

CHAPTER I

INTRODUCTION

The modern globalise economy has opened up a host of new markets for Indian Industry. The marine products industry has been quick to realize India's rich marine resources and the global demand. India after independence achieved three significant revolutions in food production, the Green revolution in agriculture, the White revolution in dairying and the Blue revolution in fish production. Fish offers the most inexpensive high quality proteins to a majority of our people. Fisheries provide direct and indirect employment to millions, especially the weaker sections and women. It also brings valuable foreign exchange by export of processed fishery products. Contributions in these three vital areas viz nutrition, rural employment and foreign exchange earnings have made fisheries a vibrant section of Indian economy. ¹

Indian fisheries occupied third position in global scenario in terms of production of which is 4.4 percent of global fish production. According to a government release issued in New Delhi, the contribution of fisheries sector is

1. Chandrashekhar G. 2010, Fish for All, Recommendation and Action Plan, Kolkata, West Bengal.

1.10 percent to the total GDP and 5.3 percent to the agricultural GDP. Fishery sector has emerged as the largest group in agricultural export of India. India exports 5.20 lakh tonnes of fisheries worth Rs. 8363 crore. The sector employs 14 million of the population.²

The Central Institute of Fisheries Technology, with its headquarters at Cochin and regional centers as well as presence in all important maritime as well as inland states, has played a very important role in bringing India into the fisheries map of the world. If India ranks 6th in this field today, it is mainly due to the pioneering contributions and extensive extension work done by this leading research institute and some sister institutions under Indian Council of Agricultural Research. India is on par with any other developed nation in fishing as well as in fish processing technologies. Fish trade within India is still primitive in the form of fresh or dried/ smoked fish.

Fish and fisheries play an important role in the nutrition, livelihood, ecology and health security of India. The fisheries sector supports 6.7 million fishers directly and an equal number in ancillary activities. The sector contributes substantially to national GDP and exports earnings. Fisheries and aquaculture resources of India are vast and varied and provide a wide range of opportunities. From the cold waters in the higher altitudes of the Himalayan range to the warm waters in the coastal areas, these resources offer ample opportunities to optimize fish production through sustainable and responsible capture fisheries and farming practices.

2. <http://www.samacharwire.com/india-occupies-3rd-position-in-fisheries-production-in-world/668>

Fisheries sector occupies a very important place in the socio-economic development of the country. It has 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 and nutritious food besides being a foreign exchange earner. Most importantly, it is the source of livelihood for a large section of economically backward population of the country. The main challenges facing fisheries development in the country includes accurate data on assessment of fishery resources and their potential in terms of fish production, development of sustainable technologies for fin and shell fish culture, yield optimization, harvest and post-harvest operations, landing and berthing facilities for fishing vessels and welfare of fishermen.³

Fisheries in India, though very under-developed, contribute annually about Rs. 10 crores to the national income. Rich in proteins, vitamins and mineral salts, fish is a valuable protective food. It forms an important constituent of the diet over considerable areas. The, development of fisheries is, therefore, one of the most promising means of improving the diet of the people.⁴

1.1. World Fisheries

Millions of the world's poorest people live in rural areas and count heavily on fish for food and income. Small-scale fisheries fishers working from shore or from small boats in coastal and inland waters provide most of that fish, with local households and economies benefiting from fish trade and related activities. It is estimated that three-quarters of the world's 30 million fishers work

3. Fish for All, 2000, Recommendation and Action Plan Kolkata, Rome.

4. <http://www.nagapattinam.tn.nic.in/fisheries.html>

in small-scale fisheries (SSF). If fisheries-associated livelihoods, such as marketing and processing as well as women, children and the elderly are also included, an estimated 150 million people directly depend on SSF and the associated industries. Small-scale fisheries are diverse in nature, geographically dispersed, vulnerable to external forces and in crisis.

Historically, development interventions have sought to reduce poverty through economic growth, improvements in technology and infrastructure and market-led economic policy reform. However, the limited positive results have led to the recognition that other factors such as establishing appropriate governance and institutions are central to the problems of food security and poverty alleviation. There has been significant growth in fish production in the country in the recent years. India is now the third largest producer of fish and second largest producer of fresh water fish in the world.⁵ The main fishing areas of the world for the purpose of fisheries statistics have been divided into seven major inland and eighteen major marine fishing areas.

The most important ten fishing nations on the basis of fish landings are China, Peru, USA, Indonesia, Japan, Chile, India, Russian Federation, Thailand and Norway. China is the largest producer of fish, In Asia the three major producers are China, India and Japan. The statistics published in 2004 by Food and Agricultural Organization (FAO) revealed that the world fish production in 2002 was 133 million metric tons, of which 40million metric tons

5. http://commerce.nic.in/PressRelease/pressrelease_detail.asp?id=279

came from aquaculture operations. China with 16.55 million metric tons ranked first followed by Peru with 8.77 million metric tons.⁶

China and Thailand are world's major exporters of fish products in value terms, both of them accounting for 16 per cent of total world trade in 2000 – 01. Japan is the biggest importer of fishery products and accounts for 22 per cent of the global trade in 2000 – 01. USA is the second biggest importer. Shrimp is the most important commodity, which accounts for 19 per cent of the international trade in value terms.⁷

1.2. Asian Fisheries

Asia accounts for over 63% of total fish production and as much as 90% of all aquaculture output. Aquaculture has become the region's fastest-growing food source, with production more than quadrupling from 14.5 million tons worth US\$46 billion in 1990 to 61.4 million tons worth \$69 billion in 2006. The steady growth of aquaculture takes up the slack left by capture fisheries that cannot grow because they are already fully exploited or worse.

