CHAPTER VII
SUMMARY OF FINDINGS AND SUGGESTIONS

7.1 INTRODUCTION

7.2 MAJOR FINDINGS OF THE STUDY

7.3 SUGGESTIONS

7.4 CONCLUSION
7.1 INTRODUCTION

Rice is one of the staple food grains of millions of people across the world including Indians. Therefore attaining self-sufficiency in paddy production has been the goal of the Indian Government. With the introduction of economic planning there has been a steady increase in the area under paddy cultivation and productivity per hectare. However, in the matter of yield per hectare yield in India is far behind the major rice growing countries. The dependence on agriculture by too many people, poor techniques and traditional methods of production, inadequate irrigation facilities, marginal and small size of land holdings, and pattern of land tenure may said to be the reasons for the poor productivity.

Even though agriculture is the key player in providing employment to the people of rural India and in fulfilling food grain requirements and supplying the raw materials required by Indian industries, the farmers engaged in cultivation with mean landholdings feel that what they earn from cultivation is not sufficient to meet even their basic needs. This condition is the same for paddy cultivators. In India the problems of paddy cultivators are the same across the length and breadth of the country. So, a study of the production and marketing of paddy may help to formulate suitable policies to increase the production and productivity. The present study has been undertaken to focus on the problems faced by paddy cultivators by analyzing the factors of production, resource-use efficiency, their impact on productivity and the problems in the cultivation of paddy. The study was conducted in the Cumbum Valley of Theni district, Tamil Nadu. The objectives of study are comparing and analyzing the production and productivity
of paddy in select countries, Tamil Nadu and in the study area, estimating and comparing the cost structure and yield of paddy for different sizes of growers and examining the cost to the benefits in paddy cultivation and the problems in production, studying the resource-use efficiency in paddy cultivation, identifying existing marketing channels and evaluating the efficiency of different channels and highlighting the problems in the marketing of paddy and offering suggestions based on the findings with a view to improve production and marketing of paddy.

The study is co-coordinated with seven chapters. Both primary and secondary data have been used. The primary data have been collected from 250 sample respondents spread across three taluks which together form the geographical area of the Valley. Since the study was conducted in the Cumbum Valley the villages falling within the valley have been chosen to select the sample farmers. The primary data have been collected for the agricultural year 2005-2006 and the secondary data were for a eleven-year period from 1994. But secondary data pertaining to the district has been collected for a nine-year period from 1997, the year of formation of the district.

The study is empirical in nature and is confined to the Cumbum Valley Theni district, Tamil Nadu. Averages, percentages, trends calculations by the Least Square method, Compound Growth Rate using semi-log function, the Cobb-Douglas type Production Function Analysis, Garrett’s Ranking Techniques and measurement of marketing efficiencies are the tools used in the study. The major findings of the study are presented below.
7.2 MAJOR FINDINGS OF THE STUDY

1. It was found that India’s share in the world’s total cultivated area and the production of paddy during the study period indicated that the percentage of area ranged from 27.28 to 29.55 and that production ranged from 20.16 to 22.77. For all the years of the study the percentage of India’s contribution in the world’s total rice production has been lower than the proportion of area, indicating lower productivity per unit of paddy cultivated land. The per hectare’s average yield in Egypt was observed to be the highest throughout the study period: it was 9685 kilograms in 2004. The trend values for per hectare average yield also indicated that all the countries selected for analysis showed increasing tendencies except by Japan. The Compound Growth Rate (CGR) for the average paddy yield in Bangladesh was the highest with 3.80 per cent. The CGR of India was 0.69 which was higher than that of China and Indonesia but lower than that of other countries.

2. It was observed that India’s share as a percentage to the world’s total rice export in terms of volume ranged from 6.02 to 24.60 and in terms of value it ranged from 7.78 to 22.20 in the study period. Export to the extent of 49,69,000 tonnes in 2002 and export earnings to the extent of 1491.79 million US$ in 1998 were the highest figures noticed during the period. The trend values for India’s export volume and export values showed increasing trends.

