A STUDY ON THE SEAFOOD EXPORT PERFORMANCE AND POTENTIALS OF MARINE FISHING INDUSTRY IN THOOTHUKUDI DISTRICT

Thesis submitted to

Manonmaniam Sundaranar University

In partial fulfillment of the requirements

for the award of the Degree of

DOCTOR OF PHILOSOPHY IN COMMERCE

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APRIL 2014

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PERFORMANCE AND POTENTIALS OF MARINE FISHING INDUSTRY IN

THOOTHUKUDI DISTRICT" submitted by A. MUTHARASI for the Degree of

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ACKNOWLEDGEMENT

First and foremost I thank the Lord Almighty for giving me the opportunity to do this research work successfully.

I extend my sincere thanks to **Dr. Lourdes Poobala Rayen**, Dean of Arts and Associate Professor of Commerce, St. Xavier's College (Autonomous) for his valuable guidance from the selection of the topic till the completion of the research.

I am extremely grateful to **Rev. Dr. V. Gilburt Camillus S.J,** Principal, St.Xavier's College, Palayamkottaiforhaving given me permission to do this research.

I express my sincere thanks to **Rev. Fr. R. Jesu Michael Das S.J,** Secretary, St.Xavier's College, Palayamkottaiforthe encouragement extended to me for doing this research.

I extend my sincere thanks to **Dr. C. Thilakam**, Director, Research Centre of Commerce, ManonmaniamSundaranar University, Tirunelveli, who has been the source of encouragement and inspiration in carrying out the research.

I am extremely grateful to my friends for their help in the completion of my research in a successful manner.

I would like to thank my friend **Dr. J. Ari Hara Suthan**, who helped me in the data collection.

I would like to thank my family, especially my mother, father, sister and brother for their support and guidance throughout the research.

I thank my husband **Mr.T.Packiaraj** for the encouragement and support extended to me for completing the research successfully.

I am grateful to **Mr. Raj Kumar**, Deputy Officer, MPEDA, for the help extended by him.

A. MUTHARASI

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LIST OF ABBREVIATIONS

ANOVA - Analysis of Variance

ARIMA - Autoregressive Integrated Moving Average

CMFRI - Central Marine Fisheries Research Institute

CFA - Confirmatory Factor Analysis

CGR - Compound Growth Rate

CV - Cumulative Value

CIFRI - Central Inland Fisheries Research Institute

CIFI - Central Institute of Fishing Technology

DIC - District Industrial Center

EEZ - Exclusive Economic Zone

EU - European Union

EDI - Entrepreneurship Development Institute

EIA - Export Inspection Agency

FAO - Food and Agricultural Organization

FDI - Foreign Direct Investment

FRP - Fiber Reinforced Plastic

GDP - Gross Domestic Product

HWP - Heavy Water Plan

HP - Hewlett- Packard

HSC - Higher Secondary School Certificate

JNP - Jawaharlal Nehru Port

KMO - Kaiser- Meyer- Olkin Measures of Sampling

Kms - Kilometers

MUE - Manufacturer Exporters

MEE - Merchant Exporters

MPEDA - Marine Product Export Development Authority

OFE - Ornamental Fish Exporters

PVC - Polyvinyl Chloride

RCMC - Registration Cum Membership Certificate

RCA - Revealed Comparative Advantage

RSW - Southwest Florida International Airport

SWOT - Strengths, Weaknesses, Opportunities and Threats

SPS - Scientific Publishing Services

SSLC - Secondary School Leaving Certificate

SSI - Small Scale Industries

SME - Small and Medium Enterprises

SIDCO - Small Industries Development Corporation

SIPCOT - State Industries Promotion Corporation of Tamil Nadu Limited

SPIC - Southern Petrochemical Industries Corporation Limited

TAC - Tariff Advisory Committee

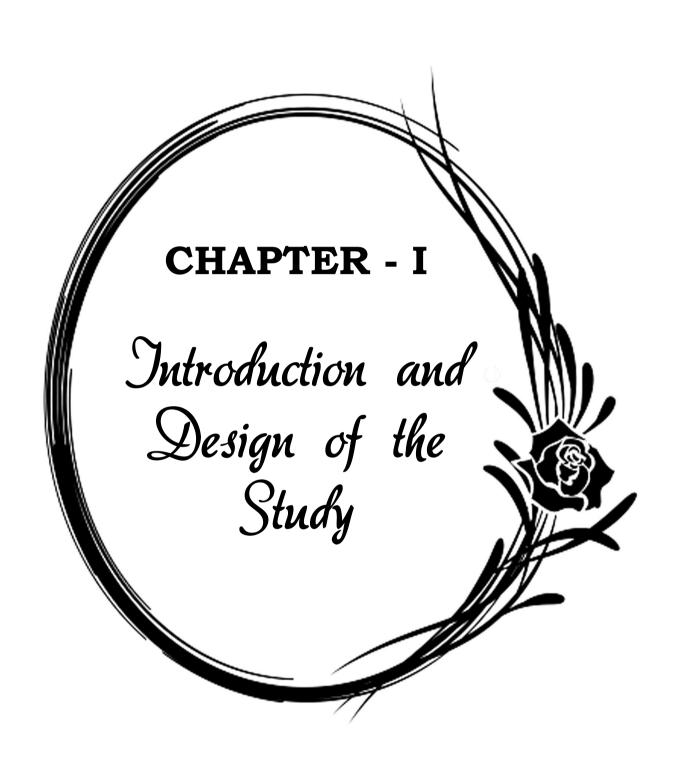
UAE - United Arab Emirates

USA - United States America

VIZAG - Visakhapatnam

VCTPL - Visakha Container Terminal Private Limited

WTO - World Trade Organization



CHAPTER - I

INTRODUCTION AND DESIGN OF THE STUDY

1.0	Introduction
1.1	Marine Fisheries in India
1.2	Profile of the Study Area
1.3	Statement of the Problem
1.4	Objectives of the Study
1.5	Scope of the Study
1.6	Operational Definitions of Concepts
1.7	Area of the Study
1.8	Period of the Study
1.9	Sampling
1.10	Data Collection
1.11	Hypotheses
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CHAPTER - I

INTRODUCTION AND DESIGN OF THE STUDY

1.0 INTRODUCTION

The growing population resource imbalances have forced humans to explore the newer avenues to meet their needs. In this connection, people have been looking for seafood. India with a large area exposed to sea has equally huge potential to reap the benefits be it domestic needs or earning revenue from export. Fishery refers to the industry of harvesting fish, shellfish, and other aquatic animals. Fisheries are an important source of food, income, jobs and recreation for people around the world. The fisheries sector 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, at the same time it is an instrument of livelihood for a large section of economically backward population of the country. Fisheries may be large commercial fisheries, recreational fisheries or small subsistence fisheries. There are four distinct channels by which fish is marketed in the country. They are local fresh fish trade, processed fish trade, export trade, and domestic urban trade.

Indian seafood is wanted internationally and there is a higher market potential in the importing countries. The potential market for marine exports is in value added products namely looked ready to eat, ready to table, dried shrimps and canned fish. Export of seafood have played a key role in developing the fishery sector in India and this makes the fishery sector a key player for the generation of employment.

Export of seafood plays a vital role in fisheries development in India by providing employment and income to millions engaged in fisheries, aquaculture,

processing and allied activities. The Marine Product Export Development Authority (MPEDA) in its Vision Document for Indian seafood export industry has highlighted capture fisheries, culture fisheries, processing and value addition, quality management and marketing with due regard to conservation and sustainability issues. To sustain fisheries in the new millennium, the quality, technical skills and management of fisheries manpower in the country will have to improve in consonance with the rapidly changing needs of our society, both nationally and internationally.

Exports of seafood have played a key role in developing the fishing and aquaculture sectors in India and this makes the fishery sector a key player in poverty alleviation and employment. India has a share of 2.58 per cent of the world seafood export trade. In terms of shrimp production India occupies the fifth position in the world and it is the top most suppliers of cephalopods to Europe. Aquaculture contributes 19 per cent by volume and 55 per cent by value of total seafood exports whereas farmed shrimp contributes 61per cent by volume and 83 per cent by value of the shrimp exports¹.

1.1 MARINE FISHERIES IN INDIA

India with a long coast line and abundant fishery resources have emerged as one of the leading seafood suppliers in the world. The Marine Product Export Development Authority, a nodal agency set up by the government of Indian in 1972 for the promotion of seafood exports from India. It gives detailed account of India's seafood potential, products, processing units and export performance. The Seafood Industry of India has come a long way and today seafood exported to nearly 100 countries from India. Currently, there are some 399 processing plants having a daily freezing capacity of

¹ Marine Product Export Development Authority, **News Letter** 2011.

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7283.36 tons. Besides, there are 471 cold storages in the country, the total estimated capacity of which is 89273.5 tons. The number of fishing vessels, which mainly contribute to the export market, is calculated as 12660². As a result of such changes, fisheries changed from a subsistence-based livelihood activity pursued by a group of largely poor and rural artisans into an urban-based, capital-intensive commercial sector earning sizeable sums of foreign exchange for the country. In 2006-07 fisheries accounted for nearly 1.3 per cent of India's GDP. India with a fishery product of 6.1 million MT from both captured and cultured sources are ranked third among the largest fish producing countries and 19th among the seafood exporting countries of the world.

1.1.1 Marine Fisheries in Tamil Nadu

Tamil Nadu is the important maritime state of the east coast of India. It is endowed with rich source of marine fisheries as this state is placed on the lower east coast, having eighth long coastline of 1076 km (13 per cent of the country's coastline) and continental shelf of 41,412 sq.km., It has 0.19 million sq.km of EEZ (9.4 per cent of the India's EEZ). Tami Nadu is having a total number of 422 fishing villages, 375 landing centers and 75,721 fishermen households. It is one of the leading states in India in marine fish production. The marine fisheries potential of the state is estimated at 0.719 million tonnes (0.369 million tonnes from less than 50 mt. depth and 0.35 million tones beyond 50 mt. depth).³

1.1.2 Marine Products

India with a long coast line of 8129 Km, 2 million sq. Km of Exclusive Economic Zone and 1.2 million hectors of brackish water bodies, offer vast potential

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²http://www.fao.org/home/en/

³http://www.fisheries.tn.gov.in/

for development of fisheries. Against an estimated potential of 3.9 million tonnes from marine sector, only 2.6 million tones are tapped. Fishing efforts are largely confined to the inshore waters through artisanal, traditional and mechanised sectors. The major marine products exported from the state include Frozen Shrimp, Prawn, Fish, Cuttle Fish, Squid, Dried Items like Shrimp, Shark Fins, Cuttle Fish Bones, Fish Maws, Canned Shrimps, Fish, Lobster, Crab, Clam, Mussel, Squid Tubes, Aquarium fishes, Fresh fish, and others.

1.1.3 Marine Product Export

There are four distinct channels by which fish is marketed in the country. They are Local Fresh Fish Trade, Processed Fish Trade, Export Trade, and Domestic urban Trade. Exports of marine products have played a key role in developing the fishing and aquaculture sectors in India and this makes the fishery sector a key player in poverty alleviation and employment. India has a share of 2.58 per cent of the world seafood export trade. In terms of shrimp production India occupies the fifth position in the world and it is the top most suppliers of cephalopods to Europe. Aquaculture contributes 19 per cent by volume and 55 per cent by value of total seafood exports whereas farmed shrimp contributes 61 per cent by volume and 83 per cent by value of the shrimp exports⁴.

1.1.4 Seafood Exports

Till the end of 1960, export of Indian marine products mainly consisted of dried items like dried fish and dried shrimp. Although frozen items were present in the export basket from 1953 onwards in negligible quantities, it was only since 1961 the export of dried marine products was overtaken by export of frozen items leading to a

⁴MPEDA News letter, Cochin, 2012.

steady progress in export earnings. With the devaluation of Indian currency in 1966 the export of frozen and canned items registered a significant rise. Frozen items continued to dominate the trade. Markets for Indian products also spread fast to developed countries from the traditional buyers in neighboring countries.

1.1.5 Market Structure of Seafood

Before 1960, the markets of Indian marine products were largely confined to neighboring countries like Sri Lanka, Myanmar (formerly Burma), Singapore etc. when our exports were dominated by dried items. This situation changed with the development of technology/modernization; dried products gave way to canned and frozen items. The product shift also resulted in market shift. More sophisticated and affluent markets viz. Japan, USA, Europe, Australia, etc. became our important buyers. Several seafood processing units with modern machinery for freezing and production of value added products were set up at all important centers in the country for export processing.

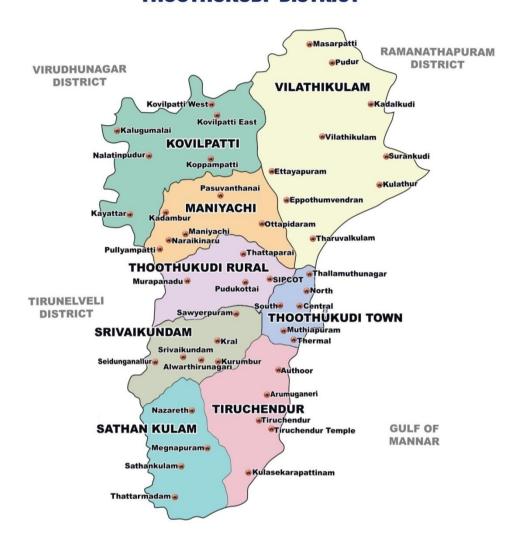
1.2 PROFILE OF THE STUDY AREA

1.2.1 Location

Thoothukudi district, the study area, is situated in the extreme South Eastern corner of Tamil Nadu state and bounded on the north by the districts of Tirunelveli, Viruthunagar and Ramanathapuram, on the East and South East by gulf of Mannar and on the west and south west by the district of Tirunelveli.

Figure 1.1
District Map

THOOTHUKUDI DISTRICT



Traditionally known as "Pearl City" on account of the prevailing pearl fishing in the area, Thoothukudi has had a fascinating history. In the farming part of the Pandiyan kingdom between 7th and 9th country. A.D Thoothukudi remained in the hands of the Cholas during the period between 9th and 12th century. Emergence of Thoothukudi as a maritime port attracted travellers, adventures, and eventually colonists. The Portugese were the first to arrive in Thoothukudi in 1932 A.D followed by the Dutch in 1958 A.D. The English captured Thoothkudi from the Dutch in 1782

and the East India Company established their control over Thoothukudi in the same year. Thoothukudi became the citadel of freedom struggle in the early half of the 20th century. It was in Thoothukudi that the illustrious patriot V.O.Chidambaranar established the first Swadesi steam Navigation Company, sailing the first steamer S.S. Gaelic to Thoothukudi on 1st June 1907.

1.2.2 Area and Population

The total area of this district is 4621 sq, kms., and it has a total population of 17,38,376 comprising of 203368 men and 201995 women⁵. The District has three revenue divisions, eight taluks, twelve blocks, three municipalities, nineteen town panchayats and 480 revenue villages. Seven Constituencies and one lok sabha are in the district.

1.2.3 Economy

The economy of Thoothukudi revolves around shipping, fishing, salt-pan and agriculture industries. Thoothukudi has a host of other industries including power, chemicals and IT. The availability of skilled labour, electricity generating plant, a container facility and a major port has made Thoothukudi an important centre for industry and business. The Sethusamudram project, the airport at Vagaikulam, Koodankulam Nuclear Power Plant, improved road and rail infrastructure and Nanguneri Special Economic Zone are expected to make Thoothukudi an attractive choice for business investment.

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⁵http://thoothukudi.nic.in/profile.html

1.2.4 Agriculture

Agriculture is the main occupation on which 70 per cent of the people depend on. The main food crop in this district is paddy. Out of the total area 470724 hectares, 178083 hectares are brought under the cultivation of different crops which of nearly 38 per cent of total area of the district. The important food crops in the district are paddy, cholam, kambu, Ragi, Varagu, Samai and commercial the important crops like Cotton, Chilly, sugarcane and Groundnut.

1.2.5 Industrial Background

The district constitutes 70 per cent of the total salt production of the state and meets 30 per cent requirement of our country. There are two Industrial Estates one at Kovilpatti with 11 units and the other at Thoothukudi with 20 units. The former is managed by SIDCO and the latter by SIPCOT. There are 2,200 and above Small Scale Industries registered in the district and about 12 major industries. They are engaged in the production of cotton and staple yarn, caustic soda, PVC resin, fertilizers, soda-ash, carbon dioxide gas in liquid form etc., Some of the major industries are SPIC, TAC, Dharangadhara Chemical Works, Loyal Textails Ltd., Madura coats Ltd., Sterlite Copper Industries, Kilburn Chemicals, Ramesh Flowers, Nila sea foods, Deva and Co., and Transworld Granite Industries. Tata steel recently announced plans to set up a Titanium dioxide project in Thoothukudi. Four national brand products are made in Thoothukudi: VVD Coconut Oil, Agsar Paints, BIO Food Ltd Hip Tea & Genkii Tea (Herbal Teas) and Venus Water Heaters.

The important public sector undertakings in this district are the Thoothukudi Thermal Power Station unit of the Tamil Nadu Electricity Board, Heavy Water Plant (HWP) and Port Trust. During this year 1,128 vessels entered this port and cargo to the tune of 12.13 lakhs tonnes was handled. Thoothukudi port has been issued the prestigious ISO-9002 certificate for the port operation and services and has joined the select group of World ports by becoming the first Indian major port to get such certificate. The Central Government is considering the construction of Titanium and Zirconium Sponge Plant, which comes under the control of Department of Atomic Energy at Palayakayal village of Srivaikundam Taluk. The District Industries Centre and the Tamil Nadu Industrial Investment Corporation are catering to the needs of the small and large scale industries in this district.

1.2.6 The Thoothukudi Port

One of the various infrastructural facilities, which contribute towards development of fisheries in general, and marine products export in specific of Thoothukudi district is the port of Thoothukudi. This port, a major gateway for India's international trade from the sourthern region, is located on the South Eastern coast of India adjoining the Gulf of Mannar of the state of Tamil Nadu about 600 km., south of Chennai.

The natural harbour with a rich hirer land activated the development of the port initially with wooden pies and it was declared as a minor anchorage port in 1868. The marine port of Thoothukudi, an anchorage port with litharge facilities has had flourishing traffic for over a century. This port was being used for export of salt, Cotton yarn, sonar leaves, palmyrah stalks, Palmyra fibers, dry fish, country drugs and other products, to neighboring countries and for import of coal, cotton, copra pulses and grains.

Thoothukudi became the citadel of the freedom struggle in the early 20th century. In 1906, one of the greatest freedom fighters of India, Mr. V.O.Chidambaram Pillai, launched the first Swadeshi "S.S Gaelia" in British India, After Independence; the minor port of Thoothkudi witnessed a flourshing trade and handled a variety of cargo meant for the neighbouring countries of Srilanka, Maldives etc, and the coastal regions of India.

In 1969 the Government of India sanctioned a project for the development of a major port of Thoothukudi for handling ships of 9.14 km (30') draft. An artificial harbour was constructed within a break water system projecting into the sea for about 4 km and Thoothukudi port became the 10th major port of India in July 1974. The minor port of Thoothukudi was merged with the newly commissioned major port in 1979. The capacity of the port is 20.75 million tonnes and it handled 21.48 million tonnes.

Thoothukudi port is an artificial deep-sea harbour formed with rubble mound type parallel breakwaters projecting into the sea for about 4 Kms., (Length of North breakwater is 4098.66 m. length of South breakwater is 3873.37 m and the distance between the breakwaters is1275m). The port was designed and executed entirely through indigenous efforts. The harbour basin extends to about 400 hectares of protected water area and is served by an approach channel of 1450 meters length and 183 meters width⁶.

1.2.7 Shipping Agencies

The informal service of shipping agency which existed at the time of emergence of Thoothukudi as a port even in A.D. Loading and unloading of cargo was done

⁶http://www.investingintamilnadu.com/tamilnadu/infrastructure/tuticorin_port_profile.php

manually from the thonies. The informal service continued even after constructing the jetties in 1894. After independence planned development took place to improve Thoothukudi harbour and garnishing the prospects of the trade, any families who were involved in the trade realized the need for dedicated man power for efficiently loading and unloading the cargo formed informal agencies. They also realized the need for systematic support service for the ships sailing and reaching the harbour. The smaller groups grew into 9 at the time when Thoothukudi port was declared as a major port in the year 1974.

The special features of this all weather port are round the clock operation navigation, Anchorage operation for lightening cargo, fourteen alongside berth, adequate warehousing and storage facility, modern cargo handling equipments to handle variety of cargo, good rail road connectivity for seamless transportation, integrated computerized system, EDI network, quick turn round of vessels and cordial industrial relations.

1.3 STATEMENT OF THE PROBLEM

Export has a major role in economic development of a country. Export expands the market for a product and its marketability increases the scale of operation and capacity utilization which in turn enhances its profitability. Thus export ensures the viability of an industry. In developing countries like India fisheries play a significant role in the economy not only as a source of providing maximum employment opportunity, but also as a main source of earning foreign exchange. Seafood especially fish and fish products constitute a major part in the export revenue and balance of payment of the country. Export orientation to marketing of seafood has brought a lot of changes in marine fishing industry. Fish export has a major impact in the economic

growth of India and it also play a vital role is development of marine fishing industry.

Tamil Nadu is one of the major fishing states in India, and Thoothukudi is one of the major seafood export destinations in the southern part of India.

Thoothukudi is one of the major port in India. It plays a vital role in the domestic and international trade. Fishery is one of the important industries of the district from the time in memorial and it is an important commercial port. Seafood export trade has grown significantly in the last half century and it is the main life time for many fishing and post harvest operations. The EU, USA and Japan account for major new export markets are emerging mainly for non-shrimp species. It is to be noted that amidst the global recession and economic meltdown the sector performed well. Contrary to the major competitors slowdown in export growth the country's seafood trade grew in quantum as well as value. Our seafood has shown consistently improved performance in overseas markets in view of the high quality. But it has to be taken care that the seafood exports has been the one sector which had been consistently growing and registered a sustained growth amidst competition from other countries. Indian seafood trade continues unabated amidst numerous non-tariff barriers.

In spite of the steady growth in the seafood exports, the seafood industry is affected by irregular supply of raw material, cutthroat competition for raw material, heavy competition for target market and low capacity utilization. Governmental support is a requisite to ensure that the sector doesn't suffer in the backdrop of unfair trade regulations and equivocal quality standards by the target markets. Preliminary literature survey has revealed a gap in the research in the seafood export performance and its potentials. This study is an attempt to examine the performance and potentials of the seafood export business in Thoothukudi district.

1.4 OBJECTIVES OF THE STUDY

- > To study the marine fishing industry and export of seafood products from
 Thoothukudi district
- To identify the factors influencing the seafood export business
- To analyze the performance of seafood export from the study area.
- To assess the role of Marine Product Export Development Authority (MPEDA) in the export of seafood.
- To examine the problems associated with seafood export
- To ascertain the export potentials of seafood from Thoothukudi
- To summarize the findings and suggestions based on the analysis and interpretations of the study.

1.5 SCOPE OF THE STUDY

This study was conducted in Thoothukudi district mainly because of the concentration of more number of seafood exporters and fishing villages. The main focus of the study was export performance and potentials of the seafood exports from the study area. The information related the business profile of the seafood exporters, the factors influencing the seafood export the performance and potentials of seafood export, the role of Marine Product Export Development Authority (MPEDA) in the export of seafood and the problems associated with seafood export was collected from the seafood exporters operating from the study area. In this study the term Marine Product and seafood are used synonymously.

1.6 OPERATIONAL DEFINITION OF CONCEPTS

1.6.1 Marine Fishing Industry

The Marine Fishing Industry includes only the activities concerned with fishing in sea and methods of taking, processing, storing, transporting, marketing or selling fish or fish products.⁷

1.6.2 Seafood

"Edible fish or shellfish from the sea".8

Seafood is any sea animal or seaweed that is served as food or is suitable for eating, particularly seawater animals, such as fish and shellfish (including mollusks and crustaceans). "The term seafood is also applied to similar animal from freshwater and all edible aquatic animals are collectively referred to as seafood. The harvesting of seafood is known as fishing and the cultivation of seafood is known as aquaculture, mari culture or simply fish farming. Seafood is a source of protein in many diets around the world"

1.6.3 Seafood Exporters

The exporters and traders of frozen seafood was started with the objective of exporting high quality frozen seafood.

1.6.4 Manufacturer Exporters

Manufacturer exporters are those exporters who manufacture the product in their processing unit and then export.

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⁷Food and Agricultural Organisation, Fisheries Section, 28 May 2008

⁸Houghton- Mifflin American Heritage

⁹ Robson.A, "Shellfish view of Omega-3 and Sustainable Fisheries", Nature 444, 2006.

1.6.5 Merchant Exporters

The term "merchants" applies to any people who sell physical goods or products. Merchant exporter means that a man who buy the materials from the manufacturers and export directly exporters who does not have manufacturing facility.

1.6.6 Ornamental FishExporters

Ornamental fish is often used as a generic term to describe aquatic animals kept in the aquarium hobby, including fishes, invertebrates such as corals, crustaceans (e.g., crabs, hermit crabs, shrimps), mollusks (e.g., snails, clams, scallops), and also live rock. Live rock is a general term for any type of rock encrusted with, and containing within its orifices, a wide variety of marine organisms including algae and colorful sessile invertebrates.

The term Ornamental fish Exporters are exporting the products are ornamental fish only.

1.7 AREA OF THE STUDY

The study area Thoothukudi district in situated in the extreme south eastern corner of Tamil Nadu traditionally known as 'pearl city' on account of the prevailing pearl fishing in the area. One of the various infrastructural facilities which contribute towards development of fisheries in general and seafood export in specific of Thoothukudi district is the port of Thoothukudi. This port a major gateway for India's international Trade from the southern region is located on the south eastern coast of India adjoining the Gulf of manner of the state of Tamil Nadu about 600 KM south of Chennai.

1.8 PERIOD OF THE STUDY

This study was conducted during 2010-2014. The required primary data were collected during November 2012 to June 2013.

1.9 SAMPLING

There are 179 exporters who have registered their names and units in Marine Product Export Development Authority (MPEDA) at Thoothukudi. They are permitted to export their seafood from anywhere in India. Among the 179 registered exporters only 130 exporters are exporting their seafood from Thoothukudi port. With regard to the selection of sample respondents, census method was adopted. Among 130 exporters, 74 exporters are Manufacturing Exporters, 44 exporters are in Merchant Exporters and the remaining 12 exporters are in Ornamental Fish Exporters. All the 130 exporters who are exporting seafood are included for the study.

1.10 DATA COLLECTION

The present study is based on both primary data and secondary data. The primary data has been used as the main source of the study and it was collected from 130 seafood exporters in Thoothukudi district. The primary data was collected through the interview schedule carefully designed after a pilot study and the several discussions with the research guide, the officials of MPEDA and a few exporters. The interview schedule was divided into three parts. The first part of the interview schedule includes the profile of the exporters, factors leading to start the export business and their export performance. The second part of the interview schedule focuses on the problems encountered by the exporters and their attitude towards the role of MPEDA towards the seafood export. The third part of the interview schedule covers the exporters' view on

the potentials for the seafood export. The relevant variables were identified with the help of exporters and also the experts in the field. A pilot study was conducted among 30 seafood exporters covering 10 manufacturing exporters, 10 merchant exporters and 10 ornamental fish exporters from the study area. Based on the feedback from the pilot study, the final draft of interview schedule was prepared with few modifications in the questions included in the interview schedule. The final interview schedule was used to collect the data from the exporters.

The secondary data was collected from the various websites, journals and MPEDA reports and publications.

1.11 HYPOTHESES

Based on the objectives of the study, the following hypotheses are drawn

- There is no significant relationship between personal profile of the exporters and the factors leading to start the seafood export business.
- There is no significant relationship between factors leading to start the seafood export business and their export performance.
- There is no significant relationship between profile of the exporters and problems faced by the seafood exporters.
- There is no significant difference among the manufacturing, merchant and ornamental fish exporters regarding their export performance and their view on various aspects related to their exports.
- There is no significant association between the profile of the exporters and their view on aspects related to the export and export performance among the exporters.

- There is no significant relationship between the role of Marine Product
 Export Development Authority and the overall attitude towards the export
 performance.
- There is no significant relationship between profile of the exporters and potentials for seafood export business.

1.12 ANALYSIS OF THE DATA

The data collected from the primary and secondary sources were duly edited and tabulated in such a way to analyse and interpret them in the context of the objectives of the study. The collected data were processed with the help of appropriate statistical tools according to the relevance of information required and the nature of the scale of data. The applied statistical tools and tests are given below.

The collected data were processed with the help of following statistical tools.

Exploratory Factor Analysis

Factor analysis is a very useful method of reducing data complexity by reducing the number of variables being studied. It is a good way of resolving the confusion and identifying latent or underlying factors from an array of seemingly important variables. In a more general way, factor analysis is a technique which, by analyzing correlations between variables, reduces their number into fewer factors which explain much of the original data, more economically ¹⁰.

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Rajendra Nargundar, Marketing Research: Text and Case, Tata McGraw Hill Publishing Company Ltd., Noida, India, 2004

In the present study, the factor analysis has been administered to narrate the variables in the factors leading to start the seafood export business, problems faced by the seafood exporters, role of MPEDA for the promotion of seafood export and potentials for seafood export.

Confirmatory Factor Analysis (CFA)

The Confirmatory Factor Analysis is one of the multivariate statistical tools which is applied to confirm the extracted variables in the factor by the Exploratory Factor analysis which explains the factor in a reliable manner or not (Segars and Grover, 1993)^{11.} It explains the reliability and validity of variables in each construct developed in the present study (Fornel and Larcker, 1981)¹². The content validity, convergent validity and discriminant validity have been tested through the Confirmatory Factor Analysis (Chan, 1997¹³; Li et al., 2007¹⁴). In the present study, the CFA has been administered to examine the reliability and the validity of variables related to each concept developed in the present study. Factor analysis has been administered to narrate the variables in the important factors leading to start the seafood export business, problems faced by the seafood exporters, role of MPEDA for the promotion of seafood export and potentials for seafood export.

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¹¹ Segars A.H, and Grover.V, "Re-examining Perceived Case of Use and Usefulness: A Confirmatory Factor Analysis", **MIS Quarterly**,17(4) pp. 517-525.1993.

¹² Fornel and Larcker D.F, "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error", **Journal of Marketing Research**, 18(1), pp. 39-51.1981.

¹³ Chan P.Y.K, Reexamining a Model for Evaluating Information Center Success using a Structural Equation Modeling Approach", **Journal of Marketing Research**, 18 (1), pp. 39-51,1997.

¹⁴ Li.W. Humphreys P.K, Yeung A.C.L, Cheng T.C.E, "The Impact of Specific Supplier Development Efforts on Buyer Competitive Advantage: An Empirical Model", International Journal of Production Economics, 106(1), pp. 230-247, 2007.

Reliability Test

The reliability of the variables included in each construct had been computed with the help of Cronbach Alpha. The minimum threshold of Cronbach Alpha is 0.60 (Nunnally, 1978¹⁵).

In the present study, the Cronbach Alpha has been applied to test the overall reliability of variables included in each construct related to the export of seafood and the problems faced by the seafood exporters.

Multiple Regression Analysis

The Multiple Regression Analysis is one of the multivariate methods. It is applied when the independent variables and dependent variables are in interval scale¹⁶. The general form of the multiple regression models is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \beta_k X_k + e$$

This is estimated by the following equation:

$$Y = a + b_1 X_1 + b_2 X_2 + \dots b_k X_k +$$

The R², co-efficient of multiple determinations is adjusted for the number of independent variables and the sample size to account for diminishing returns. After the first few variables, the additional independent variables do not make such contribution.

The F-test is used to test the null hypothesis that the co-efficient of multiple determination in the population, R^2 , is zero. This is equivalent to testing the null hypothesis

¹⁵ Nunnally J.C, **Psychometric Theory**, McGraw Hill, New York, New York 1978.

¹⁶ Goldberg M.A, **Introduction to Regression Analysis**, South Hampton, UK: WIT Press, 2002.

 $H_0=\beta_1=\beta_2=\beta_3=....=\beta_k+0.$ The test statistic has an F distribution with 'K' and (n-k-1) degree of freedom.

In the present study, the Multiple Regression Analysis was used to evaluate the impact of the problems of exporters on the export performance of various groups of exporters.