Fish is vital to Asian well-being and livelihoods, underpinning local food security and earning foreign exchange for national economies. For many of Asia's poor, fish is a major source of animal protein, sometimes the only source. In Bangladesh, Indonesia and Philippines, it supplies half or more of animal protein consumed by humans, while in Thailand and Vietnam this share is 40%. Asian countries earned \$28 billion in 2006 by exporting 41% of their fish production, or double the \$14 billion they earned only half a dozen years earlier

6. Fishing Chimes, 2004, Vol.24, No. 8, November, p.65.

7. MPEDA 2007, New Letter, op.cit, p.6.

in 1990 by exporting 24% of it. Through this trade, Asian fisheries significantly contribute to global food security.

Marine products have created a sensation in the world market because of their high health attributes. With the high unit value, seafood has been acclaimed as one of the fastest moving commodity in the world market. The world market for seafood has doubled within the last decade reaching US \$49.32 billion mark India's share is 2.4%, dependence on shrimp as a product and is changing due to the increased attention given on other fishery resource like squid, cuttlefish, fin fish. and penetrating into markets of Western Europe and South East Asia. Marine export to Japan has increased from US\$251.49 million of 1987-88 to US \$ 641.68 million by 1997-98. In the comparable period export to Europe has increased from US\$60.76 million to \$113.80 million. Steady growth is anticipated during the coming years due to rapid expansion taking place in the production front through shrimp farming and introduction of several resource specific vessels to enlarge the marine fish landings.⁸

1.3 Indian Fisheries

India is one of major fish producing countries in the world with third position in fisheries and second in aquaculture. The sector has high potentials for rural development, domestic nutritional security, employment generation, gender mainstreaming as well as export earnings. Indian Fisheries sector has been witnessing a steady growth since First Five Year Plan. The

8. Allison, Edward. H , 2008 “How the Asia Fish model can guide pro-poor investments in fish production and trade”, Director of Policy, Economic and Social Science , The WorldFish Center, PO Box 500 GPO, 10670 Penang, Malaysia.

annual fish production rose to over 6.3 million t during 2004-05 from around 0.75 million t in 1950-1951. The marine fish production increased from 0.53 million t in 1950-51 to a maximum of 2.99 million t in 2002-03 and 2.78 million t during 2004-05. The contribution of inland sector has increased at a higher rate, from 0.218 million t during 1950-51 to 3.52 million t in 2004-05. Presently, fisheries and aquaculture contribute 1.04% of the national GDP and 5.34% of agriculture and allied activities. Indian exports and its share in the global trade have shown a steadily increasing trend over the years.

In recent years, as food items, marine products have begun to enjoy excellent consumer acceptance across the world because of their newly revealed health properties (including Omega-3). No wonder the world seafood market has nearly doubled to over \$50 billion in the last 10 years and the prospects for sustained growth are rated high. This provides a big opportunity for India to meet the rising consumer demand within the country. Fortuitously, India has almost everything it takes to be seafood major.

India is world's third largest fish producing country and ranks second in inland fish production. Processed fish products for export include conventional block frozen products, individual quick frozen products and minced fish products such as fish sausages, cakes, cutlets, pastes, surimi, texturised products and dry fish. While the marine products export market has tremendous potential, actual exports have displayed erratic pattern from time to time due to adverse market conditions in major industrialised economies as also imposition of barriers by certain importing countries. India is a member of the International

Maritime Organisation since 1959 and almost all seafaring countries of the world are also members of this organisation.

Great potential exists for expanding the nation's fishing industry. India's exclusive economic zone, stretching 200 nautical miles into the Indian Ocean, encompasses more than 2 million square kilometers. In the mid-1980s, only about 33 percent of that area was being exploited. The potential annual catch from the area has been estimated at 4.5 million tons. In addition to this marine zone, India has about 1.4 million hectares of brackish water available for aquaculture, of which only 60,000 hectares were being farmed in the early 1990s; about 1.6 million hectares of freshwater lakes, ponds, and swamps; and nearly 64,000 kilometers of rivers and streams. In 1990 there were 1.7 million full-time fishermen, 1.3 million part-time fishermen, and 2.3 million occasional fishermen, many of whom worked as saltmakers, ferrymen, or seamen, or operated boats for hire. In the early 1990s, the fishing fleet consisted of 180,000 traditional craft powered by sails or oars, 26,000 motorized traditional craft, and some 34,000 mechanized boats.⁹

Indian fisheries steady growth in the export of fish Products. During 2009-10 the country exported 6.64 lakh tonnes of marine products, which resulted in export earning of 9921.46 crore. Efforts are being made to boost the export potential through diversification of products for export. The country has now started exports of frozen squid, cuttle fish and variety of other finfishes.¹⁰