3. Further it was noticed that the area under paddy cultivation, paddy production and yield per hectare of paddy in Tamil Nadu showed decreasing trends during the period under study. Likewise, the area and production of paddy in Theni district for a nine-year period from 1997 also showed a decreasing trend,
whereas the yield per hectare was on the rising scale. An observation of per hectare average paddy yield in the districts in the agricultural year 2004-05 indicated that per hectare paddy yield was the highest in Toothukudi district with 4138 Kgs. followed by Tirunelveli with 4134 Kgs. and Theni with 4033 Kgs.

4. As far as the reasons for preferring paddy cultivation among the sample respondents were concerned it was found that the farmers considered that the suitability of land the main reason. In both the seasons the cost of production decreased and the per acre average yield increased as the area of the farm increased. The cost incurred for cultivating one acre of land was Rs.11396.48 for small farmers, Rs.10957.45 for medium farmers and Rs.10699.89 for large farmers in Season I, the cost for these farmers in Season II were Rs.12042.37, 11706.72 and Rs.11034.67 respectively.

5. It was realised that the percentage of variable cost to total cost for small farmers in Season I was 43.83 and that of fixed cost was 52.12. These percentages in Season II changed to 42.89 and 52.74. Thus a decline of 0.94 percent in variable cost and an increase of 0.62 percent in fixed cost to the total cost in Season II was noticed. Among the components of variable cost the major amount was spent on Human Labour. The cost of human labour per acre in Season I was Rs.1244.57 (10.95 % of the total cost) and in Season II it was Rs.1274.47 (10.58 % of total). Of the components of the fixed cost the rental value of the land was Rs.6041.37 (50.17 % of the total) and interest on the fixed assets was Rs.309.45 (2.57 % of the total). Imputed value of family labour for one acre of land for small farmers was Rs. 460.53 in Season I and it increased to Rs.526.23 in
Season II. The least amount spent by small farmers was Rs.91.39 in both the seasons for paying permanent hired labour. However, its percentage to the total cost declined from 0.80 % to 0.76 % in Season II.

6. The operating expenses for medium farmers in the first season was found to be Rs. 4640.34. This was 42.35 percent of the total cost and was lower by 1.48 than by the expense incurred by small farmers. This size group (Medium farmers) spent Rs. 4974.01 (42.49 % of the total) on operating expenses in the second season. But of the components of operating expenses, the amount on human labour per acre was higher in Season I with Rs.1139.39 (10.40 % of the total) and with Rs.1179.70 (10.08 %) in Season II. The rental value of land in Season I was Rs. 5462.69(49.85 %) and Rs.5855.57 (50.02 %) in Season II. Interest on fixed assets for this group was Rs. 440.32 in both seasons, which was higher than for the small farmers. The imputed value of family labour per acre of land was lower than that for small farmers.

7. It was deduced that though the large farmers’ expenses on operating cost was lower than of other types of farmers, its percentage to the total cost was 42.87 % in the first season and 44.09 % in the second season. For the larger farmers the value of interest on fixed assets in both seasons was more than that for the other size groups, but the imputed value of family labour was lower than for the others in either season.

8. The cost-benefit analysis disclosed that for each size group of farmers the cost of production increased in Season II as compared to Season I. The production cost for one kilogram of paddy for the small farmers was Rs.4.69,
Rs.4.43 for medium farmers, Rs. 4.02 for large farmers and Rs.4.23 for overall farmers (all sample farmers combined) in Season I. In Season II the cost incurred by them for producing one Kilogram of paddy increased to Rs. 5.23, Rs.5.00, Rs.4.49 and Rs.4.75 respectively.

9. It was observed that in the first season, the per hectare average yield for small farmers was 2428 Kgs. for medium farmers 2476 Kgs. and for large farmers 2665 Kgs. These farmers’ yield in Season II declined to 2300, 2340 and 2504 Kilograms respectively. The average yield of the overall farmers also declined from 2570 Kgs.in Season I to 2422 Kgs. in Season II. Per acre maximum yield and also the minimum yield was made by large farmers. It was 2010 kgs. in Season I and 1900 kgs. in Season II. The range between per acre maximum yield and minimum yield was the highest for large farmers in both the seasons. But the Yield Gap (Maximum Yield – Average Yield) was the highest for medium farmers in both the Seasons. It was 517 Kgs. in Season I and 555 Kgs. in Season II. The lowest Yield Gap was for small farmers (428 kgs.) in Season I and large farmers (400 kgs.) in Season II.

