1.1. Introduction

Fish is an item of food that is so nutritious – rich in easily digestible protein, calcium, iron, omega -3 fatty acids and vitamin A, especially retinol, so essential for prevention of blindness and for the proper development and growth of a child as well as for nursing and lactating mothers. Yet, it receives such a low priority as a food item in the scheme of things and this is a paradox in itself. Besides providing nutritional security, fisheries sector employs over 14 million persons and generates over Rs. 7200 crores worth of foreign exchange.¹

Fisheries have been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries and is a source of cheap animal protein. It is an instrument of livelihood for a large section of economically backward population of the country. Fisheries is the only sector that offers cheap and good animal protein to the people, particularly to the economically weaker sections of the society and thereby it serves as a means to ensuring National Food Security. It is also a major contributor of Foreign Exchange Earnings for several countries including India through export. The potential forward and backward linkages through boat building, construction of fishing harbours, fish processing etc., contribute further to diversification and strengthening of the regional and national economy.²

1.2. Global Scenario

Global fisheries and aquaculture production have increased from 125 million tonnes in 1999 to 143 million tonnes in 2007. As the production from capture fisheries has almost remained stable during last decade, the increase has largely come from aquaculture. The global patterns of fish production owe much to the activities of China that accounts for 32 per cent of the world total in terms of quantity. Other major producers are Japan, India, the United States, the Russian Federation and Indonesia.

1.3. National Scenario

Indian fisheries are an important component of the global fisheries and the sector has been recognized as a powerful income and employment generator. It is also a source of cheap and nutritious food. The sector’s contributions to foreign exchange earnings are substantial and share 1.4 per cent of the GDP. More than 6 million fishermen in the country depend on fisheries for their livelihood.

India with a long coastline of 8118 kms and is blessed with rich fishery resources in its Exclusive Economic Zone (EEZ) extending to 2.02 million sq. kms. comprising of 0.86 million sq.km. on the West Coast, 0.56 million sq.km. on the East Coast and 0.60 million sq.km. around the Andaman and Nicobar Islands- which is highly suitable for developing capture and culture fisheries. With the absolute right on the EEZ, India has also acquired the responsibility to conserve, develop and optimally exploit the living marine resources within this area.

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Inland fishery resources are vast and varied comprising rivers and canals (171334 km), reservoirs (3.0 million hectare), ponds and tanks (2.36 million hectare), floodplains lakes and derelict waters (1.07 million hectare) and brackish water areas (1.42 million hectare). The marine fishery resources in the Indian EEZ have been estimated at about 3.934 million tonnes, constituting 51 per cent demersal, 43 per cent pelagic and 6 per cent oceanic. The present production from the marine resources is estimated at about 2.834 million tonnes which is 72 per cent of the harvestable potential.  

India is the 6th largest producer of fish and 16th largest exporter of marine products in the world. Further, India is the 2nd largest producer of inland fish in the world. This sector is of immense importance to the country’s economy due to employment generation capacity and export potential. Out of the total Indian exports, the share of sea food exports is 3.02% in the year 2006-07, however, it is the 4th largest contributor of the net foreign exchange earner of the country.

1.4. Fisheries in Tamil Nadu

Fisheries play a vital role in generating employment, augmenting protein rich food and earning substantial foreign exchange. Tamil Nadu is one of the important coastal states in the East coast, having a coastline of 1076 kms., 13 Coastal Districts and 591 fishing villages. It ranks fourth in fish production in the country. It has a continental shelf of 41,412 sq. kms. and an EEZ spread over 0.19 million sq.kms. It has emerged as a major exporter of Marine products. During 2007 – 08, about 72,644 million tonnes of marine

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5 Fisheries Development Mission, Department of Fisheries Government of Tamilnadu, 2002, p.5
products valued at Rs. 1,81,314 lakhs was exported from Tamilnadu. Tamil Nadu ranks sixth in fish production in the country.\textsuperscript{7}