9. <http://www.thehindubusinessline.com/2010/12/20/stories/2010122050371100.htm>

10. <http://www.education.nic.in/cd50years/15/8P/82/8P820P01.htm>

India is endowed with vast fisheries resources in terms of a coast line of 8129 km and 2.02 million km² of Exclusive Economic Zone, including 0.530 million km² of continental shelf. The inland fisheries resources include rivers and canals (1.95 lakh km), reservoirs (3.15 million ha), floodplain wetlands (0.35 million ha), estuaries (0.26 million ha), freshwater waters (2.41 million ha) and brackishwater water bodies (1.24 xv million ha). These resources are one of the main sources of livelihood for the rural poor, particularly the fisher community. Considering the output of the sector, it can provide livelihood for over 90 lakh at subsistence level of annual income. At present, an estimated 14 million people are engaged in fishing, aquaculture and ancillary activities.¹¹

India has a high potential of fish production. The share of fisheries in agricultural gross domestic product (GDP) has been consistently increasing and has risen from 0.84 per cent in 1950-51 to 4.19 per cent in 1999-2000. It is also contributing about 3 per cent in total exports and 20 per cent in the total agricultural exports of India. Fisheries sector plays an important role in the Indian economy.¹²

Fish and fishery products are exported from India to over 73 countries. The share of marine product exports has steadily grown over the years; from a mere Rs.3.92 crore in 1961-1962 to Rs. 73327 crore in 2009-2010 accounting for approximately 2.1 per cent of the total exports from India. However, the main destinations of export were EU, USA, Japan, China, South-East Asia and Middle East. Exports to EU accounted for 27.37 per cent of the

11. <http://www.ncscm.org/sicom/costal-fishing.htm>

12. <http://www.tn.gov.in.statistics>.

total export of fish and fisheries products from the country by value, followed by USA (23.37%), Japan (18.09%), China (10.42%), S. East Asia (9.46%) and Middle East (3.7%). Shrimps and cuttle fishes are major export items and contribute about 65 per cent of the total export earning from fisheries. World fish trade is growing strongly. World fish exported US\$ 20 billion in the year 2004. The outcome of the multilateral trade negotiations in the Doha Round and WTO regulations has large implication on international fish trade.

Export of fish and fishery products are very vital to developing countries including India, as export revenues are needed to pay for other necessary commodities such as fuel, food and also machinery and technology. Export production and processing also help for income generation and employment. But the barriers in the international trade are hindering the overall development of the fisheries sector in general and the export in particular. World Trade Organization, an international body of over 140 countries is trying to reduce the barriers and paves the way for smooth international trade.

India is predominantly a peasant economy and her future lies in her farms. Agriculture is the backbone of India's economy. Being the largest economic activity, Agriculture is the premier source of national income for India. The agriculture and allied sectors contribute nearly 25 per cent of gross Domestic Production, while about 65-70 per cent of the population is dependent on agriculture for their livelihood.¹³ Besides providing food for people and fodder for cattle, agriculture forms the basis of industries as it supplies bulk of raw

13. India 2005, Reference and Training Division of Ministry of Information and Broadcasting Government of India, New Delhi, 2005, p.60.

materials to a large section of industry. At present, India is the tenth industrialized country in the world, thanks to the boost given by the agricultural sector.

Agriculture includes cultivation of land, rearing of livestock, poultry, sericulture and fishing. The importance of fish as a food product is realized by all nations of the world because of its protein richness. So fish, the cheap protein provider, has become an important item in the international trade protein provider, has become an important item in the international trade. It helps in raising nutritional level, augmenting food supply and earring foreign exchange. Fishing and its allied activities like fish-processing and marketing offer a lot of employment opportunities. Fish is an important foreign exchange earner among all agricultural products traded by the developing countries of the worlds.¹⁴

Along with farming, fishing is one of the oldest occupations of human beings. Fish occupies an important place in Indian mythology, history and tradition. According to Hindu mythology, one of the incarnations of god was in the form of fish. Profuse references to fish are found in the great epics, stone carvings and paintings of India Traditionally, fishing has been the principal avocation for the livelihood of a segment of the population living in the coastal region and on the banks of the rivers, lakes and canals.

India, one of the major fish producing countries, USA emerged as the single largest market for Indian fishery products relegating Japan to the second position. Frozen shrimp continued to be the largest item in terms of Rupee value (66.97%) and the frozen fin fish stood as the largest item in terms of

14. MPEDA News Letter, February 2004 Vol.IX, No.2, , p.5

quantity (42.015).¹⁵ The average per capita consumption of fish in India is 3.54 kg. p.a. as against the world average of 10.3 kg. p.a.¹⁶

1.4 Tamil Nadu Fisheries

Tamil nadu is one of the maritime states of India with rich inland and marine resources. Covering a coastline of 1076 kms., along the east and west coast, Tamil Nadu accounts for 13.38 per cent of India's total coast length. The State contributes 15 per cent of total fish landings and one fourth of marine exports from India.¹⁷