10. It was disclosed that in both seasons the average yield for the medium and large farmers increased more than for the small farmers. In Season I per acre mean yield for medium farmers was at the level of 2476 Kgs. this was 1.98 per cent more than that of the small farmers’ 2428 kgs. Similarly the large farmers’ yield in Season I was 2665 kgs. per acre, which was 9.76 per cent more than the small farmers’ and 7.63 per cent more than the medium farmers’ yields. In Season II the increase in per acre yield for the medium farmers was by 1.74 per
cent more than for the small farmers, and that for the large farmers by 8.87 per
cent more than the small farmers’ and by 7.00 per cent more than the medium
farmers’ yields.

11. It was perceived that of the yield increasing methods such as
implementation of improved techniques of cultivation, application of more
manures, fertilisers and pesticides, cultivating hybrid varieties of paddy and
optimal utilization of the resources or inputs, the most preferred method by the
sample respondents was the application of more fertilizers.

12. It was observed that in both seasons the per acre income from the sale
of marketed surplus of paddy, income from the sale of the by product (straw) and
the total income increased as the area under cultivation increased, whereas the
value of the paddy retained per acre decreased. The cash income (sales value of
paddy + sales value of straw) for small farmers was Rs.11178.92, for medium
farmers Rs.12882.59, for large farmers Rs.15304.41 and for overall farmers
combined Rs. 13959.40 in the first season and these values were Rs.11039.86,
Rs.12969.59, Rs.15423.65 and Rs.14035.23 in the second season. The value of
paddy retained per acre of land was Rs.2184.00 for small, Rs.1055.60 for medium,
Rs.561.60 for large and Rs. 701.70 for overall farmers in the first season. But the
value of paddy retained by the small farmers in the second season increased by Rs.
67.02, that for medium farmers by Rs.88.40, that for large farmers by Rs.54.40
and that for overall farmers by Rs.81.20.

13. It was found in the study that the Net Operating Income (Gross
Income minus Operating Cost including depreciation on farm equipment) and the
Net Farm Income (Net Operating Income minus Fixed Cost) also increased along with the increase in the area under paddy cultivation. The Net Family Income (excluding the Imputed Value of family labour in the total cost) earned by small farmers by cultivating one acre of land in the first season was Rs. 2426.98. But it declined to Rs.1905.22 in the second season. A similar tendency was noticed for all other size groups and for all farmers combined. The Net Family Income for medium farmers was Rs. 3394.84, for large farmers Rs.5388.87 and for all farmers combined Rs.4334.02 in the first season and it declined to Rs. 2843.67, Rs.5234.76 and Rs.3993.53 for the size groups respectively in the second season.

The Net Profit earned (after including the value of family labour in the total cost) in Season I by cultivating one acre of paddy by small farmers was Rs.1966.45, by medium farmers Rs.2980.74, by large farmers Rs.5166.11 and by overall farmers Rs.4015.57. But these values declined by Rs.587.46 for small, by Rs.573.89 for medium, by Rs.161.13 for large and by Rs.360.13 for overall farmers in the second season.

The following reasons are attributed for the higher profits in large farms.

As the area under paddy cultivation increased

i) The mean yield per acre increased

ii) The mean value of paddy retained per acre for home and seeds declined

iii) The percentage of marketed surplus to per acre mean yield increased

iv) The per acre average income from sale of straw increased
v) The average cost of producing per kilogram of paddy declined

vi) The average selling price of marketed surplus increased.

14. By analyzing various costs of production with the help of ratios it was concluded that the Operational Cost, Fixed Cost and Gross Cost ratios to total income decreased as the farm size increased. The Operational Cost ratio for small farmers in Season I was 37.38%, for medium farmers 33.29% and for large farmers it was 28.91%. This ratio declined by 4.09% for medium farmers from small farmers’ 37.38%. But the ratio for large farmers showed a decrease of 8.47% over small farmers and 4.38% over medium farmers. The Operational Cost ratio for all farmers was more in Season II as compared with that in Season I. Even then the ratio declined as the farm size increased. The Fixed Cost ratio for small, medium, large and overall farmers was 44.45, 42.35, 37.13 and 39.63 per cent respectively in Season I but this ratio increased by 2.87% for small, 2.26% for medium, 1% for overall farmers. But the large farmers’ Fixed Cost ratio declined to 37.03% in Season II. The percentage of Gross Cost to Total income for large farmers was lower than that of small and medium farmers in both seasons. Further, the large farmers’ total income was 48.28 per cent more than the cost incurred.