The inland fisheries sector has about 3.71 lakhs ha of water spread area comprising reservoirs, major irrigation and long seasonal tanks, short seasonal tanks and ponds, estuaries, backwaters etc. which are suitable for both capture and culture fisheries. The inland fisheries population is about 2.17 lakhs. The fish production from the inland sector 2008-09 was 1.66 lakhs tonnes. About 6,000 ha. are being utilized for fresh water aquaculture under the programme of the Fish Farmers Development Agency. The total brackish water area available for aquaculture production is 56,000 ha. Apart from that, shrimp culture is being undertaken in 6,066 ha.\textsuperscript{8}

\textbf{1.5. Statement of the Problem}

Fishing is one of the oldest and largest industries in the world. This is true in the case of India also. Fishing industry provides employment and income to crores of people. Fish plays a significant role in solving the food problem of the world. The demand for fish is increasing year by year along with the increasing population.

The marine fish landings of India during the year 2007 has been estimated as 2.88 million tonnes showing an increase of about 1.7 lakh tones (6.3\%) against the estimate of 2006. The sector-wise contributions during the year 2007 were Mechanised 68\%, Motorised 28\% and the artisanal 4\%.\textsuperscript{9}

\begin{thebibliography}{99}
\bibitem{note9} Marine Fisheries Statistics of Tamil nadu, Department of Fisheries, Government of Tamil nadu, 2007-2008,p.94
\end{thebibliography}
Fisheries play a vital role in generating employment, augmenting protein rich food and earning substantial foreign exchange. Tamilnadu is one of the important coastal states in the East coast, having a coastline of 1076 kms., 13 Coastal Districts and 591 fishing villages. It ranks fourth in fish production in the country. It has a continental shelf of 41,412 sq. kms. and an EEZ spread over 0.19 million sq.kms. It has emerged as a major exporter of Marine products.  

The marine fish landings of Tamilnadu during the year 2007-2008 has been estimated as 72,644 million tonnes showing an increase of about 1075 tonnes (0.27%) against the estimate of 2006-07. The sector-wise contributions during the year 2007 were Mechanised 61.15%, Non-mechanized 18.27%, Motorised 19.37% and Shore seine 1.21%.  

According to the Tamil Nadu Marine Fisherfolk Census 2000, conducted last by the Department of Fisheries of Government of Tamil Nadu, the total marine fisherfolk population of Tamil Nadu state was 679111 of which Chennai City with 71057 persons accounted for 10.45 per cent and 4th rank among all maritime districts of the State. In 2005, the marine fisherfolk population of Chennai City was 75166 about 9.5 per cent of total marine fisherfolk population of Tamil Nadu State and Chennai had 7967 (14.41 per cent) of total Tamil Nadu active marine fishermen population 2005, which was the 3rd rank among all maritime districts of the state.  

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11 Endeavour and Achievements, Department of Fisheries, Government of Tamil nadu, 2007-2008,p.94  
In terms of marine fish production, Chennai was in the sixth position among the 13 maritime districts of Tamil Nadu state during the years 2006-07 and 2007-08 when the fish productions were 33374 and 31851 tonnes respectively which worked out to, on an average, 8.29 per cent of the total marine fish production in the state. Chennai City which is gifted with one of the three major fishing harbours in Tamil Nadu State. So, Chennai represents a very strong fisheries background of the State fisherfolk population.13

Finance is the crucial factor in fishing industry, one cannot ignore the importance of money. Finance is required for technical aspects such as buying boats, building catamarans and purchasing the capital equipments. Apart from technical aspects fishermen need money to keep them alive during the slack season when no catch is possible. Most of the fishermen are illiterate. So they are very much exploited by the master fishermen and money lenders. The federation acts as a friend, philosopher and guide and helps them to enjoy the benefits given by the government.