Marine Fisheries is the Economic backbone of the Tamil Nadu coastal District. Having a long coastal area, this state plays a major role in marine commodities. The marine ecosystem provides mankind with food, medicines, industrial products and pleasure. This ecosystem has to be maintained in a healthy state, if it is to provide people the benefits in a sustained manner. Natural, healthy ecosystems have evolved over millions of years, resulting in complex interactions of the environment and all the species living in them. Such interactions allow the optimal utilization of the ecosystem resources by a maximum number of species that includes the human beings. The waters along the Bay of Bengal coast of India are biologically very productive and possess several unique environmental features.¹⁸

15. MPEDA News Letter, Vol. VIII, No.10. October 2003, p.4.

16. Shanbhogue S.L, Marine Fisheries of India, Indian Council of Agricultural Research, New Delhi, 2000, p.11.

17. Policy Note 2003-2004, Animal Husbandry and Fisheries Department, government of Tamil nadu, Chennai, 2003, p.11.

18. <http://www.nagapattinam.tn.nic.in/fisheries.html>

1.5 Background of the Study

Tamil Nadu is one among the coastal States in India in the east coast having a coastal line of 1076 kms, covering both East and West coast which constitute about 15% of India's total coastal length. The State has 13 coastal districts with 591 fishing villages consisting of 8.38 lakh fishery population, of which 2.81 lakh fishermen are actively engaged in fishing activity. Marine fishery resources comprise of 0.19 million sq.kms of Exclusive Economic Zone (EEZ) and a Continental Shelf of 41,412 sq.kms. The State shares 9.4 per cent of EEZ in the Country.

Tamil Nadu contributes about 10 per cent of India's total marine fish production from its 13 coastal districts. The annual marine fish catch is estimated at 3.93 lakh tonnes and the State became the major exporter of marine products. Turning to Inland fishery, the fishery population was estimated at 2.61 lakh. Under Fish Farmers' Development Agency Programme, about 5000 hectares are being utilized for water aquaculture. For the development of Inland fisheries, there are 8 Fish Seed Production Centres functioning in the State. Presently, the total brackish water area spread over 56000 hectares is used for aquaculture production and beyond this, shrimp culture is being undertaken in 6066 hectares in the State. The State ranks eighth in fish production in the Country. The fisheries sector of the State provides employment opportunities and

generates income and stimulates growth of subsidiary industries besides assuring nutritive food security.¹⁹

Fish production is comprised of marine and inland fish and fishery products. The marine fish production accounts for more than 70 per cent of total fish production in the State. The fish production in the State had marginally improved from 5.38 lakh tones in 2007-08 to 5.63 lakh tones in 2008-09. Tamil Nadu has become one of the leading producers of marine fish and the annual marine fish production in the State is 3.93 lakh tones. The actual fish production had witnessed a marginal improvement from 3.93 lakh tones in 2007-08 to 3.97 lakh tones in 2008-09. The total consumption of fish had been increased due to the rise of population, rapid urbanization and change in the consumption pattern. In order to meet out the increasing demand for fish, the State had set up 'Fisheries Development Mission' and Tamil Nadu Fisheries Development Corporation (TNFDC) and enhanced the fish production and thereby to generate employment and income and sustain livelihood.

The Fisheries Development Mission was implemented in selected pockets of five coastal districts viz. Ramanathapuram, Nagapattinam, Thanjavur, Pudukottai and Thoothukudi during 2008-09. The scheme was being implemented at an estimated cost of Rs.20.00 lakhs in the State. Further, in order to conserve the fishery resources, the State had imposed a fishing ban during the breeding season for a period of 45 days from April 15 to May 29 in the East Coast region and June 15 to

19. Statistical Hand Book, 2011, Animal Husbandry, Fisheries and Forest, Department of Economics and Statistics, Government of Tamil Nadu, p.62.
<http://www.tnstat.gov.in/publications.html>

July 29 in the West Coast. The Government had provided Rs.200/- per family during fishing ban period. During 2008-09, a sum of Rs.719.97 lakhs was being disbursed to 143994 fishermen families.²⁰ The main objective of this study is to know the trade constraints to the exports of marine products in Tamil Nadu – India.

1.6 Statement of the Problem

The Marine fishery sector has been playing an important role in international trade. It has assumed greater significance in the context of the World Trade Organisation (WTO). There is a steady growth and heavy demand for marine products all over the world. The marine fishing sector in India has seen major changes during the last decade and these changes have an impact on the people working in various sub sectors. Although, there has been substantial increase in the production, income and employment generated in the sector with increasing international trade, the variability and vulnerability has also increased over the years.

Tamil Nadu marine product exports contribute to the major share of marine product exports in India. Such being the situation, it is felt that a study on the trade constraints to the exports of marine products in Tamil Nadu assumes greater significance. It is also hoped that the findings of such a study would be of great use to prospective exporters, Industrialists, Planners and administrators at the government level. The need for increasing marine product exports makes it imperative for one to study the trade constraints and to evolve trade policies on a long term basis in order to improve Tamil Nadu marine products exports.

20. Statistical Hand Book, 2011, State Of The Economy, Department of Economics and Statistics, Government of Tamil Nadu, pp 3-4 <http://www.tnstat.gov.in/publications.html>

Keeping these points in view, the present investigation is an attempt to study the marine products exports in Tamil Nadu.