15. The Benefit–Cost ratio is the net profit ratio. It is pointed out that the net profits for small, medium, large and overall farmers were 17.25, 27.20, 48.28 and 36.93 per cent of the total costs respectively in Season I, whereas the same declined by 5.8% for small, 6.64% for medium, 2.92% for large and 4.85% for overall farmers in Season II. However, the net profit for large farmers was the highest among all the farmers’ size groups in both seasons.
16. An analysis of the problems faced by farmers in the cultivation of paddy showed that ‘Increasing Cost of Production’ was considered the foremost problem faced by them. As far as the problems in labour are concerned, ‘High Labour Cost’ and ‘Lack of Co-operation’ were ranked respectively first and second by all farmers.

17. The determination of the efficiency of resources used in paddy production and the decision to increase profitability by spending more on resources was focused by applying the Cobb-Douglas type of production function. For the small farmers the value of co-efficient of multiple determination ($R^2$) was 0.95184 for Season I and 0.92657 for Season II, which indicated that in the Season I 95 percent of the variation in the first season’s yield and 92 per cent of variation in the second season’s yield were explained by the independent variables included in the function. In both the seasons the yield was significantly influenced by the variables area under cultivation, seeds and manures.

18. The value of co-efficient of multiple determinations ($R^2$) in either season for medium farmers was computed at 0.95 per cent. It was seen that 95 per cent of the variations in either season’s yield were explained by the independent variables included in the function. The production function calculated for medium farmers showed that paddy yield was significantly influenced by the area under cultivation in both seasons. Seed was significant in the first season but not significant in the second season. It may be said that an increase of one percent in seed could increase the mean yield by 0.083 per cent in the first season ceteris paribus. ‘Manures’ was not significant in the first season but significant in the
second season. An increase of one per cent in manures in the second season \textit{ceteris paribus} could increase the mean yield by 0.064 per cent. ‘Fertilisers’ was significant in Season I but not significant in Season II. An increase of one per cent in fertilizers in Season I \textit{ceteris paribus} may increase the mean yield of medium farmers from their present level by 0.11 per cent in that season. Human Labour was significant in Season I and not significant in Season II. Machine labour was not significant in the first season but significant in the second season. The medium farmers can increase their mean yield in Season II by 0.044 per cent with an increase of Machine Labour by one per cent in that season.

19. Further the value of co-efficient of multiple determination ($R^2$) for large farmers in the first season was at the level of 0.94 per cent and at 0.89 per cent in the second season indicating that 94 per cent variations in the first season’s yield and 89 per cent of the variations in the second season’s yield were explained by the independent variables included respectively in the function.

20. The production function calculated for large farmers brought to light that paddy yield was significantly influenced by the area under cultivation and fertilizer in the first season. But in the second season the paddy yield by this size group was significantly influenced by land (area under cultivation), seeds, fertilizers and human labour. It was observed that the mean yield by large farmers in the first season could be increased by 0.08 per cent by increasing the fertilizers by one per cent \textit{ceteris paribus} and the mean yield in the second season could be increased by 0.11 per cent by increasing seeds by one per cent \textit{ceteris paribus}. Likewise, an increase of 0.05 per cent in the mean yield by large farmers in the
The results of Production Function for overall farmers (all sample farmers) highlighted that in Season I all variables except human labour were statistically significant. But as far as the results for the second season were concerned it was clear that out of the seven variables considered for the production function calculations, fertilisers, human labour and machine labour were not statistically significant. Further, 98 per cent of the variations in either season’s yield were assumed to have been explained by the independent variables included in the respective season since the values of co-efficient of multiple determinations ($R^2$) were at 0.98625 and 0.98198 for first and second seasons respectively.

