CHAPTER VII

SUMMARY OF FINDINGS AND SUGGESTIONS

This final chapter is the logical extension of the earlier discussions. This chapter carries the leading findings and suggestions in a summary form. A conclusion and the scope for further research are added.

India is the second largest producer of fruits, after Brazil, in the world. Its share in world production is 7 per cent. There has been a growing demand for fruits and fruit products in the country and the area under fruits has been on the increase on account of profitability of the enterprise. Fruit crop production and horticulture-based industries generate gainful employment to many. India has greater potential for exporting fruits and fruit juices to foreign countries and by earning the much needed foreign exchange. Among the fresh fruits produced in India, banana has emerged as the number one fruit and has great socio-economic significance, accounting for 31.7 per cent of total fruits in India. Tamil Nadu has the largest area under banana cultivation followed by Maharashtra. Among different districts in Tamil Nadu, Tirunelveli district is the most important producer of banana. Further, the soil and climatic conditions are highly suitable and favourable for banana cultivation. These are the main reasons for selecting Tirunelveli as the study area.
The proportionate probability sampling technique has been adopted to select 300 banana farms in Tirunelveli district. Three hundred banana farms were post-stratified into two categories namely Robusta and Nadu banana varieties. Out of 300 farms, 134 came under the category of Robusta variety banana and remaining 166 came under the Nadu variety.

In each category, the sample farms have been divided into two groups, namely small and large, based on the area under cultivation. The farms with less than 5 acre were grouped as small farms and farms with 5 acre and above categories as large farms. In the Robusta variety, out of 134 farms, 85 belong to the small size and remaining 49 belong to the large size. In the case of Nadu variety, out of 166 farms, 104 belong to the small size and the remaining 62 belong to the large size. The primary data for the study were collected during the agricultural year 2010-11.

In the foregoing chapters, cost and return structure of banana, determinants of yield, resource-use efficiency, marketing channels, marketing cost, price spread and marketing efficiency are presented.
7.1 LEADING FINDINGS OF THE STUDY

The following are the leading findings of the study:

A study on input-output structure of the cultivation of banana varieties namely, Robusta and Nadu revealed that the farms producing Robusta obtained significantly higher yield per acre than Nadu variety. The average yield per acre worked out to 18.16 tonnes for Robusta variety whereas it was 17.21 tonnes for the Nadu variety. The levels of variable inputs used per acre showed that the significant difference between two varieties was found with respect to human labour, chemical fertilizers, pesticides, propping and farm manure. With regard to the use of other variable inputs such as bullock pair and suckers, only a marginal difference was found.

Comparison was made with regard to the levels of inputs used and output realised per acre for small and large farms cultivating the two varieties. Under both varieties, small farms had performed better, yield-wise than large farms. It was observed that small farms had close personal attention at all stages and the scope for division of functions and delegation of responsibility was limited. Thus, it may be concluded that small farmers cultivating banana are better in terms of yield than large farmers.
The use of human labour, chemical fertilizers, pesticides and farm manure differed significantly between the two groups of farms cultivating Robusta and Nadu varieties of banana. In the case of Nadu variety, in the cost of propping significant difference was found between the groups of farms. It is inferred from the analysis that small farmers cultivated their land more intensively by applying more inputs compared to large farmers in the study area.

The pattern of labour employment and cost incurred on the various farm activities were broadly classified under seven heads, namely (1) preparatory cultivation, (2) planting, (3) organic manure, (4) chemical fertilizers, (5) work after cultivation, (6) plant protection measures and (7) harvesting and handling. It was observed from the analysis that the banana cultivation was found to be labour-intensive in the study area. The utilisation of female labour was higher than that of male labour in banana cultivation. The pattern of labour employment in small farms was similar to the pattern of labour employment in large farms. The small farms employed less hired labour than the large farms. It may be due to the fact that the involvement of family members was higher in small farms than in large farms in the study area.