The Indian marine products trades have been very badly affected by the adoption of new economic policy of the Government of India and global economy. In early 1990s the Indian economy had witnessed dramatic policy changes. The idea behind the new economic model known as Liberalization, Privatization and Globalization in India (LPG), was to make the Indian economy one of the fastest growing economies in the world. An array of reforms was initiated with regard to industrial, trade and social sector to make the economy more competitive. The economic changes initiated have had a dramatic effect on the overall growth of the economy. It also heralded the integration of the Indian economy into the global economy.

The World Trade Organization is an international organization which was created for the liberalization of international trade. The World Trade Organization came into existence on January 1st, 1995 and it is the successor to General Agreement on Trade and Tariffs (GATT). The World trade organization deals with the rules of trade between nations at a global level. WTO is responsible for implementing new trade agreements. All the member countries of WTO have to follow the trade agreement as decided by the WTO. India is one of the founding members of WTO along with 134 other countries. India's participation in an increasingly rule based system in governance of International trade, would ultimately lead to better prosperity for the nation. Various trade disputes of India with other nations have been settled through WTO.

India has also played an important part in the effective formulation of major trade policies. By being a member of WTO several countries are now trading with India, thus giving a boost to production, employment, standard of living and an opportunity to maximize the use of the world resources. In that situation there are few trade constraints which need to be solved before India makes a mark for itself in the marine products export sector. Due to packaging, quality, anti dumping and branding has been adversely affected by the marine product exporters. At the same time India must look for potential market to sell their marine products exports.²¹

India is the third largest fish-producing nation in the world, exporting to 73 countries. It has the potential to grow further in view of the growing demand in trading blocks such as the European Union, United States, Canada and Middle East. There has been huge transformation in the Indian seafood industry over the last few years many of which have not been highlighted or marketed in the international arena. In 1997 the EU banned Indian seafood, citing lack of hygienic and phytosanitary measures in the industry, this was a landmark as thereon India has come a very long way. The challenge was on and India spearheaded quality control and HACCP was put into place. They are major trade constraints to the exports of marine products in Tamil Nadu - India.

1.7 Need for the Study

The winds of economic liberalization and globalisation have been sweeping out economy for nearly a decade. But the sector of the economy, which

21. Govt. of India, Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture. <http://www.dahd.nic.in/dahd/division/fisheries.aspx>

has remained untouched by this wind, is the marine fisheries sector. This is particularly worrying since fisheries play an important role in the economy of thirteen states in India. The huge market for fish and related products also has environmental concerns in addition to economical and social challenges. The Indian seafood industry has managed to overcome the problems which cropped up during the last one year. The vast potential for fish processing to cater to the domestic market and supplement the export of processing sea foods. A huge gap between the total fish production in the country and its processing for domestic consumption and export. The Indian marine products exports have still not achieved their true potential and there exists immense opportunities for expanding the basket of India's marine products exports. With a strategic attention on the new markets that are evolving due to free trade, India is witnessing a boom in marine products export sector.

1.8 Objectives of the Study

The objectives of the study are:

1. To study the growth performance of marine products exports in Tamil Nadu – India.
2. To analyse the trade policy implications and perspectives of marine fisheries sector.
3. To examine the trend of marine products exports in pre and post Liberalisation period.
4. To identify the trade constraints faced by the marine products exporters in Tamil Nadu.

5. To give suggestions for the promotion of marine products exports and to point out the policy implication thereof.

1.9 Hypotheses of the Study

In the light of the above objectives, the following hypotheses have been framed.

1. There is a positive growth in marine products export and the direction of trade is stable.
2. Trade constraints have a negative impact of marine products exports.

1.10 Research Methodology

Research methodology is way of systematically solving the research problem. It enlightens the methods to be followed in research activities starting from investigation to presentation. It includes, research design, sample and sampling framework, methods of data collection and framework of analysis.

1.10.1 Research Design of the Study

A research design is a framework or blueprint for conducting the research work. It details the procedures necessary for obtaining the information needed to structure and/or solve research problems. For this study, the researcher has used the already available facts or information and analysed them to make a critical evaluation of the trade constraints to the marine products exporters. The survey and fact-finding enquiries were conducted to identify the trade constraints of the marine products exporters. So the present study is descriptive and analytical in nature.

1.10.2 Sources of Data

The study is based on both primary and secondary data.

The primary data were collected from exporters of marine products in Tamil Nadu. For primary data collection, a well designed pre-tested interview schedule was prepared. The experts interview include interactions with Scientists, Economists, Technicians, Directors, Officers and Policy makers related to marine products exports.

The secondary data for the periods of 40 years from 1970-1971 to 2009-2010 relating to exports in quantity and values were collected for the study. The secondary data relevant for the study were collected from office records, annual reports and other published documents of the Marine Products Exports Development Authority (MPEDA), Central Marine Fisheries Research Institute (CMFRI), Central Institute of Fisheries Technology (CIFT), Seafood Export Association of India (SEAI), Asian Fisheries Forum (AFF), Indian Fisheries Forum (IFF), State Fisheries Department, Directorate of Industries and Commerce, State Planning Board, Industrial Department of the Government of Tamil Nadu and State Statistical Department.