The following conclusions have been drawn from the results of the Cobb-Douglas type production function calculated for overall farmers.

i) An increase of 0.19 percent in the mean yield in Season I could be made by increasing the seed by one per cent in that season ceteris paribus.

ii) An increase of 0.03 percent in mean yield in Season I could be made by increasing the manure by one per cent in that season ceteris paribus.

iii) An increase of 0.04 percent in mean yield in Season I could be made by increasing the fertilisers by one per cent in that season ceteris paribus.
iv) An increase of 0.084 percent in mean yield in Season II could be made by increasing seed by one per cent in that season *ceteris paribus*.

v) An increase of 0.06 percent in mean yield in Season II could be made by increasing the manure by one per cent in that season *ceteris paribus*.

23. In addition the relationship between the output and the scale of inputs was measured by comparing the sum of regression coefficients with unity (value 1). The results showed that for small, medium and overall farmers the sum of regression co-efficient was more than unity indicating that these farmers operated on an Increasing Return Scale. But the sum of regression co-efficients for larger farmers was less than unity and hence it was concluded that large farmers operated on a Decreasing Returns Scale.

24. The economic efficiency of inputs or factors of production was evaluated by comparing the Marginal Value Product (MVP) of each input with its cost. The results of Resource–use efficiency by small farmers showed that in Season I the marginal physical products of land, seeds and manures were 2062, 3.3904 and 1.3694 respectively. The ratio of marginal value product to factor cost was more than unity. So it was seen that there was scope for increasing the use of the variables seeds and manures. In Season II the marginal physical product of land, seeds, manures and machine labour for the small size group of farmers were 2939, 2.3653, 2.3350 and 0.45 respectively. The marginal value product of seeds, manures and machine labour were Rs. 13.58, Rs.13.40 and Rs.2.58 respectively. The ratios of Factor Cost to Marginal Value Product for these variables were more
than 1 numerically. An increase of Rs.13.58, Rs.13.40 and Rs.2.58 in the value of return could be made by spending an additional one rupee on these variables.

25. It was noticed that the marginal physical production of the variables land, seeds and fertilizers were at 2701, 0.9007 and 0.2790 respectively for medium farmers in the first season. The marginal value product of the variables seeds and fertilizers were at the levels of Rs.4.9629 and Rs. 1.5375. Hence it was clear that there was possibility of increasing the value of returns by Rs.4.9629 and Rs.1.5375 by spending an additional Re. one on seeds and fertilizers respectively, since the ratio of the MVP to Factor Cost was more than unity. In Season II, of the significant variables, land, manures and machine labour had the marginal physical product values to the extent of 3106, 1.3792 and 0.0869 respectively. Since the ratio of MVP to factor cost for the input manures was more than one, the medium farmers could increase the value of their returns by Rs.8.1374 by spending an additional rupee on manures.

26. The results of Resource-use-efficiency by large farmers in Season I and Season II showed that the Average Physical Production and Marginal Physical Production of land were at the levels of 2664 and 2298 respectively. Those for fertilizers were 2.4393 and 0.1934 respectively. It was inferred that large farmers in Season I could increase the value of their net returns by Rs.1.1294 by spending an additional amount of Re. one on the input fertilizers. In Season II for the large farmers the marginal physical product of land, seeds, fertilizers and human labour were 1360, 1.3304, 0.1175 and 0.1396 respectively. The ratio of MVP to Factor Cost for the variable seeds was more than one. Hence it was observed that larger
farmers, in Season II, can further earn Rs.1.3304 by increasing the amount spent on seeds by Re one.

27. The results of Resource–use efficiency by all sample farmers indicated that in Season I the Average Physical Products of the variables land, seeds, manures and fertilizer were 2496, 10.6511, 13.2263 and 2.5327 respectively. The Marginal Physical Production of these variables were respectively 2455, 2.0676, 0.3706 and 0.1026. The ratio of the marginal value product to factor cost was more than unity for the variables seeds and manures. So, it may be seen that the overall farmers could increase their net returns value by Rs.11.76 by spending one rupee more on the variable ‘seeds’. Similarly an increase to the extent of Rs.2.11 in the net income may be made by increasing the amount on manures.

