CHAPTER – VI

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION

6.1 INTRODUCTION

Agricultural sector plays an important role in the overall economic growth of India. Firstly, it provides the increasing demand for food and raw materials. Secondly, the agricultural commodities account for a major share of total foreign exchange earnings of the country. Cashew is one of the important agricultural commercial crops which play a vital role in foreign exchange earnings. From the point of view of farmers as well as exporters, the current emphasis that cashew is receiving, as a horticultural crop from the research and development front, is a welcome sign.

At present India has a processing capacity of nearly seven hundred thousand metric tonnes and to meet the raw nut demand, the country depends partially on imports from several countries in Africa and in recent years, from south-east Asian countries. In order to promote the cashew cultivation, all India co-ordinated spices and cashew improvement project was de-linked and an independent National Cashew Research Project was initiated with newly established National Research Centre (NRC) for the crop. Hence the present study is an attempt to analyse the production and marketing of cashew in Tamil Nadu.
Both primary and secondary data were used for the present study. The secondary data relating to area under cultivation, quantity and value of cashew export and import and prices were collected for a period 1996-97 to 2005-06. For the purpose of primary data collection, total of 300 sample farmers from the selected five districts were randomly selected. The primary data collected pertain to the year 2006-07. The farmers were post-stratified into two groups namely small farmers (168) and large farmers (132).

The second chapter deals with cultivation of cashew, historical background of cashew, varieties of cashew, value of cashew, volume of cashew cultivation, etc. Cashew nut contains 44 per cent fact (82 per cent of this fat is unsaturated fatty acids) 22 per cent carbohydrates.

India is a largest producer of cashew in the world. Cashew is mainly cultivated in coastal areas of India, viz., Andhra Pradesh, Tamil Nadu, Orissa, West Bengal (East Coast Areas), Kerala, Karnataka, Goa and Maharashtra (West Coast States). The production of cashew in India takes place in Maharasstra first, Andhra Pradesh second, Orissa third, Kerala fourth, Tamil Nadu fifth, Karnataka sixth, Goa seventh and West Bengal in the eighth place. In India, 8,55,000 hectares cashew cultivated in 2005-06 the production of cashew in this year is 5,73,000 metric tonnes.

In India 41 cashew varieties have been released for commercial cultivation. The main varieties of cashew in Tamil Nadu were VRI-1, VRI-2,
VRI-3 and VRI-4. The above varieties are released by Regional Research Centre, Virudhachalam.

In the foregoing chapters, matters relating to cost, returns and farm size-productivity, determination of yield, yield gap, yield constraints, factors associated with yield gap, export of cashew, marketing channels and problems of marketing have been discussed. The major findings along with conclusion and suggestion are now presented in this chapter.

6.2 SUMMARY OF FINDINGS

In chapter III, the characteristics of the selected farmers, the cost of cultivation of cashew, returns, farm size and productivity relationship and opinion of farmers have been discussed.

The findings of the study are summarized as follows:

1. Out of the 300 sample farmers 168 (56 per cent) farmers had the size of land holding of less than 5 acres whereas the remaining 132 (44%) farmers had the size of land holding up to 5 and more than 5 acres.

2. In the study it was found that 231 (77%) of the sample farmers belonged to the age group of below 40-60 years followed by the age group of below 40, 50 (16.7%) and above 60 age group and aged 19 (6.3%).
3. Out of the 300 farmers, 101 (33.7%) were illiterate, 75 (25%) had studied up to elementary level, 83 (27.7%) studied up to high school level, 17 (5.7%) studied up to secondary level, 24 (8%) studied up graduate and there was no post-graduate and other diploma holders.

4. Out of the 300 farmers, the main occupation was agriculture for 225 (75%) another 75 (25%) were took up agriculture as their secondary occupation.

5. Out of 300 sample farmers, 215 farmers (71.6%) cultivated traditional variety of cashew while 26 (8.7%) VRI-2, 18 (6%) VRI-3, 18 (6%) cultivated VRI-1, 17 (6%) VRI-4, and 6 (2%) farmers cultivated hybrid varieties of other States such as Andhra Pradesh, Kerala, Karnataka, Goa, etc.