In order to improve the living standards of fishermen, the Union and Tamil Nadu State Governments have introduced many welfare programmes for traditional fishermen. These programmes include Group Accident Insurance Scheme for Active Fishermen, Subsidy of Mechanised and Motorised Crafts, Development of Model Fishermen Villages, Savings – Cum-Relief Scheme, Singaravelor Memorial Fishermen Free Housing Scheme, Re-imbursement of Central Excise Duty on High Speed Diesel Oil and Kerosene / Diesel Subsidy for fishermen using Traditional Crafts. 14

13 Endeavour and Achievements, Department of Fisheries, Government of Tamil nadu, 2007-2008, p.70.
14 M.Radhakrishnan, Minister for Fisheries, Animal Husbandary, Dairying and Fisheries Department, Policy Note 2005-06, Government of Tamil nadu, Demand No.7, p.p.4-6.
and state Governments give various types of assistance to fishermen but it is very meagre.

The fishery entrepreneurs in Chennai have to meet different marketing problems. The role of transport is very important for the development of economy and agriculture and it is also no exception. Fishery entrepreneurs face problems regarding adequate and quick means of transport to fish market at the village level. A large number of fishery entrepreneurs do not have own means of transport facility to meet at regular market. Entrepreneurs need transport facilities in mid-night and early morning in order to reach beach and fish market on time. Most of the fishing villages are still not provided with sufficient transport facility that too in the mid-night and early morning.

Marketing of fishery products is different from other manufactured products because of their perishable nature, seasonality of production, bulk quantities and variation in quality which require special care and attention in providing time, form and place utilities. Storage facility is an important infrastructure for perishable fishery products to afresh. Fishery entrepreneurs are not getting storage facilities in order to preserve the unsold fishery products. There are surplus unsold products which require cold storage facilities to preserve the fish for a few days more. But this sort of facility is not available in the fish market.

Generally, the fishery entrepreneurs problems are like unending waves of the sea and some of their problems are alcoholism, drug addiction, poverty, unemployment, child labour, women labour, illiteracy, health and hygienic problems, communal and inter-village clashes, natural calamities such as
cyclone, sea erosion, tsunami etc. and they are becoming major threats to their lives.

In the world level, Chennai fishery entrepreneurs are known for their shark catching, and they also adopt modern methods to catch fish. In this situation the researcher analyses “Problems and Prospects of Fishery Entrepreneurship in Chennai City” from an entirely different angle, that is, from the point of view of their problems of fishing practices, marketing practices, financing practices along with other factors like socio-economic backwardness, natural calamities, alcoholism, group clashes, poverty, lack of drinking water facilities, electricity, toilet facilities, housing facilities etc.

1.6. Scope of the study

This study attempts to throw light on the Problems and Prospects of Fishery Entrepreneurship in Chennai City. It examines the social–economic conditions and problems of fishery entrepreneurship in Chennai City. The aim of the present study is to highlight the fishing practices and problems, marketing practices and problems, financing practices and problems and also examines the prospects of fishery entrepreneurs in Chennai City.

The study covers the marine fishery entrepreneurs situated in the coastal villages deriving the major source of income either from fishing or allied activities. It does not cover problems and prospects of inland fishery entrepreneurs, shipping entrepreneurs and fish export traders in Chennai City.
1.7. Objectives of the study

The objectives of the study are given below:

- To study socio-economic conditions and the related problems of fishery entrepreneurs in Chennai city,
- To study fishing practices and problems of fishery entrepreneurs in Chennai city,
- To study marketing practices and problems of fishery entrepreneurs in Chennai city,
- To analyses financial practices and problems of fishery entrepreneurs in Chennai city, and
- To review the prospects of fishery entrepreneurs in Chennai city.

1.8. Operational Definitions

1.8.1. Fishing: Fishing means capturing of all species of fish from the sea.

1.8.2. Fishery: Fishery is a general term covering the capture of a wide variety of marine and fresh water animals for direct use as food or for derived products.

1.8.3. Fisherfolk: It refers to the entire population that inhabits the coastal belt widening upto 600 metres from the shore and whose primary occupation is marine fishing allied activities in any place. Thus, in this study fisherfolk means marine fisherfolk.

1.8.4. Primary Occupation: The occupation, which fetches more than fifty per cent of the total annual income of a person in the selected area.
1.8.5. **Fisherman:** A male member of the fisherfolk who is engaged in either marine fishing or any of the allied activities in any place, as his primary occupation.