28. For the overall farmers in Season II the Average Physical Production of land, seeds and manures were 2360, 9.6429 and 20.3268 respectively. The marginal value product of seeds was Rs.4.9483 and that of manures was 7.3562. The ratios of Marginal Value Product to Factor Cost for these variables were more than one. So it was clear that an extra amount to the extent of Rupee one spent on the variable seed could increase the net income of overall farmers by Rs.4.95. Likewise, an additional one rupee spent on the input manures could fetch an additional income of Rs. 7.36. The results indicated that there was scope for increasing the mean yield as well as values of net returns.

29. It was seen that in Season I among the sample cultivators, respondents numbering 202 (80.80 per cent) sold paddy immediately after harvest and only 48 (19.20 per cent) stored the produce and sold later. But in Season II the number of
respondents effecting immediate sales declined to 138 (48.80 per cent), and the numbers who stored and sold later increased to 112 (51.20 per cent).

30. The reasons for the immediate sale of the produce were considered and it was understood of the reasons for immediate sales 90 (44.55 per cent) of the 202 respondents sold the produce immediately after the harvest mainly because the produce was not suitable for storage in the first season. This reason was followed by “Repayment of Loan” (18.81 per cent), “Non-availability of storage facilities” (16.84 per cent) “immediate cash receipts” (11.39 per cent) and “negative price fluctuations” (8.41 per cent). The harvest of the second season was sold immediately after harvest by only 138 sample respondents, of whom 53 (38.41 per cent) did so due to non-availability of storage facilities, 38 (27.54 per cent) for repaying loans, 23 (16.67 per cent) for immediate cash receipt, and 12 (8.69 per cent) for avoiding negative price fluctuations and the produce’s condition not being conducive to storing.

31. The reasons for storing the produce were viewed and it was found that in the first season among the respondents who stocked and sold the produce later, 24 (50 per cent) out of 48 did it for getting higher prices; similarly, in the second season higher prices motivated 60 (53.57 per cent) respondents out of 112. The absence of demand did not result in storing the produce in the second season, but for (4.17 per cent) respondents this was the condition in the first season. Buyers’ reluctance was found to be the reason for not effecting immediate sales by 8 respondents in the first season and 7 respondents in the second season. It was observed that 14 (26.16 per cent) respondents in the first season and 45 (40.18 per
cent) respondents in the second season stored their produce for getting loans from agricultural credit societies.

32. The following channels were identified to be operating in the distribution of paddy in the study area.

**Channel I** : Cultivators–Village Traders–Commission Agent–Rice Millers

**Channel II** : Cultivators–Commission Agents–Rice Millers

**Channel III** : Cultivators–Rice Millers

**Channel IV** : Cultivators–Regulated Markets–Licensed Whole Salers (Paddy)–Rice Millers.

33. Of the three agencies engaged in the distribution process, the respondent cultivators’ most preferred agency was Commission Agents followed by Village Traders, Rice-Millers and Regulated Markets. The number of sample cultivators who preferred these agencies were 84, 66, 59 and 41 respectively. As far as the individual size groups and preferences of marketing agencies were concerned it was noticed 32 out of the 90 Small Farmers (35.56 % of the size group) preferred the agency Commission Agents, whereas 20 (21.28 %) of the Medium Farmers and (32) 48.48 % of the Large Farmers selected this agency to sell their produce. Regulated Markets were chosen by 22.22 per cent of the Small Farmers 12.77 per cent of the Medium Farmers but only 13.6 per cent of the Large Farmers. The selection of Village Traders and Rice Millers by the size groups Small, Medium and Large Farmers has been 33.33, 34 and 6 per cent, and 8.89, 31.91 and 31.82 per cent respectively.
34. It was seen that in Season 1 the Marketed Surplus increased as the farm size increased, but the percentage of quantity retained as a percentage of production decreased. The highest percentage of storage loss was incurred by small farmers (0.99 % of total production), the lowest by large farmers (0.49%). When all the farmers for both seasons were compared the percentage of marketed surplus to per acre mean yield in the first season was 92.38 per cent and for the second season it was 91.70, and thus the marketed surplus in the first season was higher by 0.68 per cent. It was found that the percentage of Marketed Surplus increased as the farm size increased in both the seasons.