6. Out of 300 sample farmers 282 (94%) farmers were involved in the dry farming cultivation of cashew and another 18 (6%) followed the irrigated system.

7. Out of the 300 sample farmers 7(2.3%) farmers owned open well, 5(1.7%) had borewell, 6 (2%) farmers had drip irrigation facility as the source of irrigation for the cultivation of cashew in the study area.

8. Analysis of the yield per acre of Tamil Nadu cashew cultivation revealed that the hybrid variety provided high yield, viz., 340 kilogram per acre and traditional variety 232 kilogram per acre.
9. Analysis of the average number of tree per acre provided the result: for the trees 'up to the age of 10 years' there were 51 trees per acre, 10-20 years, 33 trees per acre and above 20 years, 30 trees per acre.

10. Out of the 300 sample farmers, 96 (32%) farmers had own source of cashew seedling, 99 (33%) got seedling from traders and 105 (35%) got seedling from the horticulture department.

11. Out of the 300 sample farmers, 64 (21.3%) farmers were involved in intercrop cultivation in the cashew cultivated land and the other 236 (78.7%) were not involved in the intercrop cultivation. Among the inter-crop cultivated, a majority of 46 respondents cultivated 'pulses' as the inter-crop.

12. Among the problems faced by the farmers in cashew cultivation 'severity of pests and disease' topped the list, followed by 'inadequate training' and 'loss by theft'. First three ranks were assigned to these factors, respectively.

13. The main diseases which attacked the cashew in the study area were 'tea mosquito bug' and 'leaf mines'. Majority of respondents ranked these diseases as first and second, respectively.

14. Out of the 300 sample farmers, 260 (87%) farmers had taken preventive measures for controlling diseases and other 40 (13%) did not take any preventive measures during cashew cultivation.
15. Out of 300 sample farmers, 245 (82%) applied fertilizer to cashew cultivation and another 55 (18%) farmers did not apply fertilizer.

16. The majority farmers numbering 183 (61%) applied the organic fertilizers, 56 (19%) inorganic fertilizers only and 18 (6%) farmers applied both organic and inorganic fertilizer. Most of the respondents, say 69.8 per cent, preferred the organic type of fertilizer.

17. The majority of farmers 299 in number (99.7%) had not taken crop insurance as far as this study area is concerned.

18. Only 43.7 per cent of respondents averred that they received assistance from the Horticulture Department. Of this, majority of small and large farmers received assistance from horticulture department in the form of counselling on pest control. Hence, this was ranked first by them.

19. Regarding the types difficulties faced, the analysis revealed that the sample respondents had not faced any difficulties in getting loan from organized sector.

20. The procedural delay was the foremost difficulty in getting loans from the organized sector. 'Cash Security' was the other difficulty is this regard.

21. The analysis of cost and returns revealed that the expenditure in the first year on farms for small and large farmers were Rs.5388.12 and Rs.6312.92 per acre.
22. Expenditure for second year was Rs.3216.12 and Rs.4716.27 per acre for small and large farms respectively.

23. The expenditure during the third year was Rs.2163.94 per acre for small and Rs.2360.03 per acre for large farms.

24. It is inferred from the analysis that the cost for the establishment for trees decreased year after year for both small and large farmers.

25. But the cost was found to be slightly higher for large farmers than the small farmers.

26. The cost of cultivation of cashew was estimated on the basis of data collected from the survey. It is inferred from the analysis that the total cultivation cost was found to be high in the case of small farmers compared to the large farmers.

