CHAPTER VIII

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSIONS

In this chapter, an attempt is made to summarise the findings emerging from the earliest chapters.

In spite of its crucial significance, fisheries sector in India has not grown to its full potential. The present study is intended to highlight the status of fishing industry in Tuticorin district. It analysed the socio-economic status of marine fishermen. It also analysed the role of fisherwomen in fishery related activities. It also highlighted the cost and return of various fishing crafts operating in Tuticorin district. It also listed out the problems faced by the marine fishermen.

To analyse the socio-economic status of respondents, the data were collected on family size, age composition, sex composition, literacy, occupation and income, ownership pattern of houses, ownership of fishing crafts, saving pattern, consumption pattern, participation of women in fisheries, level of indebtedness and debt servicing, of the sample fishermen households.

To analyse the cost and return of different fishing crafts operated in Tuticorin District, data were collected on initial investments, operating cost per trip, catch composition per trip, average number of trips during the study period average number of crew size, fixed costs and gross return. To study the problems faced by the marine fishermen, their production problems, marketing problems and financial problems were carefully asked and analysed. Later by using Garette ranking technique the problems were ranked.
Collected data were tabulated and analysed with suitable techniques and formulae. The analysis of data leads to the following findings.

Among the 300 sample fishermen households, 30 per cent of them belong to backward community. 56.67 per cent of them belong to most backward community. 13.33 per cent of them belong to schedule caste community. Among the 300 sample fishermen households, 13.33 per cent of them are Hindu by religion, 3.33 per cent of them are Muslims by religion and 88.34 per cent of them are Christians. So majority of the respondents are Christians and majority of the respondents are belonging to most backward community.

93 per cent of the respondents are in the nuclear system of family. Only 7 per cent of the fishermen are in the joint family system. In the fishermen, families’ joint family system is declining. Among the sample fishermen households, all of them of them are married.

In the non-mechanised crafts’ owners’ family, the average number of children is 4.04 and the average size of the family is 6.64. In the single-day motorised FRP crafts’ owners’ family, the average number of children is 3.72, and the average size of the family is 5.78. In the family of multi-day motorised FRP crafts owners, the average number of children is 3.38 and the average size of family is 5.78. In the family of single-day mechanised trawlers owners, the average number of children is 3.36 and the average size of the family is 5.86. In the family of multi-day mechanised gillnetters’ owners, the average number of children is 3.38 and the average size of the family is 5.96. In all sample fishing units, the average number of children is more than three.
Regarding the ownership of houses, in the non-mechanised crafts unit, only 60 per cent of the respondents have their own houses. The percentage of respondents who have self owned houses in the single-day FRP crafts unit, multi-day motorised crafts unit, single-day mechanised trawlers unit and multi-day mechanised gillnetters unit are 70 per cent, 80 per cent, 96 per cent and 100 per cent respectively. Regarding the nature of houses in which respondents are living, in the case of non-mechanised crafts’ owners, nobody is living in terraced houses. This shows the poor standard of living of the non-mechanised crafts’ owners.

The educational scenario of the respondents reveals that, 50 per cent of non-mechanised crafts owners are illiterates, 60 per cent of the single-day motorised FRP crafts owners are literates, 66 per cent of the multi-day motorised wooden crafts’ owners are literates, 76 per cent of the single-day mechanised trawlers’ owners are literates and 78 per cent of multi-day mechanised gillnetters’ owners are literates. Regarding the literacy level of the spouses of the respondents, non-mechanised unit has recorded the lowest literacy level, where as the single-day mechanised trawlers unit has recorded the highest literacy level. Regarding the literacy level of the children of the respondents also, the non-mechanised crafts unit has recorded the lowest literacy level, and the multi-day mechanised gillnetters unit, has recorded the highest literacy level.

Employment status of the spouses of sample respondents revealed that, in the non-mechanised crafts’ owners family 6 per cent of women are unemployed, 8 per cent of women in the single-day motorised FRP crafts’ owners family are unemployed, 36 per cent of women in the multi-day motorised wooden crafts’ owners
family are unemployed, 50 per cent of women in the single-day mechanised trawlers’ owners family are unemployed and 70 per cent of women in the multi-day mechanised gillnetters family are unemployed. This analysis leads to the conclusion that, because of low fishery income in the non-mechanised and motorised unit, women are engaged in fishery related activities and other employment. Among the employed fisherwomen households, 147 households are engaged in fishery related activities.