35. It was indicated that the marketing costs and marketing margins of intermediaries chosen by small farmers in first seasons showed that in Season I the average selling price of paddy was Rs.720. The marketing costs in the channels 1 through 4 were Rs.73.21, Rs.46.45, Rs.156.50 and Rs.72.25 respectively. The highest marketing cost was associated with the third channel. Marketing margins in channels 1, 2 and 4 were Rs.117.29, Rs.112.85 and Rs.119.45 respectively. The highest amount of marketing margin was made in channel 4 while the lowest marketing margin was noticed in channel II. The producer’s (cultivator’s) share in the consumer’s rupee was the highest in channel III with 78.26 per cent. The producer’s share was the lowest in channel IV with Rs. 528.30 representing 73.38 per cent of the consumer’s price.

36. The selling price of paddy in Season II was Rs. 770 per quintal. It was found that in Season II also the marketing cost was the highest in channel III (Rs.154.90) and the lowest in channel II (Rs.54.05). As compared with Season I
The marketing costs in channels I, II, and IV increased by Rs.9.72, Rs.7.6 and Rs.4.13 respectively, but in channel III it declined by Rs.1.60. The marketing margin in channels I and IV showed an increase of Rs.4.84 Rs.28.57 respectively, whereas that in channel II declined by Rs.4.15. The percentage of the producer’s share in the Rice millers’ (consumers’) rupee in channels I and IV declined but increased in channels II and III.

37. It was realized that the Medium farmers’ share in the consumer’s rupee was the highest in channel III with 79.77 percent trailed by 76.58 percent in channel II, by 75.98 percent in channel I and by 73.85 percent in channel IV. The highest amount of marketing cost per quintal was in channel III (Rs.145.67) and the lowest in channel II (46.76). The highest amount of marketing margin was earned by intermediaries in channel IV (Rs.121.84) and the lowest in channel I (Rs.99.02). The commission agent’s marketing margin was the highest both in terms of value and as a percentage of the producer’s share in the consumer’s rupee.

38. An observation of prices received by large farmers indicated that the marketing costs and marketing margins of middlemen engaged by them in selling their produce in Season I showed that the large farmer’s share in the rice miller’s price was the highest in channel III with Rs. 597.86 (83.04 percent). Next to this, their share was the highest in channel II with Rs.585.27 (81.29 per cent), followed by channel I with Rs.556.27 (77.26 per cent) and channel IV with Rs.551.82 (76.64 per cent). Among the middlemen involved in the distribution process, the wholesalers engaged in channel IV received the highest amount of the marketing
margin, channels II and III respectively followed this channel in so far as the highest amount of marketing margins was concerned. For the large farmers in Season II marketing cost channel I was Rs. 73.82, Rs.53.22 in channel II, Rs.129.36 in channel III, and Rs.74.34 in channel IV. The marketing margins of the channels I, II and III were Rs.91.25, Rs.86.78 and Rs.96.91 respectively.

39. The overall farmers’ share in the rice miller’s rupee was found to be the highest in channel III with Rs.581.24 and 80.73 percentages. In channel II the amount of the producer’s share in the consumer’s rupee was Rs. 567.85 (78.87 percent) of Rs.720, the rice miller’s price, Rs.540.52 (75.07 per cent) in channel I and Rs.531.40 (73.81 per cent) in channel IV.

40. It was noticed that for the overall farmers in both the seasons the producer’s share in the rice miller’s rupee was the highest along with the marketing cost in channel III. The percentage of producer’s share was 80.73 per cent and the marketing cost was 19.27 per cent.

41. The price spread in the distribution channels showed that the intermediaries utilized by small farmers in marketing their produce were highest in channel IV with Rs.191.17; in Season I this was followed by Rs.190.50 in Channel II, by Rs.159.30 in Channel II and by Rs.156.50 in Channel III. In the second season also the highest to the lowest amounts of price spread were associated with the same channels though the amount varied. The percentage of the price spread to the selling price increased by 2.52 in Channel IV. For the medium farmers the price spread was the highest in Channel IV in both seasons and the lowest in Channel III. The medium farmer’s share in the rice millers’
rupee was higher in Channel III in both seasons than in other channels. The percentage of the Large farmers’ share in the consumer’s rupee in both seasons and in all the channels was higher than that for other farmers’.