27. The total cost of cultivation was Rs.3375.93 per acre for small farmers and Rs.3854.96 for large farmers.

28. The amortization cost was higher for large farmers than small farmers.

29. The yield of cashew per acre was 174.37kg/acre and 192.76kg/acre for small and large farmers, respectively.

30. The gross income received was found to be higher in the case of large farmers than small farmers.

31. The rate of return was also found to be high for small farmers (Rs.3075.76/acre) than for large farmers (Rs.3662.68/acre).
32. In order to examine the relationship between farm size and productivity, a simple log linear regression model was fitted. The result revealed that there existed direct relationship between these parameters in the case of cashew cultivation.

33. The analysis of K.S test revealed the fact that there was difference in opinion of the farmers in respect of the importance to the statement 'cultivation of cashew is a profitable venture'.

34. It is inferred from K.S. test that there was a difference on assigning importance to the statement ‘reasonable profit is obtained for cashewnut’.

35. K.S. test revealed that there was a difference in opinion among the farmers regarding the statement 'there is a great potential for cashew'.

36. Further, K.S. test revealed that there was no difference in the opinion of the farmers on the importance given for the statements, (i) reasonable price was offered by middlemen and (ii) horticulture department extends all assistance.

In chapter IV, matters relating to determinants of yield, yield gap and yield constraints were discussed.

37. A Cobb-Douglas type production function was fitted to identify the major determinants of yield of small and large farmers cultivating cashew.
38. The independent variables chosen to explain the variation in the yield of cashew were (i) human labour (ii) fertilizer (iii) cattle manure (iv) pesticides and (v) capital flows.

39. In the case small and large farmers, all the five independent variables jointly accounted for variation of about 80 per cent as indicated by $R^2$ value.

40. Among the significant variables, pesticides had a greater influence on yield per acre of cashew of all types of farmers. It is followed by human labour.

41. Chow’s test revealed that there existed structural difference between the two group of farmers.

42. The results revealed that the structural difference existed at slope level and variable capital flows.

43. The analysis of yield gap revealed the existence of a gap between the potential and actual yield per acre in respect of both types of farmers.

44. The yield gap was found to be higher in the case of small farmers (22.91kg) than in the case of large farmers (19.92kgs).

45. The Garrett’s ranking technique was applied to identify the constraints faced by the farmers.

46. It is observed that the agro-biological factors such as severity of disease, water shortage and pest attack were identified as major constraints for both small and large farmers.
47. The high cost of labour was identified as major constraint of economic and institutional factors.

48. The chi-square test results revealed that the disease and pests were associated with yield gap for small farmers.

49. In the case of large farmers, high cost of fertilizer was associated with yield gap.

In chapter V, marketing of cashew in terms of system and practices, price trend, export and export earnings, channels of marketing, preference of middlemen, marketing cost, storage facilities and marketing problems have been discussed.

50. Export of cashew kernels during 2005-2006 was 114143 metric tonnes valued at Rs.251486 lakhs during 2005-2006.

51. There was an increase of 1.62 per cent in quantity from 1995-96 to 2005-06 and decrease of 2.07 per cent in value.

52. Export of cashewnut shell liquid during 2005-06 was 6,405 metric tonnes, valued at Rs.709 lakhs, against 1,735 metric tonnes valued at Rs.227 lakhs during the 1996-97.

53. There was a increase of 3.69 per cent in terms of quantity and 3.12 per cent increase in terms of value.
54. Cashew exports are engines of employment and this is what makes this industry very important to our country. It provides employment (direct and indirect) to about 10 lakh workers, 95 per cent of whom are rural women from the under-privileged sections of the society.

55. During 2005-06, USA continued to be our major buyer of cashew kernels importing 46,245 metric tonnes valued at Rs.969.51 crores, accounting for 39.01 per cent of our total exports in terms of quantity, and 39.49 per cent in terms of value. Netherlands was the second largest importer of cashew kernels from India with an intake of 19,360 metric tonnes, valued at Rs.385.07 crores, representing 16.33 per cent in quantity and 15.68 per cent terms of value.

56. Export to American zone was 40.47 per cent, European Zone 35.39 per cent, West Asia and Africa 11.12 per cent, South East and Far East zone 5.71 per cent, Oceanic zone 1.31 per cent.