The analysis of average annual household income and per capita income reveals that the average annual income of the own-mechanised crafts owners is ₹72,160, the average annual income of the single-day motorised FRP crafts owners is ₹1,40,910, the annual income of the multi-day motorised wooden crafts owners is ₹2,89,493, the annual average income of the single-day mechanised gillnetters owners is ₹4,84,000 and the average annual income of the multi-day mechanised gillnetters is ₹5,90,200. The per capita income in the category of non-mechanised unit is ₹10,867.47. In the single-day motorised FRP units the per capita income is ₹24,378.89. In the multi-day motorised wooden unit, the per capita income is ₹52,067.09. The per capita income of single-day mechanised trawlers’ owners is ₹82,593.86. The per capita income of multi-day mechanised gillnetters’ owners is ₹99026.85. This analysis reveals that there is vast difference in the distribution of income among the various categories of fishermen. Non-mechanised crafts owners have the lowest annual income and per capita income. Multi-day mechanised gillnetters’ owners have the highest annual income and per capita income.

Annual saving and repayment of debt are reported to be nil in the category of non-mechanised craft owners and single-day motorised FRP crafts owners. All other
three categories of fishermen are able to save some amount of money and able to repay some amount of debt. Average annual saving of the multi-day motorised wooden crafts owners is ₹15,500. Their average annual repayment of debt is ₹63,743. The average annual saving of the single-day mechanised trawlers’ owners is ₹45,000 and their average annual repayment of debt is ₹1,18,000. The average annual saving of the multi-day mechanised gillnetters is ₹58,000 and their average annual repayment of debt is ₹1,66,720.

Engel’s co-efficient was calculated in order to know the standard of living of the sample fishermen households. Engels co-efficient for non-mechanised crafts’ owners is 59.58, Engels’ co-efficient for single-day motorised FRP crafts’ owners is 57.06. Engels' co-efficient for multi-day motorised wooden crafts’ owners, single-day mechanised trawlers’ owners and multi-day mechanised gillnetters’ owners are 46.14, 41.88 and 39.57 respectively. This shows the standard of living of the non-mechanised crafts owners is lower than that of all other categories of fishermen households.

The average initial capital investment on different crafts was worked out. The average initial capital investment on non-mechanised craft is ₹95,000. The average initial capital investment on single day FRP craft is ₹3,05,000. The average initial capital investment on multi-day, wooden crafts is worked out as ₹7,00,000. The average initial capital investment on single day trawlers is ₹11,30,000. The average initial capital investment on multi-day gillnetters is worked out as ₹13,50,000.

Average operating cost per trip was worked out for sample fishing crafts. The average operating cost per trip was high in the case of multi-day mechanised
gillnetters as compared with other type of crafts. The total annual cost was also worked out for all sample fishing units. The total annual cost of non-mechanised craft is worked out as ₹2, 00,199. The average annual total cost of single-day FRP crafts is worked out as ₹7, 99,064. The average annual total cost of multi-day wooden motorised crafts is worked out as ₹12, 16,025. The average annual total cost of single-day trawlers is ₹23, 24,059. The average annual total cost of multi-day gillnetters is worked out as ₹18, 13,655. The annual average total cost of single-day mechanised trawlers is higher than all other types of crafts.

In order to compare the economic performance and financial performance of sample fishing units, gross income net operating income, net profits and rate of return on capital were worked out. The average annual gross return of non-mechanised craft is worked out as ₹2, 32,710. The net operating income of non-mechanised craft is ₹58,510. The average annual net profit of non-mechanised craft is worked out as ₹32,511. The average annual gross revenue for single-day motorised FRP craft is worked out as ₹9, 07,264. The average annual net operating income of this craft is worked out as ₹1, 878, 64. The average annual net profit of single-day motorised craft is worked out as ₹1, 08,200. The average annual gross revenue of multi-day wooden craft is worked out as ₹14, 83,418. The net operating income of this type of crafts is worked out as ₹4, 42,388. The average annual net profit of multi-day wooden crafts is worked out as ₹2, 67,393.

The average annual gross revenue of single-day mechanised trawlers is worked out as ₹27, 88,359. The average annual net operating income of single-day mechanised trawlers is worked out as ₹7, 43,959. The net profit of this type of crafts is ₹4, 64,300.
The average annual gross income of multi-day mechanised gillnetters is worked out as ₹23,92,855. The average annual net operating income of multi-day gillnetters is worked out as ₹9,30,855. The average annual net profit of multi-day gillnetters is worked out as ₹5,79,200.

The labour productivity of non-mechanised craft is ₹298.35. The labour productivity of single-day motorised FRP craft is ₹824.79. The labour productivity for multi-day motorised wooden craft is ₹821.38. Single-day mechanised trawlers have the labour productivity of ₹1834.45. In the case of multi-day mechanised gillnetters, the labour productivity is ₹1495.53. Single-day mechanised trawlers have recorded a highest labour productivity.