1.8.6. **Fisherwoman:** A female member of the fisherfolk who is engaged in any of the fishing allied activities in any place, as her primary occupation.

1.8.7. **Entrepreneur:** Entrepreneur is a person who initiates, organize, manage and control the affairs of a business unit, whether it pertains to agriculture, industry, trade or profession. They combine the factors of production and supply of goods and services.

1.8.8. **Entrepreneurship:** Entrepreneurship is the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence.

1.8.9. **Gear:** Gear is implement or instrument used for catching fish.

1.8.10. **Fish Landing Centre:** A place where the fishermen land their catches.

1.8.11. **Fish Production:** Catching of fish from the sea and processing.

1.8.12. **Fishing Allied Activities:** This term refers to the fishery related activities that aid, support and enhances fishing operations and post-harvesting. These activities include fish vending / trade (fresh and / or dried), fish processing and fish auctioning, transporting, loading and unloading of fish, fuel, ice, water and food provisions for the voyage, building, repairing and maintenance of fishing craft and gear, net-making and net-mending.
1.8.13. Auction hall and Packing hall: They are sheltered open sheds for cleaning, sorting, weighing, auctioning, packing and loading the fish on the vehicles or railways for transportation to consuming centers or storage.

1.8.14. Fish Oil Factory: May be located near the fish meal factory. Capacity depends on the catch used for fish oil.

1.8.15. Fishing Gear Storage Shed: Fishing gear and accessories are stored in the fish gear storage shed located near the berthing jetties shed of 3m wide, 5m long with 4m high roof that is sufficient for this purpose.

1.8.16. Net Drying and Repair Shed: An open shed of sufficient area is desirable in every fishing harbour near the berthing jetty to dry nets and for repair work, located along with the storage shed.

1.8.17. Boat Building Yard and Workshop: It is desirable to provide space for a boat building yard close to slipway so that new vessels can be built and launched.

1.8.18. Instrument and Radio Shop: A servicing and repairing shop is needed near the berthing quay.

1.8.19. Fire and First Aid Stations: Fire and first aid stations are needed inside the harbour, usually located in the centre of harbour area to meet the exigencies.

1.8.20. Signaling Stations: These are needed for communication of important information like cyclone, storms etc... to all concerned in the industry located near the approach channel or berthing quay.

1.8.21. Fishing Industry: Fishing Industry consists of country craft boat, country craft filled with motors and mechanized boat in fishing operation.
1.8.22. **Income from Fish Trade:** It implies the income received from the sale of raw (fresh) fish as well as dried or salted fish on a regular basis for their livelihood.

1.8.23. **Net Income from Fishing:** It is the income earned from fishing operations after deducting the operating expenses.

1.8.24. **Fishing Expenses:** In the present study fishing expenses include wages given to workers, repairs of gears and crafts, purchase of fuel, spare parts etc.

1.8.25. **Consumption Expenditure:** It refers to the amount incurred on all goods and services for the current consumption by the household. In this study it includes the amounts incurred by the household on food, cloth, shelter, education, entertainment and travel, social and religious functions and other items during the reference period.

1.8.26. **Fishing Ground:** Fishing Ground is commonly applied to an area in which fishing is carried on. Fishing grounds are referred to as continental shelf. It is subdivided into inshore area upto 20 metres, offshore area from 20 metres upto 80 metres and deep sea area beyond 80 metres.

1.8.27. **Small Scale Fishermen:** Those who by virtue of their limited fishing range and a host of related socio-economic characteristics are confined to an arrow strip of land and sea around their community, faced with the limited set of options, if any, and intrinsically depend on the local resources.

1.8.28. **The Wedge Bank:** The Wedge Bank, an important fishery region in the Indian Ocean, is situated to the south of Cape Camorin and North of Sri Lanka. The Wedge Bank was being exploited also by vessels of other countries like Sri Lanka, Thailand, South Korea and Taiwan. In view of the
bilateral agreement India and Sri Lanka reached in 1974, Wedge Bank falls within the territorial water of India.