Regarding the cost and return structure, the analysis revealed that Robusta yielded higher returns amounting to Rs.43113.15 compared to Rs.40151.16 in the case of Nadu variety. Though, the Robusta farms incurred high cost of production
(Cost C), they were benefited more in both physical and monetary terms of yield. It is also observed from the analysis that except for the expenditure on human labour, chemical fertilizers, farm yard manure and interest on working capital, other inputs exhibited the same pattern for both varieties.

In the case of small and large farms producing both varieties, the yield per acre realised by the small farms was significantly larger than that of the large farms in physical and monetary terms. This may be due to the effective personal supervision and farm management in small farms. Though the cost of production incurred was less for large farms, they could not receive yield to the level of small farms. This may be due to large scale cultivation, inefficient hired and contract labour and ineffective supervision. The higher share of human labour cost in total operational cost indicated the labour-intensive nature of plantain cultivation. The difference in rent may be due to the imperfection prevailing in the land market in the study area.

The economics of cultivation of Robusta and Nadu variety showed that each rupee spent resulted in a benefit of Rs.0.82 in the case of Robusta and Rs.0.78 in the case of Nadu. The net returns over the operating cost as well as the cost of production earned by small farms were slightly higher than those of large farms. The benefit-cost ratio revealed that both the farms enjoyed equal benefits out of the investment made.
Thus, it may be concluded from the analysis of cost and returns structure that the Robusta farms benefited more in terms of yield and net returns per acre. Though the cost of cultivation per acre was more for Robusta variety, it was more profitable and beneficial to cultivate Robusta variety than the Nadu variety in the study area.

In the identification of determinants of yield of Robusta and Nadu varieties of banana and of small and large farms producing these varieties, a log-linear regression model was fitted. The results indicated that the explanatory variables included in the model together, explained about 80 per cent variation in yield of Robusta and Nadu banana. In the case of Robusta variety, the variable inputs namely human labour, fertilizers, pesticides and capital flows were found to be statistically significant and positively related to yield. Among the significant variables, human labour had a greater influence on yield of Robusta banana, followed by the variable pesticides. In the case of Nadu variety, the variables that influenced were human labour, chemical fertilizer and pesticides and they were positively related to the yield of Nadu variety. Human labour was found to be the most significant input influencing the yield of Nadu variety. The results indicated that the banana cultivation was more labour intensive in the study area.

In order to examine whether structural differences existed between the farms cultivating Robusta and Nadu, Chow’s test was applied. The results
indicated that there existed a structural difference between the two varieties of banana. Insignificancy of intercept dummy indicated that the nature of technical change was neutral for both group of farms. In the slope dummy, the coefficient corresponding to pesticides emerged statistically significant. It indicated that the structural difference was caused with respect to the application of pesticides.

The results of regression model fitted to the different categories of farmers producing Robusta indicated that the pesticides was the most important significant variable influencing the yield of banana for small and large farms producing Robusta variety. The variable, fertilizers followed it. Structural difference existed between small and large farms in the study area. The difference was found only at slope level caused by the variable capital flows.

In the case of Nadu variety, among the significant variables, pesticides and capital flows were found to be most influential variables on yield of Nadu banana for small and large farms respectively. The structural difference existed between two groups only at slope level in terms of the variables, pesticides and capital flows.

The channels through which banana was marketed was identified as three in Tirunelveli district. More than 71 per cent of the producers preferred to sell through commission agents; 19.33 per cent and 9.33 per cent were sold through wholesalers cum retailers respectively.
The availability of credit facilities from commission agents and easy to sale were found to be the major reasons influencing the selection of middlemen for the sale of banana in Tirunelveli district.

The marketing costs incurred by the small farmers when sold through village traders, wholesalers cum retailers and commission agents were Rs.281.06, Rs.330.47 and Rs.309.02 respectively. But in the case of large farmers, the costs were Rs.371.16, Rs.422.74 and Rs.341.77 respectively. The marketing cost was found to be high in Channel I for small farms and Channel II for large farms. The net price received by the farmers was lower due to the higher marketing cost.