Operating ratio was worked out for the all sample fishing units. The operating ratio for the non-mechanised craft is 74.86. The operating ratio for single-day motorised FRP craft is 79.29. The operating ratio for the multi-day wooden motorised craft is 70.18. The operating ratio for single-day mechanised trawlers and multi-day mechanised gillnetters are 73.32 and 61.10 respectively. This shows that the capital productivity for multi-day mechanised gillnetters is more than that of all other types of fishing crafts as the operating ratio is lowest in the case of multi-day mechanised gillnetters.

Capital turn over ratio is worked out as 2.45 for non-mechanised crafts, 2.97 for single-day motorized FRP crafts, 2.12 for multi-day motorized wooden crafts, 2.02 for single-day mechanised trawlers and 1.77 for multi-day mechanized gillnetters.

The payback period of all sample fishing crafts was calculated. The payback period for non-mechanised crafts is 2.92 years. The payback period of single-day motorized FRP crafts is 2.82 years. The payback period of multi-day motorized
wooden crafts is 2.62 years. The payback periods for single-day mechanized trawlers and multi-day mechanized gillnetters are 2.43 years and 2.33 years respectively. Multi-day mechanized gillnetters have recorded the lowest payback period followed by single-day mechanized trawlers. Non-mechanised crafts have recorded the highest payback period.

The rate of return on investment of non-mechanised craft is 34.22. The rate of return on investment for single-day FRP motorised craft is worked out as 35.48. The rate of return on investment of multi-day wooden motorised craft is worked out as 38.20. The rate of return on investment for single-day mechanised trawlers is worked out as 41.09. The rate of return on investment for multi-day mechanised gillnetters is 42.90. There is high degree of positive correlation between initial capital investment and rate of return on investment.

The problems faced by marine fishermen were analysed. Fishermen are of the view that there is decline in the fish catch. 80 per cent of the non-mechanised crafts’ owners felt that decline in fish catch is due to mechanisation of fishing and trawling method, 80 per cent of the single-day motorised crafts’ owners also quoted the same reason. 60 per cent of the multi-day motorised wooden crafts’ owners also felt that mechanisation and trawling methods resulted in decline in fish catch. Majority of the respondents in the single-day mechanised trawlers unit and multi-day mechanised felt that climate change and restriction of the fishing area have resulted in decline in fish catch. All the non-mechanised crafts’ owners sell their catches immediately after landings. In the motorised unit more than 90 per cent of the fishermen sell their catches immediately after landings. 84 per cent of the single-day mechanised trawlers’ owners sell their catches immediately after landings. 80 per cent of the multi-day mechanised gillnetters’ owners sell their catches immediately after
landings. This tendency shows that there is lack of proper storage facilities in the study area and the fishermen are indebted to money lenders. So the fishermen are forced to surrender their catches immediately after landings to the middle men. All the non-mechanised crafts’ owners surrender their catches to the money lenders. More than 90 per cent of the respondents in the motorised and mechanised units surrender their catches to the money lenders. This also shows the severity of indebtedness of fishermen. The investment debt ratio is 89.78 to non-mechanised crafts’ owners. The investment debt ratio is found to be lowest to the multi-day mechanized gillnetters’ owners. As far as the source of finance is concerned, the main source of finance is money lenders for all the five categories of fishermen. Among the problems faced by the fishermen, lack of institutional finance has been ranked first by non-mechanised crafts’ owners, single-day motorized FRP crafts’ owners, multi-day motorised wooden crafts’ owners, and single-day mechanised trawlers’ owners. The reduction in the catch composition has been ranked first by the multi-day mechanized gillnetters’ owners.

**SUGGESTIONS**

Based on the present study, the following suggestions are made for the overall development of fishing industry in the study area.

It was observed that mechanisation of fishing crafts has many advantages. It has a favourable impact on fish catch, collection of high valued fish, earnings and export. But over mechanisation and over fishing is harmful. There should be control on over fishing. Mechanisation policy should be framed by the Government. It should take into account the limitations of mechanisation also. Safe mechanisation can be encouraged.
Infrastructural facilities, marketing and processing centres, fishing education and training would be developed and accelerated. A Government owned boat yard may be constructed at Tuticorin for undertaking repairing works and provide facilities to the crafts. A jetty facility may be provided by the government.

Fishermen in the study area are not able to get institutional finance. So efforts must be made for proper institutional finance. Co-operatives and national banks are good institutions for providing finance. The state fisheries department should establish the fisheries co-operative banks exclusively for fisher folk like agricultural co-operative banks.

The socio-economic condition of non-mechanised craft owners is very poor. So efforts must be made for improving the economic and social condition of non-mechanised crafts’ owners and small fishermen.

Efforts must be made for institutional financing facility during off season. There should be remuneration packages and LIC schemes against an accident during the time of fishing. Fishing is a risky business both in terms of life and crafts. So insurance facilities may be provided to them and its awareness must be created.

