt to purchase the whole of marketable surplus through the public agencies at procurement prices, it appears that market prices have ceased to play any role in paddy market and hence to act as incentives to farmers for increasing their paddy production and marketable surplus. The procurement prices were found to be mostly lower than cost of production of paddy in Thanjavur. This affects the returns from cultivation and implies that less of own resources being available for intensive cultivation. This in turn might unfavourably affect the rate of growth of agriculture and would result in generation of less marketable surplus. This would also impede the process of
capital formation in the region and the resultant economic growth. Therefore, agricultural price policy should aim at fixing the price in such a way that it not only covers the cost of production but also leaves a sizeable margin towards profit.

Though zonal restrictions on the movement of foodgrains on private account has been abolished, a separate zone policy exists for this district even today and is detrimental to the interests of the farmers of all size-groups. **Ipso facto**, whether this policy of penalising the farmers especially the small farmers should continue - having continued nearly for two decades - and the transfer of benefits from low income producer to low income consumer is justified on equity grounds.