One Way Analysis of Variance

The Analysis of Variance is used to examine the differences in the mean values of the dependent variable associated with the effect of the controlled independent variables, after taking into account the influence of the uncontrolled independent variables. Essentially, the ANOVA is used as a test of means for two or more populations¹⁷. The one way analysis of variance involves only one categorical variable, or a single factor.

The one way ANOVA has been applied to find out the significant association between the profile of the exporters and their views on various aspects related to the problems, role of MPEDA, potentials for seafood export and the exporters' attitude towards MPEDA.

F-Test

The F-test has been used to analyze the significant difference between the groups of exporters regarding their views on the related aspects to the export of seafood.

¹⁷ Rick Turner.J, and Julian Thayer, Introduction to Analysis of Variance: Design, Analysis and Interpretation, thousand Oaks, CA: Sage Publications, 2001.

1.13 CHAPTER SCHEME

The research report has been divided into seven chapters.

The first chapter deals with the design of the study. This chapter includes introduction, statement of the problem, objectives of the study, scope of the study, operational definitions, area of the study, period of the study, sampling, data collection, hypotheses, plan of analysis, limitation of the study and chapter scheme.

The second chapter presents the review of literature. Reviews of the previous studies organized according to topics of importance namely reviews relating fisheries, marine fishing industry, export performance and export problems and challenges in the chronological order have been presented in this chapter.

The third chapter deals with the marine fishing industry This chapter gives information regarding marine fishing industry, role of Government in the development of fishing, analysis of export of marine products, fisheries in Tamil Nadu and the marine fishing industry in Thoothukudi district.

The fourth chapter deals with the profile of the seafood exporters and the factors leading to start the seafood export business in Thoothukudi District. The information relating to the profile of the seafood exporters, seafood export units, factors leading to start the seafood export business, exporters' view about the factors leading to start the seafood export business, association between the profile of exporters and the factors leading to start the seafood export business.

The fifth chapter presents the performance of the seafood exporters in Thoothukudi district. It gives information about the analysis of seafood export during the period 2001-02 to 2011-12 in respect of quantity and value of seafood export from

the Thoothukudi port. The performance of the seafood export has been analysed in terms of product and in terms of the country to which the seafood is being exported from Thoothukudi port.

The sixth chapter deals with problems and potentials of seafood export from Thoothukudi District. It includes problems faced by the seafood exporters, the association between the profile of the seafood exporters and the problems faced by the seafood exporters, the impact of problems relating to the seafood exporters on the seafood export performance, role of Marine Product Export Development Authority (MPEDA) and the association between the profile of the exporters and the role of MPEDA.

The seventh chapter highlights the summary of findings and suggestion based on the analysis and interpretation of the study.

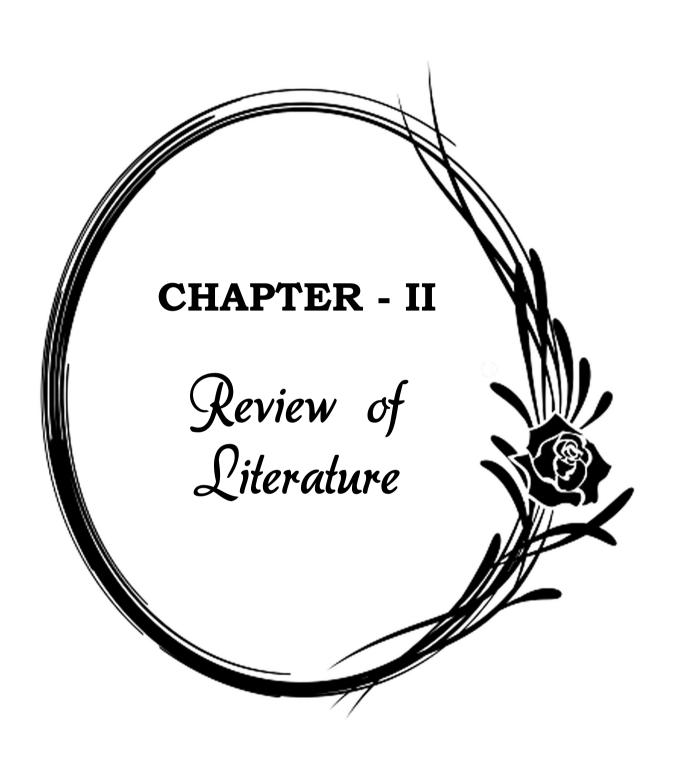
1.14 LIMITATIONS OF THE STUDY

The following are the limitations of the study

- 1. The analysis was done on the data given by the exporters from the study area. The exporters were hesitating to share some of the data which are sensitive in nature.
- 2. The study is restricted to Thoothukudi district only and the findings and suggestion may not be applied to other areas.
- 3. The results of the primary data are solely dependent on the trust worthiness of the respondents.

1.15 CONCLUSION

The design of the study helped the researcher to draw the detail plan or outline for the research work to be conducted. The objectives of the study show the action plan and the direction of the study. This chapter also gives information about the tool to be used for the data collection, the sampling methods and the size of the sample, the plan of analysis and the limitations of the study.



CHAPTER - II

REVIEW OF LITERATURE

2.0 Introduction
2.0 IIIII OUUCUOII

- 2.1 Reviews Relating to Fisheries
- 2.2 Reviews Relating to Marine Fishing Industry
- 2.3 Reviews Relating to Export Performance
- 2.4 Reviews Relating to Export Problems and Challenges
- 2.5 Conclusion

CHAPTER - II

REVIEW OF LITERATURE

2.0 INTRODUCTION

Review of literature paves the way for a clear understanding of the areas of research already undertaken and throws a light on the potential areas which are yet to be covered. Keeping this fact in mind, an attempt has been made to make a brief survey of the previous works undertaken in the field of export performance in the seafood export business in Thoothukudi district.

For any research, the survey of related literature is of utmost importance; because it throws light on the problems in hand. It helps the researcher for a well conceived and planned approach in conducting the study. A review of literature relevant to study has been presented. It covers research studies relating to export problems in the seafood export business and other related aspects of the industrial relation.

2.1 Reviews Relating to Fisheries

Selvaraj.P¹ (1975) in his article "Small Fishermen in Tamil Nadu" revealed that the lenders of the catamarans are poor and inadequate to maintain the small fishing families even at the subsistence level they are exploited by the motorboat owners. There are no organized marketing centers and no transport facilities. The result is that they are at the mercy of middlemen.

¹ Selvaraj. P, "Small Fishermen in Tamil Nadu", **Institute of Development Studies**, Sangam Publishers Madras Publication, No. 9, 1975, pp. 1-49.

Rao P.S ²(1978) in his study "Fish Marketing and Management" suggests that the marketing organization should be organized in such a way as to utilize the human, financial and technical inputs to their maximum capacity to gain the highest output. The rapid mechanization of fishing industry has trebled the output in the last decades. Rao strongly advocates the development of the fish market, which alone can bring a big change in the Indian fishing industry.

Noble.A and Narayan Kulty.N³ (1978) in his article "Economics of Indigenous Fishing units Operating at Monastery Cochin" says that the gross income in relation to investment in very good in the indigenous fishing units giving out proportionately higher rate of products then the mechanized units. The country crafts require comparatively less investment and can be economically put into action even when the fish in the sea is socially.

John Kurien⁴ (1982) in his study "Technological Change in fishing – Its impact on Fishermen" says that there was an increase in physical output of fish in Kerala at the rate of 3.65 per cent during the last two decades. The benefit of increased output accrued mainly to the mechanized sector. The working fishermen have not reaped the full benefits the bulk of the surplus accrued to private entrepreneurs.

Nair P.V.R and Pillai V.K⁵ (1983) in their article "Productivity of Indian Seas" says that the Indian Ocean including Antarctic's has an area of about 75 million square Kms., which is roughly one fifth of the total area of the world oceans. But the

² Rao P.S, "Fish Marketing and Management", **Industrial Fisheries Association Souveni**r, New Delhi, 1978, pp. 15-25.

³ Noble.A and Narayan Kulty.N, "Economics of the Indigenous Fishing units at Cochin- A case study", **Central Marine Fisheries Research Institute**, Special publication, Cochin – 1978, pp. 24.

⁴ John Kurien, "Technological Change in Fishing – Its Impact on Fishermen", **Centre for Development Studies, Trivandrum**, March 1982, pp. 25-40.

⁵ Nair P.V.R and Pillai V.K, "Productivity of the Indian Seas", **Journals of Marine Biological Accessories India, Vol. 25 (1&2),** July 1983, pp. 41-50.

fish production from this ocean is only about 4 million tonnes (ie) about some per cent of the world annual catch. Among the countries bordering the Indian Ocean. India is the largest and it contributes to about 45 per cent of the production from the region. There are about 2 million square kms of marine water spread under the control of India as against its land area of about 3.2 million square Kms.

Leela Gulati⁶ (1983) in her article "Fishing Technology and Women in Kerala" reveals that the younger generations of fishermen are quite familiar with both traditional as well as mechanized fishing and can switch from one to the other with perfect ease. There has been a steady increase in the number of mechanized boats pawned by fishermen and decrease in the number of traditional crafts. Since the technological change was followed closely by the discovery of major new prawn grounds, a direct improvement has taken place in the opportunities for employment and income generation.

Ramanathan.V ⁷(1984) is his work "Fisheries Potentials in Tamil Nadu" says that a lot of interest has been generated among the public on the fishing industry consequently a number of leading business houses have made their entry into the industry these businesses have embarked on projects for the construction of big mechanized fishing vessels with facilities for fish processing the author listed out the obstacles in mechanist as Inadequate boat building yards, Lack of suitable machine engines, Non availability of spaces , High cost of indigenously made boats , No knowledge of the resources of the oceans around Tamil Nadu, and Inadequate supply of ancillary materials such as winches, and deep sea floats.

⁶ Leela Gulati, "Fishing Technology and Women in Kerala", Centre for Development Studies, Trivandrum, January 1983, pp. 29-40.

⁷ Ramanathan.V, "Fisheries Potentials in Tamil Nadu", **Yojana, April 1984**, pp. 24-25.

Subba Rao.N⁸ (1985) in his article "Some Parameters of Fisheries Development with special reference to Andhra Pradesh" revealed that agriculture deals with many varieties of crops of different nature to be handled in a known area, where the process of growing crops can be watched regularly and continuously and adequate precautionary measures can be taken by the cultivator on the standing crops. In the case of Mineral resources, the product (mining) after the estimation will be a question of tapping the known and fixed resources. But fish is a living organism and highly perishable. It is common property resources and the methods of estimation capture and the availability of different varieties of fishes is of a different nature as the resources are mostly moving invisible although renewable. The resources such as fish, shellfish, etc. through caught in different waters have to be brought to the few selected centers.

Srivastava U.K⁹ (1986) in his work "Import of Mechanization of small fishermen Analysis and Village Studies" says that it was a part of work done by the Centre for Management in Agriculture, Indian Institute of Management, Ahmadabad. The study provides insight into the problems of small fishermen in the process of technological changes.

Nalini Nayak¹⁰ (**1986**) in her article "Impact of the Changing Pattern of Fish vending by Women in the Fishing Communities" revealed that the control over marketing depends on factors like mode of production, the perishable nature of fish and the socio-economic relations between producers, traders and middlemen and the structure of market.

Subba Rao.N, "Some Parameters of Fisheries Development with special reference to Andhra Pradesh", **Seafood Export Journal, Vol. 18 (6)**, November 1985, pp. 5-12.

⁹ Srivastava U.K, "Impact of Mechanists on Small Fishermen-Analysis and Village Studies", Concept Publishing Company, New Delhi 1986, pp. 1-499.

Nalini Nayak, "Impact of the Changing Pattern of Fish Vending by Women in the Fishing Communities", **Programme for Community Organization**, Trivandrum 1986, pp. 25-27.

Nishad Y.P¹¹ (1987) in his study "Socio Economic Aspects of Motorization of Traditional Crafts" mentioned that institutional credit and responsible of the mechanization fishing vessels. He further observed that the benefits of increased output accrued mainly to the mechanized sector. However, the fisherman has not reaped full benefits of increase in the output. The bulk of the surplus accrued to private enterprises. The non-mechanized sector experienced a substantial declare in volume and a small increase in the real value of output moreover, distribution of income between, different groups of workers ie., independent fisherman, wageworkers and the like in the non-mechanized sector is unequal.

Pichaiah.N¹² (1987) in his study "Socio-Economic Conditions of Fishermen" arrived that the conclusion that the fishermen suffer in poverty as they have not taken steps to family planning and still continue to use outdated techniques of fishing. Fishermen have suffered from middlemen due to poverty and illiteracy.

Ranga Rao.V¹³ (1987) in his study "Performance of the Fishing Sector in India" says that the some of the pressing problems and ways to factor them. The author examined the fishing problems along the following points are entry of deep sea fishing trawlers in the inshore region affected the small fishermen, infrastructure development in fisheries were lacking very much, marketing facilitates were coast provided and even where those existed was unorganized, review of Mechanization programme and evaluation of different subsidy projects in each state and to take necessary steps in the state where allocation was attained.

Nishad Y.P, "Socio economic Aspects of Motorization of Traditional Crafts", Fishing Chimes, Vol. 7, No.7, October 1987, pp. 31-41.

Pichaiah.N, "Socio-Economic Conditions of Fishermen", Kurukshetra, Vol. XXXV, No.8, May 1987, pp. 35-37.

Ranga Rao.V, "Fisheries Development a new Perspective", **Agriculture Situation in India, Vol. XVII, No. 4**, July 1987, pp. 273-276.

Varamballey K.V.M¹⁴ (1988) in his study "Women Employment in Fishing Industry" pointed out that female fish vendors may not get their regular quota if the whole sale merchants purchase all the fish available. In his opinion, lack of finance is a problem in procuring more fish. It is also difficult for the women to get loan from the co-operative societies. Moreover concern is not able to depend on the "passengers can goods" buses for the transportation of fish as they seldom enjoy the co-operation of the fellow passengers and the crew. He also said that inadequate marketing facilities are one of the hurdles to the marketing of the fish.

Sridevi.C¹⁵ (1989) in her study "The Fishermen Financier, A study of states – Role Nexus in a pleasant Community" reveals that a large number of fishermen are not able to meet the basic needs of their life and hence the women members of their families are forced to make their entry into the industry.

Balakrishnan Nair.N¹⁶ (1989) in his study "A study on Fisheries in Kerala" mention that the following recommendations.Delimitation of fishing zones for the different types of craft should be strictly enforced and implemented, night fishing in the sea by any type of gear except gill nets is to be prohibited, registered and licensed vessels / crafts alone should ply and fish in the territorial water of Kerala, suggested that total ban should be enforced on trawling during June, July and August in the interest of conservation of resources, use of craft fitted with out Board Machine with more than 15 HP should be prohibited and destructive fishing practices are to be banned. It also recommended providing adequate encouragement for mechanized

¹⁴ Varamballey K.V.M, "Women Employment in Fishing Industry – A case study of Dakshina Kammada District", Pigmy Vol. 33, No.7, Feb. 1988.

Sridevi.C, "The Fishermen Financie, A study of states – Role Nexus in a pleasant Community", Economic and Political weekly, Vol. XXIV, No. 17, April 29, 1989, p. (ws) 6.

¹⁶ Balakrishan Nair.N, "A Study on Fisheries in Kerala", **Kerala University**, 1989.

fishing boats to diversify their operations from bottom trawling for shrimps to other types of fishing for varieties.

Khanna S.S and Deviah M.D¹⁷ (**1989**) in their study "Strategy to enhance fish in particular prawn production in India" says that deep sea fishing vessels can help to get huge amount of revenue.

Sankaran Pillai. C and Stephan J.K¹⁸ (1992) in their study "Employment Potential of Fisheries in Kanyakumari District" says that the following conclusions to economic and rural backwards of the fisherman. They have observed that economic and rural backwards of the fishermen are the result of their lack of skill and their non-migratory nature. In their view, they do not have the means to try any of the modern techniques of fishing.

Rao P.S¹⁹ (1993) in his article "Importance of Fishing Industry in Indian Economy" has analyzed the employment opportunities of the fisherman in India. Fisheries and allied industries like beat building and net manufacturing industries would generate employment opportunities to a large number of people and there by contribute to the growth of income of people. Similarly more number of workers has been working in fish processing industries.

Alan Nixon²⁰ (**1997**) in his article "World Fisheries: The Current Crises" has pointed out the world's fisheries have reached, and in many cases even exceeded the limits of sustainability. At the same time the world's population continues to increase

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¹⁷ Khanna S.S and Deviah M.S, "Strategy to enhance Fish in particular Prawn product in India", **Yojana Vol. 20,** 1989, pp. 17-19.

¹⁸ Sankaran Pillai.C and Stephan J.K, "Employment Potential of Fisheries in Kanyakumari District", Hindecem Annual, Hindecem Research Centre, Vol. I, 1992, pp. 47-50.

¹⁹ Rao P.S, "Importance of Fishing Industry in Indian Economy", **Yojana, Vol. XVII, No.15, Sep** 1993, pp. 27-29.

²⁰ Alan Nixon, "World fisheries: The Current Crises", **Science and Technology Division**, January1997.

by approximately 100 million a year and is expected to surpass 7,000 million by the year 2010 and that maintaining current levels of consumption of fish to the year 2010 will require an additional 19 million tonnes of food fish over the 1993 level of 72 million tonnes. In this context he suggested that production can be doubled and significant improvements should be achieved in the conservation and management of capture fisheries, through stock rebuilding and more rational harvesting practices, and with the application of food technology to improve utilization of by catches and small pelagic fish for direct human consumption.

Bhave S.Y²¹ (2000) in his work "India Needs Deep Sea Fishing Policy" says that strongly about the code of regulations in India on minimum mesh size and obscured many fisherman use nets. He lamented that fishermen made their own smaller mesh cod and for nothing supplied by other manufactures the attributed depreciation of fishery resources in Indian waters mainly to the operation of small meshed nets. He estimated 50 per cent of make of the catches because of using, small mesh were dumped overboard. He also mentioned that insufficient funds are being put into the education of fishermen who remain backward.

Armaan Ullah Muzaddai²² (2000) in his study "Sustainable Use of Fisher Resources" identified that some of the current issues of sustainable usage of fishery resources namely, land and water resources, waste utilization, environmental impact caused by over fertilization of agricultural fields and fish ponds, over exploitation, water pollution, socio-economic effects and coastal zone management. He has drawn the conclusion that public awareness of hazardous effects of pollution and importance

²¹ Bhave S.Y, "India Needs a Deep Sea Fishing Policy", **Fishing Chimes, Vol. 20, No. 1**, April 2000, pp. 106-107.

Armaan Ullah Muzaddadi, "Sustainable Use of Fisher Resource", **Marine Product Export Development Authority News Letter,** August 2000.

of conservation of threatened fish species, proper understanding of biological and statistical terms like carrying capacity, Maximum Sustainable Yield, Total Allowable Catch by the people are some of the basic requirements of sustainable usage of fish resources.

Venugopal.V et.al., ²³(2001) in their study "Potential for control of Bio-Hazards of Cultural Fish by Gamma Irradiating" says that aqua culture production in India can supplement captured fishery products. The earning of foreign exchange through exports aqua cultured products from India is expected to exceed U.S \$2 billion in the near future they also expressed their view that fish and fishery products are one among the several cashier of disease causing micro-organisms and parasites As compared with capture fisheries aqua culture fish and shell fish may be more associated with chemical hazards due to possibilities of their contamination through agents both from freshwater and coastal ecosystems they also emphasized that there is a need for implementation of Hazard Analysis and Critical Control Point concept along with never processing technique in order to protect the consumer against such hazarders. They also discussed about various biological hazards associated with aqua's culture operations and the scope of using radiation for alleviation of the problems.

Dixitunu D.V.H²⁴ (**2001**) in his study "Emerging Fishing Opportunities in India EEZ" revealed that the estimated potential of fish store of Indian Exclusive Economic Zone is 3.921 million tones. He recommended in his report that there is an urgent need for the government to set up a fishing vessel acquisition and operation fund which will be used to promote the sustainable utilization of the fishery resources of Indian so the

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Venugopal.V, Warrier.S.B and Bongirevar D.R, "Potential for Control of Bio Hazards of Cultural Fish by Gamma Irradiation", Marine Product Export Development Authority News Letter, Feb 2001, pp. 14-20, FOOD Technology Division Bhaba Atomic Research Centre Mumbai 400 085.

Dixitunu D.V.H, "Emerging Fishing Opportunites in India Exclusive Economic Zone", Marine Product Export Development Authority, News letter, May 2001, pp. 11.

system of financing should be such that the vessel builders should not only supply vessels but also prove the fishing capabilities of vessels supplied by them by undertaking trial fishing operations. He also recommended that the existing traveling flat of 23-28 should be equipped with mono filament long lining if can also be extended to the mechanized fishing boats of export tuna potentials. Another important suggestion made by him was that a base with needed infrastructure may be set up in Nicobar Islands to facilitate operations of vessels engaged in fishing and for export of tuna particularly to Japan.

Suresh Kumar.P²⁵ (2001) in his study "New Technology and Artisanal Fishermen in Kerala 2001" discusses that conflict between two modes of production fish namely modernization under Indo. Norwegian project sponsored technology and the traditional mode. There is a fall in the share of non-mechanized sector in the fish production. The paper also attempts to assess the economic mobility and sustainability of the emergence of the modernization phase of the fishing industry. The study provides the results on the new motorization process have not only improved the duration fishing and also the earning capacity of artisanal fishermen.

Karunasaga and Indrani ²⁶(2001) in their work "Disease Problems in Shrimp Aqua Culture – Their Prevention and Control" highlighted some of the disease problems in shrimp aquaculture such as problems due to virus, bacteria parasites and white spot disease. They also brought out some of the measure to prevent and control such problems namely rapid detection of pathogens in brood stock, larvae and carrier animals even before they show signs of disease and avoidance of water contamination

²⁵ Suresh Kumar.P,"New Technology and Artisanal Fishermen in Kerala 2001", The Indian Journal of Labour Economics, Vol. 44, No.1, Jan 2001.

²⁶ Karunasagar and Indrani, "Disease Problems in Shrimp Aqua Culture - Their Prevention and control", Department of Microbiology, College of Fisheries, Manglore, Marine Product Export Development Authority News Letter, February 2001.

with pathogens, identifying brook stock carrying the virus and to avoid their usage in hatcheries and improve the water quality used in culture pond.

Ganesh Keremane.B²⁷ (2001) in his article "SWOT Analysis of Indian Fishing Industry" reveals that the fishing industry has generated and strengthened a large number of ancillary industries and it will continue to strengthen them. The fishing industry of India has made several studies in the commercial sector, and will continue to move forward in the coming decades, Inthis context, it is imperative that the objectives of food security supply, income and employment generation and export earnings are also planned to move apace.

Sathiadhas.R²⁸ (2003) in his article "Marketing and Price Structure of Marine Fisheries in India" says that the annual average for different species of marine fish brought to lending centers at whole sale and retail level for all Mari time status. The conclusions are (i) At the landing centers the average fish price varied from ₹5 Kg for Oil Sardines in Gujarat ₹450 kg for 10 less in Tamil Nadu (ii) At the Whole sale level the fish price varied from ₹6 kg per oil sardines in Gujarat to ₹625 kg for lobsters in Tamil Nadu (iii) At retail level, the Price varied from ₹8 kg for oil sardines in Gujarat to ₹850 kg for labs trots in Tamil Nadu. (iv) the price was comparatively low in Andhra Pradesh for almost all species of fish, varying from ₹7 kg for silver bellies, Oil sardines and Bombay duck to ₹46 kg for Prompters.

²⁷ Ganesh Keremane.B, "SWOT Analysis of Indian Marine Fishing Industry", **Fishing Chimes, Vol.21, No.5**, August 2001, pp. 45-46.

²⁸ Sathiadhas.R, "Marketing and Price Structure of Marine Fisheries in India", Central Marine Fishing Research Institute Annual Report Cochin 2003, pp. 67.

Venkatesh Salagrama²⁹(2004) in his study "Implications of Liberation of Fish Trade for Developing Countries-A case study for India" highlights that the trade liberalization in India has had to content with trade reforms and structural adjustment policies at the domestic level. The lifting of tariffs and quantitative restrictions in the fisheries sector during the 1990s have so far not brought any perceptible benefits or ill effects, but apprehensions about it is widespread. He also pointed out that the possible import of foreign fish and fishing systems remains a threat, while the export opportunities remain unutilized because of poor catches and systems of organizations.

Arjun Singh, *et.al*, ³⁰ (2004) in their article "Fishery sector in India Prospects and Perspectives" emphasized that the scope and future of Fishery sector in quite bright and sustain a good hope for providing rich diet to the people and earning large for exchange, provided proper attention is given and proper due done in the sector in the competitive age of globalization modern and liberalization.

Zofair S.M³¹ (**2005**) in his study "Performance of Gujarat Fisheries in India" says that the Gujarat Fisheries sector during 2003-04 had a second negative growth in marine sector and positive growth in island sector by registering 30.5 per cent growth rate. It is interesting to note the trend that in energy two or in alternate years a negative growth rate ranging between 10-18 per cent is reflected in the states fish production.

Nishclith V.D³² (2011) in his article "Women Employee in Fishing Sector" says that the results of this study show that most of the women employed in the fish

²⁹ Venkatesh Salagrama, "Implication of Liberation of Fish Trade for Developing Countries - A Case study for India", **Integrated Coastal Management India, Project PR.NO: 26109**, July 2004.

³⁰ Arjun Sing, Ravi Sing and Dalbir Singh, "Fishery Sector in India Prospects and Perspectives", India Journal of Agricultural Economics, Vol. 58, No.3, July – Sep 2004, pp. 16-24.

³¹ Zofair S.M, "Performance of Gujarat Fisheries Sector, during 2003-2004", **Fishing Chimes Vol. 25** (10), Nov 2005, pp. 16-18.

³² Nishclith V.D, "Women Employee in Fishing Sector", **Indian Journal of Fishing, Vol. XXII**, 2011.

processing factories of the three states studied come from Kerala. The special skills possessed by the women of Kerala have influenced management to choose women from this state over local females. Most of these women are educated and live on their own in the accommodation provided by the factories. Seventy-five per cent of the labour force in these processing factories are women.

Sundaresan.J³³(2011) in his article "Ornamental Fishing in India" says that the Ornamental fish industries have enormous potential in tropical countries. Avenues are unlimited to India. India has more than 1000 islands and about 7000 km of coastline. National Fisheries Development Board, Ministry of Agriculture has initiated many training programmes at Centre of Annamalai University, Advanced Study in Marine Biology. They had initiated seven training programmes in marine ornamental fish culture to the entrepreneurs and fisheries and extension officials from various States from August 2010 to February 2011.

Jeyasekhar.S³⁴ (2011) in his study "Food Safety Regulations and Trade effects: The Case of Indian Seafood Industry with special reference to Kerala" says that the study represents an attempt to estimate the effects of SPS measures in terms of trade elasticity of regulations and competitiveness of exports. In spite of the generalized acknowledgment of growing liberalization of trade between countries, there are still numerous obstacles to trade, more of the non-tariff type. This study aims to contribute to the literature on quantifying the economic impact of health and environmental regulations expressed in the form of SPS measures on international trade in agro-food products, by taking Indian seafood exports case study.

Sundaresan.J, "Ornamental Fishing in India", Indian Journal of Geo-Marine Sciences, Vol. 40 No. XXI, February 2011.

³⁴ Jeyasekhar.S, "Food safety regulations and trade effects: The Case of Indian Seafood Industry with special reference to Kerala", **Center for Development Studies (CDS), Trivandrum**, Kerala, 2011.

Kakalimajumdar³⁵(2012) in his study "Foreign Direct Investment in Indian Food Processing Industry" says that food processing sector has been attracting substantial FDI and is among the top ten sectors getting FDI equity. FDI up to 100 per cent equity is permitted under the automatic route in food and infrastructure like food parks and cold chains. There are many areas for investment in this sector which include mega food parks, agri-infrastructure, supply chain aggregation, logistics and cold chain infrastructure, fruit and vegetable products, animal products, meat and dairy, fisheries and seafood cereals, consumer foods/ready to eat foods, wine and beer, machinery/packaging.

Shyam S.Salim³⁶ (2013) in his article "Indian Seafood industry and post WTO – A Policy Outlook" says that the SWOT analysis of the Indian export sector reveals that it had confronted the asymmetric trade opportunities impressively while competing in the world market impressively and poised for a million tonne export and four billion dollar revenue earnings in the near future. In the wake of an emerging domestic market the export policy framework for efficient and sustainable seafood markets integrating domestic markets is required.

2.2 REVIEWS RELATING TO MARINE FISHING INDUSTRY

Alagaraja.K and Srinath.M³⁷(1980) in their article "Marine Fish Landings in India-Estimates and Precision" says that the reliability of estimates of marine fish production arrived at by the Central Marine Fisheries Research Institute based on the stratified multistage random sampling is further proved by testing the same, by fitting

³⁵ Kakalimajumdar, "Foreign Direct Investment in Indian Food Processing Industry", AJRBEM, Asian Journal of Research in Business Economics and Management Vol.2 Issue 4, April 2012.

Shyam.S.Salim, "Indian Seafood Industry and post WTO – A Policy Outlook", Central Marine Fisheries Research Institute, Kochi: Cadalmin, 2013, pp. 458.

³⁷ Alagaraja.K and Srinath.M, "Marine Fish Landings in India-Estimates and Precision", Yojana, Vol 27 No.1 and 2, 1980.

regression equations, with the export figures released by the Marine Products Export Development Authority.

Sreenivasan.A³⁸ (1981) in his article "Small Scale Marine Fisheries of Tamilnadu" says that the larger imported vessels were less efficient and less economical than the smaller indigenous mechanized boats. He adds that the big imported trawler gives direct employment to only 10 persons whereas the 10 indigenous boats would provide direct employment to 60 persons and indirect employment to 90 persons. The return per unit investment of non-powered boats is twice that of the powered boats and generates almost seven times direct employment than mechanized boats.

Sreenivasa Rao.S³⁹ (1983) in his study "An overview of the Marine Fish Marketing in India" had pointed out that the fisherman's share in the consumer rupee depended on the number of intermediaries and the distance between supplies and consuming centres. Bonding practice and an oligopolistic market prevailed because the fishermen depended on the traders' for their working capital requirements. Inadequate data, particularly pertaining to marketing and consumption duplication of data leading to either wastage of effort or contradictory figures and poor dissemination of data are the major problems identified in relation to data and information system.

John Kurien⁴⁰ (**1984**) in his study "The Marketing of Marine Fish inside Kerala State" has analysis the mode of selling or the organization of transactions

Sreenivasan. A, "Small Scale Marine Fisheries of Tamilnadu", Article in the Present Status of Small- Scale Fisheries in India and Two Neighbouring Countries, Central Marine Fisheries Research Institute, Bulletin No. 30 B, September 1981, pp. 25-29.

⁴⁰ John kurien, "The Marketing of Marine Fish inside Kerala State -A Preliminary study", Centre for Development Studies Trivandrum, October 1984, pp. 41-42.

³⁹ Sreenivasa Rao.S, "An overview of the Marine Fish Marketing in India", **Concept Publishing Company**, New Delhi, 1983, pp. 1-23.

between fishermen and buyers. It levels that auctioning and bargaining are the most common practices for dispensing of fish in the sea shores in Kerala. The existence of larger handing per craft and the presence of middlemen in the purchasing whole wield a position of monophony create a market condition where bargaining over prices is the cost common mode of selling.

Tridevi K.K⁴¹ (1986) in her study "Marine Fisheries Development 2000" reveals that in examining the various pre investment activities (exploratory fishing and resource surveys) will increase the world catch if is evident that there will be a need to be a very substantial investment in fishing vessels, processing distribution and marketing systems it will be necessary to help existing fishermen through various extension services and a grass root education process as they provide a reserve of manpower for the extension of fisheries.

Mathiarjunan⁴² (1988) in his work "A Study of Marine Fishing Industry in Tuticorin" analyzed the cost and returns of different types of fishing crafts in Tuticorin. He also examined various measures of efficiency and studied the strength and weaknesses of the fishing industry in Tuticorin. He also estimated the fish production of Tamilnadu, Thirunelveli District and Tuticorin in particular from 1974-75 to 1984-85. It also conclude that trawl net gear used by mechanized boats is the most efficient gear among various other types of fishing gears, the value of fish catch of mechanized vallams which use long lines is higher than the non-mechanized vallams in Tuticorin and the pair-trawling by mechanized boats sweeps the entire fish in the inshore region. The author recommended that the intermediaries in fish marketing

⁴¹ Trivedi K.K, "Fisheries Development 2000", **An Edited Bde Association of Indian Fishery Resources, Mohan Primlani for Oxford BH Publishing Co. Pvt. Ltd., New Delhi** 1986, pp. 107-113.