The results of marketing efficiency computed by the Shepherd’s formula, Acharya and Agarwal’s formula and composite index method showed that Channel III, namely commission agents was the most efficient channel in banana marketing.

7.2 A FEW SUGGESTIONS

Heavy wind, flood and incidence of pest and disease result in low yield which badly affect the financial position of the farmers. At present there is no crop insurance facility for this particular crop. So, the government should introduce crop insurance scheme for this crop also and it should be made compulsory for banana growers to utilize the insurance scheme. Often banana
crop was badly affected by the cyclones and floods in the area. Hence, the affected farmers should get due compensation from the insurance company as it is done for paddy these days.

It is suggested that causarina may be planted around the banana’s place of cultivation as a windbreaker to save the banana plants from lodging due to heavy wind.

As banana yields food fibre, fibre production and papermaking from banana pseudostems are commercial possibilities. Hence, it may be profitable to established paper, dye from pseudostem juice and crude rope industries in Tirunelveli district to solve the rural unemployment problem to some extent.

Allied agro-based industries can be established in and around the areas of banana cultivation. Food articles like banana crops, jams, flour and powder can be made from banana. This will solve the food problem to a considerable extent as in the state of Kerala (India) where majority of people consume banana in different forms.

In this study area farmers, were found not to attach importance to fertilizers and pesticides. The farmers are well aware of their importance but due to insufficient funds, they are not able to apply fertilizers and pesticides as per the recommendations of the agricultural scientists. Besides, every year the costs of
fertilizers and pesticides keep increasing. Hence, it is suggested that costs of fertilizer and pesticides should be reduced, or they may be applied to farmers at subsidized rates.

New techniques and scientific farming have not yet reached this area fully. Agricultural extensive officers should help the farmers in cultivating banana on a scientific basis. So, that the production can be increased.

Loans given by the banks to the farmers are not adequate due to the increase in the cost of production. The banks and co-operatives should make necessary arrangements to increase the loan amount to meet the requirement of the cultivators.

7.3 POLICY IMPLICATIONS

Agriculture plays a dominant role in accelerating the speed of economic development. Agricultural commodities are produced on a mass scale due to technological diffusion in Indian agriculture. In this study, the researcher had pointed out some major problems faced by the banana-growing farmers. The researcher has made some suggestions, which may be followed by the government of Tamil Nadu. The bright future of the banana grower depends upon his courage to meet risks and also adopt modern cultivation practices. Crop insurance, subsidies by the government, assured water supply; remunerative prices through
regulated markets, adequate compensation for loss due to heavy wind and pest attack may be provided by the government. Such measures would help in a large way to encourage the cultivation of the banana crop. Since banana cultivation is highly labour intensive the government may encourage banana growers announcing ‘manium’ (gift) and incentives to bring more land under banana cultivation. This can solve rural unemployment and disguised unemployment to a large extent.

7.4 CONCLUSION

The researcher feels happy and satisfied as she gives the final touches to this work. She could study a significant agricultural problem. Agriculture has been regarded as the backbone of India’s economy and as Mahatma Gandhi, our esteemed Father of the Nation used to say, “India lives in her villages”. The contribution made by the vast commercial sector has been one of the main reasons for the emergence of India as a world economic super power. Above all, this is a local and so a real problem. This is a modest and humble research work, but it will be useful and add to creative type of knowledge. There are problems in banana cultivation but as the renowned Management Guru, Peter Drucker says, “Every problem has solution”. A few suggestions are submitted with optimism. If they are given a try, it will pave the way for greater success.
7.5 SCOPE FOR FURTHER RESEARCH

The present work offers some scope for further research in this field. A few topics could be the following:

(a) An evaluation of banana cultivation

(b) An analysis of storage facilities of banana

(c) Comparison of the marketing channels for banana and other farm yields.

(d) The cost and returns trends in banana cultivation and

(e) The scope for export of banana to other countries.