1.8.29. Fishing Season: Fishing goes on, all round the year. But from the stand point of catches the year may be divided into two seasons, the active and slack. The seasons may also vary from place to place. In Chennai City active season extends from January to March and July to August when fish is caught in plenty. The slack season is from October to December.

1.8.30. Co-operatives: Co-operatives means organizations which are constituted according to, and in practice follows, the co-operative laws in the country (Co-operative Act 1984). Two types of co-operatives have been studied – Fishermen Co-operative Society and Fisherwomen Co-operative Society.

1.8.31. Tsunami: A tsunami is a wave train or series of waves, generated in a body of water by an impulsive disturbance that vertically displaces the water column. Tsunami can savagely attack coastlines, causing devastating property damage and loss of life.

1.8.32. Continental Shelves: The ocean bottom to a depth of 200m, the major fish producing areas of the world, cod and flounder ground in arctic and temperate areas, croaker grounds in subtropical and tropical areas.

1.8.33. Deep Sea: Below 500m, there is no photosynthesis, and no living plants but animals found to maximum Ocean depths of about 10,000m, most animals red or black in colour, many with light – producing organs, not extensively explored but there is little chance for development of fishery resources.
1.9. Geographical Coverage

The present study covers all 44 coastal villages in Chennai City. It is one of the 13 coastal districts of Tamil Nadu State. The list of coastal villages of Chennai City is given in Appendix-B.

1.10. Methodology

This study, descriptive and empirical in nature, is based on primary and secondary data. Primary data were collected directly from the fishery entrepreneurs with the help of a pre-tested interview schedule, a copy of which is given in Appendix A. The fishery entrepreneurs were classified into three categories like Mechanized boat entrepreneurs, Motorised craft entrepreneurs and Traditional craft entrepreneurs.

Secondary data were collected from journals, magazines, newspapers, books, documents, pamphlets and reports published by the Department of Fisheries, Tamilnadu, Department of Economics and Statistics, Tamilnadu and Department of Evaluation and Applied Research of Government of Tamil Nadu, Publications Division of Government of India and South Indian Federation of Fishermen Societies (SIFFS), Thiruvananthapuram. The researcher also held a number of discussions with officials of the Department of Fisheries, Government of Tamil nadu, prominent senior citizens of the coastal villages and Office bearers of the various Non-Government Organisations connected with the well- being of fisherfolk.

1.10.1. Construction of tools

The interview schedule used in this study was structured by the researcher herself. Before preparing the schedule the researcher made an in-depth review of the literature directly and indirectly connected with the topic of
the study and held in-depth discussions with owners and worker fishermen currently engaged in mechanized boats, motorised crafts and traditional craft fishing, the fishermen currently engaged in fishing-allied activities, the senior-most fishermen of the above categories who had retired from their occupation due to old age, fisherwomen engaged in fishing-allied activities and the officials of the Department of Fisheries, Government of Tamilnadu.

1.10.2. Construction of interview schedule

In the light of the experience gained and information gathered from general and special discussions mentioned above, the researcher prepared the first draft of the interview schedule. The copies of the interview schedule were circulated and pre-tested among ten fellow research scholars, five faculty members and five office bearers of South Indian Federation of Fishermen Societies (SIFFS), Thiruvananthapuram and higher officials from the Department of Fisheries, Government of Tamilnadu for their critical comments. The interview schedule was revised and redrafted in the light of their comments.

1.10.3. Pre-test

The revised interview schedule was pre-tested with twenty five fishery entrepreneurs who include Mechanised boat, Motorised craft and Traditional Craft entrepreneurs. In the light of suggestions put forth by the respondents of pilot study, and the interview schedule was once again modified and finalized.

1.10.4. Sampling Design

In this study proportional stratified random sampling method has been followed. The size of the sample was fixed as 650 entrepreneurs taking into account the time, cost and administrative considerations. The entrepreneurs
of Chennai City are classified into 3 groups on the basis of their fishing practices.

- Fishery entrepreneurs of Mechanised Boat
- Fishery entrepreneurs of Motorised Craft
- Fishery entrepreneurs of Traditional Craft

The number of sample entrepreneurs chosen from each village under different groups is given in Table 1.1. It shows the size of population according to different strata and the size of sample drawn from each stratum on the basis of size of population.