Mathiarjunan.N, "A Study of Marine Fishing Industry in Tuticorin", Ph.D Thesis, Department of Economics, Madurai Kamaraj University, Madurai -21, 1988.

should be given license. The fishermen should also be given alternative employment. It is also recommended that the fish production can be increased by developing aquaculture.

Rajalakshmi.V⁴³ (1990) In her doctoral thesis "A study of Institutional Finance to Marine Small-Scale Fisheries in Chidambaranar District-Tamilnadu" had concluded that the levels of literacy is low in fishing families and have more number of dependent members, fishermen and women are not aware of the family welfare measures, the participation of non-active affect the democratic functioning of fisheries co-operative societies, the non-institutional source of financing has been playing an important role in fisheries credit, among institutional borrowers, borrowers from banks are more in number, majority of the borrowers are not repaying the loans because of their expectation of loan write offs by the government, saving among fisher folk should be encouraged and the socio-economic role of the women in fishing communities should receive more attention and support through appropriate credit and marketing arrangements.

Katar Singh and Ram Mohan Nair⁴⁴ (1992) in their study titled "The Marine Fishermen Cooperatives in Kerala" came out with following findings. The survey revealed that group ownership of craft was quite lown Vizhinjam. But it was high among the fishermen of Moothakkara. The fishermen of these areas appreciated the significance of ply-vallams as an alternative to Catamarans. The study revealed that the new fishing technology was highly capital intensive and beyond the reach of an average fishermen. The study revealed that 95 percent of the respondents perceived an

⁴³ Rajalakshmi.V, "A study of Institutional Finance to Marine Small-Scale Fisheries in Chidambaranar District-Tamilnadu", **Ph.D Thesis, Madurai Kamaraj University, Madurai**,1990.

⁴⁴ Katar Singh and Ram Mohan Nair, "The Marine Fishermen Cooperatives in Kerala", Kerala University, Kerala 1992.

increased in number of fishing days after the introduction of mechanization. It was clear that over –fishing in the study area was a very important local issue in the eyes of artisanal fishermen. They drew the conclusion that, though the marine fishermen cooperatives in Kerala were established to improve the socio-economic well being of marine fishermen, the situation has not yet improved significantly among the fishermen.

Selvaraj.P⁴⁵ (**1998**) in his study "Status of Marine Fisheries in Kanyakumari District" says that Tuticorin highlights the character of fishermen in Kanyakumari district. It notes that the mechanization of fishing crafts may be undertaken in a phased manner. The parity between input price and output price may be studied in depth and suitable price policy should be formulated. The status of fishermen should be improved by extending organized financial aides to all fishermen.

Durai Raj. N⁴⁶ (2000) in his study "Marine Fishing Industry in Thanjavur District" says that the estimation of production function in marine fishing depth of the fishing area is more important than capital labour. Among the craft used in fishing the mechanized boat was found to be the efficient recording the highest total catch per annum.

2.3 REVIEWS RELATING TO EXPORT PERFORMANCE

Deepak Nayar⁴⁷ (**1976**) in his study "India's Export and Export Policies in 1960's" says that the fundamental explanation for the actual trends in exports is to be

Selvaraj. P, "Status of Marine Fisheries in Kanyakumari District", Tuticorin Research Report Fisheries College, Fish Eco 204, 1998, pp. 1-3.

Durai Raj. N, "A study of Marine Fishing Industry in Thanjavor District", Ph.D. Thesis, Madurai Kamajar University, 2000, September pp. 1.216.

Deep Nayar, "India's Export and Export Policies in 1960s", **Cambridge University Press, 1976**, pp. 33-42.

found in internal rather that external factor. Inadequacy of supplies for traditional goods, domestic policies, like investment licensing or inadequate infrastructure facilities, shortage of material inputs, the non-price factors designing effective advertising, after sale delivery and high price are the internal factors.

Mercy Hentry⁴⁸ (1984) in her doctoral thesis "The Trends in Trade between India and USA" discussed that India's export trade have increased from 10 million kg forming 0.41 per cent of world exports in 1950 to 76 million kg or 3.88 per cent of world export in 1979-80. The average price of fish per kg has increased from ₹1.31 to ₹34.2 in this period of 30 years. The share of fish import by USA, UK, Japan from India also discussed in the study. The study reveals that the share of US in India's export of marine products has been declining from 57.1 per cent in 1956-66 to 12.7 per cent in 1979-80 and the share of Japan has increased continuously from 6.6 per cent to 66.8 per cent in the same period. Whereas, the share of U.K in marine product import from India showed a fluctuating trend.

Srinath.M and Kamal Kumar Dutta⁴⁹ (1985) in their study "Forecasting Marine Product Exports Time-Series Analysis" says that a Technique using Box-Jenkins model, based on monthly time series, is proposed for forecasting the exports of marine products from India. By demonstrating its application in a sample case, the technique has been shown to prove its effectiveness to arrive at predictions close to actual.

⁴⁸ Mercy Hentry, "The Trends in Trade between India and USA", **Ph.D Thesis, Madurai Kamaraj University**, 1984.

⁴⁹ Srinath.M and Kamal Kumar Dutta, "Forecasting Marine Product Export Time- Series Analysis", Seafood Export Journal, Vol. 32, No.2, 1985.

Venkatachalam⁵⁰ (1987) in his article "Export of Handloom Cloth-A Study of the Trade Policy and Marketing Practices" says that the exporters of handloom goods have made no special effort to promote their trade abroad. The study observed that the withdrawal of certain concessions like weighted deduction on export earnings has discouraged exporters. Cash Compensatory Assistance and Duty Draw back rates were also not increased in proportion to the rate of increase in the prices of raw materials. Lack of finance for special processing is a handicap for this industry. The interest rate changed on loan has not much in favor of the industry, the overall conclusion of the study is that the promotional efforts of the exporters are inadequate and the production side suffers mainly from lack of quality control and financial support for promotion.

Shah K.C⁵¹ (**1991**) in his study "Action Plan to boost Exports of Indian Marine Products" explained that the present positions of our marine products export. It has compared the growth for a period of eight years from 1980 – 1988 with six other countries around Indian sub continent. During this period the export had gone only by 197 per cent while it was by 816 per cent in Philippines. He has outlined various steps needed to improve marine exports.

Suresh Thakur Desai⁵² (**1991**) in his article "Development of SSIs-Lessons of International Experience" says that raised two questions and offered two options namely, how to promote cost effective small scale enterprises in developing nations and how to help them to become financially self-sustaining. Two options have been tried for promotion through government assistance and also through private organizations.

⁵⁰ Venkatachalam.A, "Export of Handloom Cloth – A Study of the Trade Policy and Marketing Practices", **Indian Journal of Marketing, Vol. 53**, 1987.

Shah K.C, "Action Plan to Boost Exports of Indian Marine Products", Fishing Chimes, Vol. 10 (11), July 1991, pp. 14-15.

Suresh Thakur Desai, "Development of SSIs-Lessons of International Experience", Fortune India, February 1, 1991.

He also pointed out that the Indian small scale industry is facing a lot of problems including technological obsolescence and inferior quality of products. As a result, its performance compares unfavorably with its counterparts in several other countries. He has advised that giant multinational enterprises and small scale enterprises should work together in a wide range of fields for the benefit of the society in numerous developing countries throughout the world.

Varshney R.L⁵³ (1991) in his article "International Trading Environment" mentioned that the responsible factors for the expansion of world trade; share of developing countries in world exports, growing importance of Multinational Companies, regional trading blocks especially the progressive integration of the European community in Western Europe. He also mentioned that India should increase the share in export and augment capacities in respect of those products which have distinct export potential Japanese and American companies should also explore the possibilities of establishing joint ventures in the European countries in some promising sectors to get easier access to European countries markets.

Venugopalan.R and Prajneshu⁵⁴ (1996) in their study "Trend Analysis in All- India Marine Products Export using Statistical Modeling Techniques" says that various statistical modeling techniques, viz, polynomial function fitting approach, Non-linear mechanistic growth modeling approach ARIMA time- series methodology are employed for describing the all- India marine Products export during 1960-61 to 1994-95. The underlying assumptions are examined by statistically sound procedures.

⁵³ Varshney R.L, "International Trading Environment", **Fortune India**, February 1991.

Venugopalan.R and Prajneshu, "Trend Analysis in All India Marine Products Exports Using Statistical Modeling Techniques", Yojana Vol. 43, No. 2, 1996.

Attempts are made to develop the most suitable statistical model. The identified model is then used to forecast the marine products export for three more years.

Venkateshwaran⁵⁵ (1998) in his study "Seafood Thrust on Value Addition" says that the processors to produce more value added shrimp based products for exports. He has notified that the use of antibiotics in shrimp hatcheries and forms will create trouble, which will restrain the growth of the industry.

Paulraj and Thirunavukkarasu.S⁵⁶ (1998) in their article "A study of Production, Marketing and price Behaviour of Shrimps in Andra Pradesh" says that the demand for seafoods had gone up in the state due to increase in population, increase in export demand, increase in per capital income and increase in standard of living.

Ramaswamv K.V⁵⁷ (1998) in his study "Exporting in Globalized Economy" discussed that the economic reforms in India and its international competitiveness and the export growth. He also focused policies with regard to trade, exchange rate and macroeconomic stability. He also linked the global economy through the following four export roles. Export processing assembly operations, Component supply sub equipment manufacturing contracting, Original and Original brand manufacturing.

Susan Hart and Nikolaos Tzokas⁵⁸ (1999) in their study "The Impact of Marketing Research on SME Export Performance: Evidence from the UK" suggested that the profitability of exporting is significantly relating to decisive and unequivocal

⁵⁸ Susan Hart and Nikolaos Tzokas, "The Impact of Marketing Research Activity on SME Export Performance: Evidence from the UK", Journal of Small Business Management, April 1999, pp. 63-73.

⁵⁵ Venkateshwaran, "Seafood Thrust on Value Addition", **Yojana, Vol. 42, September** 1998, pp. 12-17.

⁵⁶ Paulraj and Thirunavukkarasu.S, "A study of Production, Marketing and Price Behaviour of Shrimps in Andra Pradesh", Seafood Export Journal, Vol. 22, July 1998, p. 11.

⁵⁷ Ramaswamy K.V, "Exporting in Globalized Economy", **Indian Economic Journal, Vol. 56**,1998.

use of information as an important decision input. Export sales performance is significantly related to four actual uses of information namely back up managerial hunches, export marketing research, key decision making and export decision.

Tiger Li⁵⁹ (1999) in his article "The impact of the Marketing Research and Development interface on new product Export performance. A contingency Analysis" found that the new product performance in a host country market is found to be determined, to a large extent, by the intensity of a firm is Marketing Research and interface process. This finding suggests the interface process plays a key role in enchaining new product performance. The results show that the characteristics of environmental factor influence a firm's behavioral activities investment the market Research and development interface. The R and D interface in driver less by completion than by customer characteristics.

Satish C. Jha⁶⁰ (2000) "Asian Currency Crisis-Lessons for India" says that 80 per cent decline in Indonesian Rupiah, 50 per cent in Thai Haht and 54 per cent in Korean Won led to a significant decline in the GDP growth-with a sharply declining export, depletion in foreign exchange reserves, lowering foreign direct investment, increasing external debt burden and bankruptcies of several banks and companies. The devaluation of Japanese Yen and Chinese currency (Reniminbi) also increased the crisis further. The study noted that the exports of China constitutes only 20 per cent of its' economy, with its own domestic market and nowhere nearly as dependent on exports as some other East Asian economies. Hence the author suggests that the Indian

⁵⁹ Tiger Li, "The Impact of the Marketing Research and Development interface on New product Export performance. A contingency Analysis", **Journal of International Marketing 7(1)**, 1999, pp. 10-33.

Satish.C.Jha, "Asian Currency Crisis-Lessons for India", Indian Economic Journal, Vol. 47, July-September, 1999-2000.

planners and policy makers, so far the economic issues are concerned, should try to learn from China.

Antony Raj. N⁶¹ (2000) in his study "Export Trend of Marine products in India- A study with special reference to Kerala and Tamil Nadu" highlights that the fishery resources of the country are so varying that half of them alone have been exploited so far and in the states of Tamilnadu and Kerala about two fifths of their fish potentials have been tapped so far. He also analyses the problems faced by the seafood exporters of the state and the analysis reveals that the major problems are: increase in the idle capacity of freezing plants for want fish supply, problems relating to modernization of the fish processing plants to meet the international standards, financial problems created by the overseas buyers in delaying the payments and making wrong claims on the products, and the problems created by bureaucrats by delaying the benefits to the exporters and the problems relating to the price fluctuations in the overseas market.

Khairul Azam⁶² **(2000)** in his article "A comparative study related to Organizational setup, Quality standard and Export performance of the Frozen Seafood Companies" says that the differences in microbiological parameters between the different points, receiving and procession, block within one company and among the different companies.

⁶¹ Antony Raj .N, "Export Trend of Marine Products in India- A study with special reference to Kerala and Tamil Nadu", **Ph.D Thesis, Manonmanian Sundaranar University, Tirunelveli** 2000.

⁶² Khairul Azam, "A comparative study related to organizational setup, Quality standard and Export performance of the Frozen Seafood Compaines", **Aqua International, October** 2000, pp. 14-16.

Aulakh and Kotable⁶³ (2000) in his study "Export Strategies and Performance of firms from Emerging Economics" identified that cost leadership strategy trends to enhance export performance for emerging economy firms in both developed and developing countries. A differentiation strategy leads to improved performance if the Market focus is on developing countries.

Francis. J and Colleen⁶⁴ (2000) in their article "Export Orientation on the Export performance of high tech small, medium sized enterprises" revealed that the effectiveness of proactive export orientation and caution against a conservative approach in the turbulent business environment faced by high tech SME s. The most successful firms are those that are more proactive as well as less consecutive approaches. The negative relationship between conservative strategies and export performance indicates that conservative actions are not just wasted effort but are detrimental to export success.

Jag Mohan Singh Verma⁶⁵ (2000) in his study "Globalization and Economic Reforms in India" analyzed that present phase of economic reforms in India including exchange rate adjustments and the impact of economic reform programme. He presented in his paper that the decadal growth rate of Indian economy has gone up from 5.8 per cent between 1980 and 1990 to 6.9 per cent between 1990-99. Against this modest rise, there has been consistent increase in poverty. He also claims that it is the time for the Indian poor to break their silence and for a pro-poor turns in the national policies.

⁶³ Aulakh.S and Masaaki Kotabe, "Export Strategies and Performance of Firms from Emerging Economics, Evidence from Brazil, Chile and Mexico", **Academy of Marketing Journal**, **43(3)** 2000, pp. 342-361.

Francis J and Colleen, "Export Orientation on the Export performance of high tech small, medium sized enterprises", **Journal of International Marketing 8(3), 2000**, pp. 84-103.

Jag Mohan Singh Verma, "Globalization and Economic Reforms in India", Indian Economic Journal, Vol. 42, 2000.

Davidson .C ⁶⁶ (2000) in his report "Foreign Processor Compliance Inspections India" made the following recommendation. The technical assistance and training provided through EIC (Export Inspection Council), EIA (Export Inspection Agency) and MPEDA to the industry should be expanded to maintain the current standard of compliance and improve it over time. The certification programme for inspection staff would improve both inspection quality and the technical assistance provided to the industry. The final recommendation made by him was that the personnel exchange programme for inspectors from India to the United States and from US to India could improve HACCP implemtation efforts in the long term.

Santhana Krishnan.G⁶⁷(2001) in his study "Fresh Water Prawn Culture in India" showed that the need for developing scampi culture in the country. Scampi is also another type of fish which resembles prawn. The cultured scampi production increased from 200 tonnes in 1989 to 753 tonnes in 1997 and further increased to 7140 tonnes in 1999-2000. In Kerala, the Kuttand holds excellent potential with an extent of 55,000 ha., of area suitable for scampi culture. He also assumes that, out of the available freshwater potential we can develop 50,000 ha., in the first ten years of the new millennium and generate additional scampi. Out of those 6 are in Kerala and 8 in Tamilnadu Scampi production cab generated an additional foreign exchange of ₹750-1000 crores. In order to standardize and demonstrate the commercial farming technology MPEDA is implementing a Department of Bio-Technology sponsored project at Erode, Salem District, Tamilnadu. Another project for scampi culture demonstration is also in progress in Kuttnad, Kerala. He concluded his study by stating

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⁶⁶ Davidson.C, "Foreign Processor Compliance Inspection India", Centre for Food Safety and Applied Nutrition US Food and Drug Administration, 2000.

⁶⁷ Santhana Krishnan.G, "Fresh Water Prawn Culture in India", **Marine Product Export Development Authority News letter, Cochin**, March 2001.

that with proper utilization of available technology, the country can emerge as one of the world leaders (China, Bangladesh, Taiwan and Thailland) in cultured scampi Production and also in its exports.

Deshpande⁶⁸ (2001) in his article "Market Research use of Market knowledge Management in using Market Knowledge" identified that the important antecedents of export information use. These are context specific factors (firm size and environmental turbulence) information specific factors (intensity of information acquisition, information overload information users) country of origin (uncertainty avoidance, masculinity and power distance) export specific factors (export experience, export dependence, export complexity and export specificity)

Amine and Tamer⁶⁹ (2001) in their article "Export Marketing strategies in the British Clothing Industry" identified that the important factors that influence the export performance of tea. These are company's commitments to exporting process of market Selection, marketing mix decisions and selection of retail outlets abroad. No evidence has been found on association between either company size or the availability of parent company help with exports and resulting levels of export performance. However, export performance does appear to improve with greater experience measured by number of years in exporting.

Gopal.R *et.al.*, ⁷⁰ (2002) in their study "Leveraging Innovation for Successful Corporate Entrepreneurship- A Case Study of Gadre Marine Export, Mirkarwada,

Deshpande Robit, "Market Research use of Market knowledge Management in using Market Knowledge", C.A Sage Publications , 2001, pp. 1-8.

Gopal.R Rashmi Gopinathan, Shilpa Varma, "Leveraging Innovation for Successful Corporate Entrepreneurship- A Case Study of Gadre Marine Export, Mirkarwada, Ratnagiri", Journal of Research in Business Economics, Vol. 32, 2002.

⁶⁹ Amine and Tamer, "Export Marketing strategies in the British clothing Industry", **European Journal** of Marketing 20(7), 2001, pp. 21-33.

Ratnagiri", says that, In a world of ever increasing global economy, the idea of corporate entrepreneurship has become a topic that leaders and managers must not only be aware of conceptually but also understand in order to be able to strategize and position for organizational viability.

Wilkinson *et.al.*,⁷¹ (2002) in their article "The Effectiveness of Objective Knowledge Acquisition in Promoting Exports in Geography and International Business" found that the export information affects the export strategy. The different types of information used are associated with various degree of export success. It is common for information to be acquired but not subsequently used in decision making, such non use also has been documented in an export selling. Given The substantial costs often associated with export information gathering activities, means of increasing the likelihood that collected information will be put to good use are important from an organizational efficiency point of view.

Cadon Nicola⁷² (2000) in his study "Key antecedents to Export Market orientation behavior. A Cross National Empirial Examination Analysis" says that the important factors in export market orientation with the help of confirmatory factor analysis there are export intelligence generation, export intelligence dissemination of export intelligence responsiveness. The significant difference among the various nations has been identified regarding export market orientation.

Wilkison T.J.L.E Brouthers and K.D Brouthers, "The Effectiveness of Objective Knowledge Acquisition in Promoting Exports in Geography and International Business", **Proceeding of Academy of International Business Annual meeting, Sau Juan, Paer Rico, June 28** –July 2002.

Cadon Nicola, "Key antecedents to Export Market orientation behavior. A Cross National Empirial Examination", **International Journal of Research in Marketing 18(3)** 2002, pp. 261-282.

Sarada *et. al.*,⁷³ (2004) in their article "Indian Seafood Export Demand, An Application of Principal Component Regression" explains that to make use of Japan and USA's Vast marketing potential Indian Seafood items should be priced competitively and the quality should be superior compared to the fish products of competing countries.

Rosson and Ford⁷⁴ (2003) in their article "Conflict and Performance in Export Marketing Channels Management" say that important and exporters' perception of the level of conflict in a relationship is often different that difference has a strong relationship with the export performance. The variables such as the degree of uncertainly, perceived distance conflict, Co-Operation, power dependence and the degree of adoption have been identified as being related to the export marketing activities of the firms.

Mittlestaedt D.G⁷⁵ (2003) in his study "How small istro small', firm size as a barrier to exporting from the United States" says that number of firm characteristics linked with SME export performance. They include firm size, international experience, dependence on exports, and adoption of product for sale in foreign markets

Julian.C⁷⁶ (2003) in his article "Export Marketing performance, A Study of Thailand firms" says that the need for systematic analysis to select export markets for better export performance. It requires systematic and for formalized international

⁷³ Sarada, Ravi Sankar.T and RaviVhandran.P, "Indian Seafood Export Demand, An Application of principal componant Regression", Indian Journal of Agricultural Economics, Vol. 58, No. 53, July- September 2004, pp. 14-17.

⁷⁴ Rosson P.J and Ford.D stake, "Conflict and Performance in Export Marketing Channels Management", International Review 20(4), 2003, pp. 31-37.

⁷⁵ Mittlestaedt, "How small istro small", firm size as a brrier to exporting from the United states", **Journal of Small Business Management 41(1),** 2003, pp. 68-84.

⁷⁶ Julian.C, "Export Marketing performance, A Study of Thailand firms", **Journal of Small Business Management 41(2),** 2003, pp. 213-221.

market research, visits of foreign markets, monitoring of national and international business press for product related activities and of published statistical sources in differentiating foreign markets.

Gabriel and Simone⁷⁷ (2004) in their work "Factors Influencing Export Performance in International Marketing A study of Australian firms" indentified that the important factors influencing export performance in international marketing are marketing expertise, market slimming piling strategy perception, of benefits of exporting outside assistance ability to handle environmental problems, managers personal attributes and strong motivation to export the import discriminate factor among high and poor performers in marketing expertise, market slaring pricing strategy and product differentiation strategy.

Ingram Thomas.N⁷⁸ **(2004)** in his article "Sales Management Analysis, Decision Making" says that export sales manager's motivation, as well as the adoption of a team selling orientation, did not differ significantly between export concentrators and spreaders. The operation aliased motivation reflects mainly on intrinsic motivation, which exists when sales people find their job to the heavenly rewarding.

Luis⁷⁹ (2004) in his study "The step scale a Measure of short term Export Performance Improvement" says that three dimensional scale for assessing managerial judgment of short term export performance namely satisfaction with short term performance improvement short term exporting intensity improvement and expected

⁷⁷ Gabriel and Simone, "Factors Influencing Export Performance in International Marketing, A study of Australian firms", **International Journal of Management 21(2) June, 2004**, pp. 172-185.

⁷⁸ Ingram Thomas.N, "Sales Management Analysis, Decision Making", **Hinddale, II: Dryden Press**, 2004.

⁷⁹ Luis, "The step scale A Measure of short term Export Performance Improvement", **Journal of International Marketing 12(1),** 2004, pp. 36-56.

short term performance improvement. The study established that the poor or successful performance in export operations has an immediate impact on strategic decisions

Hallen.L and Johnson.J⁸⁰ (2004) in their study "Industrial Marketing strategies and different National Environments" found that the type of competition faced by a firm affects its interest in exports (that is, the country of origin of the buyer) affects the type of channel strategy Utilized by exporters. Apart from this, the government business relations played a key role in the success of international trade developing countries.

Uma Maheswari *et.al.*,⁸¹ (2004) in their article "An analysis of Export Competitiveness of Marine Fisheries on India" explain that the relative export competitiveness by export performance ratio ranged for 0.21 to 0.47 in the post-reform period, which indicates that India is yet to attain global competitiveness in marine exports hence efforts need to be made for diversification and quality control of the export marketing.

Pagire B.V et.al., 82 (2004) in their article "Production Status and Potential for Export of Indian Fishers" explain that the scientific technology like remove marine resources which would increase export earnings of marine products. Moreover products diversification and value of Indian marine products along with adoption of proper marketing strategies and co-ordinate efforts of the marine products exporters and export

⁸⁰ Hallen.L and Johnson.J, "Industrial Marketing strategies and different National Environments", Journal of Business Research, 13(3) 2004, pp. 495-509.

⁸¹ Uma Maheswari.L, Nasrudee.P and Binukumar.D, "An analysis of Export Competitiveness of Marine Fisheries on India", Indian Journal of Agriculture Economics, Vol. 58, No. 3, July – Sep 2004, pp. 18-20.

Pagire.B.V,Navadkar.D.S.and Birari.B.S, "Production Status and Potential for Export of Indian Fishers", Indian Journal of Agricultural Economics Vol. 58, No. 3 July – Sep 2004, pp. 16-19.

development authority Government holds the key role to the success of Indian marine products export in Future.

Ayyappan and Biradar.S⁸³ (2004) in their article "Global Competition" says that our country should encourage fisheries export of processed and high value commodities. Diversification of new markets should get profits. A favorable support mechanism including marketing intelligence, harmonization of quality standards, simplication of export procedures, export and infrastructure development are required to be undertaken periodically.

Chellappa⁸⁴ (2005) in his study "Sustainable Fisheries Development Focus on Andhra Pradesh" says that problems faced by Shrimp farmers in Andhra Pradesh in the matter of selling their produce because of constraints of Anti Dumping duty levied on exports to united status. He concluded that it was the negative outcome of tsunami damage to the fisheries sector.

Meera⁸⁵ (2006) in her study "Perception among Exporters of Tirupur Garment Industry Quota Free Regeme"identified that the reasons for success in the phenomenal growth rate of the exports of knit wear items from Tirupur as easy availability of hosiery yarn, availability of cheap rural labours and flexible attitude of entrepreneurs in meeting the demands of buyers. Exporters and logistics operators prefer Tuticorin port due to less transit time, cost effectiveness and reliable services. The important countries to which, the tea exported are European Union, U.S.A., and South America.

Ayyappan and Biradar.S, "Global Competition", Hindu Survey of India Agriculture, 2004,

Chellappa, "Sustainable Fisheries Development Focus on Andhra Pradesh", Fishing Chimes Vol. 25(8), Sep 2005, p. 38.

Meera, "Perception among Exporters of Tirupur Garment Industry Quota Free Regeme", Organisational Management, 21 (4) January-March 2006, pp. 5-6.

Jose Cyriac.K⁸⁶ (2007) in his article "Export of Marine products to the EU from India" has analyzed that European Quality Standards for fish and fishery product. He suggests, that the norms for sampling and testing by the European member states may be made more transparent so that the same procedure/methodology can be adopted by the processors concerned to avoid situations leading to unpleasant quality complaints. He also suggests that Indian seafood processing community must acquire first hand information and exposure and equip themselves in maintaining equivalences of standards as required by the European member states concerned.

Rajasenan.D⁸⁷ (2009) in his study "Impact of Sanitary Measures on Exports of Fishery Products from India: The Case of Kerala" says that fish production has increased rapidly over the last 30 years, including both capture production and to a greater extent, aquaculture. Simultaneously, the fish supply chain has evolved driven in part by the rapid growth in fish and fishery products exports. In particular, fish processing has been transformed from a largely artisanal activity to include large-scale industrial processing facilities.

Nikita Gopal *et.al.*, ⁸⁸ (2009) in their study "Indian Finfish Exports – An Analysis of Export Performance and Revealed Comparative Advantage" says that the export of finfish from India has been rising over the past few years and in 2006-07 it contributed almost 44 per cent of the total marine products exported from the country in quantity terms. However in value terms its contribution is only 16 per cent, indicating low unit value realization of the products. The paper has suggested reviewing of the

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⁸⁶ Jose Cyriac. K, "Export of Marine Products to the EU from India", Seafood Export Journal, Vol. XXVIII MPEDA Cochin, 2007, pp. 11-13.

⁸⁷ Rajasenan.D," Impact of Sanitary Measures on Exports of Fishery Products from India : The Case of Kerala", **Agriculture and Rural Development Discussion Paper**, 2009.

⁸⁸ Nikita Gopal, Jeyanthi.P, Geethalakshmi.V and Unnithan G.R, "Indian Finfish Exports – An Analysis of Export Performance and Revealed Comparative Advantage", **Agricultural Economics Research Review, Vol. 22 July-December** 2009, pp. 291-297.

policy of finfish export, with a shift in emphasis to export of only high-value finfish and value added low-value finfish.

Gopal.R et.al., ⁸⁹ (2010) in their study "Growth Strategies: A Case Study of Maharastra's Seafood Exporters" says that the Indian Seafood industry is developing quickly: with near double-digit positive levels of growth posted consistently year-on-year since the beginning of the decade. The growth is being propelled by the decision of the Indian Government to provide a major impetus to Seafood Exports. This study first identifies the top Seafood Export Companies.

Rajeasekar.P and Aravanan.S⁹⁰ (2011) in their study "Financial Performance Analysis of Major Ports in India-A study with special reference to Tuticorin port Trust" says that the financial performance of Tuticorin port Trust. Financial performance of PPT was aspersed by Ratio analysis. The current ratio shows the short term solvency of the port is comfortable. Cash position ratio gives a good indication of the short term solvency and liquidity of the poet. It maybe stated that financial performance is comfortable. However, in spite of best efforts, the norms of various ratios in the context of ports could not be obtained, Hence the general norms were taken as criteria for appraising the financial performance.

Sunny Thomas1 and Waheeda Sheikh⁹¹ (2011) in their study "Growth and Composition of Indian Agricultural Exports during Reform Era" says that the emerging world demand for Indian agricultural commodities offers great opportunity. Indian

⁹⁰ Rajasekar.P, Aravanan.S, "Financial Performance Analysis of Major Ports in India - A study with special Reference to Tuticorin port Trust", Indian Journal of Finance, September 2011, pp. 45-57.

⁸⁹ Gopal.R, Pradip Manjrekar and Dhond.S.S, "Growth Strategies: A Case Study of Maharastra's Seafood Exporters", **Agricultural Economics Research Review, Vol. 25, July-December** 2010.

Sunny Thomas 1 and Waheeda ,"Growth and Composition of Indian Agricultural Exports During Reform Era", Abhinav National Monthly Refereed Journal of Research in Commerce and Management Vol. 1, Issue No.6 ISSN 2277-1166 104, 2011.

agricultural exports have increased manifolds. However, the contribution of agricultural export in the total export of the country has decline. Present study explores the growth performance of India's agricultural exports from 1991-92 to 2009-10, using compound annual growth rate and percentage share in total export of India as well as Gross Domestic Product.

Sathiadhas. R⁹² (2011) in his article "Efficiency of Domestic Marine fish Marketing in India-A Macro Analysis" says that the rapid economic growth and expansion of domestic retail sector in India has created a significant market for fresh and processed fish and fishery products with in the country. The increase in the prices of fresh as well as processed fish is very much higher than all other food products.

Liya Jayalal and Ramachandran.A⁹³ (2012) in their article "Export Trend of Indian Ornamental Fish Industry" says that Ornamental fish industries have enormous potential in tropical countries. Avenues are unlimited to India. For the trade to prosper three pre-requisites are quality, quantity and sustainability (MPEDA, 2010). Therefore, the exploitation of wild fish stocks for the aquarium trade may become restricted due to a trend towards conserving the country's natural resources. So to expand the trade, new technologies will need to be developed in order to commercially breed rare species, as well as marines.

Jesekhar.s *et.al.*, ⁹⁴ (**2012**) in their study "Experiencing the International Food Safety Regime: Evolving Seafood Export Value Chain Governance in Kerala" says that

⁹² Sathiadhas.R, "Efficiency of Domestic Marine Fish Marketing in India –A Macro Anaysis", Yojana, Vol. 58, No.4, 2011.

⁹³ Liya Jayalal and Ramachandran.A, "Export Trend of Indian Ornamental Fish Industry", Agriculture and Biology Journal of North America ISSN Print: 2151-7517, ISSN Online: 2151-7525, 2012.

⁹⁴ Jesekhar.S, Harilal.K.N and Parameswaran.M, "Experiencing the International Food Safety Regime: Evolving Seafood Export Value Chain Governance in Kerala", Center for Development Studies (CDS), Trivandrum, Kerala, 2012.

the considered the theoretical aspects of Global Value Chain and attempted to empirically validate the concepts by taking up a case study of Kerala in India. While examining the evolution of value chain dynamics found different types of co ordinations have governed the seafood export chain of Kerala over a period of time (late 1950s onwards).