As fish is a perishable commodity, it should be sold at once. When there is abundant catches, automatically they do not fetch high prices. Mostly prices are fixed by the fish traders. To avoid exploitation of fishermen by the fish traders, it would be better, if cold storage facilities and processing facilities are arranged by the state or state sponsored agency. Since the fishermen do not follow Common measurement, it causes a higher price variation and affects their income. Pricing by auction, box and
size-wise may be sometimes favourable and other time unfavourable to fishermen. Hence the fishermen may dispose their catches only by proper weight.

An overall, co-ordinated and collective effort must be developed to establish well organised fish co-operatives. There is an urgent need of co-operative fishing organisation for overall development of fishery sector and fishermen themselves.

There is need for recognizing the crucial role of women in the distribution of fish and net making in the marine sector. In order to improve the socio-economic condition of women in processing plants, a women’s wing should be started in the fisheries department and that department should undertake all functions related to women workers and skill development. Fisherwomen co-operatives may be developed.

When we compare the economic conditions of fishermen with the development in the fishery sector, it is generally found that the position of the poor fishermen has not improved commensurately with the development of the fishery sector. Poor fishermen are exploited by the middlemen. Fisheries co-operatives are the only accepted instrument which may save the poor fishermen from exploitation. Fishermen’s co-operatives should be more concerned with the traditional fishermen and the inland fishermen engaged in fishing traditionally.

Sustainable development is a multi-faced concept including biological, human and technological dimensions. Fish being a renewable resource, biologically it would mean that the rate at which the resources are harvested should in harmony with the rate at which it multiplies. Humanly it means that principles of equity and basic needs get a priority. Technologically it means that using means that augments rather than
displace the human skills, utilization of renewable energy and methods which are environmentally appropriate and less destructive. From the organizational and developmental point of view, the policy of increased people’s participation and decentralization of investments and planning will offer added benefits. This kind of development will improve the socio-economic condition of the fisher folk.

The death-cum-accident insurance scheme should be continued and it should include the women too. Subsidies should be made available to enhance the ownership of gears and crafts by the traditional fisher folk. A comprehensive housing legislation should be enacted by the state government to guarantee every family of the traditional fisher folk own a house.

At present for long-term and short-term loans not only for the fishing equipments but also to meet unexpected household expenditure, the fishermen have to depend on private money lenders. Consequently, they remain perpetually in debt. Formation of village level co-operatives establishments for fishermen is essential not only for to help them acquire means of production but also do fish marketing and to supply fishing equipments at reasonable prices.

There should be remuneration during off-season. There should be aid and subsidy for mechanisation. There should be provision for arrangement for supplying fuel sufficiently and timely. There should be co-operative based ice plant in the landing centre. Government should give encouragement to these plants. Government may develop proper marketing facilities. Government may declare minimum support price for fishes.
CONCLUSIONS

Aquaculture development is needed. From this study, it is concluded that, still there is a good potentiality of development in fishery sector in Tuticorin District. Safe mechanisation through co-operative organisation is the key to Blue Revolution. At present the importance of this sector has not been realised by the policy makers. In the context of growing population and dwindling food supply and also the depletion of our foreign exchange reserves, there is an urgent need for evolving appropriate strategies for promoting marine fisheries. They have abundant potential to satisfy domestic as well as external demand for protein rich food items. Unlike other animals, fish food has varieties which vary in taste, nutritional components, value, and availability and so on. Considering these views, special attention should be given to this sector by the government. There is vast scope for exploiting marine fishery resources in India and Tamil Nadu. Optimum exploitation of fishery resources will improve the livings of fisher folk to a satisfactory level.

SCOPE FOR FURTHER STUDY

Interstate, and Inter-district study on the impact of mechanisation of the fishing on production, income, socio-economic status and employment of fishermen will be a useful area of research. An inter-disciplinary study of entrepreneurial dimensions of fishing industry will provide a scope for further research.

Practically no study has been made on the financing of the fishing industry. Financing of fishing will offer a good scope for further research. Fishing industry has got both backward and forward linkage. Fishing industry is closely associated with other activities like fish net making, carving of traditional crafts, construction of motorised and mechanised boats, fish trade, production of fish meal, fish processing
industry etc. Since these activities provide ample scope for employment in India, the research on forward and backward linkage of fishing industry will be fruitful area of investigation.

Indebtedness of fishermen will be another area of further research. An intensive study on constraints faced by marine fishermen is suggested for further research. The effects of climate-change on marine fisheries will be a fruitful area for further research. A comprehensive study on marine products export may be done. Impact of 45 days ban of mechanized crafts on the earnings of marine fishermen may be studied. A comprehensive study on the role of fisher women folk in fishery activities may also be done.