57. There has been an increase of about 6.72 per cent to the American zone.

58. Exports to European zone and South East and Far East Asia zone showed a decrease of 3.08 per cent and 8.49 per cent, respectively.

59. Import of raw cashewnuts into India during 2006-07 was 5,86,044 metric tonnes valued at Rs.1,811.62 crores against 5,65,400 metric tonnes valued at Rs.2,162.95 crores during 2005-06. This was 3.65 per cent more in quantity and 16.24 per cent less in value compared to the previous year.
60. The average import price was Rs.30.91 per kg during 2006-07 against Rs.38.26 during 2005-06.

61. Majority farmers numbering 186 (62%) marketed their product immediately after harvest and another 114 (38%) farmers kept in storage their product for sale in future when prices were favourable to them.

62. The reason for marketing the product immediately after the harvest was 'to meet the family expenses’ which fact was indicated by most of the respondents. So, first rank is given to this reason by the small as well as large farmers.

63. About 60.7 per cent of the sample growers preferred to sell the produce to local trader, 15.3 per cent of the sample cashew growers sold their produce directly to wholesalers who were prepared to buy cashewnut from the growers when there was a great demand for cashewnut.

64. The marketing cost of cashewnut was very low because the local trader bought cashewnut at cashew farm gate.

65. Out of 300 sample farmers, 36% growers stored the cashew with the expectation of price raise and 105 sample growers stored the produce at their own houses while only 2 farmers stored the cashew at farm house.

66. Weight loss in storage has been incurred by the 84 sample respondents. Storage loss of cashew per quintal was up to 5 kg for 21 farmers, 5-10 kg for 47 farmers, 10-15 kg for 13 farmers and above 15kg for 3 farmers.
67. The sources of price information were friends and relatives for 89 (64%) cashew growers, village traders for 36 (26%); co-operative society for 13 (9%) and for only one 1 (1%) newspapers.

68. The study revealed that only 46.3 per cent of respondents are aware of the cashew prices.

69. The price realized per kg by the small farmers was – Rs.23 in 2000-01, Rs.25 in 2001-02, Rs.27 in 2002-03, Rs.30 in 2003-04 and Rs.41 in 2004-05 whereas it is Rs.27, Rs.30, Rs.32, Rs.34 and Rs.41 in the case of large farmers during the same years.

70. The study indicates that 40 per cent of small farmers and 47 per cent of large farmers faced problems in marketing cashew. Lack of marketing information on cashew was the major problem and price fluctuation was the next important problem faced by the growers. Delays in payment, inadequate storage facility were the notable problems of the cashew growers and lack of transportation was not a problem for cashew growers.

71. The average gross income of cashew farmers per acre / per year on sale of cashewnut was Rs.9,251, sale of cashew wood Rs.101 and sale of inter-crop income Rs.523. There were no earnings from sale of cashew apple.
6.3 SUGGESTIONS

The following suggestions are offered for betterment of production and marketing.

1. Liberal financial assistance to the cashew farmers such as crop loans, development loan, and for meeting irrigation facilities through commercial banks, co-operative banks and primary agricultural and rural development bank can be provided.

2. Vital information on marketing, viz., price, market, export etc., may be passed to the growers and traders through the media and other means of communication.

3. The Ministry of Agriculture of Government of Tamil Nadu may introduce new high yield varieties of cashew and their salient features are to be informed to the cashew cultivators.

4. The Horticulture Department of Tamil Nadu Government should take special efforts to improve cultivation methods. It must take preventive measures to control the disease of tea-mosquito bug and stem and root borer as these two diseases severely affect the cashew production.

5. The Tamil Nadu Forest Plantation Corporation (TAFCORN) may take efforts to extend production of cashew in all forest areas of Tamil Nadu.

6. The production of cashew in TAFCORN is fully based on organic cultivation, but the TAFCORN must get a certificate for organic farming in order to enjoy the available benefits.
7. The horticulture department must create the awareness of organic farming and the benefits to cashew cultivators and they provide bio-pest control technology information to the farmers.