Sricharan Y. Kaza and Venkataiah C.H⁹⁵ (2012) in their article "Exports of Indian Marine Products with Special Reference to Refer Container Operations: A Case Study of VCTPL" conclude that Marine products industry has a share of at least 5-6 per cent in world exports. India is projected to become one among the top five seafood exporting countries in the world. The seafood exports from Visakhapatnam, India have been described in this paper. An attempt is made to analyze the current situation vis-àvis futuristic challenges and potentials of Visakha Container Terminal Pvt.Ltd. (VCTPL).

Muthusamy.A⁹⁶ (2013) in his article "A Study on Export Performance of Marine Products in India" says that the marine sector has been identified as a sunrise sector under the Special Focus Initiative of the Foreign Trade Policy of the Government of India. Post- globalization, there are no quantitative restrictions and the export rules are very liberal. The product mix of India's seafood exports has been undergoing changes owing to the limitations in fish production and availability of raw material for processing as well as changed market perceptions.

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Sricharan Y. Kaza, Venkataiah C.H, "Exports of Indian Marine Products with Special Reference to Refer Container Operations: A Case Study of VCTPL", AMET International Journal of Management 43 ISSN: 2231 – 6779 / July – Dec 2012.

Muthusamy.A, "A Study on Export Performance of Marine Products in India", ZENITH International Journal of Business Economics & Management Research ISSN 2249-8826 ZIJBEMR, Vol.3 (10), October 2013.

Prathvi Rani *et.al.*, ⁹⁷ (2013) in their study "Export Performance of Indian Ornamental Fish - an analysis of Growth, Destination and Diversity" says that Ornamental fish trade is a multibillion dollar industry globally, with an annual turnover of more than 6 billion US\$. India still remains a sleeping giant with a contribution of less than 1 per cent of the global ornamental fish trade. The new schemes of the Marine Products Export Development Authority (MPEDA) and research support can soon make India a major player in international ornamental fish trade thereby, greatly increase the foreign exchange earnings, employment and rural livelihood.

2.4 REVIEWS RELATING TO EXPORT PROBLEMS AND CHALLENGES

Sangay Kathura and Nisha Taneja⁹⁸ (1986) in their study "India's Export A Challenge for China" established that the true domestic market, rather than competition, might be turning Indian exporters away for exports. Internal demand will be repressed if the need for foreign exchange dictates export boost.

Ameet Kumar⁹⁹ (1987) in his study "Export Marketing of Nontraditional Items-Problems and Prospects" says that the profitability of marine products has been adversely affected by the high cost of inputs such as diesel oil and petering materials inadequate credit hinders the growth of export in this sphere on competitive prices conditioned mainly by high cost of cans and the caning medium put Indian marine products on a disadvantageous position in the highly competitive international market India's export of marine products has suffered a long time clue to their poor quality.

Prathvi Rani, Sheela Immanuel, Ananthan .P.S, Ojha. S.N, KumarN.R, Krishnan. M, "Export Performance of Indian Ornamental Fish - an analysis of Growth, Destination and Diversity", **Indian Journal Fish**, **60**(3): **81-86**, 2013.

Sangay Kathura and Nisha Taneja, "India's Exports, A challenge for China", Council for Research on International Economic Relations, New Delhi, 1986, pp. 18-22.

Ameet Kumar, "Export Marketing of Nontraditional items-Problems Prospects", **Indian Journal of Marketing Vol. XVIII. No. 2-4, October-December** 1987.

Vijayalakshmi.P¹⁰⁰ (1999) in her study "New Challenges in Export Packaging" suggested that all exporters should seal in mind the following seven p's in export of packaging. Particularly in the case of consumer goods namely. Protection, Preservation, Preservation, Promotion, Proportion, Profitability and Pollution free. She also pointed out that the Indian exploring community in general has been able to pay that much often packaging as on the contents. In this regard it was suggested by heart that the exporters should devote a fair part of their revenue proceeds towards research and development (R.D). In fact, developed countries are giving high priority and about percent of their expenditure is utilized for R and D in packaging the study gives little attention to other developmental strategies of export trade such as branding of value added products and also about financial liberalization.

Shanmuga Sundaram and Panchanathan¹⁰¹ (2007) in their study "Export Challenges in Tamil Nadu Garment Industry" mentioned that important problems in tea exports as unreliable order, price, lack of information about the world market, modernization and delayed payments. The above mentioned problems have not shown linear relationship with the performance in exports. There is a significant difference of opinion among the respondents about the export performance.

Sathianandan T.V¹⁰² (**2011**) in his study "Indian Marine Fishery Resources: Optimistic Present, Challenging Future" says that Marine fish production from capture fisheries in India has increased by about six fold during the past six decades. Export earnings from the marine sectors crossed 12000 crores in 2010-11 and gross revenue

¹⁰⁰ Vijayalakshmi .P, "New challenges in Export Packaging", **Loghu Udyog Samachar, July- Sep** 1999.

Shanmuga Sundaram.S, and Panchanathan.V, "Export Challenges in Tamil Nadu Garment Industry", Synthesis, 4(1), January-June 2007, pp. 67-76.

SathianandanT.V, "Indian Marine Fishery Resources: Optimistic Present", Challenging Future, Vol. 58, No. 4, 2011.

through marine fish landings at the point of first saled was about 20000 crores. Marine products are now exported from India to nearly 100 countries. Mointoring the harvest of different marine fishery resources is very much essential for planning and implementing policies for sustained production from the sea.

Bhat B.V.S and Vinod P.N¹⁰³ (2008) in their study "Development of Sea Farming in India – an Export Perspective" says that according to a vision formulated by MPEDA, the seafood export from India is targeted to reach US\$4 billion by 2009/2010. To make this vision a reality, the contribution of the aquaculture sector is expected to rise from the current level of US\$0.7 billion to about US\$1.5–2.0 billion. There is a growing demand for marine finfish, and offshore fish farming can offer new vistas for Indian aquaculture to achieve the set target, advance national economic development and ensure the livelihoods of many more people.

Varambally K.V.M¹⁰⁴ (1990) in his study "Export Potentials of Marine Products" says that the performance of marine products in exports from 1981 to 1988 and had put forward some useful suggestions for further accelerating exports. According to him the exporters have to adopt new marketing strategy to promote Indian marine products in other countries understand the changing customers preferences and scan the global market to identify our strength, weakness, opportunity and threat to our marine exports in international markets.

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Bhat B.V and Vinod, "Development of Sea Farming in India – an Export Perspective", **FAO** Fisheries Proceedings. No.11, Rome, FAO. 2008, pp. 301–306.

Varambally K.V.M, "Exports Potential of Marine Products", Seafood Export Journal, MPEDA Cochin, Vol No:28, Nov. 1990, pp. 29-33.

Francis C.A¹⁰⁵ (2001) in his study "Export Development: Process and Potential A Study with Special Reference to the Marine Products Industry in India" says that the Export development is an important ingredient of the economic development strategy of almost all nations of the world. The reasons for this or the relative importance of the different objectives of export development may vary among nations. A country may need to boost its exports to earn enough foreign exchange to finance the imports and to service foreign debt.

Somvanishi V.S¹⁰⁶ (2001) in his paper "Potential for Resource Specific Fishing in Indian Waters" says that the scope for increasing marine fish production by undertaking resource specific fishing operations and underlines the potential for increasing Indian seafood exports. The current fishing activities are largely confined to areas upto 100 m depth. It is estimated that about 2 million tonnes of fish is harvested from within 50m depth and 0.74 million tonnes from 50.100m depth. From the present lovely of fishing and potential available, it is evident from his study that additional yield about1.2million tones have harvested from outer continental shelf, continental slope and oceanic areas. Recent exploitation extending to deep sea areas up to 1000m along the main land India and around Andaman and Nicobar islands reveals the availability of deep sea shrimps. While the coastal shrimps remained the main component of the exports, frozen fish and Cephalopod that made a significant contribution to exports.

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Francis.C.A, "Export Development: Process and Potential A Study with Special Reference to the Marine Products Industry in India", Cochin University of Science and Technology, Kochi, 2001.

Somvanishi.V.S, "Potential for Resources Specific Fishing in Indian Waters Fisher Survey of India", Mumbai Business Session, India international Seafood Show held at Visakapatanam, February 2001.

Shigam Sekhas S.S¹⁰⁷ (2004) in his study "Export Performance of Indian Fisheries in the context of globalization" says that export performance and potential of Indian Marine Products during the period of trade liberalization. Using the revealed comparative advantage index, export competitiveness was calculated for the two sub periods.

- (i) Pre Liberalization Period (1979 to 1990) and
- (ii) Post Liberalization Period (1991 2002).

It was reported that revealed comparative advantage (RCA) of Indian export was 2.31 during post liberalization period and 1.68 during pre – liberalization period. The study suggested that the better performance of Indian fisheries export with report to world fisheries export.

Philipse K.K¹⁰⁸ (2005) in his study "Ornamental fish Exports Buyer Seller Meet" says that the potentials and exports prospects of marine ornamental fishes. He revealed that marine ornamental fishers were abundant in the seas. Around India especially in the Coral reefs of Lakshadweep. Andaman and Nicobar islands and other parts of the Indian coast. Some of the community available fisher were marine angel butterfly fish damselfish banner fish as well as various species of mulluscs and exhioderme. These fishes and other organisms had tremendous potential for exploitation in the export trade of ornamental fish and these were largely untapped at present.

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Shigam Sekhs S.S, "Export Performance of Indian Fisheries in the context of globalization", **Indian Journal of Agricultural Economics, Vol. 59. No. 3 July – Sep** 2004, pp. 448 – 464.

Philipse K.K, "Ornamental fish Exports Buyer Seller Meet", Fishing Chimes Vol. 25(2), June 2005, pp. 18-20.

Raghuram.G and Asopa.V.N¹⁰⁹ (2008) in their work "Issues in Infrastructure for export of marine products from India" highlights the key issues in infrastructure development for marine product export. Its discussed Poor deep sea exploitation, Water and the quality in the public domain needs to significantly improve standards and certification would be imperative, Poor quality of the smaller mechanized boats, Lack of global standard in fishing harbours, and landing centers and lack of clean and deterioration free handling are the key issues identified by the researcher, The human resources in this sector need to be invested in, to (i) achieve mind set change in cultural practices and (ii) practice more deep sea fishing and We can aim to be the second player after China in the export (and domestic consumption) markets. In the export market, we can be a high per unit value player.

All the above studies are centered around the trends of export issues related with the infrastructure for and the unexploited potentials. The role of exporter which is a key factor in the export performance is not focused in any of these studies. The present study is an attempt to fill this gap.

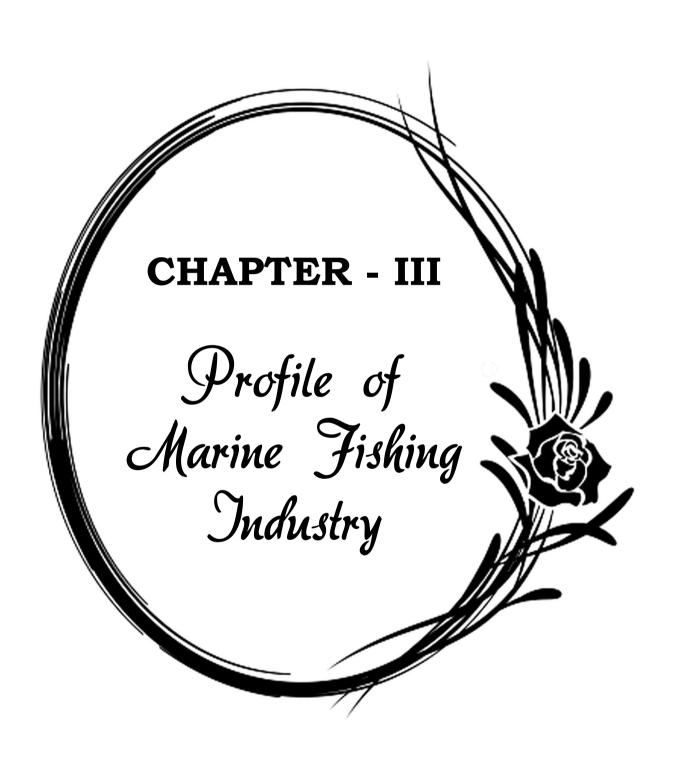
Ganesh Kumar.Band Joshi.P.K,¹¹⁰ (2011) in their article "Quantifying India's Export Potential in Fish and Fishery Products" conclude that the results suggest that India has scope to enhance its fishery exports to many Asian and European countries, if encouraged with favourable policy measures.

Raghuram.G and Asopa.V.N, "Issues in Infrastructure for Export of Marine Products from India", W.P. No 2008 – 07 – 04, Indian Institute of Management, Ahamabad, July 2008.

Ganesh Kumar.B and Joshi.P.K, "Quantifying India's Export Potential in Fish and Fishery Products", **Journal of Agricultural Development & Policy Vol. 21 (1)**, 2011, pp. 1-8.

2.5 CONCLUSION

Reviews relating to fisheries, marine fishing industry, export performances and the problems relating to seafood export helped the researcher to understand the various studies already conducted in this field. The reviews collected from various sources paved the way to identify the research gap.



CHAPTER - III

PROFILE OF MARINE FISHING INDUSTRY

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CHAPTER - III

PROFILE OF MARINE FISHING INDUSTRY

3.0 INTRODUCTION

In Marine Fishing Industry trawlers are now using technology developed by the military to catch fish in waters as deep as a mile, catching species that few would have considered edible or useful a decade ago. Now that the shallow fisheries are in serious decline, trawl nets fitted with wheels and rollers are dragged across the bottom of the deep oceans, removing everything of any size. Squid, Skate, Rattails, Hoki, Blue Ling, Black Scabbard, Red Crabs, Black Oreos, Smooth Oreos, Deep Shrimp, Chimeras, Slackja Weeds, Blue Hake, Southern Blue Whiting, Sablefish, Spiny Dogfish, and Orange Roughly are now being harvested from the deep ocean and sold in seafood stores, cooked into "fish sticks" at McDonald's, or processed into fake "crab meat" for seafood salads.

Geographically speaking, the major fisheries of the ocean in the marine fishing industry are located in the waters which overlie the continental shelves around the world. The shelf areas of North West Europe, along the coast of Western South America and of Japan produce the largest catches of fish. Tuna and Whale fisheries are the only ones operated in the open ocean and fishing is done by the marine fishing industry.

Marine fishing has changed drastically over the past 45 years as the activities have increased greatly. The growth in the marine fishing industry reflects the sophistication of fishing vessels and gear along with the continued increase in the world population. These factors serve to undermine the health of fish stocks around the

world. In 1993, the Food and Agriculture Organization of the United Nations (FAO) estimated that more than two-thirds of the marine fish stocks were overfished. The FAO asserts that 25 per cent of the fish stocks they studied were either depleted from overfishing or in imminent danger of depletion due to overharvesting.

The Fisheries sector provides direct employment for about 15 Million people in India. It also provides indirect employment in allied activities such as net making, boat building, fish processing, fish transportation, basket making, ice manufacturing and salt making.¹

Marine fisheries constitute an important component of Indian economy today. Fish as a food item is relished by more that 60 per cent of the people of India. Both as a food item for internal consumption and as a commodity that can earn foreign exchange, the importance of fish is great indeed. Further marine fishery is powerful income and employment generator for the large means of backward and economically weaker section of rural and coastal community as it stimulates the growth of a number of subsiding industries. With (fishing) rising pressure on food production from land and sea due to population explosion, an increasing share of future food supply needs, especially of developing countries like India, may have to be met from fisheries.

3.1 MARINE FISHING INDUSTRY

India has a vast and rich potential of marine fishery resources with the Arabian Sea in the west and the Bay of Bengal in the east, both merging into the Indian Ocean. The Indian coastal line stretches for 8129 Kms. The long coastal line covers the maritime states of West Bengal, Andaman Nicobar Islands, Orisssa, Andra, Tamilnadu including Pondicherry, Kerala, Lakshadweep group, Karnataka, Goa, Maharastra and

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¹ Subba Rao. N, "Import of Trawlers – Need for Fresh Appraisal", **Economic Times**, 1988.

Gujarat. The continental shelf of Indian coast is calculated to cover an area of 0.5 million sq kms. Beyond the continental shelf, lies the oceanic water, home of large sharks and rays and bony fishes like the tuna, sail fish and sword fish.

Fish Catching in India employs about 14.5 million people. The country's rich marine and inland water resources, fisheries and aquaculture offer an attractive and promising sector for employment, livelihood and food security. Fish products from India are well received by almost half of world's countries, creating export driven employment opportunity in India and greater food security for the world. During the past decades the Indian fisheries and aquaculture has witnessed improvements in craft, tackle and farming methods. Creation of required harvest and post-harvest infrastructure has been receiving due attention of the central and state governments.

India has a very large Exclusive Economic Zone (EEZ) of 2.02 million sq km. India has a marine fishery potential of 3.9 million tonnes. Further, out of 1.4 million ha of brackish water area approximately 70,000 ha., are water shrimp farming. The country has also immense fresh water resources. India is the largest country in the Indian Ocean region it is blessed with a long coastline and vast living resources in the seas around and in the Oceanic islands with over 200 commercially important species of fishes and shell fishes².

Among the Indian Ocean, countries like Bangladesh, Bahrain, Indonesia, Kenya, Madagascar, Malaysia, Oman, Qatar, Somalia, Seychelles, Sri lanka, Thailand,

² Sreenivasa Rao.S, "An overview of the Marine Fish Marketing in India", Concept Publishing Company, New Delhi, 1983.

UAE, Yemen Rep, and others, India occupies a top position in marine fish production, constituting 36.72 per cent of the total fish catch in the year 1991³.

3.2 FISHING RESOURCES IN INDIA

The Marine fishery resources of India in the four major regions in the North West, south west, south east, and north east comprise chiefly the following.

- Major pelagic resources, such as Oil Sardine, Mackerel, Seer fish, Tuna and other pelagic resources of regional importance such are Sardine anchovies and Ribbon fishes.
- Demerseal fishery resources such as Perches, Sciaenid's, Cat fish,
 Polynemids, Flat fish, Pomfrets, Eds, Sharks and Rays.
- 3. Mid water Fishing resources constitute by Bombay duck, silver bellies and Horse Mackerel.
- Crustocean Fishing resources consist of Prawn, Shrimps, Lobsters and Crabs.
- Molluscs fishing such as Chank, Oysters, Mussels, Clams, Squids and Cuttle fish and also constitute fishing resources.
- 6. Sea weeds resources.

3.2.1 Resource in Indian Seafood

India has a long coast line of 8129 Kms., two million sq. kms of Exclusive Economic Zone and 1.2 million hectors of brackish water bodies that offer vast

Trivedi K.K, "Fisheries Development 2000, A.D." An edited Bde association of Indian fishery resources, **Mohan Primlani for Oxford BH Publishing Co., Pvt.Ltd**, New Delhi 1986.

potential for the development of fisheries. Against an estimated fishery potential of 3.9 million tonnes from marine sector, only 2.6 million tonnes are tapped.

Fishing efforts are largely confined to the inshore waters through artisanal, traditional and mechanized sectors. About 90 per cent of the present production from the marine sector is from within a depth range of up to 50 to 70 meters and the remaining 10 per cent from depths extending up to 200 meters. While 93 per cent of the production is contributed by artisanal, mechanised and motorised sector, the remaining 7 per cent is contributed by deep sea fishing fleets confining their operation mainly to the shrimp grounds in the upper East Coast⁴.

Table 3.1

Capacity of the Indian seafood Industry

S. No	State Name	No. of Exporters	No. of Processing Plants	Freezing Capacity	No.of Cold Storages	Storage Capacity	No. of Fishing Vessels
1	Kerala	287	124	1585.77	169	23086.50	2963
2	Tamil Nadu	286	48	524.55	67	5600.00	1562
3	Karnataka	43	14	186.40	26	3540.00	3226
4	Andhra Pradesh	95	52	779.50	53	7200.00	717
5	Goa	9	7	104.00	9	1275.00	420
6	Gujarath	64	55	2216.03	57	22925.00	426
7	Orrisa	30	21	220.00	20	2460.00	414
8	Maharastra	268	41	1327.11	39	19372.00	2932
9	West Bengal	99	37	340.00	30	3500.00	0
10	Delhi (UT)	92	-	0.00	1	15.00	0

Source: MPEDA Annual Report 2012

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⁴ Food and Agricultural Organization Report, Fisheries Department, 2009.

3.3 FISHING TECHNOLOGY IN INDIA

Fisheries sector plays an important role in the Indian economy. It contributes to the national income, exports, food and nutritional security and in employment generation. This sector is also a principal source of livelihood for a large section of economically underprivileged population of the country, especially in the coastal areas. Share of agriculture and allied activities in the GDP is constantly declining. It has been observed that agriculture sector is gradually diversifying towards high value enterprises including fisheries. There are four Fishing Technologies are followed.

3.3.1 Fishing Crafts and Gears

The success of fisheries in a country depends on the fishing methods and the boats that can play in its waters. The fishing crafts used in India are broadly classified into two namely, Traditional crafts and Modern crafts. Traditional crafts are further classified into four namely, 1) Catamaran 2) Vallam 3) Motorized Catamaran 4) Motorized Vallam. Modern Crafts are known as Motorized Boats.

3.3.2 Fish Landing

Marine Fishery includes coastal, offshore and deep-sea fisheries whereas, inland fishery includes estuaries (located in the mouths of the rivers and lakes), nerving (located in rivers and canals), pond culture and fish farming. The most important species available in Indian seawater are sardines, anchovies, tunas, sharks and Crustaceans.

3.3.3 Processing Technology

Fish decomposes quickly and it is good only when it is fresh. As fish is a highly perishable commodity various methods have been devised to preserve it. The methods

followed in preserving fish include, Freezing, Curing, Drying, Canning, Smoking and Salting.

- **Freezing** is one of the important methods of processing of fish. Preservation of biological materials by freezing depends upon the inhibitory effects of low temperature upon the growth of microbial organisms.
- Canning is another form of preservation of fish materials. Fresh foods normally carry organisms, which will cause spoilage if their activity is not restricted. The basis of canning process rests on the destruction of these organisms by heat and prevention the entry of others.
- Curing method was very familiar before the introduction of freezing technique. Until the year 1959, more than 50 Per cent of the total catch of fish was preserved by curing which included sun drying, salting and smoking. When the fish curing industry faced crises because of the British Government's imposition of excise duty on salt, the Provincial Governments established salting yards and supplied duty free salt to genuine fish curers.
- **Drying** is one of the methods of preservation of fish by reducing the water content of the fresh exposure to wind, the heat of the sun and artificial heat.

Indian exporters of seafood follow all the above processing methods. Sometimes the fish has to undergo pre processing also before the actual freezing takes place.⁵

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⁵ Mary Chandy, "Fishes", **National Book Trust India**, New Delhi, 2004.

3.3.4 Infrastructure Facilities

There have been significant inputs to marine fisheries development in recent years in India. In order to improve the internal marketing of fresh fish, a number of cold storages and ice plant have been established. As far as export trade of fish is concerned, more than 90 per cent of marine products plants are exported in frozen form.⁶

3.4 IMPORTANCE OF FOOD AND NON FOOD UTILITIES IN MARINE PRODUCTS

Fishes are best known as articles of food because of their protein rich content, carbohydrates, vitamin (A,B,D and E) iron, calcium, and other minerals. Fishes are used as food cooked, salted smoked or preserved in other ways. In one pound of fish the food value comes to be 300-600 calories which is much higher in comparison to other food materials. For human consumption the fish contents are also processed into a number of valuable for human needs and other purposes.

Fish liver oil is one of the byproducts of fish. It contains protein, fat and water. The contents of vitamin A and D in the liver are much suitable for human needs. The fat and vitamin contents vary from fish to fish. The fat content in shark is higher than in other fishes.

A part from fish liver oil, fish body oil is also obtained from the body of certain fishes like oil sardines and salmon. Though the body oil is poor in vitamin A and D contents, it is used for various other industrial purposes like making varnishes for shed tempering making cosmetics, lubricants, candles, for manufacturing printing ink and plastics, for cooking purposes and also for paltry feed. Fisheries and fish flavors are of great use for human consumption, Sardines mackerels, ribbonfish and some sharks are

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⁶ Food and Agricultural Organisation, Fisheries Department, 2010.

used as raw materials for fish meal preparations. The fish meal contains about 55-70 per cent protein, 2-15 per cent oil /fat and 10 to 20 per cent minerals. Fish flour is normally mixed with wheat flour and is used in bakery products. It is manufactured in South Africa, USA, Morocco and Chile and also in India.

3.5 ROLE OF GOVERNMENT IN THE DEVELOPMENT OF FISHING

After India became independent in 1947 concerted efforts were initiated for the development of fisheries of the country. For organized research and development of fisheries in the fisheries sector, the Central Marine Fisheries Research Institute (CMFRI) Cochin and the Central Inland Fisheries Research Institute (CIFRI) Barrack pore were established. The deep sea fishing stations and the Central Institute of Fishing Technology (CIFI) Cochin were also established subsequently.

Fisheries research and training institutions are supported by central and state governments that deserve much of the credit for the expansion and improvements in the Indian fishing industry. The principal fisheries research institutions, all of which operate under the Indian Council of Agricultural Research, are the Central Institute of Marine Fisheries Research at Kochi (formerly Cochin), Kerala; the Central Inland Fisheries Institute at Barrackpore, West Bengal; and the Central Institute of Fisheries Technology at Willingdon Island near Kochi. Most fishery training is provided by the Central Institute for Fishery Education in Bombay (or Mumbai in Marathi), which has ancillary institutions in Barrackpore, Agra (Uttar Pradesh), and Hyderabad (Andhra Pradesh). The Central Fisheries Corporation in Calcutta is instrumental in bringing about improvements in fishing methods, ice production, processing, storing, marketing, and constructing and repairing fishing vessels. Operating under a 1972 law, the Marine Products Export Authority, headquartered in Kochi, has made several market surveys

abroad and has been instrumental in introducing and enforcing hygiene standards that have gained for Indian fishery export products a reputation for cleanliness and quality.

There are several specialized institutes that train fishermen. The Central Institute of Fisheries Nautical and Engineering Training in Kochi instruct operators of deep-sea fishing vessels and technicians for shore establishments. It has facilities in Madras and Vishakhapatnam for about 500 trainees a year. The Integrated Fisheries Project, also headquartered in Kochi, was established for the processing, popularizing, and marketing of unusual fish. Another training organization, the Central Institute of Coastal Engineering for Fisheries in Bangalore, has done techno-economic feasibility studies on locations of fishing harbour sites and brackish-water fish farms.

To improve returns to fishermen and to provide better products for consumers, several states have organized marketing cooperatives for fishermen. Nevertheless, most traditional fishermen rely on household members or local fish merchants for the disposal of their catches. In some places, marketing is carried on entirely by fisherwomen who carry small quantities in containers on their heads to nearby places. Good wholesale or retail markets are rare.

During the first two year plans, importance was given for the mechanization of indigenous crafts, introduction of mechanized fishing boats, improvements of fishing gears, establishment of infrastructure facilities such as processing plants, ice plants, cold storage, landing and berthing facilities. These programmes helped to increase fisheries⁷.

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⁷ Marine Product Export Development Authority, Vision Document, 2010.

3.5.1 Role of Marine Product Export Development Authority in Fishing Industry

The Fishing Industry in India is contributing significantly to the agricultural export of the country and thereby helping poverty alleviation and generating employment to millions of people in the coastal area. India with a fishery production of 6.57 million metric tonnes from both captured and cultured resources is ranked 3rd among the largest fishing producing countries and occupies the 17th position among the seafood exporting countries of the world. The estimated potential yield from the Indian EEZ measuring 2.02 million sq. km. is 3.93 million Metric Tons of which the current exploitation is only 3.3 million Metric tonnes. While the territorial waters have been almost exploited to the maximum sustainable yield levels or beyond, the contribution from the deep sea is insignificant in terms of export. The deep sea fishing industry as of today is almost a 100 per cent shrimp oriented one faced with over exploitation of the available shrimp resources.

The expert committees who have studied the Indian deep sector has recommended for diversifying the existing deep sea/mechanized fishing fleet to resource specific vessels. Majority of the deep sea fishing vessels and mechanized fishing vessels in operation in Indian waters are trawlers and not equipped for resource specific fishing such as long lining for tuna, jigging for squid etc. India has about 58000 mechanized boats and more than 58 active deep sea fishing vessels are involved in deep sea fishing.

Sustainability of fishing has assumed significant importance in the context of some importing countries insisting on information on the sustainability of the fisheries of the exporting countries. Under the vision for capture fisheries, it is envisaged that India through a sustainable management system will have to exploit its potential to the

full in the coming years through a progressive conservation policy for fishing to become totally sustainable. Besides India to emerge as a leading exporter of tuna and other under exploited resources like oceanic squid, India to gain prime position in the world sashimi market by focusing on quality and will emerge as a leading exporter of oceanic tuna.

MPEDA has been designated as the nodal agency by the Government of India to validate Catch Certificate for the export of marine products to EU countries since 1st January 2010. Catch certification is an integral part of the EU Regulation No. 1005/2008 which will improve traceability of all fishery products traded with the EU community, which facilitates control of their compliance with conservation and management measures. In order to boost the export from capture fisheries, MPEDA is implementing the following schemes.

- 1. Subsidy for the conversion of existing fishing vessels to tuna long liners.
- 2. Interest subsidy for the construction of new tuna long liners.
- Assistance to fishermen for better preservation of catch Subsidy for installation of insulated fish hold/RSW system/ice making machine onboard fishing vessel.

Training in monofilament long line fishing for tuna and better handling of catch for value addition⁸.

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 $^{^{8}\} http://commerce.nic.in/aboutus/budgetpdfs/End-1-Quarterly-Review-MPEDA-2011-12.pdf$

3.6 INDIAN MARINE PRODUCTS SCENARIO

The Scenario of Indian Marine products in India have been examined by the quantity and value of exports of various products namely frozen shrimp, frozen fish, frozen cuttle fish, frozen squid, dried items, live items, chilled items and others. The country wise analysis on export of Indian marine products is examined with the help of the exports to Japan, USA, European Union, China, South East, Asia, Middle East and other countries.

3.6.1 Product Wise Export of Indian Marine Products

The export of Indian marine products from 2001-02 to 2011-12 have been included for the present study in order to exhibit the trend of export of Indian marine products. The relevant data were collected from the different sources. The Indian marine products are classified into frozen shrimp, frozen fish, frozen cuttle, frozen squid, dried items, live items, chilled items and others. The item wise exports from India are presented in Table 3.2.

Table 3.2

Product wise Export of Indian Marine Products from 2001-02 to 2011-12

	Product wise Export(Quantity in Tonnes)										
Year	Frozen Shrimp	Frozen Fish	Frozen Cuttle	Frozen Squid	Dried Items	Live Items	Chilled Items	Others	Total		
2001-02	127709	174976	30568	39790	8207	1628	3284	38308	424470		
2002-03	134815	196322	41382	37833	8179	2116	3352	43298	467297		
2003-04	129768	138023	39610	37832	12574	2341	3779	48090	412017		
2004-05	138085	159689	44239	48124	9692	2262	3988	55250	461329		
2005-06	145180	182344	49651	52352	14167	2568	5060	60842	512164		
2006-07	137397	270751	55701	47252	24292	2477	7200	67571	612641		
2007-08	136223	220200	45955	34172	22414	2498	6541	73698	541701		
2008-09	126039	238544	50750	57125	31688	3434	21453	73802	602835		
2009-10	130553	260988	63502	61444	47053	5490	28816	80590	678436		
2010-11	151465	312358	59159	87579	79059	5208	21118	97145	813091		
2011-12	189125	347118	54671	77373	53720	4198	21278	114538	862021		
Average	140578	227392	48653	52807	28277	3111	11443	68467	580727		
Per cent	24.21	39.16	8.38	9.09	4.87	0.54	1.97	11.79	100.00		
Rank	2	1	5	4	6	8	7	3			

Source: MPEDA Annual Reports

The frozen shrimp exported from India is increasing from 1,27,709 tonnes in 2001-02 to 1,89,125 tonnes in 2011-12. The rate of increase during the study period is 48.09 per cent whereas the rate of increase in the frozen fish has increased by 98.38 per cent during the same study period. The rate of increase in the export of frozen cuttle and frozen squid during the study period are 78.85 and 94.45 per cent respectively. In the case of export of dried items and live items, the rate of increase during the study period are 554.56 and 157.86 per cent respectively. In the case of export of chilled items and other items, the rate of increase in exports are 547.93 and 198.99 per cent respectively. The total quantity of exports has increased by 103.08 per cent. The analysis reveals that there is an uptrend in the case of export of all items regarding the Indian marine products to the foreign countries.