<table>
<thead>
<tr>
<th>Groups of entrepreneurs</th>
<th>Population Size</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanised Boat (ME)</td>
<td>600</td>
<td>200</td>
</tr>
<tr>
<td>Motorised Craft (MO)</td>
<td>750</td>
<td>250</td>
</tr>
<tr>
<td>Traditional Craft (TR)</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1550</strong></td>
<td><strong>650</strong></td>
</tr>
</tbody>
</table>

Source: Registration Details of Mechanized Fishing Boats of Fishing Harbour Management Wing, Chennai – 13

It is evident from Table 1.1 that the total number of population is divided into 3 strata. The number of samples chosen from each stratum is proportional to the population size of the strata. One-Third of population in Mechanised Boat and Motorised Craft is selected as sample size and the entire population of Traditional Craft entrepreneurs is selected as sample size. The number of Traditional Craft entrepreneurs is getting down year by year and they become Mechanised Boat entrepreneurs and Motorised Craft entrepreneurs. So the researcher has attempted to study the entire population of Traditional Craft entrepreneurs. The table further reveals that
out of 650 sample entrepreneurs 200 are Mechanised Boat entrepreneurs, 250 are Motorised Craft entrepreneurs and the remaining 200 are the Traditional Craft entrepreneurs.

1.10.5. Data Processing

After the completion of the data collection, the filled-in interview schedule was edited to make them ready for coding. Master tables were prepared in order to incorporate all the information available in the interview schedules. Computer facility was used to record the data from interview schedules. Classification tables were prepared with the help of the data fed into the computer. The analysis of the data was made with the help of Statistical Package for Social Sciences (SPSS). Classification tables were prepared with the help of the data recorded into the computer.

1.10.6. Tools of Analysis

The analysis and interpretation of data were made with the help of the following statistical techniques.

- Summary statistics
- Factor Analysis
- Garrett Ranking
- Weighted Average
- Multiple Regression Analysis
- Discriminant Function Analysis
- Analysis of Variance

1.11. Hypotheses of the study

To fulfill five objectives of the study, the following null hypotheses have been formulated and tested.
• There is no significant difference in the mean agreeability scores on marketing problems among the respondents.

• There is no significant difference in the mean score on total revenue per year, expenses per year, profit or loss per year, profit or loss to revenue ratio, expenses to revenue ratio among different community groups of respondents.

• There is no significant difference in the mean score on total revenue per year, expenses per year, profit or loss per year, profit or loss to revenue ratio, expenses to revenue ratio among different educational groups of respondents.

• There is no significant difference in the mean agreeability scores on financing problems among respondents.

• There is no significant relationship between the scores of economic variable namely increase in production- X1, increase in sales-X2, increase in investment-X3, increase in own capital-X4, increase in revenue-X5, increase in profit-X6, increase in number of boats-X7, increase in number of equipments-X8 and increase in employment-X9.

• There is no significant difference in the past five years economic position and prospects of fishery entrepreneurs.

1.12. Chapter scheme

The thesis has been organised into eight chapters.

• The first chapter gives an “Introduction and Design of the study” which includes introduction, statement of the problem, scope of the study, objectives of the study, research methodology, hypotheses of the study, and chapter scheme.
• The second chapter presents “Reviews of Literature” of the previous studies relevant to the present research.

• The third chapter covers the “Socio – Economic Conditions and problems of Fishery Entrepreneurs in Chennai”.

• The fourth chapter presents the “Fishing Practices and Problems of Fishery Entrepreneurs in Chennai”.

• The fifth chapter deals with “Marketing Practices and Problems of Fishery Entrepreneurs in Chennai”.

• The sixth chapter focuses on “Financing Practices and Problems of Fishery Entrepreneurs in Chennai”.

• The seventh chapter gives “Prospects of Fishery Entrepreneurs in Chennai”.

• The eighth chapter recapitulates the Key Findings and Conclusions of the study. At the end of this chapter certain suggestions have been put forth for better promotion of fishery entrepreneurs in Chennai.