8. The public is to be informed about medicinal uses of cashewnut and cashew apple.

9. At present Cashewnut and Cocoa Development Corporation is functioning in Cochin, Kerala, and it is mainly catering to the needs of cashew growers in Kerala. It is suggested that regional centres of cashew Development Corporation can be established in Tamil Nadu, preferably in Cuddalore, Sivagangai and Pudukkottai districts.

10. As a result of inadequate raw nut production, coupled with growing competition in the international market for raw cashewnut, India should pay immediate attention for increasing the production, and productivity of crop.

11. The government assistance through horticultural department is not available to cashew farmers. So, the government is contemplating on taking immediate action in this regard. The 'cashew farmers attitude that cashew is a dry farming crop' is erroneous. It is really an irrigated crop. Hence government should educate the cashewnut cultivators and farmers, provide necessary incentives and farm irrigation facility, so as to popularize cashew as an important food product.
12. The government, by providing uncultivated and barren land to the farmers free of cost, can increase cashew planting programmes in Tamil Nadu; thereby can increase cashew production to very high levels.

13. The length of the marketing channel affects the procurement price of cashewnut. So the government can directly procure cashewnut from growers through co-operative societies and fix the price of cashewnut.

14. The Tamil Nadu government can also establish a Cashew Development Corporation on the models of Kerala Cashew Development Corporation. This corporation can engage in activities relating to both production and marketing aspects of cashew, thereby avoid all the hurdles and impediments associated with the production and marketing of cashew.

15. The farmers should be advised to bring their produce, after removing immature and unhealthy nuts, to the market so that they can get reasonable price for their produce.

16. More number of co-operative societies may be organized so that the growers can market their produce through these societies and realize reasonable returns.

17. With a view to increasing productivity, the researcher suggests that hybrid seedling (high yield varieties) must be used extensively for increasing cashewnut production in Tamil Nadu.
18. The raw cashewnut requirement of the cashew processing industry in India has been estimated to be over 12 lakhs metric tonnes per annum whereas the availability from internal sources is about half of it. This point need to be borne in mind for increasing the indigenous production of raw cashewnut to make necessary steps to step up the indigenous production.

19. The cashew apples are not put to proper use and there has not been adequate return to the cultivators in Tamil Nadu but the cashew apple has significant economic value. It contains Vitamin ‘C’ (Five times more than orange), iron and Vitamin B1. The cashew apple can be eaten raw and used for production of jam, chutney, pickle, etc.

20. The cashew cultivators and public are not aware of cashew apples; thus cashew apples accrue no additional benefits for growers. In Goa, the cashew apple is used for preparing fenny, a locally popular distilled liquor.

6.4 AREA FOR FURTHER RESEARCH

The following areas are identified for further research.

1. "A Study on the Problems of Cashew Farmers" can be undertaken to analyse the entire problems of cashew farmers and suggest suitable remedial measures.
2. "A Study on the Awareness and Attitude of Agriculturists towards Crop Insurance" can be made to create proper awareness to agriculturists and their opinion towards crop insurance can be measured.

3. "Pricing Pattern of Cashew – An Analytical Study" can be conducted to examine how the prices are fixed for cashew by the farmers, marketers as well as by the cashew department.

4. "A Study on the Various Assistance Provided by the Government to the Cashew Farmers" can be made to analyse the type of assistance provided by the government and its utility to the farmers can be examined.

5. "Training of Farmers in Increasing the Productivity of Cashew" can be undertaken to study the various training programmes that are necessary for the farmers to enhance their productivity.

6.5 CONCLUSION

Thus, it may be concluded from the analysis that the large farmers have gained much than the small farmers producing cashew in Tamil Nadu. The main reason is that the large farmers cultivating cashew has adopted advanced methods of cultivation and spent money for protecting their crop. To meet the ever growing and stupendous growth in demand and increase export potential, the base of cashew cultivation has to be strengthened by developing improved processing and post-harvesting techniques.

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