3.6.2 Product wise Export of Indian Marine Products

The total value of export of marine products from 2001-02 to 2011-12 have been collected from various secondary sources. The value of export of frozen shrimp, frozen fish, frozen cuttle, frozen squid, dried items, live items, chilled items, and other items from 2001-02 to 2011-12 have been examined and presented in Table 3.3

Table 3.3

Product wise Export of Indian Marine Products from 2001-02 to 2011-12.

		Product wise Export (Value in Crores)										
Year	Frozen Shrimp	Frozen Fish	Frozen Cuttle	Frozen Squid	Dried Items	Live Items	Chilled Items	Others	Total			
2001-02	4139.92	713.11	280.07	329.67	67.96	40.57	63.66	322.09	5957.05			
2002-03	4608.31	841.65	417.09	384.37	84.23	53.66	59.14	432.86	6881.31			
2003-04	4013.07	620.73	435.18	372.92	145.68	51.1	64.04	389.23	6091.95			
2004-05	4220.67	759.21	474.01	477.26	121.01	50.75	68.14	475.58	6646.63			
2005-06	4271.51	998.7	549.15	575.52	132.56	61.71	81.56	574.58	7245.29			
2006-07	4506.08	1452.88	797.37	568.32	183.16	64.06	117.3	674.35	8363.52			
2007-08	3941.63	1303.41	744.13	408.42	258.88	69.07	118.11	777.29	7620.93			
2008-09	3779.8	1722.34	761.05	632.35	420.75	99.00	217.34	975.33	8607.96			
2009-10	4182.35	2032.51	923.83	622.63	981.11	139.14	264.49	902.84	10048.9			
2010-11	5718.13	2623.89	1104.57	1010.57	954.94	142.15	257.54	1089.67	12901.46			
2011-12	8175.26	3284.15	1346.72	1228.19	562.65	154.61	357.42	1488.21	16597.21			
Average	4687	1487	712	601	356	84	152	737	8815			
Per cent	53.17	16.86	8.08	6.82	4.04	0.95	1.72	8.36	100.00			
Rank	1	2	4	5	6	8	7	3				

Source: MPEDA Annual Reports

The value of export of frozen shrimp has increased from ₹4139.92 crores in 2001-02 to ₹8175.26 crores in 2011-12. Whereas the rate of increase during this period is 97.47 per cent. The rate of increase in export of frozen fish and Cuttle during the study period are 360.53 and 380.85 per cent to its export during 2001-02 respectively. The rate of increase in export of frozen squid and dried items during the study period are 272.55 and 727.91 per cent respectively whereas the rate of increase in export of live and chilled items during the study period are 281.09 and 461.45 per cent respectively. The growth rate of other items during the study period is 362.05 per cent respectively. The total value of export during the study period has increased by 178.61 per cent. The dominant item in the total export value during the period is made by the export of frozen shrimp since it constitutes 53.17 per cent to the total value of export of Indian marine products during the study period.

3.6.3 Country wise Export of Indian Marine Products

The export of Indian marine products to various countries are examined in the present study. The countries are grouped into Japan, USA, European Union, China, South East Asia, Middle East and others. The quantity of export to the aforesaid countries from 2001-02 to 2011-12 have been collected from the secondary sources. The means of export of Indian marine products to each country and the per cent of contribution of export to each country to the total quantity export have been computed and presented in Table 3.4.

Table 3.4

Country wise Export of Indian Marine Products from 2001-02 to 2011-12.

	Country wise Export(Quantity in Tonnes)										
Year	Japan	USA	European Union	China	South East Asia	Middle East	Others	Total			
2001-02	64905	49041	82895	134767	52424	19159	21279	424470			
2002-03	54916	61703	94541	170811	44097	19668	21561	467297			
2003-04	50020	53153	96284	123738	50670	14711	23441	412017			
2004-05	57832	50045	117742	124826	63842	16624	30418	461329			
2005-06	59785	55817	136842	137076	60140	22270	40234	512164			
2006-07	67437	43758	149773	203514	67650	23585	56924	612641			
2007-08	67373	36612	149382	139792	63818	25752	58972	541701			
2008-09	57271	36877	155161	202142	34123	27177	90084	602835			
2009-10	62690	33443	164800	144290	149352	34924	88937	678436			
2010-11	70714	50095	170963	159147	233964	43983	84225	813091			
2011-12	85800	68354	154221	84515	343962	38155	87014	862021			
Average	63522	48991	133873	147693	105822	26001	54826	580727			
Per cent	10.94	8.44	23.05	25.43	18.22	4.48	9.44	100.00			
Rank	4	6	2	1	3	7	5				

Source: MPEDA Annual Reports

The quantity of export of Indian marine products to Japan has increased from 64905 tonnes in 2001-02 to 85800 tonnes in 2011-12 whereas the rate of increase in export to Japan during the study period is 32.19 per cent. The rate of increase of export to USA and European Union during the study period are 39.38 and 86.04 per cent respectively. The rate of increase of export to South East Asia during the study period is 556.1 per cent whereas the rate of decrease in export to China is by 37.28 per cent. The rate of increase in export of Indian marine products to Middle East and other countries during the study period are 99.15 and 308.92 per cent respectively. The rate of increase in export of Indian marine products are noticed in the ease of South East Asia. The average export of Indian marine products are identified as higher in China and European Union since their average are 147693 tonnes and 133873 tonnes respectively.

3.6.4 Country wise Export of Indian Marine Products

The countries are grouped into Japan, USA, European Union, China, South East Asia, Middle East and others. The Value of export to the aforesaid countries from 2001-02 to 2011-12 have been collected from the secondary sources. The means of export of Indian marine products to each country and the per cent of contribution of export to each country to the total value export have been computed and presented in Table 3.5.

Table 3.5

Country wise Export of Indian Marine Products from 2001-02 to 2011-12

		Country wise Export (Value in Crores)										
Year	Japan	USA	European Union	China	South East Asia	Middle East	Others	Total				
2001-02	1820.69	1421.38	1150.07	597.23	538.75	181.06	247.87	5957.05				
2002-03	1534.76	2051.12	1388.47	744.48	660.38	204.74	297.63	6881.58				
2003-04	1163.69	1682.06	1470.99	676.46	545.77	201.52	351.46	6091.95				
2004-05	1202.45	1556.09	1819.28	693.25	628.83	244.42	502.37	6646.69				
2005-06	1155.97	1639.24	2134.25	848.45	586.85	307.65	572.9	7245.31				
2006-07	1353.38	1347.8	2760.32	1156.96	616.7	371.06	757.3	8363.52				
2007-08	1227.57	1016.94	2664.24	1009.59	573.97	393.96	734.62	7620.89				
2008-09	1234.04	1021.55	2854.07	1646.25	523.23	475.72	853.11	8607.97				
2009-10	1289.58	1012.52	3013.33	1790.89	1479.55	553.59	909.07	10048.53				
2010-11	1683.39	1990.26	3459.4	1977.81	2114.48	669.9	1006.23	12901.47				
2011-12	2140.67	2977.53	3810.44	1259.23	4193.27	894.38	1321.72	16597.24				
Average	1437	1611	2411	1127	1133	409	687	8815				
Per cent	16.30	18.27	27.36	12.79	12.85	4.64	7.79	100.00				
Rank	3	2	1	5	4	7	6					

Source: MPEDA Annual Reports

The value of export to Japan has increased from ₹1820.69 crores in 2001-02 to ₹2140.67 crores in 2011-12 whereas the rate of increase during the study period is by 17.57 per cent. The rate of increase of value of export to USA and European Union are 109.48 and 231.18 per cent respectively whereas the rate of increase in value of export to China and South East Asia are 110.85 and 678.33 per cent respectively. In the case of Middle East and other countries, the rates of increases are 393.96 and 433.23 per cent respectively. The higher mean of the value of export is seen in the case of European Union and USA since the mean scores are ₹2411 and ₹1611 respectively. The contribution of value of export to European Union is comparatively higher than the other countries since it constitutes 27.36 per cent to the total value of export during the study period. It is followed by USA and Japan which constitutes 27.36 and 18.27 per cent respectively.

3.6.5 Major Port wise Export of Indian Marine Products

It is imperative to examine the relative importance of the parts in the export of Indian Marine Products for some policy implications. The ports in the present study are confined to Kochin, Chennai, JNP, Pipavav, Vizag, Calcutta, Tutucorin, Mangalore and others. The quantity of export of Indian marine products exported from the aforesaid ports from 2001-02 to 2011-12 have been collected from the secondary sources and examined with the help of its mean score and contribution of each port in the export of Indian marine products to the total export. The results are given in Table 3.6.

Table 3.6

Major Port wise Export of Indian Marine Products from 2001-02 to 2011-12

Year	Port wise Export (Quantity in Tonnes)											
	Kochin	Chennai	JNP	Pipavav	Vizag	Calcutta	Tutucorin	Mangalore	Others	Total		
2001-02	72035	41517	91483	78097	22154	17692	16966	7423	77103	424470		
2002-03	80373	52877	107972	99070	25571	17386	17270	9996	56782	467297		
2003-04	75761	46894	95584	89628	24284	17473	21568	8474	32351	412017		
2004-05	86291	42649	109430	109597	32028	18492	28160	10349	24333	461329		
2005-06	95737	45246	120492	115101	37121	18291	27172	15965	37039	512164		
2006-07	106454	42272	137153	178751	36594	23238	30611	26723	30845	612641		
2007-08	98520	42947	104670	149434	35535	27666	29697	26155	27077	541701		
2008-09	98537	39043	126853	163866	32277	33625	29354	33084	46196	602835		
2009-10	104281	45991	129318	182052	31863	46901	27782	59000	51248	678436		
2010-11	121550	55961	155829	197478	38217	56060	30220	104821	52955	813091		
2011-12	152445	46184	148891	219801	62215	59151	34532	86367	52435	862021		
Average	99271	45598	120698	143898	34351	30543	26667	35305	44397	580727		
Per cent	17.09	7.85	20.78	24.78	5.92	5.26	4.59	6.08	7.65	100.00		
Rank	3	4	2	1	7	8	9	6	5			

Source: MPEDA Annual Reports

The quantity of export of Indian marine products from Kochin port is increasing from 72035 tonnes in 2001-02 to 152445 tonnes in 2011-12 whereas the rate of increase in it during the study period is by 111.62 per cent. The rate of increase in Chennai and JNP port are 11.24 and 62.75 per cent during the study period respectively. The rate of increase in the quantity of export to Pipavav and Vizag port during the study period are by 84.26 and 180.83 per cent respectively whereas the rate of increase in Calcutta and Tutucorin port are by 72.64 and 57.18 per cent respectively. In the case of Mangalore ports the rate of increase is 375.62 whereas in the case of other ports, it has decreased by 42.42 per cent respectively. The higher mean export is seen at Pipavav and JNP port since it's mean of the quantity of export are 143898 and 120698 tonnes respectively.

3.6.6 Major Port wise Export of Indian Marine Products

The value of export of Indian marine products from the ports namely Kochin, Chennai, JNP, Pipavav, Vizag, Calcutta, Tutucorin, Mangalore and others from 2001-02 to 2011-12 have been examined with the help of the mean of the value of export from the ports during the study period. The per cent of contribution of each port regarding the value of export to the total export during the study period has been computed. The results are given in Table 3.7.

Table 3.7

Major Port wise Export of Indian Marine Products from 2001-02 to 2011-12

1 7	Port wise Export (Value in Crores)									
Year	Kochin	Chennai	JNP	Pipavav	Vizag	Calcutta	Tutucorin	Mangalore	Others	Total
2001-02	930.87	1570.13	699.19	357.38	771.81	523.94	446.27	55.42	602.49	5957.5
2002-03	1022.22	2071.05	916.29	527.59	886.51	557.43	436.82	64.76	398.64	6881.31
2003-04	1077.11	1505.51	837.25	477.31	763.64	543.56	565.65	64.48	257.44	6091.95
2004-05	1135.7	1432.87	965.32	629.54	1029.06	521.13	635.19	76.92	220.96	6646.69
2005-06	1218.97	1382.56	1173.04	776.83	1115.3	537.95	613.17	103.27	324.21	7245.3
2006-07	1476.51	1332.58	1279.48	1162.05	1264.75	655.65	735.48	149.49	307.53	8363.52
2007-08	1383.74	1158.5	1120.86	1075.31	1018.6	689.7	654.64	162.61	356.96	7620.92
2008-09	1504.98	1078.44	1487.28	1408.35	897.93	720.36	693.76	238.44	578.4	8607.94
2009-10	1576.19	1314.1	1564.42	1673.74	943.29	892.48	686.45	400.33	997.53	10048.53
2010-11	1892.14	1979.76	1910.65	2025.72	1300.28	1313.67	880.41	688.32	910.55	12901.5
2011-12	2859.02	1847.02	2151.66	2710.34	2652.15	1730.89	1180.84	659.41	805.91	16597.24
Average	1462	1516	1282	1166	1149	790	684	242	524	8815
Per cent	16.58	17.19	14.55	13.23	13.04	8.96	7.76	2.75	5.94	100.00
Rank	2	1	3	4	5	6	7	9	8	

Source: MPEDA Annual Reports

The total value of export of Indian marine products from Kochin port is increasing from ₹930.87 crores in 2001-02 to ₹2859.02 crores in 2011-12 whereas the rate of increase in the value of export during the study period is by 207.13 per cent. The rate of increase in the value of export from Chennai, JNP and Pipavav port during the study periods are by 17.63, 207.74 and 658.39 per cent respectively. The rate of increase of value of exports from Vizag, Calcutta and Tuticorin ports are by 243.63, 230.36 and 164.60 per cent respectively. The rate of increase in the value of exports from Mangalore and other ports are by 1089.84 and 33.76 per cent respectively. The higher mean of value of export of Indian marine products are noticed at Chennai and Kochin port since their respective mean scores are 1516 and 1462 respectively. The higher per cent of contribution of export at the port of the total value of export is seen in Chennai and Kochin port since it contributes 17.19 and 16.58 per cent respectively.

3.7 ANALYSIS OF EXPORT OF INDIAN MARINE PRODUCTS

The analysis on the scenario of Indian Marine Products in given the growth rate of quantity and value of exports have also been examined with the help of annual and compound growth rates.

3.7.1 Trend in Export of Indian Marine Products

The total quantity of export of Indian marine products from 2002-03 to 2011-12 have been collected from the relevant sources. The increase/decrease and the per cent of increase/decrease on the previous year have been computed in order to show the trend of the quantity of export of Indian Marine Products. The results are given in Table 3.8.

Table 3.8

Trend in Export of Indian Marine Products

Year	Quantity in Tonnes	Increase/Decrease	Percentage Increase/ Decrease
2002-03	467297		
2003-04	412017	-55280	-11.83
2004-05	461329	49312	11.97
2005-06	512164	50835	11.02
2006-07	612641	100477	19.62
2007-08	541701	-70940	-11.58
2008-09	602835	61134	11.29
2009-10	678436	75601	12.54
2010-11	813091	134655	19.85
2011-12	862021	48930	6.02

Source: MPEDA Annual Reports

The quantity of export of Indian Marine Products is increasing from 467297 tonnes in 2002-03 to 862021 tonnes in 2011-12. The rate of increase in the quantity of export during the study period is by 84.47 per cent. The analysis of increase/decrease shows that there was a decline in total quantity of exports during 2003-04 compared to 2002-03 and 2007-08 compared to 2006-07. The per cent of decrease during the above said two occasions are 11.83 and 11.58 per cent respectively. In all other years, there was an increase in the quantity of exports. The year of year increase is identified as higher in 2010-11 and 2006-07 since its per cent of increase are 19.85 and 19.62 per cent respectivel

3.7.2 Growth Rate of Indian Marine Products Export in Terms of Quantity

The growth performance of export of Indian Marine Products have been analyzed with the help of annual and compound growth rates. The annual and

compound growth rates are estimated with the help of semi-log linear and exponential function respectively. The results are shown in Table 3.9.

Table 3.9

Growth rate of Indian Marine Products Export in terms of Quantity

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)
1.	Quantity	5.5817 (0.0252)	0.033* (0.004)	0.891	7.89	25.22

^{*} Significant at five per cent level

Figures in parenthesis are standard error.

The significant annual growth rate is noticed in the case of total export of Indian Marine Products during the study period since the annual growth rate which is significant at five per cent level. The R² (0.891) shows that the changes in the time period explains the changes in the total quantity of export of Indian marine products to an extent of 89.10 per cent. The compound growth rate of Indian Marine Products during the study period is 7.89 per cent. There is a moderate consistency in the level of total export of Indian marine products since the coefficient of variation is 25.22 per cent.

3.7.3 Trend in Export of Indian Marine Products

The total value of export of Indian Marine Products have been discussed to exhibit the trend of the value of export of Indian marine products. The value of export of from 2002-03 to 2011-12 have been collected from the relevant secondary sources. The increase/decrease year or year and its per cent of increase/ decrease have been computed. The results are given in Table 3.10.

Table 3.10

Trend in Export of Indian Marine Products

Year	Value in Crores	Increase/Decrease	Percentage Increase/ Decrease
2002-03	6881.31		
2003-04	6091.95	-789.36	-11.47
2004-05	6646.69	555	9.11
2005-06	7245.30	599	9.01
2006-07	8363.53	1118	15.43
2007-08	7620.92	-743	-8.88
2008-09	8607.94	987	12.95
2009-10	10048.53	1441	16.74
2010-11	12901.47	2853	28.39
2011-12	16597.21	3696	28.65

Source: MPEDA Annual Reports

The value of export of Indian marine products is increasing from 6881.31 crores in 2002-03 to 16597.21 crores in 2011-12 whereas the rate of increase in export during the study period is by 141.19 per cent. The decreases in the value of export are seen in 2003-04 and 2007-08 since the amount of decreases in the previous year is -789.36 and -743.00 respectively. The per cent of decrease in the above said periods are 11.47 and 8.88 per cent respectively. In all other years, there was an increase in the total value of exports. The higher rate of increase is noticed in the year 2011-12 and in the year 2010-11 since the rate of increase in the previous years are 28.65 and 28.39 per cent respectively.

3.7.4 Growth Rate of Indian Marine Products Export in Terms of Value

The growth performance of the value of export of Indian Marine Products have been examined with the help of annual and compound growth rate. The figures on

value of export from 2002-03 to 2011-12 have been included for the analysis. The estimated annual and compound growth rates are shown in Table 3.11.

Table 3.11

Growth rate of Indian Marine Product Export in terms of Value

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)
1.	Value of exports	3.7109 (0.0414)	0.0412* (0.0067)	0.8262	9.95	36.25

^{*} Significant at five per cent level

Figures in parenthesis are standard error.

The significant annual growth rate is identified in the ease of value of export of Indian marine products since its annual growth rate (0.0412) is significant at five per cent level. The changes in the time period explain the changes in the value of export of Indian marine products to an extent of 82.62 per cent since it's R² is 0.8262. The compound growth rate of value of export is 9.95 per cent. The lesser consistency in the value of export during the study period is noticed since the coefficient of variation is 36.25 per cent.

3.8 FISHERIES IN TAMIL NADU

Tamilnadu is one of the leading States in India in Fisheries Development having coastal length of 1076 km. Tamilnadu is bordered on the north by Andhrapradesh State, on the north west by Karnataka state, on the west by Kerala state and on the east and south by the Bay of Bengal and the Indian Ocean. The different types of aquatic resources in Tamilnadu like marine, freshwater, brackish water, riverine stretches, cold water streams in upland area are bestowed with rich biodiversity of aquatic fauna and flora. There are 2500 species of fishes found in different aquatic environment. The fisheries in the state is one of the vital source for food security.

The department of fisheries in Tamilnadu is one of the oldest department started during 1907. The department has pioneered many fishery development activities in India. The Department is marching towards its centenary during 2007¹⁹.

3.8.1 Importance of Fisheries in Tamil Nadu

Tamil Nadu occupies the fourth position producing 9.2 per cent of the total fish production in the country. Fishery sector made a significant contribution of around some crores to the state income in 2011-12. There is a consistent and faster growth of income from fisheries compared to the overall contribution of agricultural sector to the state's income

Next to agriculture and handloom sectors, fisheries provide employment avenues for more than 5 lakhs people in the state with 362 fish landing centers in the state, the marine fisheries provide employment to nearly 2.6 lakhs persons. Nearly 2 lakhs persons draw their livelihood from inland fisheries.¹⁰

3.8.2 Fishing Resource Potentials in Tamil Nadu

Tamil Nadu fishery resources consist of marine as well as inland. As far as marine fishery of the state is concerned it has very large coastline of 1000 Kms, of which 940 Kms on the East Coast were extending from Chennai to Kanyakumari and 60 Kms on the West Coast extending from Kanyakumari to Kollencode. The Tamilnadu coast is divided into four coastal regions namely the coromandal coast covering 350 Kms, Palk Bay covering 270 Kms, Gulf of Mannar covering 320 Kms and the west coast covering 60 Kms. The continental shelf of Tamil nadu has a total

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⁹ http://www.fisheries.tn.gov.in/

Tamil Nadu- An Economic Appraisal, **Government of Tamil Nadu, Kuralagam**, Chennai, 2011-2012.

area of 41,412 sq, Kms with 33,616 sq.Kms on the East Coast and 7796 sq.Km on the west coast. The Exclusive Economic Zone (EEZ) of Tamil nadu is 0.19 million sq.Kms. There are 442 fishing villages on the coastline of tamilnadu.¹¹

Central Marine Fisheries Research Institute has assessed the marine fish resources in Tamilnadu. Its estimate shows that there is a potential for capture fisheries to the extent of 11.50 lakhs tonnes in Tamilnadu water beyond 40 fathoms depth and 3.53 lakh tonnes upto 200 m. depth and 5.30 lakh tonnes in the Exclusive Economic Zone.

There is also a potential for culture fisheries about 3.7 lakh ha in the inland water spread. It comprises reservoirs with an area of 52,000 ha brackish water area of 56,000 ha and other areas of 262,790 ha.¹² Nearly one-fourth of the total fish production in the state comes from these inland sources.

3.8.3 Fishing Technology in Tamil Nadu

Fishing is one of the oldest occupations of mankind. The fishing crafts used by Indian active fishermen are broadly classified into two 1.Traditional and 2. Modern. The traditional crafts are further divided into three types namely, Catamaran, the dugout canoes and plank built canoes. These traditional fishing crafts are in practice even from the early periods.

But the idea of modernizing the fishing industry was made at the end of the last century. In 1898 the Government of Madras Presidency was advised to modernize the fishery sector in order to fight famine. In 1907, Madras Fisheries Development was started and in the following years, trawling was started on a trial basis. It took almost

Rajalakshmi.N, Tamilnadu Economy, Business Publication INC, Mumbai 2009.
 Abstract from Tamil Nadu Fisheries, Statistics, 2010, Government of Tamil Nadu, Chennai. 2010

40 years to take the final decision to modernize fisheries sector in India. In 1952, Technical Co- operation Agreement between the Government of India, USA and the United Nations was signed according to which mechanized fishing vessels, ice plants and fish processing plants were brought in 13.

The Government of Tamil Nadu has enacted the Tamil Nadu Marine Fishing Regulation Act with a view to enforce strict regulatory measures for restricting the operational areas of the mechanized boats. Since the owners of the mechanized boats do not follow the provisions of the above Act, the Government of Tamil Nadu has prohibited them from operating during the monsoon period with the aim of conserving the marine resources and avoiding disputes arising out of these.

3.8.4 Fishery Policy and Programmes

The Department of Fisheries was started in the state in 1907. It functions with twin objectives of developing and conserving the fishery resources and ameliorating the socio-economic conditions of large section of fishermen population both in marine and inland sectors. The state plan on fisheries is also drawn in this direction.

The main objectives of fisheries department is to maximize fish production through eco-friendly and sustainable technologies. In order to achieve this objective, the fisheries department of Tamil Nadu implements various programmes.¹⁴

- 1. Marine Sector
- 2. Inland Sector

-

Dixinulu. J.V.H and Paparao. G, **Hand Book of Fisheries, Global Fishing Private LTD**, Visakapatanam,.

¹⁴ Policy Note 2003-2004, Government of Tamil Nadu, 2005.

Marine Sector

The Government of Tamil Nadu has focused on the exploitation of resources in the sea over the last 40 years. The state had introduced mechanized fishing boats at a subsidized rate. There are about 10000 mechanised crafts engaged in marine fishing.

- a. Acquistion of Fishing Vessel.
- b. Deep sea Fishing
- c. Diesel Subsidy for Mechanised Boats
- d. Training Centers to Operate Modern Crafts
- e. Motorisation of Traditional Crafts
- f. Meenavar Angadis

Inland Sector

The Government also aims at increasing the fish production in inland fisheries sector. The main objective is to enhance the fresh water fish production by utilizing the available water spread area of about 3.71 lakhs hectare comprising reservoirs, major and minor irrigation tanks, village ponds and tanks.

3.9 MARINE FISHING INDUSTRY IN THOOTHUKUDI

Fisheries is one of the important industries of the district. This district has a coastline of 163.5 km and there are 24 marine fishing villages along this coast. About 17445 fishermen are directly engaged in fishing by these crafts.

Marine fishing, pearl and chunk fishing are famous in this district from time immemorial. Thoothukudi is the main centre for deep sea fishing in the district. Prawn culture is a very flourishing trade in this district and it earns a considerable amount of

foreign exchange. Now prawn culture has been banned by the supreme court of India due to pollution issues. Many varieties of fishes are caught in the district and most of the quantity of the fish is exported to all parts of the country and the world. Some kinds of fishes are caught, powdered and packed and it is called Masi for which Thoothukudi is famous in India. The Masi is even exported to all parts of the country as well as foreign countries particularly to Sri Lanka and other Indian Ocean countries. The fish cakes produced here are used for food for prawns and other fishes.

The Government of Tamil Nadu constructed some ice plants at Thoothukudi with a total capacity of 150 tonnes per day. In addition, there were also a few ice plants in the private sector. The Tamil Nadu Fisheries Development Corporation was running an ice plant, cold storage and freezing plant in Thoothukudi. A Large number of sea food companies are based on Thoothukudi. These companies are engaged in the marketing of commercially important species of fish like Shrimp, Cuttlefish, prawn, Squid and lobster.

In Thoothukudi, the fish landing centers are situated in the urban area. The mechanized fishing sector and the traditional fishing sector co-exist side by side. Thoothukudi is a landing, assembling and consuming center for marine fish. It is also a processing and exporting center for prawns and dry fish. The Fish Landing Centre of this area is Therespuram 17 acres it has a one major Fishing hourbour of 21 acres.

All different types of fishing crafts like fishing vessels comprising Mechanised Fishing Boats, Wooden Vallams, FRP Vallams, FRP Catamarans, and Wooden Catamarans were found to be in operation in these districts.

Table 3.12
Fishing Crafts in Thoothukudi District in 2011-12

Mechanise FishingBoats (TN12MFB)	Wooden Vallams (TN12WV)	FRP Vallams (TN12FR)	FRP Katamarans (TN12WC)	Wooden Katamaras (TN12WC)	Fishing Crafts
448	2073	1606	2	1020	5149

Source: Tamil Nadu Fisheries Statistics, 2011-2012, Department of Fisheries, Chennai

The total number of fishing crafts operating in Thoothukudi district was 5149. There were 25 Fishermen Co-operative Societies in the district with a total membership of 30265 and there were 24 fisher women Co-operative Societies with 18335 members.

The Government of Tamilnadu established a Fishermen Training Center in Thoothukudi in 1956. The Center had trained more than 10000 persons. Six villages namely Punnakayal, Periathalai, Tharuvaikulam, Alanthalai, Kilavaipar and Veerapandi Pattanam have guide light facilities. There is a fish landing platform in Thoothukudi-South which was constructed with the assistance of Marine Product Export Development Authority (MPEDA)

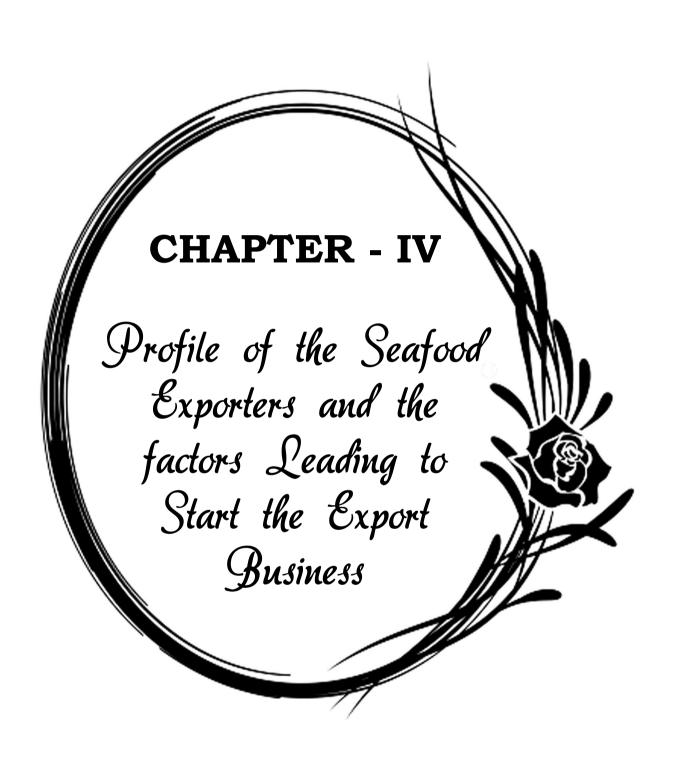
The Central Marine Fisheries Research Institute (CMFRI) has established a research station in the study area. Marine Products Export Development Agency and Export Inspection Agency are maintaining offices at Thoothukudi. Moreover, Exploratory Fisheries station is located here and large fishing vessels of exploratory fisheries station are berthed in the harbour.

There is one Joint Director and Assistant Director of fisheries in charge of pearl-chunk fishing, fishermen training institute and for technical guidance. There is also a fish-seed farm at kadamba. Service central base workshop of this district oils

situated at Thoothukudi. There is a fish curing center at Punnakayal. A Government fisheries college is also functioning in Thoothukudi.

3.10 CONCLUSION

The study about the profile of the marine fishing industry exposed the fishery resources and fishing technologies adopted. This chapter also gave information regarding the role of the Government in the development of fishing. The marine product scenario helped the researcher to know the marine product export in terms of quantity and value of the marine product exported to various countries and the trend in the export business. The fisheries in Tamil Nadu gave information regarding the fishing resources and the technology used for fishing in Tamil Nadu. The marine fishing industry in Thoothukudi district helped the researcher to understand the seafood export in the study area.



CHAPTER - IV

PROFILE OF THE SEAFOOD EXPORTERS AND THE FACTORS LEADING TO START THE EXPORT BUSINESS

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4.V	muroaucuon

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CHAPTER - IV

PROFILE OF THE SEAFOOD EXPORTERS AND THE FACTORS LEADING TO START THE EXPORT BUSINESS

4.0 INTRODUCTION

In this chapter the profile of the seafood exporters and the factors leading to start the seafood export business have been presented. The profile of the exporters includes gender, level of education, age, income, years of experience, forms of organisation, legal status, registration authority, membership in association, nature of approval, approval category and capital employed, sources of seafood, nature of products exported, mode of transport used, channels used for export, export destination, packing standard followed, method of export and nature of ownership of containers. Moreover the profile variables are used for analyzing its association with factors leading to start the seafood export business.

4.1. PERSONAL PROFILE

The personal profile of the exporters has been classified to the gender, level of education, age and income of the exporters.

4.1.1 Gender of the Respondents

The gender of the exporter is one of the important profiles of the exporters. Since the gender may play an important role in the performance of the seafood exporters, it is included as one of the profile variable. The exporters are classified into three categories namely manufacturer exporters, merchant exporters and ornamental fish exporters and they are denoted as MUE, MEE, and OFE respectively. The distribution of exporters on the basis of their gender is given in Table 4.1.

