CHAPTER IX

SUMMARY OF FINDINGS, CONCLUSION AND SUGGESTIONS

In an agriculture dependent country with private ownership of land property, any decision made by the farmers will affect the volume and composition of production both at the micro and macro levels. The decision of farmers depends upon a complex number of factors - sociological, economic, environmental, technological and institutional factors. The studies in this field have analysed the problem at different levels by using different techniques and models with varying specifications. While some studies indicating price responsiveness of farmers, some other studies have revealed difference in price responsiveness between regions and crops. Most of the recent studies have come out with the result that the farmers are price responsive. Their price response result would have been due to confounded effect of technological advancement and improvement in the institutional condition, since, those studies were made during the period when the outlook of the farmers toward the adoption of new technology was about to change and the institutions started showing improvement in their performance. But those studies have neither used the technology factor nor adopted an appropriate specification of technology. Similarly, the institutional factors have not been considered in their analysis. Besides, those
studies either ignored the risk factor or adopted with inadequate specification. This altogether lead to rather a distorted picture about the supply response of farmers. In the past one and a half decade, there has been a spectacular change in the agricultural technology and institutional set up particularly in the Marketing and Banking. In the light of changing condition, an appropriate measure of the said factors if adopted in a model may give a true picture about the price responsiveness of farmers. Keeping this in view, the present study has been carried out in Periyar district, the agriculturally progressive district of Tamil Nadu with the objective of

(1) Analysing the factors influencing the supply of important agricultural produces under the changing institutional and technological condition.

(2) Estimating supply elasticities with respect to explanatory factors from the time-series and cross-section data.

(3) Studying regional variation in the supply response result.

(4) Examining the variation in the supply response result between crops and

(5) Making a comparative study of the price response results arrived through time-series and cross-sectional data.
The study covers fifteen years from 1973-74 to 1987-88 and twelve crops viz., Paddy, Sorgham, Cumbu, Ragi, Groundnut, Gingelly, Cotton, Tobacco, Chillie, Turmeric, Sugarcane and Banana. The cross-section study is made with reference to the crop year 1986-87.

**FINDINGS AND CONCLUSION**

The study has brought into light certain important characteristics of supply response. The analysis of cross-section data reveals the following points.

1. The preliminary analysis of cross-section data with the correlation analysis, $\chi^2$ test and Analysis of variance chosen according to their appropriateness reveals that the age of the farmer, education of the decision maker, family education of the farmer, family type, occupational status of the farmer, extent of family labour and caste of the farmer have no role in the allocation of area under the various crops. However, the analysis indicates significance of farm size, family income, asset holding of the farmer in their acreage decision.

2. The analysis also reveals that the competing crop for each of the crops under study is not the same for all the regions under study.

3. Both commercial crops as well as food crops respond to price changes. However, the price response looks very weak in the case of most of crops when compared
with their response to non-price factors. While, Cumbu, Rainfed Groundnut and Cotton have reacted to their own prices, Gingelly has responded only to relative price movement. Groundnut has responded both for its own price and relative profitability changes. Relative profitability has also influenced the rainfed Cumbu area along with the influence of competing crop's price. Rainfed Cumbu area has varied only for competing crop's price. Inter-crop difference in price response is very evident from the results of the study.

(4). The total irrigated area in the case of irrigated crops and pre-sowing season rainfall in the case of rainfed crops appear as the common influencing factors of crop area. Paddy, Sorgham, Groundnut and Tobacco have reacted primarily to the changes in the total irrigated area.

(5). The influence of technology factor is more pronounced in the case of commercial crops than in the case of food crops. While it shows its crucial role in deciding the area of Gingelly, Rainfed Gingelly, Chillie, Turmeric, Sugarcane and Banana, plays only subsidiary role in the case of Paddy, Rainfed Sorgham and Rainfed Cumbu.

(6). Risk factor also weighs in the acreage decision of the farmers. It shows it's considerable influence upon the area of Sorgham, Rainfed Ragi, Rainfed Gingelly, Tobacco, Turmeric and Banana. However it's influence is found at it's lowest ebb.
Similarly, the agricultural credit extended by the commercial banks has also influenced the farmers while deciding the area under Sugarcane and Tobacco.

Cost of cultivation per hectare does play its role in the decision making process of farmers while allocating area under Ragi and Banana.