1.10.3 Period of Study

The secondary data relating to export of Indian marine products were obtained for 40 years 1970-71 to 2009-2010. The field survey was carried out from April 2009 to March 2010 for the collection of primary data. The reference period of the survey was 2009-2010.

1.10.4 Sample Design

The Total numbers of exporters in Tuticorin sub regional office and Chennai regional office are 131 and 244 respectively. Out of these exporters, only 86 and 164 exporters were selected. The above exporters further classified

are manufacturer exporters, merchant exporters, route through merchant exporters and ornamental fish exporters. The total sample size of exporters has arbitrarily assigned as 66 percent of the total population. So the sample size is 250 exporters. Proportionate stratified random sampling technique is followed for selecting the sample exporters. In order to select the sample from each type of exporters have been selected at random level are 91,107 and 52 respectively. The sample of Tamil Nadu marine products exporters list were obtained from Marine Product Export Development Authority (MPEDA) office Cochin. The distribution of total marine products exporters and sample exporters in the present study is shown in Table 1.1.

TABLE 1.1
SAMPLE TAMIL NADU MARINE PRODUCTS EXPORTERS
SELECTED FOR THE STUDY

		Total Marine Products Exporters			Sample Marine Products Exporters		
S. No.	Types of Marine Products Exporters	Sub Regional Tuticorin Office Exporters	Regional Chennai Office Exporters	Total	Sub Regional Tuticorin Office Exporters	Regional Chennai Office Exporters	Total
1	MAE	46	90	136	30	61	91
2	MEE	55	105	160	36	71	107
3	OFE	30	49	79	20	32	52
	Total	131	244	375	86	164	250

Source: Indian Marine Products Exporters Directory, 2008, MPEDA, Cochin.

MAE - Manufacturer Exporters

MEE - Merchant Exporters

OFE - Ornamental Fish Exporter

1.10.5 Statistical Tools Analysis

For analysing the data collected during investigation, the following statistical tools were used. They are based upon the nature of data and relevance of the information required.

1.10.5.1 Analysis of Variance

Analysis of Variance was used for examining the differences in the mean values of the dependent variables associated with the effect of controlled independent variables, after taking into account the influence of the uncontrolled independent variable. Essentially, ANOVA is used as a test of means of two or more population. One way analysis of variance involves only one categorical variable or a single factor ANOVA applied when that categorical variable is in interval scale.

$$F \text{ ratio} = \frac{\text{Variance between groups}}{\text{Variance within groups}}$$

is calculated and compared

With the respective table value of F, (k-1) (n-k+1) degree of freedom whereas k- number of groups, n- number of samples.

1.10.5.2 Multiple Regression Analysis

Multiple regression analysis is used when there is one dependent variable and more than one independent variables. Both these independent and dependent variable are in interval scale. The impact of independent variables on the dependent variable is measured with the help of multiple regressions. The fitted regression model was

$$Y = a + b_1x_1 + b_2x_2 + \dots + b_nx_n + e$$

Where

y = Dependent variable

$X_1 \dots \dots \dots X_n$ = Independent variable

$b_1 \dots \dots \dots b_n$ = Regression coefficient of independent variables

a = intercept

e = error term

1.10.5.3 Factor Analysis

Factor analysis is a general name denoting a class of procedures primarily used for data reduction and summarization. In research, there may be a large number of variables, most of which are correlated and which must be reduced to a manageable level. Relationship among sets of many interrelated variables were examined and represented in terms of underlying factors.

1.10.5.4 Growth Rate Analysis

The statistical figures relating to various exports facts of marine products were compiled and analysed by fitting trend equation.

The equation is $y = a + bx$

Whereas y = exports fact

X = time

a = Intercept and

b = coefficient

Compound growth rate of these variable are estimated to ascertain the growth performance in the exports. The type of function fitted is in the form of

$y = abt$

Where

y = Value of exports facts.

a = intercept

b = parameter

t = years

By taking logarithms of above equation on both sides, the exponential form gets reduced to linear form with (yt) as dependent variable and 't' as independent variable. The transformation is given as follows:

$$\ln Y_t = \ln A + \ln B$$

The equation is solved by ordinary least squares method. The parameters 'a' and 'b' will indicate absolute investment in various exports facts. In order to obtain compound growth rate it is necessary to take antilog of 'b' and subtract one from it. The so obtained value is multiplied by 100 to get percentage growth rate.

$$\text{Compound growth rate} = (\text{Antilog of } b - 1) \times 100$$

1.10.5.5 Coefficient of Variation

Coefficient of variation is an improved measure over standard deviation. It is the ratio between the standard deviation and mean, and it is usually represented by percentage. The researcher had measured the marine trade constraints through variable associated with them. In order to measure the consistency of each variable on the particular constraints, the researcher found out the coefficient of variance of each variable using its mean value and standard deviation value. This measure indicates the consistency of the observations within a sample and discriminates a given set of samples sharply in terms of consistency.

1.10.5.6 Garret's Ranking Technique

The Garret's Ranking Technique was used to rank the expectation for export of marine products.