Table 4.1

Gender wise classification of Respondents

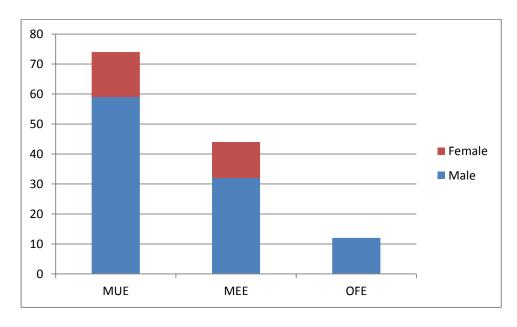
C.N.	Condon	Numl	T-4-1			
S.No	Gender	MUE	MEE	OFE	Total	
1.	Male	59 (79.7)	32 (72.7)	12 (100)	103 (79.2)	
2.	Female	15 (20.3)	12 (27.3)	-	27 (20.8)	
3.	Total	74 (100)	44 (100)	12 (100)	130 (100)	

Figures with in bracket shows the percentage

In total, a maximum of 79.20 per cent of the respondents are male whereas the remaining 20.80 per cent are female. The dominant gender among respondents in MUE and MEE are male which constitute 79.70 and 72.70 per cent respectively. All the 12 respondents in OFE are male. The analysis reveals the male domination among the exporters in all three groups.

Figure 4.1

Gender wise Classification of the Respondents



4.1.2 Level of Education among the Respondents

The level of education may provide more knowledge and exposure on the export formalities, export procedure and export activities among the respondents. Hence, it may influence the exporters performance. The level of education among the respondents in the present study is confined to upto X STD, SSLC, HSC, graduation, diploma and professional. The levels of education among the respondents are illustrated in Table 4.2.

Table 4.2

Level of Education among the Respondents

C No	Level of	Numbe	Total		
S.No	Education	MUE	MEE	OFE	1 Otal
1.	Upto X Std	0 (0)	2 (4.50)	0 (0)	2 (1.53)
2.	SSLC	11 (14.86)	2 (4.50)	2 (16.70)	15 (11.53)
3.	HSC	5 (6.76)	9 (20.50)	2 (16.70)	16 (12.30)
4.	Graduation	37 (50.00)	28 (63.70)	4 (33.30)	69 (53.10)
5.	Diploma	16 (21.62)	2 (4.50)	4 (33.30)	22 (16.92)
6.	Professional	5 (6.76)	1 (2.30)	0 (0)	6 (4.62)
	Total	74 (100)	44 (100)	12(100)	130 (100)

Source: Primary Data

Figures with in bracket shows the percentage

The level of education of majority (53.10 per cent) of the respondents are having among the respondents in total is a graduation and diploma holder which constitutes 53.10 and 16.92 per cent to the total respectively. The important level of education among the respondents in MUE is graduation and diploma which constitutes 50.00 and 21.62 per cent so it's total respectively. Among the respondents in MEE, there are graduation and HSC which constitutes 63.70 and 20.50 per cent to it's total

respectively. Among the OFE, these two are graduation and diploma which constitutes 33.30 and 33.30 per cent to its total respectively. The analysis informs that the dominant level of education among the exporters is graduation and diploma.

100% 90% 80% 70% 60% 50% 40% 30% 20% 10%

Figure 4.2

Level of Education among the Respondents

4.1.3 Age of the Respondents

0%

Age is one of important profile of the exporters. Age may reveal the level of experience and exposure on export of sea foods, problems and prospects of marine exports. Hence, it is included as one of the profile variables in the present study. The age of the exporters is confined to below 25 years, 25 to 35, 35 to 45 and above 45 years. The distribution of respondents on the basis of their age is given in Table 4.3.

Table 4.3

Age wise classification of the of respondents

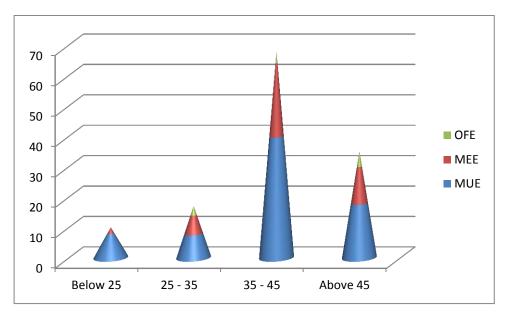
G.N.	Age	Numb	TD . 4 . 1		
S.No	(in years)	MUE	MEE	OFE	Total
1.	Below 25	8 (10.8)	2 (4.50)	0 (0)	10 (7.7)
2.	25 – 35	8 (10.8)	6 (13.60)	3 (25.00)	17 (13.1)
3.	35 – 45	40 (54.1)	24 (54.60)	4 (33.30)	68 (52.3)
4.	Above 45	18 (24.3)	12 (27.30)	5 (41.70)	35 (26.9)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Figures with in bracket shows the percentage

In total, a maximum of 52.3 per cent of the respondents are in the age group of 35 to 45 years which is followed by the age group of above 45 years with 26.90 per cent to the total. The important age group among the respondents in MUE is 35 to 45 years and above 45 years which constitutes 54.10 and 24.30 per cent to its total respectively. Among the respondents in MEE, it is also the same which constitutes 54.60 and 27.30 per cent to its total respectively. Among the respondents in OFE, above 45 year of age and 35 to 45 years of age constitute 41.70 and 33.30 per cent to its total respectively. The analysis reveals that the majority (52.3 per cent) of the respondents are in the age group of 35-45.

Figure 4.3

Age of the Respondents



4.1.4 Income of the Respondents

Income of the respondents means the monthly income of the exporters earned through the export of seafood. Since, the income of the exporters may influence the views on various aspects related to the export of seafood, it is included as one of the profile variable. The monthly income of the exports is classified into upto ₹10,000, ₹10,000 to 20,000, ₹20,000 to 30,000, ₹30001 to 40,000, ₹40,001 to 50,000 and above ₹50000. The distribution of respondents on the basis of their monthly income is shown in Table 4.4.

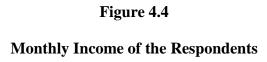
Table 4.4

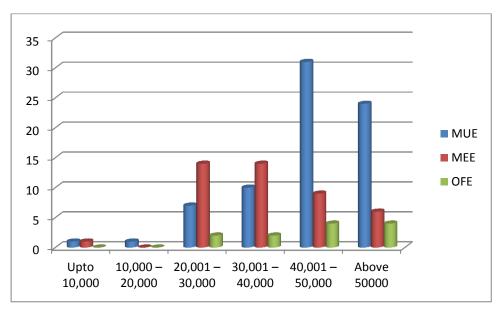
Income wise classification of the respondents

S.No	Monthly Income	Numbe	Total		
5.110	In ₹.	MUE	MEE	OFE	Total
1.	Upto 10,000	1 (1.4)	1 (2.30)	0 (0)	2 (1.5)
2.	10,000 – 20,000	1 (1.4)	0 (0)	0(0)	1 (0.80)
3.	20,001 – 30,000	7 (9.5)	14 (31.80)	2 (16.7)	23 (17.70)
4.	30,001 – 40,000	10 (13.5)	14 (31.80)	2 (16.7)	26 (20.00)
5.	40,001 – 50,000	31 (41.8)	9 (20.50)	4 (33.30)	44 (33.80)
6.	Above 50000	24 (32.4)	6 (13.60)	4 (33.30)	34 (26.20)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Figures with in bracket shows the percentage

The important monthly income among the respondents is ₹40,001 to 50,000 and above ₹ 50000 which constitutes 33.80 and 26.20 per cent to the total respectively. The important monthly income among the respondents of MUE is ₹40,001 to 50,000 which constitutes 41.80. Among the respondents in MEE, these are ₹30,001 to 40000 and ₹ 20,001 to 40000 which constitutes 31.80 and 31.80 per cent to its total respectively. Among the respondents in OFE, these are ₹40,001 to 50000 and above ₹ 50,000 which constitutes 33.30 and 33.30 per cent to its total respectively. The analysis infers that the level of monthly income among the respondents in MUE and OFE is higher than that among the respondents of MEE.





4.2 BUSINESS PROFILE

The business profile of the exporters have been classified on the basis of years of experience, forms of organisation, legal status of the exporters, registration authority membership in association, nature of approval, approval category, capital employed, source of purchase, nature of products exported, mode of transport used, channel of export, export destination, packing standard followed, method of export, nature of ownership of container. The factors leading to start the export of seafood also discussed in this section.

4.2.1 Respondents Years of Experience

It shows the years of experience in the export of seafood by the respondents. Since the years of experience of the exporters may have its own influence on their views relating to problems and prospects of marine exports, it is included as one of the profile variable. The years of experience of the exporters is classified into upto 5 years,

5 to 10 years, 10 to 15 years, 15 to 20 years and above 20 years. The distribution of respondents on the basis of their years of experience is shown in Table 4.5.

Table 4.5

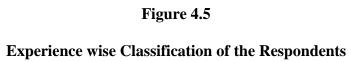
Experience wise classification of the respondents

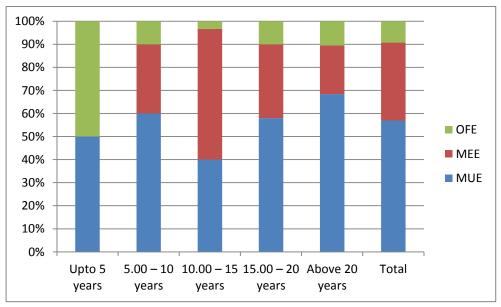
S.No	Voors of Evroviones	Numbe	Total		
5.110	Years of Experience	MUE	MEE	OFE	Total
1.	Upto 5	1 (1.40)	0 (0)	1 (8.30)	2 (1.50)
2.	5 – 10	6 (8.10)	3 (6.80)	1 (8.30)	10 (7.70)
3.	11 – 15	12 (16.20)	17 (38.60)	1 (8.30)	30 (23.10)
4.	16–20	29(39.20)	16 (36.40)	5 (41.70)	50 (38.50)
5.	Above 20	26 (35.10)	8 (18.20)	4 (33.40)	38 (29.20)
	Total	74 (100)	44 (100)	12 (100)	130(100)

Source: Primary Data

Figures with in bracket shows the percentage

The dominant years of experience among the respondents are 16 to 20 and above 20 years which constitutes 38.50 and 29.20 per cent to the total respectively. The dominant years of experience among the respondents of MUE are 16 to 20 years and above 20 years which constitutes 39.20 and 35.10 per cent to its total respectively. Among the respondents of MEE, these are 11 to 15 years and 16 to 20 years which constitute 38.60 and 36.40 per cent to its total respectively. Among the respondents of OFE, the dominant years of experience are 16 to 20 years and above 20 years which constitutes 41.70 and 33.40 per cent to its total respectively. The analysis reveals that the dominant years of experience among the respondents are 16-20 years.





4.2.2 Classification of Respondents on the basis of Forms of Organisation

Respondents are classified on the basis of forms of organization such as sole proprietorship, partnership and limited company. Since the form of organization can also play an important role in the development of seafood export business, it is included as a business profile variable in the present study. The distribution of respondents on the basis of the forms of organization of the seafood export units is given in Table 4.6.

Table 4.6

Forms of organization of Seafood Export Units

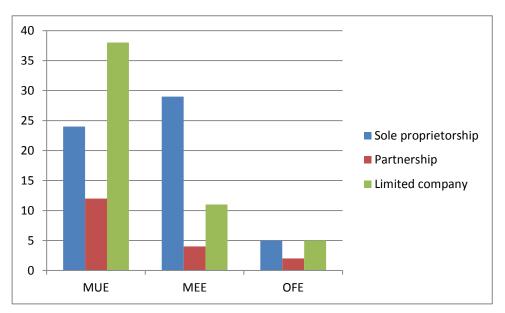
S.No	Forms of	Numbe	Total		
	organization	MUE	MEE	OFE	Total
1.	Sole proprietorship	24 (32.40)	29 (65.90)	5 (41.70)	58 (44.62)
2.	Partnership	12 (16.20)	4 (9.10)	2 (16.60)	18 (13.84)
3.	Limited company	38 (51.40)	11 (25.00)	5 (41.70)	54 (41.54)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The dominant forms of organization among the seafood exporters are sole proprietorship and limited company since it constitutes 44.62 and 41.54 per cent to the total respectively. Among the respondents of MUE and MEE most of the seafood export units are in the form of limited company and sole proprietorship which constitutes 51.40 and 65.90 per cent to its total respectively whereas among the respondents of OFE, it is both sole proprietorship and limited company since it constitutes 41.70 and 41.70 per cent to its total respectively. The analysis reveals that most of the seafood export units are sole proprietorship and limited company.

Figure 4.6

Forms of Organisation of Seafood Export Units



4.2.3 Legal status of the Seafood Exporters

The seafood exporters are classified according to their legal status namely registered and unregistered. The legal status of the seafood exporters can influence their export related activities. For availing the government assistances and subsidies, the seafood exporting units have to register their units with the appropriate authorities. An

attempt has been taken to examine the legal status of the seafood exporters in the study area. The data relating to this is presented in Table 4.7.

Table 4.7
Legal status of the Seafood Exporters

S.No	Noture of firm	Numbe	Total		
	Nature of firm	MUE	MEE	OFE	10tai
1.	Registered and licensed	74 (100)	44 (100)	12 (100)	130 (100)
2.	Unregistered and not licensed	0 (0)	0 (0)	0 (0)	0 (0)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

Figures with in bracket shows the percentage

The above table revels that all the seafood exporters have registered their concern and they are having export license also. It is inferred that how important the registration of the seafood export unit.

4.2.4 Authority under which the Seafood Export units are registered

The seafood export units are registered under some authority. The Marine Product Export Development Authority is involved in the development of seafood export in India. Through their various regulatory functions, market promotion functions, development of fisheries function etc., MPEDA is supporting the seafood exporters. In addition to this some concerns have registered with the District Industries Centre also. The distribution of seafood exporters on the basis of the authority under which they have registered is presented in the Table 4.8.

Table 4.8

Authority under which the Seafood Export units are registered

C No	A4h	Numb	er of responde	Total	
S.No	Authority	MUE	MEE	OFE	Total
1.	MPEDA	73 (98.60)	42 (95.50)	12 (100)	127 (97.70)
2.	DIC	1 (1.40)	2 (4.50)	0 (0)	3 (2.30)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Figures with in bracket shows the percentage

It is inferred from the above table that majority (97.70 per cent) of the respondents have registered the seafood export units under MPEDA. The number of respondents registered under MPEDA among the MUE, MEE and OFE constitutes 98.60, 95.50 and 100 per cent to its total respectively. The analysis indicates that majority of the respondents have registered their seafood export units under MPEDA in the study area.

4.2.5 Membership in Association among the exporters

Membership in an association related to the business activity will help the members to gain knowledge relating to the business and it will help the members to protect the business interest too. Since, the membership in association like Chamber of Commerce, Export Promotion Council and RCMC may provide knowledge relating to export of seafood business, it is included as one of the profile variable. The distribution respondents on the basis of their membership are given in Table 4.9.

Table 4.9

Membership in Association among the respondents

S.No	A	Numbe	Total		
	Association	MUE	MEE	OFE	Total
1.	Chamber of Commerce	74 (100)	42 (95.45)	12 (100)	128 (98.46)
2.	Export Promotion Council	0 (0)	1 (2.27)	0 (0)	1 (0.77)
3.	RCMC	0 (0)	1 (2.28)	0 (0)	1 (0.77)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Figures with in bracket shows the percentage

The above table reveals that majority (98.46 per cent) of the respondents are having membership in the Chamber of Commerce. In the categories of MUE, MEE and OFE the membership in Chamber of Commerce constitutes 100.00, 95.45 and 100 per cent to its total respectively. The analysis reveals the dominance of membership among the respondents in the Chamber of Commerce.

4.2.6 Nature of approval for Plant for seafood export

It is inevitable for the seafood exporters to get the approval for their plants which are used for the processing the seafood. As the approval is essential for the seafood exporters it is included as one of the business profile variable. The distribution of respondents on the basis of the nature of their approval is shown in Table 4.10.

Table 4.10

Nature of approval for plant for seafood export

S.No	Nature of Approval	Numbe	Total		
		MUE	MEE	OFE	Total
1.	Approved	74 (100)	42 (95.5)	12 (100)	128 (98.5)
2.	Not Approved	0 (0)	2 (4.50)	0 (0)	2(1.50)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Figures with in bracket shows the percentage

It is evident from Table 4.10 that majority (98.50 per cent) of the respondents have got approval for their plant used for processing the seafood. Only 2 units out of 130 seafood exporting units are not having the approval. Irrespective of the category of the seafood exporters most of the respondents are having approval for their plant. It shows the importance of getting approval for doing the seafood export business.

4.2.7 Approval category among the exporters

The approval category also plays a vital role for seafood export. In the present study, the category of the approval is confined to national standard, USA standard and European standard. The approval category among the respondents in the present study is illustrated in Table 4.11.

Table 4.11
Approval category among the respondents

C No	Approval	Number	Total		
S.No	Category	MUE	MEE	OFE	Total
1.	National standard	40 (54.10)	42 (100)	12 (100)	94 (73.44)
2.	USA standard	11 (14.90)	0 (0)	0 (0)	11 (8.59)
3.	European standard	23 (31.00)	0 (0)	0 (0)	23 (17.97)
	Total	74 (100)	42 (100)	12 (100)	128 (100)

Source: Primary Data

The important approval category among the respondents is National standard and European standard which constitutes 73.44 and 17.97 per cent to the total respectively. The most important approval category among the respondents in MUE, MEE and OFE is National standard which constitutes 54.10, 100.00 and 100.00 per cent to its total respectively. The analysis reveals the dominance of National standard approval used by the seafood exporters in the present study.

4.2.8 Capital employed in the seafood export units

Capital is the life blood of any business unit. The amount invested by the seafood exporters at the beginning is included as one of the business profile variable in this study. It represents the total capital invested by the seafood exporters at the time of starting their export unit. The initial capital investment is classified into below ₹10 lakhs, ₹10 lakhs to 30 lakhs, ₹31 to 50 lakhs and above ₹50 lakhs. The distribution of respondents on the basis of their initial capital employed is given in Table 4.12.

Table 4.12

Initial Capital Employed in the Seafood Export units

S.No	Capital employed	Numb	Total		
	(₹ In lakhs)	MUE	MEE	OFE	Total
1.	Below 10	39 (52.70)	32 (72.72)	6 (50.00)	77 (59.20)
2.	10 – 30	28 (37.80)	10 (22.73)	6 (50.00)	44 (33.80)
3.	31 – 50	6 (8.10)	2 (4.55)	0 (0)	8 (6.20)
4.	Above 50	1 (1.40)	0 (0)	0 (0)	1 (0.80)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The above table reveals that majority (59.20 per cent) of the respondents have invested below ₹10 lakhs. Among this majority (52.70 per cent) of them are manufacturer exporters. 33.80 per cent of the respondents have invested ₹ 10-30 lakhs. Among this majority (37.80 per cent) of them are manufacturer exporters. Among the merchant exporters majority (72.72 per cent) of the respondents have invested below ₹10 lakhs. The analysis reveals that majority (59.20 per cent) of the respondents have invested below ₹10 lakhs in the seafood export business at the beginning.

4.2.9 Sources of Seafood

Seafood exporters are purchasing the seafood from different sources. The quality, quantity and the price of the seafood varies depending upon the source from where it is purchased. So the source of purchase is included as one of the business profile variable. In the present study, the sources of seafood are confined to three categories namely getting the seafood through own vessels, purchase through agent and purchase through direct auction. The distribution of respondents on the basis of sources of seafood is given in Table 4.13.

Table 4.13
Sources of Seafood

S.No	Sources	Number	Total		
	Sources	MUE	MEE	OFE	Total
1.	Through own vessels	19 (25.70)	21 (47.70)	0 (0)	40 (30.77)
2.	Purchase through Agents	55 (74.30)	22 (50.00)	12 (100)	89 (68.46)
3.	Purchase through Direct auction	0 (0)	1 (2.30)	0 (0)	1 (0.77)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The above table reveals that majority (68.46 per cent) of the respondents are purchasing the seafood through the agents. Only 30.77 per cent of the respondents are using their own vessels for getting the seafood. 74.30 per cent of the manufacturer exporters are purchasing the seafood through the agents. 47.70 per cent of the merchant exporters are using their own vessels for getting the seafood. The analysis reveals that majority (68.46 per cent) of the seafood exporters are purchasing the seafood through the agents.

4.2.10 Nature of products Exported by the Seafood Exporters

From the study are different items of seafood are being exported to various countries. The seafood items exported from the study area includes frozen shrimp, frozen cuttle fish, frozen squid, dried items, live items, chilled items and others. The distribution of respondents on the basis of the seafood items exported to other countries is presented in Table 4.14.

Table 4.14
Seafood items Exported by the respondents

C No	Seafood items	Numbe	/D . 4 . 1		
S.No	Exported	MUE	MEE	OFE	Total
1.	Frozen Shrimp	28 (37.80)	7 (15.91)	0 (0)	35 (26.9)
2.	Frozen cuttle fish	7 (9.50)	2 (4.55)	0 (0)	9 (6.90)
3.	Frozen squid	1 (1.40)	3 (6.80)	0 (0)	4 (3.10)
4.	Dried items	29 (39.00)	28 (63.64)	0 (0)	57 (43.80)
5.	Live items	7 (9.50)	2 (4.55)	12 (100)	21 (16.20)
6.	Chilled items	1 (1.40)	0 (0)	0 (0)	1 (0.80)
7.	Others	1 (1.40)	2 (4.55)	0 (0)	3 (2.30)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The above table revels that majority (43.80 per cent) of the respondents are exporting dried items in the study area. 26.9 per cent of the respondents are exporting frozen shrimps. Among the manufacturer exporters 39.00 per cent are exporting dried items. Among the merchant exporters 63.64 per cent of them are exporting the dried items. In the case of ornamental fish exporters they are exporting live items. The analysis reveals that majority (43.80 per cent) of the respondents are exporting dried items in the study area.

4.2.11 Mode of transport used by the Seafood Exporters

The seafood exporters are using different mode of transport for exporting their products. Only two prominent modes are available for the export of seafood from the study area namely though sea and through air. The cost of air transport is costlier than the cost of sea transport but the air transport offers a quicker service than the sea transport. The distribution of seafood exporters on the basis of the use of mode of transport is shown in Table 4.15.

Table 4.15

Mode of transport used by the respondents

S.No	Mode of Transport	Numbe	Total		
		MUE	MEE	OFE	Total
1.	Through Sea	69 (93.20)	42 (95.50)	12 (100)	123 (94.60)
2.	Through Air	5 (6.80)	2 (4.50)	0 (0)	7 (5.40)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

It is evident from the above table that majority (94.60 per cent) of the respondents are exporting the seafood through sea. Only 5.40 per cent of the respondents are using the air transport for their export. The number of respondents using sea transport in the case of MUE, MEE and OFE constitutes 93.20, 95.50 and 100.00 per cent to its total respectively. The analysis reveals that the dominant mode of transport among the respondents is sea transport.

4.2.12 Reasons for using Sea Transport

There are lot of reasons for using a particular mode of transport for any business. As majority of theseafood exporters are using sea transport in the study area, the reasons for using the sea transport is considered for the analysis. The seafood exporters are asked to rank the reasons for using the sea transport according to their order of importance. The mean ranking among the exporters on the basis of their ranking is given in Table 4.16.

Table 4.16

Reasons for using Sea Transport

S.No	S.No Reasons for using Sea		Mean Ranks Among the Respondents			
	Transport	MUE	MEE	OFE	Statistics	
1	Comparatively lesser cost	4.2739	4.0454	4.2308	0.7879 NS	
2	Nearness to port	3.2738	3.1136	3.3077	0.5673 NS	
3	Availability of container facilities	3.2055	3.2500	3.3076	0.2674 NS	
4	Value added Seafood	3.5068	3.2273	3.4615	0.1973 NS	
5	Preference of the Importer	3.7534	3.7273	3.4613	0.4041 NS	
6	Availability of special container for shipment	3.1369	3.2045	3.1538	0.2045 NS	

Source: Primary Data

Among the MUE, MEE and OFE the most important reason for using the sea transport is lesser cost of transportation since its mean ranks are 4.2739, 4.0454 and 4.2308 respectively. The second reason among the MUE and MEE are preference of the importers since its mean ranks are 3.7534 and 3.7273 respectively. Among the three groups of respondents there is no significant difference exists regarding the reasons for choosing sea transport.

4.2.13 Reasons for using Air Transport

There are some reasons for choosing the air transport for the export of seafood. Six important reasons namely urgent order, perishability of the product, live item, nearness to air port, lesser volume of cargo space and good air cargo facility are included in the present study for the analysis. The seafood exporters are asked to rank these six reasons. The mean rank and the F statistics are shown in Table 4.17.

Table 4.17

Reasons for using Air Transport

S.No	Reasons	Mean F R	F- Statistics		
		MUE	MEE	OFE	Staustics
1	Urgent order	3.4795	3.5227	3.4616	0.2459 NS
2	Perishability of the product	3.7808	3.6818	3.0769	3.1173*
3	Live item	3.6164	3.5682	3.6923	0.3961 NS
4	Nearness to air port	3.3151	3.3864	2.9231	1.6562 NS
5	Lesser volume of cargo space	3.1918	3.1591	2.4615	3.0676*
6	Good air cargo facility	3.7671	3.6364	3.4615	1.2491NS

^{*}Significant at five percent level

The highly ranked reasons to select the air transport by the MUEs are perishability of the product and good air cargo facility since its mean ranks are 3.7808 and 3.7671 respectively. Among the MEEs the reasons are the same but with the mean

ranks of 3.6818 and 3.6364 respectively. Among the OFEs highly ranked reasons are 'live item' and urgent order since their mean ranks are 3.6923 and 3.4616 respectively.

Regarding the reasons for preferring the air transport significant difference among the three groups of exporters have been noticed in the case of perishability of the product and lesser volume of cargo space since their respective 'F' statistics are significant at five percent level.

4.2.14 Channels use for Export of Seafood

Different channels are used for the export of seafood in the study area. Some seafood exporters may prefer to export their products directly others may export the products indirectly. The channels used by the seafood exporters will have a say in their performance of their business. In the present study the channels used for the export of seafood are confined to export through merchants, export trading houses, trading companies, export drop shipper and agent brokers. The distribution of respondents on the basis of the channel used for the export of seafood is given in Table 4.18.

Table 4.18
Channel use for Export of Seafood

C N -	Charact.	Number	T-4-1		
S.No	Channel	MUE	MEE	OFE	Total
1.	Export through merchants	12 (16.20)	5 (11.40)	0 (0)	17 (13.10)
2.	Export through trading houses	48 (64.90)	23 (52.20)	6 (50.00)	77 (59.20)
3.	Export through Trading companies	3 (4.10)	5 (11.40)	6 (50.00)	14 (10.80)
4.	Export through Drop shipper	0 (0)	2 (4.50)	0 (0)	2 (1.50)
5.	Export through Agent brokers	11 (14.90)	9 (20.50)	0 (0)	20 (15.40)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The important channel of export among the respondents is export through trading houses since it constitutes 59.20 per cent to the total. Among the respondents of MUE and MEE, the highly used channel is exporting through trading houses which constitutes 64.90 and 52.20 per cent to its total respectively. Among the respondents of OFE, it is trading companies which constitute 50.00 per cent to its total. The analysis reveals that the most important channel used by the exporters of seafood in the study area is export trading houses.

4.2.15 Export destination for the Seafood

The export destination represents the country to which the exporters are exporting their seafood. Since the export destination is one of the important, aspects in export, it is included in the present study. It is confined to Japan, USA, European Union, China, South East Asia, Middle East and others. The distribution of respondents on the basis of their export destination is given in Table 4.19.

Table 4.19

Export destination among the respondents

C N -	Export	Numbe	T-4-1		
S.No	Destination	MUE	MEE	OFE	Total
1.	Japan	60 (81.10)	25 (56.80)	12(100)	97 (74.62)
2.	USA	1 (1.40)	1(2.30)	0 (0)	2 (1.54)
3.	European Union	2 (2.70)	1 (2.30)	0 (0)	3 (2.31)
4.	China	1 (1.40)	2 (4.50)	0 (0)	3 (2.31)
5.	South East Asia	6 (8.10)	10 (22.70)	0 (0)	16 (12.31)
6.	Middle East	2 (2.70)	1 (2.30)	0 (0)	3 (2.31)
7.	Others	2 (2.70)	4 (9.10)	0 (0)	6 (4.60)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The important export destination among the respondents is Japan which alone constitutes 74.62 per cent to the total. It is followed by South East Asia which constitutes 12.31 per cent to the total. The most important export destination among the respondents in MUE, MEE and OFE is Japan which constitutes 81.10, 56.80 and 100.00 per cent to its total respectively. The analysis reveals the dominance export destination for the seafood in the study area.

4.2.16 packing standard followed by the exports

The seafood exporters in the study area are following some packing standard. The present study has made an attempt to examine the various packing standards followed by the seafood exporters. The packing standards are confined to British standards packing code, USA standards code, ordinary standards and European standards for the analysis. The distribution of respondents on the basis of the packing standard followed at the time of exporting the seafood is illustrated in Table 4.20.

Table 4.20
Packing standard followed for the Export of Seafood by the respondents

C N-	De dên e stendend	Number	(T) . 4 . 1		
S.No	Packing standard	MUE	MEE	OFE	Total
1.	British STD packing code	1 (1.40)	0 (0)	0 (0)	1 (0.80)
2.	USA code	10 (13.50)	1 (2.30)	0 (0)	11 (8.46)
3.	Ordinary STD	41 (55.40)	41 (93.20)	12 (100)	94 (72.30)
4.	European STD code	22 (29.70)	2 (4.50)	0 (0)	24 (18.44)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The important packing standard followed by the respondents for the export of seafood in the study area are ordinary standard and European standard code which constitutes 72.30 and 18.44 per cent to the total respectively. The most important packing standard followed by the respondents in MUE, MEE and OFE is ordinary standard which constitutes 55.40, 93.20 and 100.00 per cent to its total respectively. The analysis reveals that the most important packing standard followed by the seafood exporters in the study area is ordinary standard.

4.2.17 Type of importers of seafood

Importers are the person to whom the seafood is exported. Since the party to whom the seafood is exported may have an influence on the seafood export performance, it is included in the present study for the analysis. The importers in the present study are classified into distributors, wholesalers, retailers and state trading organizations. The distribution of respondents on the basis of the persons to whom the seafood is exported is illustrated in Table 4.21.

Table 4.21

Type of importers of seafood

C N -	T	Number	TD : 4 : 1		
S.No	Importers	MUE	MEE	OFE	Total
1.	Distributors	7 (9.50)	2 (4.50)	0 (0)	9 (6.90)
2.	Wholesalers	46 (62.10)	27 (61.40)	12 (100)	85 (65.40)
3.	Retailers	16 (21.60)	10 (22.70)	0 (0)	26 (20.00)
4.	State buying organization	5 (6.80)	5 (11.40)	0 (0)	10 (7.70)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

The important importers of seafood among the respondents are wholesalers and retailers which constitutes 65.40 and 20.00 per cent to the total respectively. The most important importer among the respondents of MUE, MEE and OFE is wholesalers which constitutes 62.10, 61.40 and 100.00 per cent to its total respectively. The analysis reveals that the most important importer of seafood among the exporters in the study area is wholesalers.

4.2.18 State of condition / form of Seafood exported

The exporters export their seafood in different forms or conditions. In the present study, the methods followed by the exporters are confined to freezed, chilled, live, ready to eat and others. The distribution of exporters on the basis of the form / conditions of seafood is given in Table 4.22.

Table 4.22
State of condition / form of Seafood exported

C No	State of condition / form	Numbe	Total		
S.No	State of condition / form	MUE	MEE	OFE	Total
1.	Freezed	37 (50.00)	12 (27.30)	0 (0)	49 (37.70)
2.	Chilled	10 (13.50)	4 (9.10)	0 (0)	14 (10.80)
3.	Live	3 (4.10)	1 (2.30)	12 (100)	16 (12.30)
4.	Ready to eat	0 (0)	1 (2.30)	0 (0)	1 (0.80)
	Other forms	24(32.40)	26 (59.00)	0(0)	50(38.50)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

Figures with in bracket shows the percentage

The important state / conditions of export of seafood among the respondents is freezed and others which contributes 37.70 and 38.50 per cent to the total respectively. The most important state at which the seafood is exported by the respondents of MUE

and MEE are freezed and others which constitutes 50.00 and 59.00 per cent to its total respectively. Among the respondents of OFE, it is 'live' which constitutes 100.00 per cent to its total.