The analysis of time-series data has brought to the lime light the following points.

In general, the farmers in Periyar district respond to relative price movements. However the degree of response differs between crops. In the case of Paddy, Sorgham, Ragi, Groundnut, Cotton, Chillie, Sugarcane, Tobacco and Turmeric, farmers have responded positively to relative price changes but their response is more marked only in the case of last two crops. On comparison of this result with the result of cross-section analysis there seems to be improvement in the price response result of the farmers.

The total irrigated area has indicated its major impact in the case of the crops in which the relative price has taken the secondary role in influencing the crop area. Where the relative price has taken the primary role, the total irrigated area turned out to be the secondary influencing factor. The areas of Paddy, Sorgham, Gingelly, Chillie, Cotton, Sugarcane and Banana have varied primarily to changes in the total irrigated area. The total irrigated
area constitutes as the common influencing factor of crop hectarage though it's importance differs between the crops. This result is in conformance with the cross-sectional result.

(11). While the technology and agricultural bank credit variables showing significant influence upon certain crop areas in the cross-section study show no impact upon crop hectarage in the time-series analysis. This is indicative of the fact that farmers are insensitive to the changes in these factors over a period of time.

(12). Consistent behaviour pattern of the farmers to risk variable is noticed only in the case of rainfed Gingelly. Besides this crop, the risk factor has also shown its influence in the case of Ragi and Cotton.

(13). Slow adjustment in the hectarage is observed in the case of Cumbu, Rainfed Cumbu, Gingelly, Turmeric, Sugarcane and Banana. All other crops have shown rapid adjustment in their hectarages.

(14). The test of significance for the differences in price co-efficients has discovered significant inter-crop variation in the price responsiveness of farmers. In the same way, it makes it clear that the price response result of time-series analysis is significantly different from that of the results of cross-section analysis. This implies that
the farmers' response to price changes at a particular point of time is different from their response over a period of time.

(15). The regional analysis reveals that the supply response of farmers is not uniform. There is differing behaviour pattern of the farmers in different regions of Periyar District. The importance of different factors in influencing the crop hectarage differs markedly between regions and between crops.

(16). Significant difference in the price response of farmers between regions is noticed for Paddy, Sorgham, Ragi, Grroundnut, Rainfed Cumbu and Rainfed Sorgham. But in the case of all other crops, the regions show no difference in the price responsiveness of farmers.

To conclude, the farmers in periyar district respond to price incentives. Their price responsiveness differs between crops, regions and time span of the study. District level aggregative analysis gives only the distorted picture about the supply response of farmers. Hence there is a need to ascertain the supply response by homogeneous sub-regions.

**SUGGESTIONS**

The results obtained in the study have some policy implications. The results of the study imply that it is possible to influence area allocation by manipulating the
prices of the crops. However, the study cautions against manipulating the prices of individual crops leaving the prices of competing crop uncontrolled. While fixing the prices of the crops, it must be fixed in relation to the prices of it's competing crop.

The important implication of the present study is that, the area under the crops can be increased by increasing the total irrigated area. While framing agricultural policy for development, due consideration may be given for more irrigation projects. Liberal financial facility may be provided to individual farmers for digging new wells and deepening the old ones.

Another significant point revealed for policy framers is that risk factor plays significant role in the hectarage allocation decision of farmers. The policy framers while framing price policy must provide means against risk and uncertainty arising out of fluctuations in the prices of inputs and outputs. Yield risk may also be considered and a measure of insurance against the yield risk may also be provided. Crop insurance scheme should be introduced and popularised in this regard.

Another point which is having significant policy implication is that the technology is not the consistent factor influencing hectarage under different crops over a period of time. To keep the agriculture in the phase of
development and boost up agricultural production, the farmers must be kept abreast of the technological developments taking place in agriculture. For this, Integrated production approach covering the supply of inputs at subsidised rates, supplying of improved varieties, field demonstrations of new agricultural practices etc., may be undertaken.

Though there is improvement in the marketing and banking, it is not upto the mark of influencing the production decisions of the farmers over a period of time. Hence, necessary steps may be taken to improve their performance so as to cover more number of farmers.

The core policy implication of the study is that there is inter-regional difference in the price responsiveness of farmers. The price policy should take into consideration these regional and crop variation in price response for fully realising it's desired goal of increasing agricultural production with the desired cropping pattern.