1.11 Scope of the study

Relevance of the Marine Fisheries Sector extends beyond the livelihood security of the large coastal population to the food security of our countrymen and our foreign exchange generation. The potential of the sector for employment generation through ancillary activities and empowerment of coastal womenfolk is significant. However, the global marine fisheries, especially the coastal sector, has been under constant threat in the recent years basically due to depleting resources, land and sea based pollution and upheaval in the climatic conditions. Concerns over this in the international for a have given rise to conventions and procedures that are to be sincerely implemented by the Governments and meticulously practiced by the stakeholders so as to ensure sustainability in fisheries. Fishery is a state subject and as such the primary responsibility for development rests with the state Governments. The major scope in marine fisheries development has been focused on optimizing production and productivity, augmenting export of fishery products, generating employment and improving welfare of fishermen and their socio-economic status.

1.12 Operational Definitions and Concepts

Anti dumping

Dumping is said to occur when the goods are exported by a country to another country at a price lower than its normal value. This is an unfair trade practice which can have a distortive effect on international trade. Anti

dumping is a measure to rectify the situation arising out of the dumping of goods and its trade distortive effect. Thus, the purpose of anti dumping duty is to rectify the trade distortive effect of dumping and re-establish fair trade. The use of anti dumping measure as an instrument of fair competition is permitted by the WTO. In fact, anti dumping is an instrument for ensuring fair trade and is not a measure of protection per se for the domestic industry. It provides relief to the domestic industry against the injury caused by dumping.

Barriers

Trade barriers are generally defined as government laws, regulations, policy, or practices that either protect domestic products from foreign competition or artificially stimulate exports of particular domestic products. While restrictive business practices sometimes have a similar effect, they are not usually regarded as trade barriers. The most common foreign trade barriers are government-imposed measures and policies that restrict, prevent, or impede the international exchange of goods and services.

Duty Entitlement Pass Book

Duty Entitlement Pass Book Scheme in short DEPB is an export incentive scheme. Notified on 1/4/1997, the DEPB Scheme consisted of (a) Post-export DEPB and (b) Pre-export DEPB. The pre-export DEPB scheme was abolished w.e.f. 1/4/2000. Under the post-export DEPB, which is issued after exports, the exporter is given a duty entitlement Pass Book Scheme at a pre-determined credit on the FOB value.

Economic Reform

Economic reform-in the words re-form means a change for the better as a result of correcting abuses and this in the sense of economic reform is to bring a change in the economy

Export

The term export is derived from the conceptual meaning as to ship the goods and services out of the port of a country. The seller of such goods and services is referred to as an "exporter" who is based in the country of export whereas the overseas based buyer is referred to as an "importer". In International Trade, "exports" refers to selling goods and services produced in home country to other markets.

Fisheries

Fisheries have been important parts of human life and food production throughout history. Fisheries have become a part of human cultures and mythologies, providing a community identity and a subject for artists throughout the ages. Partially, this is because fisheries are irretrievably wrapped up in humanity's perpetual fascination with the sea, and partially, because they have been a major source of food and income for many communities throughout the ages.

Foreign Exchange Controls

Foreign exchange restrictions and foreign exchange controls occupy a special place among the non-tariff regulatory instruments of foreign economic activity. Foreign exchange restrictions constitute the regulation of transactions of residents and nonresidents with currency and other currency

values. Also an important part of the mechanism of control of foreign economic activity is the establishment of the national currency against foreign currencies.

Globalisation

Globalisation describes an ongoing process by which regional economies, societies and cultures have become integrated through globe-spanning networks of exchange. The term is sometimes used to refer specifically to economic globalization: the integration of national economies into the international economy through trade, foreign direct investment, capital flows, migration, and the spread of technology.

Gross Domestic Product

Gross domestic product refers to the market value of all final goods and services produced within a country in a given period. It is often considered an indicator of a country's standard of living.

$$\text{GDP} = \text{C} + \text{I} + \text{G} + (\text{E} - \text{I})$$

C = private consumption

I = gross investment

G = government spending

E = exports

I = imports

Hazard Analysis Critical Control Points (HACCP)

HACCP stands for hazard analysis critical control points. HACCP is a food safety management system that uses process controls to minimize food safety risks in the food processing industry. HACCP is a preventative food safety system that tries to reduce the risk of hazards getting into food products to an

acceptable level. It does not eliminate risks altogether (Goodrich, Schneider and Schmidt, 2005).

International Trade

International trades between countries and across continents have existed for centuries including previous civilizations. Traditionally international trade consisted of traded goods like marine products, textile, food items, spices, precious metals, precious stones, and objects of art and various items across the borders. Everybody has heard of the silk route as well as amber road and other famous routes that existed and the ports and settlements that flourished due to the trade, which was carried on through land route as well as sea routes.

Liberalisation

Liberalisation refers to a relaxation of previous government restrictions, usually in areas of social or economic policy.

Licenses

The most common instruments of direct regulation of imports (and sometimes export) are licenses and quotas. Almost all industrialized countries apply these non-tariff methods. The license system requires that a state (through specially authorized office) issues permits for foreign trade transactions of import and export commodities included in the lists of licensed merchandises. Product licensing can take many forms and procedures. The main types of licenses are general license that permits unrestricted importation or exportation of goods included in the lists for a certain period of time; and one-time license for a certain product importer (exporter) to import (or export). The use of licensing systems as an instrument for foreign trade regulation is based on a number of international

level standards agreements. In particular, these agreements include some provisions of the General Agreement on Tariffs and Trade and the Agreement on Import Licensing Procedures, concluded under the GATT (GATT).