4.2.19Nature of ownership of Containers used by the Seafood Exporters

The exporters use containers for exporting their seafood. The nature of containers used for the export of seafood will play a vital role in the export business. Hence, it is included as one of the variables in the present study. The nature of ownership of the container among the respondents is given in Table 4.23.

Table 4.23

Nature of ownership of Containers used by the Seafood Exporters

C No	Noture of Oxymorphia	Numbe	Total		
S.No	No Nature of Ownership	MUE	MEE	OFE	Total
1.	Yes	3 (4.10)	2 (4.50)	0 (0)	5 (3.80)
2.	No	71 (95.90)	42 (95.50)	12 (100)	125 (96.20)
	Total	74 (100)	44 (100)	12 (100)	130 (100)

Source: Primary Data

Figures with in bracket shows the percentage

In total, 96.20 per cent of the exporters do not own the container for export. The seafood exporters who own containers among MUE and MEE constitutes only 4.10 and 4.50 per cent to the respectively. The present analysis shows that majority of exporters are not having their own container for their export.

4.2.20 Nature of engagement of containers by the exporters

The exporters may engage the containers either on rental basis or on lease basis. It is essential to examine the nature of engagement of containers among the exporters as it affects the export of seafood business. The distribution of exporters on the basis of their nature of engagement of containers is given in Table 4.24.

Table 4.24

Nature of engagement of containers by the respondents

C No	Noture of Engagement	Numbe	Total		
S.No	Nature of Engagement	MUE	MEE	OFE	Total
1.	Rent	69 (97.20)	40 (95.20)	12 (100)	121 (96.80)
2.	Lease	2 (2.80)	2 (4.80)	0 (0)	4 (3.20)
	Total	71 (100)	42 (100)	12 (100)	125(100)

Source: Primary Data

Figures with in bracket shows the percentage

The Table 4.24 reveals that 96.80 per cent of the exporters are engaging container on the rental basis whereas the remaining 3.20 per cent are engaging the containers on 'lease' basis. The number of respondents engaging the container on rental basis among the respondents of MUE, MEE and OFE constitutes 97.20, 95.20 and 100.00 per cent to its total respectively. The analysis reveals that the most of the seafood exporters are taking the container on rent.

4.3 FACTORS LEADING TO START THE SEAFOOD EXPORT BUSINESS

Number of factors may induce a person to start the seafood export business. The reasons may be related to personal factors, locational advantage, past experience and environmental factors etc. It is imperative to examine the relative importance given to

the various reasons for the export of seafood for some policy implications. Even though, the reasons are too many, the present study confine to only twenty three reasons. The exporters are asked to rate the reasons at five point scale according to their order of importance. The score of the various reasons among the exporters have been included for factor analysis in order to narrate the reasons into factors (important reasons) for further analysis.

Initially, the validity of data for factor analysis has been conducted with the help of Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's Test of Sphericity. The results are shown in Table 4.25.

Table 4.25
Factors leading to Start SeafoodExport Business

S.No	Factors	Eigen value	Per cent of variance explained	Cumulative percentage of variance
1.	Product related factors	4.379	19.04	19.04
2.	Government policy related factors	2.906	12.636	31.68
3.	Business related factors	2.152	9.359	41.04
4.	Management related factors	1.62	7.044	48.08
5.	Financial related factors	1.364	5.932	54.01
6.	Personal factors	1.32	5.741	59.75
7.	Environmental factors	1.097	4.77	64.52

* Kaiser-Meyer-Olkin measure of Sampling Adequacy : 0.622

* Bartlett's Test of Sphericity Chi-Square : 1044.006

Degree of Freedom : 253
Significance : 0.000

The KMO measure of sampling adequacy is greater than 0.60 and the chi-square value is significant at five per cent level. Both these two tests satisfy the validity of data for factor analysis. The factor analysis results in seven important factors leading to start the seafood export business. The identified factors are product, government policy, business, management, financial, personnel and environmental. The most important factors which lead to start the seafood export business are product and Government policy related factors since their Eigen values are 4.379 and 2.906 respectively. The per cent of variation explained by these two factors are 19.04 and 12.64 per cent respectively.

The next two factors are business and management, related factors since their eigen values are 2.152 and 1.62 respectively. The per cent of variation explained by the above said two factors are 9.36 and 7.04 per cent respectively. The last three factors identified by the factor analysis are financial, personal and environmental related factors since their respective eigen values are 1.36, 1.32 and 1.09 respectively. The per cent of variation explained by the above said three factors are 5.93, 5.74 and 4.77 per cent respectively. In total, the narrated seven factors explain the variables leading to start the export of seafood business to an extent of 64.52 per cent.

4.3.1 Reliability of the Variables included in the Product related factor

The variables included in the product related factor have been noticed with the help of factor analysis. The communality value of each variable in this factor has also been computed. The overall reliability of variables in this factor has been estimated with the help of cronbach's alpha. The results are given in Table 4.26.

Table 4.26
Reliability of the Variables included in the Product related factor

S.No	Variables in Product Related Factor	Factor loading	Communality	Cronbach's Alpha
1.	Adequate variety of seafood	0.78	0.792	0.812
2.	Availability of seafood at reasonable price	0.779	0.662	
3.	Steady export opportunities for the seafood	0.677	0.533	
4.	Adequate availability of seafood	0.67	0.667	

Four variables included in the product related factors. The factor loading of the variables in this factor vary from 0.67 to 0.78. The variables in product related factor explain it to an extent of 81.20 per cent since its cronbach's alpha is 0.8120. The communality (H²) value of each variable indicates the power of variable to explain all factors altogether. It is identified as higher in the case of adequate variety of seafood since its H² value is 0.762.

4.3.2 Reliability of the Variables included in the Government Policy related Factor

The factor analysis identified that three variables are having higher factor loading in this factor than in other factors hence, these variables are included in this factor namely government policy related factor. The factor loading of the variables in this factor, its communality and cronbach alpha have been computed with the help of factor analysis and overall reliability analysis respectively. The results are given in Table 4.27.

Table 4.27

Variables in Government Policy related factors and its Reliability

S.No	Variables in Government Policy Related Factor	Factor loading	Communality	Cronbach's Alpha
1.	Favorable export policy &Govt. subsidies	0.916	0.886	0.753
2.	Infrastructural facilities & Intermediate services	0.797	0.74	
3.	Receptive policies of importing countries	0.792	0.682	

The factor loading of the variables in Government policy related factor is identified as higher (0.916) in the case of favorable export policy and Government subsides whereas lesser (0.792) in the case of receptive policies of importing countries. The higher communality value is noticed in the case of favorable export policy and Government subsidies since its H² value is 0.886. The variables in Government policy related factor explain it to an extent of 75.30 per cent since its cronbach alpha is 0.753.

4.3.3 Variables in business related factor

The factor analysis has identified three variables which are having higher factor loading in business related factor than in other factors. The overall reliability of variables in business related factor has been estimated with the help of cronbach alpha. The results are summarized in Table 4.28.

Table 4.28

Variables in Business related factors and its Reliability

S.No	Variables in Business Related Factor	Factor loading	Communality	Cronbach's Alpha
1.	Reasonable profitability of the business	0.767	0.671	0.697
2.	Easy availability of products	0.758	0.654	
3.	Good demand of the product	0.641	0.647	

The factor loading of the variables is ranging from 0.767 to 0.641. It is higher in reasonable profitability of the business whereas lesser in the case of good demand of the product. The higher H² value is noticed in the case of reasonable profitability of the business since its H² value is 0.671. The variables included in the business related factor explain it to an extent of 69.70 per cent since its cronbach alpha is 0.697.

4.3.4 Variables in Management related factor

Three variables are included in the management related factor since its factor loadings are higher in these variables compared to the factor loading of other variables associated with these factors. The overall reliability of the variables in management related factor has been estimated with the help of cronbach alpha. The factor loading, communality value of the variables in management related factor and the cronbach alpha are summarized in the Table 4.29.

Table 4.29

Variables in Management related factor and its Reliability

S.No	Variables in Management Related Factor	Factor loading	Communality	Cronbach's Alpha
1.	Availability of different modes of transportation	0.805	0.692	0.739
2.	Favorable policies of the importing countries	0.71	0.61	
3.	Availability of intermediate service	0.706	0.547	

The higher factor loading is noticed in the case of availability of different modes of transportation since its factor loading is 0.805 whereas the lesser factor loading is noticed in the case of availability of intermediate services since its H² value is 0.692. The variables included in the management related factor explain it to an extend of 73.90 per cent since its cronbach's alpha is 0.739.

4.3.5 Variables in Finance related Factor

The finance related factor consists of three variables since their factor loadings are higher in these variables compared to the factor loading of other variables associated with these factors. It has been identified by the factor analysis. The power of these variables explains the narrated factors altogether in the analysis have been estimated with the help of communality value H². The overall reliability of the variables in finance related factor has been estimated with the help of cronbach alpha. The results are shown in Table 4.30.

Table 4.30

Variables in Finance related factors and its Reliability

S.No	Variables in Finance Related Factor	Factor loading	Communality	Cronbach's Alpha
1.	Comparatively less financial requirements	0.808	0.768	0.752
2.	Availability of Government subsides	0.695	0.557	
3.	Access to finance	0.561	0.505	

The factor loading of the variables in finance related factor varys from 0.808 to 0.561. It is higher (0.808) in the case of comparatively less financial requirements whereas it is lesser (0.561) in the case of access to finance. The higher H² value is noticed in the case of comparatively less financial requirements since its H² value is 0.768. The variables included in the finance related factor explain it to an extent of 75.20 per cent since its cronbach alpha is 0.752.

4.3.6 Variables in personal related factor

The factor analysis identified four variables in personal factor since their factor loading of the variables are higher in these variables compared to the factor loading of other variables associated with these factor. The communality value of all variables in the personal factor has been computed to exhibit the power of the variables to explain all factors altogether. The cronbach alpha is computed to examine the overall reliability of variables in this factor. The results are summarized in Table 4.31.

Table 4.31

Variables in the Personal Factor and its Reliability

S.No	Variables in Personal Factor	Factor loading	Communality	Cronbach's Alpha
1.	Ancestral Business	0.72	0.56	0.689
2.	Association with fishery activities	0.67	0.659	
3.	Belongs to Fishermen community	0.595	0.651	
4.	Support from financial institution	0.484	0.584	

The factor loading of the variables in personal factor ranges from 0.72 to 0.484. The higher H² is identified in the case of association with fishery activities since its H² is 0.659. It shows that the above said variable is having more power to explain all factors altogether compared to other three variables in personal factors. The cronbach alpha (0.689) reveals that the variables included in the personal factor explain it to an extent of 68.90 per cent.

4.3.7 Variables in Environmental Factors and its reliability

The environmental factor consists of three variables namely presence of the major port, more coastal area and availability of fishing harbour since their factor loadings are higher in these variables. The reliability of the three variables in the environmental factors has been tested with the help of cronbach alpha. The power of the variables in environmental factor has been estimated with the help of communality. The results are summarized in Table 4.32.

Table 4.32

Variables in environmental factor and its reliability

S.No	Variables in Environmental Factor	Factor loading	Communality	Cronbach's Alpha
1.	Presence of the major port	0.764	0.644	0.673
2.	More Coastal area	0.67	0.602	
3.	Availability of fishing harbour	0.516	0.554	

The higher factor loading of the variables is identified in the case of presence of the major port since its factor loading is 0.764. It is followed by more coastal area and availability of fishing harbour since its factor loadings are 0.67 and 0.516 respectively. The higher communality value is seen in the case of presence of the major port since its communality value is 0.644. The variables included in the environmental factor explain it to an extent of 67.3 per cent since its cronbach alpha is 0.673.

4.3.8 Exporters view on the important factors

The exporters view on the factors leading to start the export of seafood among the respondent haven been examined with the help of the mean score of each factor among the respondents of MUE, MEE and OFE. The one way analysis of variance has been administered to find out the significant difference among the three groups of exporters regarding their view on the factors leading to start the seafood export business in the study area. The results are given in Table 4.33.

Table 4.33

Exporters view on the Factors leading to Start the Seafood Export Business

CNo	Eastons	Mean score	'F'		
S.No	Factors	MUE	MEE	OFE	Statistics
1.	Product	3.1458	3.6508	3.0899	3.1173*
2.	Government policy	3.6227	3.3089	3.6071	2.0884 NS
3.	Business	3.3882	3.5117	3.7882	3.0889*
4.	Management	3.0891	3.1108	3.2671	1.0173 NS
5.	Financial	3.2089	3.3011	3.2171	0.8996 NS
6.	Personal	3.1186	3.2732	3.0896	1.2341 NS
7.	Environmental	3.6808	3.7768	3.8182	1.4547 NS

^{*} Significant at five per cent level

The highly viewed factors by the respondents of MUE are environmental and Government policy since their mean sources is 3.6808 and 3.6227 respectively. Among the respondents of MEE, these are environmental and product since their mean scores is 3.7768 and 3.6508 respectively. Among the respondents in OFE, these are environmental and business since their mean scores is 3.8182 and 3.7882 respectively.

Regarding the view on factors leading to start the export of seafood, the significant difference among the three groups of exporters have been noticed in their view regarding the product and business related factors since their respective 'F' statistics are significant at five per cent level.

4.3.9 Association between profile of exporters and the factors leading to start the Seafood Export Business

The profile of the exporters may associate with their view on the factors leading to start the seafood export business. The present analysis has made an attempt to examine it with the help of one way analysis of variance. The included profile variables are the gender, education, age, income, type of exporter, experience, forms of organisation, legal status, registration authority, membership in association, nature of approval, approval category and capital employed. The result of one way analysis of variance is summarized in Table 4.34.

Table 4.34
Association between profile of exporters and the factors leading to start the Seafood Export Business

					'F' Statistics	in		
S.No	Demographic Variables	Product Factor	Govt. Policy Factor	Business Factor	Management Factor	Financial Factor	Personal Factor	Environmental Factor 0.578 NS 1.368 NS 0.716 NS 1.585 NS 2.442* 1.120 NS 3.600* 0.559 NS 1.863 NS 1.282 NS 1.035 NS 2.872*
1.	Gender	0.502 NS	1.174 NS	2.010NS	0.570 NS	0.481 NS	1.062 NS	0.578 NS
2.	Education	2.265*	0.826 NS	1.136 NS	0.846 NS	0.761 NS	1.287 NS	1.368 NS
3.	Age	1.808*	1.410 NS	0.672 NS	2.774*	1.616 NS	0.678 NS	0.716 NS
4.	Income	1.144 NS	1.683 NS	1.550 NS	2.416*	0.656 NS	0.911 NS	1.585 NS
5.	Type of Exporter	2.621*	3.843*	0.812NS	3.296*	0.994 NS	14.274*	2.442*
6.	Experience	0.759 NS	1.067 NS	0.898 NS	1.392 NS	1.534 NS	2.098*	1.120 NS
7.	Forms of organisation	1.575 NS	0.552 NS	1.506 NS	1.244 NS	1.312 NS	2.326*	3.600*
8.	Legal status	0.369 NS	0.885 NS	0.689 NS	0.544 NS	0.272 NS	0.627 NS	0.559 NS
9.	Registration Authority	3.799*	0.673 NS	2.402 NS	0.620 NS	6.076*	1.827 NS	1.863 NS
10.	Membership in Association	8.659*	1.189 NS	0.843 NS	0.596 NS	0.750 NS	2.358*	1.282 NS
11.	Nature of Approval	3.269*	0.746 NS	1.850 NS	1.300 NS	2.476*	0.726 NS	1.035 NS
12.	Approval Category	2.79*	2.425*	1.765 NS	1.173 NS	1.012 NS	0.778 NS	2.872*
13.	Capital Employed	1.894*	2.758*	2.269*	1.141 NS	1.172 NS	0.908 NS	1.184 NS

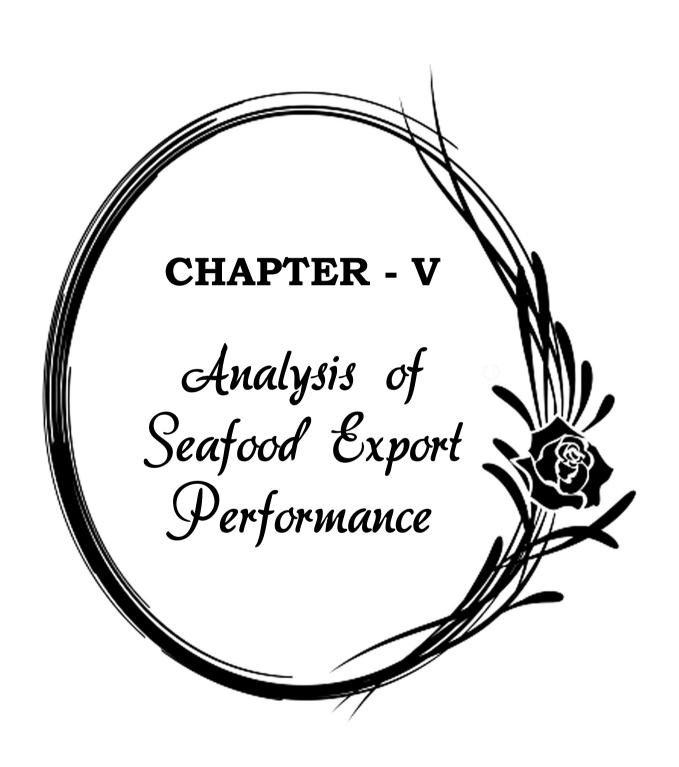
^{*}Significant at five per cent level

The significantly associating profile variables with the factors leading to start the seafood export business regarding product are their education, age, type of exporter, registration authority, membership in association, nature of approval, approval category and capital employed since their respective 'F' statistics are significant at five per cent level. Regarding the view on government policy, these profile variables are type of exporter, approval category and capital employed whereas in the case of business factor, it is capital employed. Regarding the view on management factor, the significantly associating profile variables are age, income, and type of exporter whereas in the case of financial factor, these are registration authority and approval category.

In the case of personal factor, the significantly associating profile variables are type of exporter, experience, forms of organization and membership in association whereas regarding the view on environmental factor, these are type of exporter, forms of organisation and approvalcategory.

4.4 CONCLUSION

The personal profile of the seafood exporters helped the researcher to understand the dominant profile variables of the seafood exporters. The business profile of the seafood export units revealed the various aspects of the seafood export business. The analysis of factors leading to start the export of seafood export business revealed the factors to be considered most at the time of starting the seafood export business. The association between the profile variables and the factors leading to start the seafood export business revealed the factors to be considered in relation to the profile variable.



CHAPTER - V

ANALYSIS OF SEAFOOD EXPORT PERFORMANCE

5.0 Introduction

5.1 Export Performance of Seafood in Thoothukudi District

- 5.1.1 Product Wise Export of Seafood from Thoothukudi Port
- 5.1.2 Growth Rate of Export of Seafood from Thoothukudi Port in terms of Quantity
- 5.1.3 Product Wise Export of Seafood from Thoothukudi Port in terms of Value
- 5.1.4 Growth Rate of Export of Seafood from Thoothukudi Port in terms of Value

5.2 Country Wise Analysis

- 5.2.1 Country Wise Export of Seafood from Thoothukudi Port
- 5.2.2 Growth Rate of Export of Seafood from Thoothukudi Port in terms of Quantity
- 5.2.3 Country Wise Export of Indian Seafood from Thoothukudi Port in terms of Value
- 5.2.4 Growth Rate of Export of Seafood from Thoothukudi Port in terms of Value

5.3 Profit Earned by the Seafood Exporters

- 5.3.1 Profit Earned by the Seafood Manufacturer Exporters
- 5.3.2 Growth Rate of Profit earned by Seafood Manufacturer Exports in Thoothukudi
- 5.3.3 Profit Earned by the Seafood Merchant Exporters
- 5.3.4 Growth Rate of Profit Earned by Seafood Merchant Exporter in Thoothukudi
- 5.3.5 Profit Earned by the Ornamental Fish Exporters
- 5.3.6 Growth Rate of Profit Earned by the Ornamental Fish Exporters in Thoothukudi

5.4 Impact of Factors Leading to Start the Seafood Export Business on Export Performance

5.5 Conclusion

CHAPTER - V

ANALYSIS OF SEAFOOD EXPORT PERFORMANCE

5.0 INTRODUCTION

This chapter deals with seafood export performance in Thoothukudi district. The seafood export performance of the study area has been analysed from the point of view of seafood products and the country to which the seafood was exported. In addition to this the impact of factors leading to start the export business on the export performance has been included in this chapter. The seafood products included in this study were frozen shrimp, frozen fish, frozen cuttle fish, frozen squid, dried items, and others. The countries included in the analysis of export of seafoodare Japan, USA, European Union, China, South East, Asia, Middle East and other countries. The growth in the quantity and value of exports has also been examined with the help of annual and compound growth rates.

5.1 EXPORT PERFORMANCE OF SEAFOOD IN THOOTHUKUDI DISTRICT

5.1.1 Product wise Export of Seafood from Thoothukudi port

The export of seafood from Thoothukudi from 2001-02 to 2011-12 have been classified into export of frozen shrimp, frozen fish, frozen cuttle, frozen squid, dried items and others. The relevant data have been collected from the relevant sources. The mean value of quantity of seafood export of the above said six products have been computed and presented in Table 5.1.

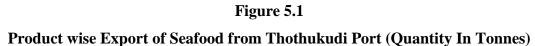
Table 5.1

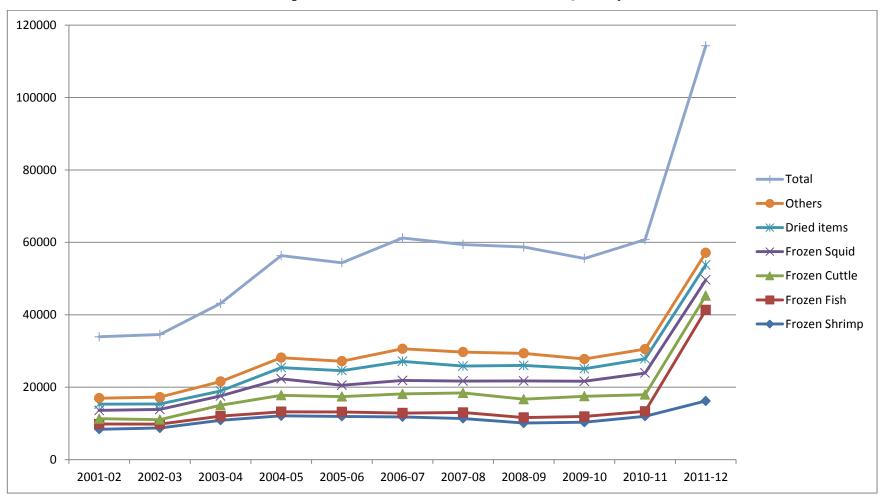
Product wise Export of Seafood from Thoothukudi port (Quantity in Tonnes)

Year	Frozen Shrimp	Frozen Fish	Frozen Cuttle	Frozen Squid	Dried items	Others	Total
2001-02	8407	1434	1453	2298	1737	1637	16966
2002-03	8724	1100	1238	2789	1521	1900	17272
2003-04	10876	1149	3012	2526	1375	2630	21568
2004-05	12102	1128	4548	4554	3094	2734	28160
2005-06	11930	1257	4227	3153	4002	2613	27172
2006-07	11814	1047	5280	3717	5293	3460	30611
2007-08	11361	1670	5383	3285	4146	3852	29697
2008-09	10094	1545	5044	5048	4292	3331	29354
2009-10	10324	1598	5586	4124	3449	2702	27783
2010-11	11986	1337	4617	5973	3946	2662	30221
2011-12	16207	25113	3967	4347	4144	3354	57132
Average	11257	3489	4032	3773	3364	2807	28721
Per cent Share	39.19	12.15	14.04	13.14	11.71	9.77	100.00
Rank	1	4	2	3	5	6	

Source: MPEDA Annual Reports

The export of frozen shrimp is increased from 8407 tonnes in 2001-02 to 16207 tonnes in 2011-12 whereas the rate of increase in the export of frozen shrimp during the study period is by 92.78 per cent. The rate of increase in the quantity of export of frozen fish and frozen cuttle during the study period are 1651.25 and 173.02 per cent respectively. The rate of increase in the export of frozen squid and dried items during the study period are by 89.16 and 138.57 per cent respectively. The rate of increase in the export of other seafood products during the study period is 104.89 per cent. The mean export of frozen shrimp is identified as higher compared to the mean of export of other commodities since their mean score is 11257 which constitutes 39.19 per cent to the total.





5.1.2 Growth Rate of Export of Seafood from Thoothukudi in terms of Quantity

The growth performance of the seafood export from Thoothukudi has been examined with the help of annual and compound growth rates. The annual and compound growth rates are computed with the help of semi log liner and exponential functions respectively. The data related to export of six classified commodities from 2001-02 to 2011-12 have been included for the analysis. The coefficient of variation of the export of six commodities and the total commodities has been computed to measure the level of consistency in the export of seafood from Thoothukudi. The results are given in Table 5.2.

Table 5.2

Growth Rate of Export of Seafood from Thoothukudi Port in terms of Quantity

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)
1.	Frozen shrimp	3.951 (0.039)	0.016* (0.006)	0.456	3.753	18.513
2.	Frozen fish	2.831 (0.221)	0.067 NS (0.033)	0.321	16.681	205.654
3.	Frozen cuttle	3.264 (0.108)	0.050* (0.016)	0.522	5.1105	37.587
4.	Frozen squid	3.377 (0.052)	0.031* (0.008)	0.642	7.399	28.589
5.	Dried items	3.214 (0.092)	0.046* (0.014)	0.557	11.173	38.337
6.	Others	3.299 (0.055)	0.023* (0.008)	0.468	5.439	23.606
	Total	4.256 (0.036)	0.027* (0.005)	0.735	6.414	21.165

^{*} Significant at five per cent level

Figures in parentheses are standard errors.

The significant annual growth rates are noticed in the export of all commodities except the frozen fish since its respective annual growth rate is not significant at five per cent level. The higher annual growth rates are noticed in the case of export of dried items and frozen cuttle since their respective annual growth rates are 0.046 and 0.50 respectively. The higher R² is noticed in the case of export of frozen squid since its R²is 0.642. The higher compound growth rates are identified in the export of frozen fish and dried items since its compound growth rates are 16.681 and 11.173 per cent respectively. The higher consistency in the level of export from Thoothukudi port is noticed in the case of export of frozen shrimp and others since their respective coefficient of variations are 18.51 and 23.61 per cent respectively.

5.1.3 Product wise Export of Seafood from Thoothukudi Port in terms of Value

The export of seafood from Thoothukudi port have been examined in terms of value of export of frozen shrimp, frozen fish, frozen cuttle, frozen squid, dried items and others. The relevant data on the above said items have been collected from the secondary source from 2001-02 to 2011-12. The mean value of export of various commodities and its contribution to the total has been computed in order to show the trend in the value of exports of seafood from Thoothukudi port. The results are given in Table 5.3.

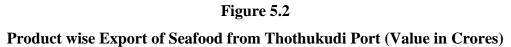
Table 5.3

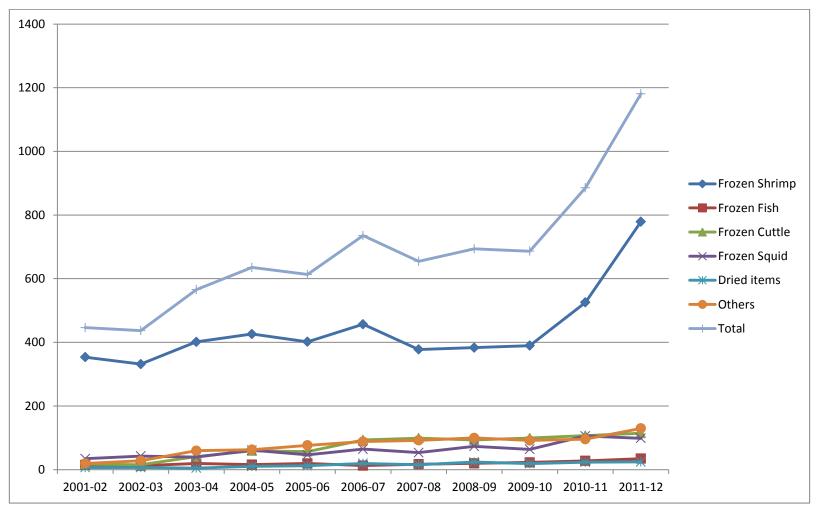
Product wise Export of Seafood from Thoothukudi Port (Value in Crores)

Year	Frozen Shrimp	Frozen Fish	Frozen Cuttle	Frozen Squid	Dried items	Others	Total
2001-02	353.33	14.81	17.53	34.45	6.52	19.63	446.27
2002-03	331.59	12.34	15.29	42.68	6.81	28.1	436.81
2003-04	401.43	19.29	40.98	39.33	5.06	59.58	565.67
2004-05	426.08	15.74	59.26	61.04	10.19	62.87	635.18
2005-06	401.62	19.39	56.82	46.49	12.27	76.48	613.07
2006-07	456.74	12.87	93.43	64.62	19.64	88.18	735.48
2007-08	377.51	17.17	98.99	53.51	15.58	91.88	654.64
2008-09	383.35	19.87	93.39	73.49	23.89	99.77	693.76
2009-10	389.67	22.75	99.29	63.8	19.12	91.81	686.44
2010-11	525.54	27.62	107.1	105.87	23.43	95.85	885.41
2011-12	779.05	34.54	114.61	98.56	24.43	129.66	1180.85
Average	438.72	19.67	72.43	62.17	15.18	76.71	684.87
Per cent Share	64.06	2.87	10.58	9.08	2.22	11.20	100.00
Rank	1	5	3	4	6	2	

Source: MPEDA Annual Reports

The value of total export of frozen shrimp is increasing from ₹353.33 crores to ₹779.05 crores in 2011-12 whereas the rate of increase during the study period is by 120.49 per cent. The rate of increase in the export of frozen fish and cuttle during the study period is by 133.22 and 553.79 per cent respectively. The rate of increase in the export of frozen squid and dried items during the study period are by 186.09 and 259.36 per cent respectively. The rate of increase in the export of other seafood during the study period is by 560.52 per cent. The higher mean of seafood export from Thoothukudi port are noticed in the case of export of frozen shrimp and others since their mean scores are ₹438.72 crores and ₹76.71 crores respectively which constitutes 64.06 and 11.20 per cent to the total respectively.





5.1.4 Growth Rate of Export of Seafood from Thoothukudi port in terms of Value

The growth performance of total value of exports from the Thoothukudi port has been examined with the help of annual and compound growth rate. The annual and compound growth rate has been estimated with the help of semi-log linear and exponential function respectively. The value of export of all six seafood from 2001-02 to 2011-12 has been included for the analysis. The coefficient of variation in the value of export of all six seafood has been estimated in order to show the level of consistency in the value of export. The results are shown in Table 5.4.

Table 5.4

Growth Rate of Export of Seafood from Thoothukudi port in terms of Value

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)	
1.	Frozen shrimp	2.501	0.021*	0.486	4.954	28.341	
1.	110zen sinnip	(0.050)	(0.007)		7.757	20.541	
2.	Frozen fish	1.077	0.033*	0.641	7.895	22 605	
۷.	FIOZEII IISII	(0.055)	(0.008)	0.041	7.093	33.695	
3.	Frozen cuttle fish	1.277	0.084*	0.795	21.339	49.732	
3.	Frozen cuttle fish	(0.096)	(0.014)	0.793	21.339	49.732	
4.	Enozon aguid	1.510	0.043*	0.000	10.408	37.251	
4.	Frozen squid	(0.044)	(0.007)	0.828	10.408	37.231	
_	Duioditama	0.709	0.069*	0.920	17.00	10 601	
5.	Dried items	(0.068)	(0.010)	0.839	17.22	48.684	
6	Othors	1.436	0.066*	0.775	16 412	42.025	
6.	Others	(0.081)	(0.012)	0.775	16.412	42.035	
	Total	2.618 (0.035)	0.034* (0.005)	0.828	8.143	30.230	

^{*} Significant at five per cent level

Figures in parentheses are standard errors.

The significant annual growth rates are noticed in the export of total value of all goods since their respective annual growth rates are significant at five per cent level. The higher annual growth rate is noticed in the case of export of dried items and others since their respective annual growth rates are 0.069 and 0.066. The higher R² is noticed in the case of export of dried items and frozen squid since its R² is 0.839 and 0.828 respectively. The higher compound growth rates are identified in the case of export of frozen shrimp since its compound growth rate is 28.34 per cent.