42. It was found that in Season I and in Season II the most efficient channel for all farmers was Channel II. For all the size groups this channel was considered the most efficient when utilized by medium farmers, as the percentage was higher than for the other farmers. In this channel II the only intermediaries linking the paddy producers and the consumers (rice millers) were the Commission Agents. Next to Channel II the most efficient channel observed was Channel IV, which involved the services of licensed paddy whole salers functioning in Regulated Markets. Channel I and Channel III occupied places of III and IV as far as efficiency was considered.

43. In so far as the problems in marketing of paddy are concerned the prominent problem faced by overall, medium and large farmers was the lack of storage facilities. The fluctuation in prices of paddy was considered the prime problem by the small farmers, but this problem was ranked second by overall farmers and large farmers and seventh by medium farmers.

7.3 SUGGESTIONS

1. The present study indicated that the per acre yield and the net income of the farmers increased as the size of farms increased. Therefore, increasing the farm size can be suggested so as to increase the income of farmers especially the farmers with mean operational holdings. Increase in the farm sizes will become
possible by adopting the joint farming system by contract farming and co-operative farming.

2. The trend values for area under paddy cultivation, production and per hectare average yield in Tamil Nadu showed decreasing tendencies. In the study area also the paddy cultivated area and production decreased over the study period. Efforts may be taken to increase the area, production and productivity by following:

i) Dry land development

ii) Cultivation on vast tracts of waste lands

iii) Speedy transfer of technologies to the farmers through information and communication technology

iv) Ensuring availability of quality seeds

v) Providing information on availability of inputs and market situation

vi) Setting up of agricultural facilitation centres and extension of agricultural activities by the departments concerned.

vii) Construction of drying yards

viii) Creating of documentary films on optimum utilization of water, fertilizers, pesticides for cropping and pest control, application of organic manure and the importance of soil testing

xi) Training in technology, land, soil conservation and marketing
x) Establishing interface between agricultural institutions /research centres and farms.

3. Farmers may be educated on the need for timely harvest at optimum moisture using proper harvesting methods to avoid losses in threshing and winnowing, and on the importance of following sanitation methods to avoid contamination of grains and to protect them from insects, rodents and birds.

4. Use of proper technique of processing i.e. cleaning, parboiling and milling may be recommended and grading and standardization practices may be implemented by the government to give the farmers easy marketing opportunities.

5. Providing adequate transportation and storage facilities to store the produce may be effected.

6. Efforts may be taken to reduce marketing cost.

7. Direct Procurement Centres during the time of harvest may be opened at the village level.

8. The Minimum Support Prices (MSP) for paddy may be increased.

9. The functioning of the regulated markets may be strengthened.

10. Institutional credits at lower rate of interest may be provided to the farmers.

7.4 CONCLUSION

The Cumbum Valley of Theni district continues to occupy one of the top places among the paddy producing districts of Tamil Nadu. It ranked third in the
per hectare yield in 2005 inspite of various constraints such as fragmentation of land holdings, over-exploitation of irrigation sources, deterioration of soil health due to continuous intensive cropping and shrinking trend of gross cropped area. The production function analysis also indicated the existence of opportunities for increasing yield. It is high time that the opportunities for increasing yield are tapped so as to increase the farm income and also the production of the cereal paddy, the staple food of the people of Tamil Nadu.

**SCOPE FOR FURTHER RESEARCH**

The researcher feels that further studies may be conducted in the following:

1. Finding the ways to increase the area under paddy cultivation since the total area under cultivation of this cereal in Tamil Nadu shows a declining trend.

2. Agricultural universities / institutions / research stations-cultivators interface to increase the paddy yield by speedy transfer of technologies from universities/institutions/research stations to farmers.

3. Identifying and enhancing the role of information technology for the speedy transfer of technologies and also to know the availability of inputs, their prices and market information such as demand and price.

4. Recommending the suitable methods for the optimum utilisation of water and other inputs.

5. Finding the ways to reduce or avoid the loss of the produce in harvesting and transportation.

7. The functioning and efficiency of existing marketing infrastructure.

8. Finding and recommending the ways for revamping the functions of regulated markets.

9. Researches on proper water management.