Non-tariff barriers (NTB)

Non-tariff barriers to trade are trade barriers that restrict imports but are not in the usual form of a tariff. Some common examples of NTB's are anti-dumping measures and countervailing duties, which, although they are called "non-tariff" barriers, have the effect of tariffs once they are enacted. Their use has risen sharply after the WTO rules led to a very significant reduction in tariff use. Some non-tariff trade barriers are expressly permitted in very limited circumstances, when they are deemed necessary to protect health, safety, or sanitation, or to protect depletable natural resources. Some of non-tariff barriers are not directly related to foreign economic regulations, but nevertheless they have a significant impact on foreign-economic activity and foreign trade between countries.

Policy

The term policy usually implies some long-term purpose in a broad subject field (e.g. land tenure), not a series of ad-hoc judgments in unrelated fields. Sometimes, however, we conceive of policy not so much as actively purpose oriented but rather as a fairly cohesive set of responses to a problem that has arisen. In the sphere of government development activities, governments have policies, plans, programmes and projects, each of these in succession being a little more short-term, more specific in place and timing than the previous and each successively more executive rather than legislative.

Privatisation

Privatisation is the incidence or process of transferring ownership of a business, enterprise, agency or public service from the public sector (government) to the private sector (business).

Sanitary and Phytosanitary (SPS)

The Agreement on the Application of Sanitary and Phytosanitary Measures (the "SPS Agreement") entered into force with the establishment of the World Trade Organization on 1 January 1995. It concerns the application of food safety and animal and plant health regulations. Sanitary and phytosanitary measures, by their very nature, may result in restrictions on trade. All governments accept the fact that some trade restrictions may be necessary to ensure food safety and animal and plant health protection. A sanitary or phytosanitary restriction which is not actually required for health reasons can be a very effective protectionist device, and because of its technical complexity, a particularly deceptive and difficult barrier to challenge. The basic aim of the SPS Agreement is to maintain the sovereign right of any government to provide the level of health protection it deems appropriate, but to ensure that these sovereign rights are not misused for protectionist purposes and do not result in unnecessary barriers to international trade.

Standards

Standards take a special place among non-tariff barriers. Countries usually impose standards on classification, labeling and testing of products in order to be able to sell domestic products, but also to block sales of products of

foreign manufacture. These standards are sometimes entered under the pretext of protecting the safety and health of local populations.

Subsidies

To subsidize an industry or company refers to, in this instance, a governmental providing supplemental financial support to manipulate the price below market value. Subsidies are generally used for failing industries that need a boost in domestic spending. Subsidizing encourages greater demand for a good or service because of the slashed price.

Tariff

A tariff is a tax placed on a specific good or set of goods exported from or imported to a country, creating an economic barrier to trade. Usually the tactic is used when a country's domestic output of the good is falling and imports from foreign competitors are rising, particularly if there exist strategic reasons for retaining a domestic production capability.

Technical Barrier to Trade (TBT)

A technical regulation or other requirement (for testing, labeling, packaging, marketing, certification) applied to imports in a way that restricts trade.

Trade

Trade refers to buying and selling of goods and services for money or money's worth. It involves transfer or exchange of goods and services for money or money's worth. The manufacturer or producer produces the goods, then moves on to the wholesaler, then to retailer and finally to the ultimate consumer.

Quotas

Licensing of foreign trade is closely related to quantitative restrictions – quotas - on imports and exports of certain goods. A quota is a limitation in value or in physical terms, imposed on import and export of certain goods for a certain period of time. This category includes global quotas in respect to specific countries, seasonal quotas, and so-called "voluntary" export restraints. Quantitative controls on foreign trade transactions carried out through one-time license. However, the system of licensing and quota imports and exports, establishing firm control over foreign trade in certain goods, in many cases turns out to be more flexible and effective than economic instruments of foreign trade regulation. This can be explained by the fact, that licensing and quota systems are an important instrument of trade regulation of the vast majority of the world.

1.12 Limitations of the Study

A few Tamil Nadu marine products exporters are not included for the study because of the non-availability of the complete records for the whole study period. The landing centers could furnish the information only from his memory and therefore information furnished by them was subject to the recall bias. However, the reliability of the data was ensured by repeated questioning in different ways and by cross-checking with similar information provided by other well-informed fishermen in the study area.

1.13 Chapter Design

The present study has been classified in to five chapters.

Chapter One includes the introduction, the marine products exports in India and Tamil Nadu, background of the study, statement of the

problem, need of the study, scope of the study, settings of the research problems, objectives of the study, hypotheses and research methodology of the study.

Chapter Two narrates the review of literature related to the marine products exports in Tamil Nadu - India.

Chapter Three discusses the profile of the marine products exports, overviews of marine fisheries resources potential of Tamil Nadu – India, trade constraints faced by marine products exporters and the measures for the improvement of the exporter's problems.

Chapter Four reveals the research results and discussion for the promotion of marine products exports.

Chapter Five presents the summary of findings, suggestions, policy implications, scope of future research and conclusion.