5.2 COUNTRY WISE ANALYSIS

5.2.1 Country Wise Export of Seafood from Thoothukudi port

The quantity of export of seafood from Thoothukudi port have been examined with the help of the quantity of export from Tuticorin port to Japan, USA, European Union, China, South East Asia, Middle East and Others. The total quantity exported to the above said countries from Thoothukudi port have been examined with the help of the export figures from 2001-02 to 2011-12. The mean of the total quantity of export from Tuticorin port to all seven countries have been estimated to exhibit the level of exports from Thoothukudi port to various countries. The results are show in Table 5.5.

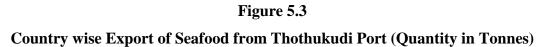
Table 5.5

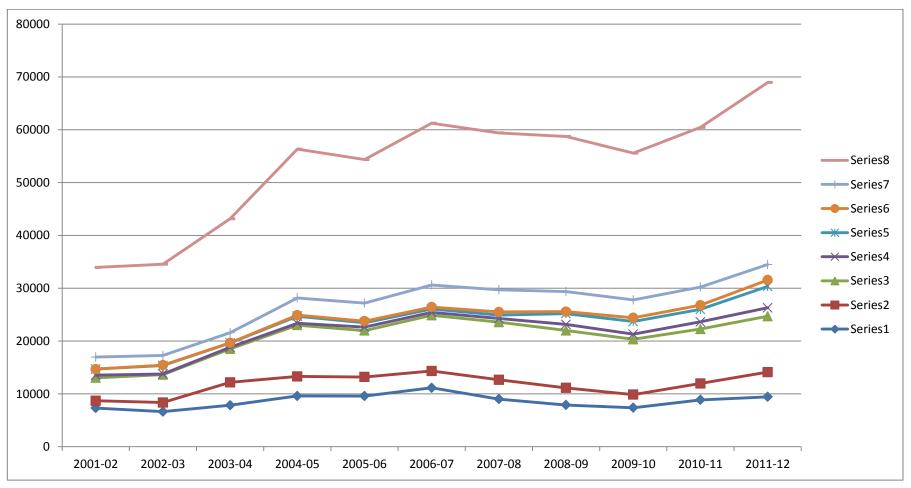
Country wise Export of Seafood from Thoothukudi Port (Quantity in Tonnes)

Year	Japan	USA	European Union	China	South East Asia	Middle East	Others	Total
2001-02	7323	1372	4343	498	1156	4	2270	16966
2002-03	6642	1719	5277	136	1586	84	1828	17272
2003-04	7844	4336	6339	308	798	31	1912	21568
2004-05	9606	3701	9698	374	1331	194	3256	28160
2005-06	9597	3600	8790	648	837	295	3405	27172
2006-07	11144	3184	10550	543	640	372	4178	30611
2007-08	9019	3639	10913	690	661	580	4195	29697
2008-09	7889	3241	10868	1142	2048	385	3781	29354
2009-10	7374	2490	10470	969	2394	711	3375	27783
2010-11	8861	3103	10309	1357	2362	791	3438	30221
2011-12	9433	4686	10566	1614	4041	1216	2915	34471
Average	8612	3188	8920	753	1623	424	3141	26661
Per cent Share	32.30	11.96	33.46	2.82	6.09	1.59	11.78	100.00
Rank	2	3	1	6	5	7	4	

Source: MPEDA Annual Reports

The quantity of seafood export to Japan is increasing from 7323 in 2001-02 to 9433 in 2011-12 whereas the rate of increase in the quantity of export to Japan during the study period is by 28.81 per cent. The rate of increase in the export to USA and European Union during the study period is 132.36 and 143.29 per cent respectively. The rate of increase in the export to China and South East Asia during the study period is by 224.09 and 249.57 per cent respectively. In the case of Middle East and other countries, the rate of increase in exports is by 303 times and 28.40 per cent respectively. The higher mean of export of seafood are noticed to the countries namely European Union and Japan since their mean scores are 8920 and 8612 respectively.





5.2.2 Growth Rate of Export of Seafood from Thoothukudi Port in terms of quantity

The performance of the seafood export to various countries has been examined with the help of annual and compound growth rate. The annual and compound growth rates are estimated with the help of semi-log linear and exponential function respectively. The quantity of exports to various countries namely Japan, USA, European Union, China, South East Asia, Middle East and other countries have been used for this purpose. The level of consistency in terms of quantity of seafood export made to different countries has been estimated with the help of coefficient of variation. The results are given in Table 5.6.

Table 5.6

Growth Rate of Export of Seafood from Thoothukudi Port in terms of quantity

S.No	Particulars	Constant	Annual growth	\mathbf{R}^2	CGR (%)	C.V (%)	
1.	Japan	3.888	0.007 NS	0.122	1.625	15.345	
1.	Japan	(0.042)	(0.006)		1.023	13.343	
2.	USA	3.323	0.026 NS	0.278	6.17	31.601	
۷.	USA	(0.095)	(0.014)	0.278	0.17	31.001	
3.	European Union	3.717	0.036*	0.693	8.643	27.223	
٥.	European Omon	(0.054)	(0.008)	0.093	0.043		
4.	China	2.294	0.082*	0.754	25.1172	61.616	
4.		(0.106)	(0.016)	0.734	23.1172	01.010	
5.	South East Asia	2.858	0.046 NS	0.346	11.173	63.620	
J.	South East Asia	(0.144)	(0.021)	0.540	11.173	03.020	
6.	Middle East	1.160	0.193*	0.769	26.9092	87.914	
0.	Wildle East	(0.239)	(0.035)	0.709	20.9092	07.914	
7.	Others	3.339	0.24*	0.381	5.682	26 270	
/.	Others	(0.068)	(0.010)	0.361	3.062	26.379	
	Total	4.256	0.027*	0.735	6.414	21.165	
	10141	(0.036)	(0.005)	0.735	0.414	21.105	

^{*} Significant at five per cent level

Figures in parentheses are standard errors.

The significant annual growth rates are noticed in the case of export of seafood to European Union, China, Middle East and others since their respective annual growth rates are significant at five per cent level. The higher R² is noticed in the case of Middle East and China since the R² are 0.769 and 0.754 respectively. The higher compound growth rates are noticed in the case of above said two countries since their respective compound growth rates are 26.9092 and 25.1172 per cent respectively. The higher consistency in the level of quantity exported to the countries is noticed in the case of Japan and others since their respective coefficient of variations are 15.345 and 26.379 per cent respectively.

5.2.3 Country Wise Export of Seafood from Thoothukudi Port in terms of value

The value of seafood export from Thoothukudi port to various countries namely Japan, USA, European Union, China, South East Asia, Middle East and other countrieshave been analyzed to ascertain the performance of seafood export. The value of seafood export to the above said countries from 2001-02 to 2011-12 were collected from the relevant secondary sources. The mean value of export to various countries and its contribution to the total value of export has been computed to exhibit the trend in the value of seafood export to various countries. The results are summarized in Table 5.7.

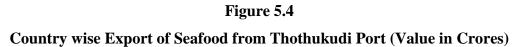
Table 5.7

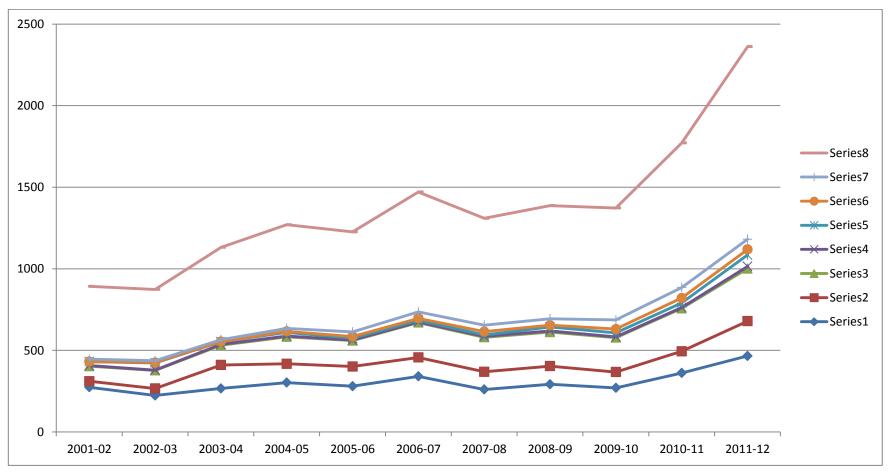
Country wise Export of Seafood from Thoothukudi Port (Value in Crores)

Year	Japan	USA	European Union	China	South East Asia	Middle East	Others	Total
2001-02	273.99	36.86	92.2	3.91	24.2	0.01	15.1	446.27
2002-03	223.51	42.91	110.61	1.86	44.48	2.51	10.93	436.81
2003-04	267.03	143.3	121.49	5.21	15.94	0.93	11.75	565.65
2004-05	302.64	115.09	165.15	5.26	22.05	6.12	18.87	635.18
2005-06	280.46	120.56	159.06	2.72	11.21	10.66	28.4	613.07
2006-07	340.79	115.69	214.15	3.48	9.92	12.02	39.43	735.48
2007-08	260.49	108.49	210.97	5.78	9.05	20.01	39.85	654.64
2008-09	292.06	111.38	208.6	7.54	23.69	11.19	39.3	693.76
2009-10	270.08	97.16	211.12	4.24	24.53	23.39	55.92	686.44
2010-11	361.44	132.96	263.04	5.13	27.87	30.42	64.55	885.41
2011-12	465.98	213.44	322.18	13.1	70.26	33.88	62.01	1180.85
Average	303.50	112.53	188.96	5.29	25.75	13.74	35.10	684.87
Per cent Share	44.31	16.43	27.59	0.77	3.76	2.01	5.13	100.00
Rank	1	3	2	7	5	6	4	

Source: MPEDA Annual Reports

The value of seafood export from Thoothukudi port to Japan is increasing from ₹273.99 crores in 2001-02 to ₹465.98 crores in 2011-12 whereas the rate of increase in the value of export during the study period is by 70.07 per cent. Regarding the value of export to USA, European Union and China, the rate of increase is by 479.06, 249.40 and 235.04 per cent respectively during the study period. The rate of increase in value of export to South East Asia, Middle East and other countries are by 190.33, 338700.00 and 330.53 per cent respectively. The mean value of seafood export during the study period is identified as higher to Japan and European Union since their value of exports is ₹303.50 crores and ₹188.96 crores respectively.





5.2.4 Growth Rate of Export of Seafood from Thoothukudi Port in terms of Value

The growth performance in the value of seafood export to various countries has been examined with the help of annual and compound growth rate. These are estimated with the help of semi-log linear and exponential function respectively. The value of seafood export to various countries from 2001-02 to 2011-12 were included for the analysis. The level of consistency in the value of export to various countries has been estimated with the help of coefficient of variations. The results are presented in Table 5.8.

Table 5.8

Growth Rate of Export of Seafood from Thoothukudi Port in terms of Value

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)	
1.	Japan	2.369	0.017*	0.461	3.992	21.596	
1.	Зарап	(0.043)	(0.006)		3.772	21.570	
2.	USA	1.724	0.047*	0.503	11.429	42.104	
۷.	USA	(0.106)	(0.016)	0.303	11.429	42.104	
3.	European Union	1.961	0.048*	0.929	11.686	26 105	
3.	European Union	(0.030)	(0.004)	0.929	11.080	36.185	
4	China	0.410	0.043*	0.413	8.0717	56.981	
4.	Cnina	(0.117)	(0.017)	0.413	0.0717	50.961	
5.	South East Asia	1.220	0.018 NS	0.051	6.741	69.432	
3.	South East Asia	(0.180)	(0.027)	0.031	0.741	09.432	
6	Middle East	-0.745	0.245*	0.636	0.15	95 250	
6.	Wilddie East	(0.419)	(0.062)	0.030	-8.45	85.250	
7	Othors	0.980	0.082*	0.800	11.077	56 417	
7.	Others	(0.062)	(0.009)	0.899	11.077	56.417	
	Total	2.618	0.034*	0.000	0 1 / 2	20.220	
	Total	(0.035)	(0.005)	0.828	8.143	30.229	

^{*} Significant at five per cent level

Figures in parentheses are standard errors.

The significant annual growth rates on the value of export are noticed in the case of all countries except South East Asia since its annual growth rate is not significant at five per cent level. The higher R²is noticed in the case of European Union. It reveals that the changes in time explain the changes in the value of export to European Union to an extent of 92.9 per cent. The higher compound growth rates are noticed in the case of European Union and USA since their compound growth rates are 11.68 and 11.42 per cent respectively. The higher consistency in the value of seafood export to Japan and European Union has been identified since the respective coefficient of variations is 21.59 and 36.18 per cent respectively.

5.3 PROFIT EARNED BY THE SEAFOOD EXPORTERS

5.3.1 Profit Earned by the Seafood Manufacturer Exporters

Profit earned by a business unit shows the performance of the unit. The profit earned by the seafood manufacturer exporter in Thoothukudi has been examined to show the performance of the seafood exporters. The relevant details are collected from the seafood manufacturer exporters for this study. The analysis of profit earned by the seafood manufacturer exporters are given in Table 5.9.

 $\label{eq:table 5.9}$ Profit earned by the Seafood Manufacturer Exporter during 2002 - 2011

S.No	Year	Profit (in Rupees)	Increase/Decrease (in Rupees)	Percentage Increase/Decrease
1.	2002	33930743		
2.	2003	35326216	1395473	4.11
3.	2004	38086014	2759797	7.81
4.	2005	39123986	1037973	2.73
5.	2006	40762905	1638919	4.19
6.	2007	42954392	2191486	5.38
7.	2008	45220000	2265608	5.27
8.	2009	46634527	1414527	3.13
9.	2010	48696284	2061757	4.42
10.	2011	51430743	2734459	5.62
	Average	4,22,16,581	1944444	4.74

Source: Primary Data.

The profit earned by the seafood manufacturer exporters is increasing from ₹3.39 crores in 2002 to ₹51.4 crores in 2011. The rate of increase in their profit during the study period is 51.62 per cent. The percentage of increase is higher in the year 2004 and 2011 which have an increase of ₹27.59lakhs and ₹27.34 lakhs to its previous year profit respectively.

5.3.2 Growth Rate of profit earned by Seafood manufacturer exporters in Thoothukudi

The growth rate of profit earned by the seafood manufacturer exporters in Thoothukudi has been examined with the help of annual and compound growth rates.

These are computed with the help of semi log linear and exponential function

respectively. The profit earned by the seafood manufacturer exporters from 2002 to 2011 were analysed and the growth rates are given in Table 5.10.

Table 5.10

Growth rate of profit earned by the Seafood Manufacturer Exporters

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)
1.	Manufacturer Exporters	7.513* (0.003)	0.020* (0.000)	0.996	4.71	13.70

^{*} Significant at five per cent level

Figures in parentheses are standard errors.

The annual growth rate of the profit earned by the seafood manufacturer is 0.02 which is significant at five per cent level. The R² (0.996) reveals that the changes in the time period explain the changes in the profit of the manufacturer exporters to an extent of 99.60 per cent. The compound growth rate is 4.71 per cent. The higher consistency in the profit earned by the manufacture exporters are noticed since the coefficient of variation is only 13.70 per cent.

5.3.3 Profit earned by the Seafood Merchant Exporters

The profit earned by the seafood merchant exporters for the period 2002 to 2011 has been examined to know their performance. The profit earned in a period is compared with the previous year profit to know the increase or decrease in the profit earned and the increase or decrease in profit is presented in the form of percentage also. The results are shown in Table 5.11.

Table 5.11

Profit earned by the Seafood Merchant Exporters during 2002 – 2011

S.No	Year	Profit (in Rupees)	Increase/Decrease (in Rupees)	Percentage Increase/Decrease
1.	2002	15588182		
2.	2003	16088182	500000	3.21
3.	2004	16363864	275682	1.71
4.	2005	16798523	434659	2.66
5.	2006	17191932	393409	2.34
6.	2007	17534773	342841	1.99
7.	2008	17910227	375455	2.14
8.	2009	18131250	221023	1.23
9.	2010	18418750	287500	1.59
10.	2011	18692727	273977	1.49
	Average	1,72,71,841	344949	2.04

Source: Primary Data.

The profit earned by the seafood merchant exporters is increasing from ₹1.55 crores in the year 2002 to ₹1.86 crores in the year 2011 whereas the rate of increase during the study period is 20.00 per cent. The higher rate of increase in profit earned is noticed in the years 2003 and 2005. The actual increase in the profit during this period is ₹5.00 and ₹4.35 lakhs respectively. The percentage of increase during this period 2003 and 2005 is 3.21 and 2.66 per cent respectively.

5.3.4 Growth Rate of profit earned by Seafood Merchant Exporter in Thoothukudi

The performance of seafood merchant exporter is examined with the help of annual of compound growth rates. The profit earned by the seafood merchant exporters was used for the assessment of performance. The coefficient of variation has been computed in order to find out the consistency in the profit earned by the merchant exporters. The results of the analysis are given in Table 5.12.

Table 5.12

Growth rate of profit earned by Seafood Merchant Exporters

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)
1.	Merchant Exporters	7.189* (0.002)	0.009* (0.00)	0.988	2.09	6.05

^{*} Significant at five per cent level

Figures in parentheses are standard errors.

Significant annual growth rate is noticed in the case of profit earned by the seafood merchant exporters during the study period since the annual growth rate (0.009) is significant at five per cent level. The R² (0.988) reveals that the changes in time period explain the changes in profit earned by the merchant exporters to an extent of 98.80 per cent. The compound growth rate is only 2.29 per cent. The higher level of consistency in the level of profit earned by the seafood merchant exporters since its coefficient of variation is only 6.05 per cent.

5.3.5 Profit earned by the Ornamental fish exporters

The present study has made an attempt to examine the profit earned by the ornamental exporters from year 2002 to 2011. The primary data regarding the profit earned by the ornamental fish exporters were collected from the respondents of the study area. The increase/decrease in profit earned over the previous year has been computed for all years along with the percentage increase/decrease. The results are shown in Table 5.13.

Table 5.13

Profit Earned by Ornamental Fish Exporters during 2002- 2011

S.No	Year	Profit (in Rupees)	Increase/Decrease (in Rupees)	Percentage Increase/Decrease
1.	2002	11524390		
2.	2003	11812500	288110	2.50
3.	2004	12277083	464583	3.93
4.	2005	12726250	449167	3.66
5.	2006	12980833	254583	2.00
6.	2007	13433333	452500	3.49
7.	2008	13912083	478750	3.56
8.	2009	14412917	500833	3.60
9.	2010	14689583	276667	1.92
10.	2011	15141667	452083	3.08
	Average	1,34,87,361	416146	3.15

Source: Primary Data.

The profit earned by the ornamental fish exporters is increasing from ₹1.15 crores in the year 2002 to ₹1.51 crores in the year 2011 whereas the rate of increase during the study period is by 27.97 per cent. The profit earned by the ornamental fish exporters is more in the years 2004 and 2011. The actual increase during this period is ₹4.64 and ₹4.52 lakhs respectively. The higher percentage of increase is noticed in the year 2004 and 2005. The percentage of increase in profit during this period is 3.93 and 3.66 respectively.

5.3.6 Growth Rate of profit earned by the ornamental fish exporters in Thoothukudi

The growth performance of the ornamental fish exporters has been analyzed with the help of annual and compound growth rate. The profits earned by the

ornamental fish exporters from 2002 to 2011 have been included for the analysis. The consistency in the profit earned by the ornamental exporters has been examined with the help of coefficient of variation. The results are given in Table 5.14.

Table 5.14

Growth rate of Profit earned by the Ornamental Fish Exporters

S.No	Particulars	Constant	Annual growth	\mathbb{R}^2	CGR (%)	C.V (%)	
1.	Ornamental Fish Exporters	7.046* (0.002)	0.014* (0.000)	0.996	3.28	9.51	

^{*} Significant at five per cent level

Significant annual growth rate on the profit of ornamental fish exporters has been noticed since the annual growth rate (0.014) is significant at five per cent level. The R² (0.996) shows that the changes in this period explain the changes in the profit earned by the ornamental fish exporters to an extent of 99.60 per cent. The compound growth rate is 3.28 per cent. The higher consistency is seen in the profit earned by the ornamental fish exporters since the coefficient of variation is 9.51 per cent.

5.4 IMPACT OF FACTORS LEADING TO START THE SEAFOOD EXPORT BUSINESS ON EXPORT PERFORMANCE

The factors leading to start the export of seafood business may have its own influence on the export performance of the respondents. Hence the present study has made an attempt to examine it with the help of multiple regression analysis. The fitted regression model is,

Figures in parentheses are standard errors.

$$y = a + b_1x_1 + b_2x_2 + ---- + b_7x_7 + e$$

whereas y - Performance of exporters

 X_1 - score on product factor

 X_2 - score on government policy factor

X₃ - score on business factor

X₄ - score on management factor

X₅ - score on finance factor

 X_6 - score on personal factor

X₇ - score on environment factor

 $b_1, b_2 - --- b_7$ - regression coefficient of independent variables

a - intercept and

e - error term

The impact of factorsleading to start the export of seafood business on the export performance has been examined among the respondents of MUE, MEE, OFE. The results are summarized in Table 5.15.

Table 5.15

Impact of Factors Leading to start the Seafood Export business on Export Performance

C No	Voriables	Natation	Regression coefficient among respondents				
S.No	Variables	Notation	MUE	MEE	OFE	Over all	
1.	Constant	b_0	2.754*	1.393	1.705	2.95	
2.	Product Factors	X_1	0.271*	0.106*	0.122*	0.149*	
3.	Government policy factor	X_2	0.121 NS	-0.041 NS	0.068*	0.042 NS	
4.	Business factors	X_3	0.118 NS	-0.051 NS	0.335*	-0.037 NS	
5.	Management factor	X_4	0.535*	0.637*	0.046 NS	0.583*	
6.	Finance factors	X_5	-0.029 NS	0.081*	-0.045 NS	0.132 NS	
7.	Personal factors	X_6	0.497*	0.104*	0.355*	0.262*	
8.	Environment factor	X_7	0.335*	0.188*	0.151*	0.153*	
		R2	0.767	0.748	0.721	0.706	
		F-Test	16.94	27.958	17.384	41.846	

^{*} Significant at five per cent level

Among the respondents of MUE, the significantly influencing factors on their export performance are product, management, financial, personal and management factors since their respective regression coefficients are significant at five per cent level. A unit increase in the above said factors result in an increase in the export performance among the manufacturing exporters by 0.106, 0.637, 0.081, 0.104 and 0.188 units respectively. The changes in the view on the factors explain the changes in the export performance among them to an extent of 74.80 per cent since its R² is 0.7480.

Among the merchant exporter, a unit increase in the view on product, management, personal and environmental factors result in an increase in their export performance by 0.271, 0.535, 0.497 and 0.335 units respectively. The changes in the view on the factors explain the changes in the performance of merchant exporters to an extent of 76.70 per cent since its R² is 0.767 whereas among the ornamental fish exporters, it is to an extent of 72.10 per cent. The significantly influencing factors are product, government policy, business, personal and environment factors since their regression coefficients are significant at five per cent level. The analysis of pooled data reveals that the factors influencing the export performance of the respondents are business, personal and environment factors.

5.5 CONCLUSION

The analysis of seafood export performance in the study area helped the researchers to understand the performance of the seafood export. The performance of the seafood export revealed the product wise performance in terms of quantity and value. The analysis of performance in terms of country revealed the quantity and value of seafood exported to the various countries. The impact of factors leading to start the seafood export business on the export performance revealed the factors responsible for the export performance.



CHAPTER - VI

PROBLEMS AND PROSPECTS OF SEAFOOD **EXPORT BUSINESS**

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0.0	Intro	duction
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CHAPTER - VI

PROBLEMS AND PROSPECTS OF SEAFOODS EXPORT BUSINESS

6.0 INTRODUCTION

This chapter deals with the problems faced by the seafood exporters, the role of Marine Product Export Development Authority (MPEDA) towards the development of seafood export and the potentials for the seafood export. First part of this chapter deals with the problems encountered by the seafood exporters. The problem varies from concern to concern and number factors will play a role. So it is imperative to examine these problems in order to find out suitable remedial measures to overcome the same in future. Even though the problems are too many, the present study is confined to some major problems faced by them namely procurement, storage and processing, transportations, finance and export related problems.

The second part of this chapter deals with the role of Marine Product Export Development Authority (MPEDA) towards the development of seafood export. The perception of the seafood exporters towards the various functions of MPEDA namely regulatory, technology, market promotion, export promotion and development of fisheries are presented in this part. In addition to this the association between the profile variables of the seafood exporters and the role of MPEDA, the attitude of the seafood exporters towards the role of MPEDA and the impact of the role of MPEDA on the overall attitude of the seafood exporters also dealt with in this part.

In the third part of this chapter the potentials of seafood export is presented. It includes the factors influencing the potentials of seafood export, the opinion of the

seafood exporters towards the various factors and the association between the profile variables of the seafood exporters and the potentials of the seafood export is also presented in this chapter.

6.1 PROBLEMS IN SEAFOOD EXPORT BUSINESS

Since the problem perception among the exporters may influence their export performance, it is imperative to study the important problems encountered by the exporters of seafood. Even thoughthe problems are too many, the present study confines to only five important problems namely procurement, storage and processing, transportations, financial and export problems. The present analysis focuses on the exporters' view on the important problems in the export of seafood and also its impact on export performance among the exporters.

6.1.1 Procurement problems faced by the Seafood Exporters

One of the important problems included in the present study is procurement problems. The procurement problems faced by the exporters have been measured with the help of ten variables. The exporters are asked to rate the variables at five point scale according to their orders of importance. The assigned scores on these scales are from 5 to 1 respectively. The mean score of variables among the respondents in MUE, MEE and OFE have been computed separately. The one way analysis of variance have been executed to find out the insignificant difference among the three group of exporters regarding their view on procurement problems. The results are given in Table 6.1.

Table 6.1

Procurement problems faced by the Seafood Exporters

S.No.	Procurement Problems	Mean S	F – Statistics		
		MUE	MEE	OFE	Staustics
1	High Cost of Seafood	4.1212	4.0682	3.5	3.887*
2	Irregular supply of Seafood	3.9189	3.9773	4	0.218NS
3	Inadequate supply of seafood	3.6892	3.6591	4.5	6.111*
4	Wastages	3.473	3.8182	4.5	5.640*
5	Decomposition	3.2027	3.8182	4	6.222*
6	Procurement from different location	3.2838	3.8409	4.5	9.750*
7	Dishonesty of procurement staffs	3.2703	3.6136	4	3.839*
8	Lack of international services	3.2162	3.8182	5	20.130*
9	Inferior Quality	3.3108	3.8409	4	6.010*
10	Underweight	3.4054	3.9318	4.5	8307*

^{*} Significant at five per cent level

The highly viewed variables in procurement problems by the respondents of MUE are high cost of seafood and irregular supply of seafood since their respective mean scores are 4.1212 and 3.9189 respectively. Among the respondents of MEE the highly viewed procurement problems are high cost of seafood and irregular supply of seafood since their respective mean scores are 4.0682 and 3.9773 respectively. Among the respondents of OFEthe highly viewed procurement problem is lack of international services since its mean score is 5.00.

Regarding the procurement problemsof the seafood exporters significant difference among the three group of exporters have been noticed in their view on high cost of seafood, inadequate supply of seafood, wastages, decomposition, procurement from the different locations, dishonesty of procurements staffs, lack of international

services, inferior quality and underweight since their respective 'F' statistics are significant at five per cent level.

6.1.2 Storage and Processing problems faced by Seafood Exporters

The storage and processing problems encountered by the seafood exporters have been measured with the help of nine variables. The exporters are asked to rate the nine variables at five point scale according to the order of importance. The mean score of each variable have been computed separately in order to exhibit the intensity of problems among the three groups of exporters. In order to examine the significant difference among the three groups of exporters regarding storage and processing problems one way analysis of variance have been administered. The results are given in Table 6.2.

Table 6.2
Storage and Processing problems faced by Seafood Exporters

S.No.	Problems in storage and	Mean R	F – Statistics		
	processing	MUE	MEE	OFE	Staustics
1	Labour problems	4.5405	4.4545	5.0	2.017NS
2	Low storage capacity	3.9865	4.1364	4.5	2.82NS
3	High maintenance cost of the plant	4.0405	4.0682	5.0	9.807*
4	Power shortage	3.2027	3.8182	4.3333	8.933*
5	Technical problems	4.2027	3.9318	4.5	2.438NS
6	High replacement cost of the plant and machinery	3.2027	3.8182	3.6667	5.116*
7	Lack of trained personnel	4.1081	4.0455	4.5	1.236NS
8	High depreciation rate of plant	4.1216	3.8182	3.5	2.946NS
9	Under utilization of capacity	3.8514	3.7727	4.0	0.280NS

^{*} Significant at five per cent level

The highly viewed storage and processing problems among the respondents of MUE are labour problems and technical problems since their mean scores are 4.5405 and 4.2027 respectively. Among the respondents of MEE the highly viewed storage and processing problems are labour problems and low storage capacity since their mean scores are 4.4545 and 4.1364 respectively. Among the respondents of OFE, these are labour problems and high maintenance cost of plant since their scores are 5.00 in both the cases.

Regarding the storage and processing problems significant difference among the three groups of exporters have been noticed in the case of high maintenance cost of the plant, power storage and high replacement cost of the plant and machineries since their respective 'F' statistics are significant at five per cent level.

6.1.3 Transportation Problems faced by Seafood Exporters

Five variables relating to transportation problem faced by the seafood exporters have been identified and the exporters were asked to rate these five variables at five point scale according to the order of importance. The mean score of the variables were computed to identify the highly viewed variables among the three groups of exporters. One way analysis of variance have been administered to find out the significant difference among the three group of exporters regarding their opinion on the transportation problems. The results are summarized in Table 6.3.

Table 6.3

Transportation Problems faced by Seafood Exporters

S.No.	Problems in Transportation	Mean R	F-		
	_	MUE	MEE	OFE	Statistics
1	High shipment cost	3.2027	3.8182	4.3333	8.933*
2	High Air cargo Tariff	3.2027	3.8182	3.3333	4.619*
3	Inadequate supply of freezer container	3.4189	3.4318	4.0	1.904NS
4	Short supply of special container	3.473	3.7727	4.5	6.749*
5	Time delay in transportation	3.6081	3.6136	3.5	0.057NS

^{*} Significant at five per cent level

The highly viewed transportation problem among the exporters of MUE are short supply of special container and the time delay in transportation since their mean scores are 3.6081 and 3.4730 respectively. Among the respondents of MEE, these are higher shipment cost and high air cargo tariff since their mean scores are 3.8182 in both the cases. Among the respondents of OFE, these are short supply of special container and high shipment cost since their mean scores are 4.5000 and 4.3333 respectively.

Regarding the transportation problem significant difference among the three groups of exporters have been noticed in the case of high shipment cost, high air cargo tariff and short supply of special containers since their respective 'F' statistics are significant at five per cent level.

6.1.4 Financial Problems faced by Seafood Exporters

The exporters view on the financial problems in the present study is measured with the help of seven variables. The exporters are asked to rate the financial problems variables at five point scale according to their order of importance. The mean scores of

the variables in financial problems among the respondents of MUE, MEE and OFE have been computed separately in order to exhibit the exporters' perception about the financial problems. The one way analysis of variance has been executed to find out the significant difference among the three groups of exporters regarding their view on financial problems. The results are given in Table 6.4.

Table 6.4

Financial Problems faced by Seafood Exporters

S.No.	Problems in Financial	Mean S	F –		
		MUE	MEE	OFE	Statistics
1	Inadequate working capital	3.2027	3.8182	4.0	6.222*
2	Inadequate capital for modernization	3.2027	3.8182	4.0	6.593*
3	Lack of capital for increasing infrastructure	3.5811	3.6364	3.5	0.166 NS
4	Fluctuation in the exchange rate	3.8378	3.7500	3.0	4.187*
5	Fluctuation in the prices for the products	3.2027	3.8182	4.0	6.222*
6	High rejection rate	3.7162	3.8636	4.0	0.727 NS

^{*} Significant at five per cent level

The highly viewed financial problemsamong the respondents of MUE are fluctuation in the exchange rate and high rejection rate since their mean scores are 3.8378 and 3.7162 respectively. Among the respondents of MEE, these are inadequate working capital and inadequate capital for modernization since their mean scores are 3.8182 and 3.8182 respectively. Among the respondents of OFE, these are inadequate working capital and inadequate capital for modernization, fluctuation in the prices for the products and high rejection rate since their mean scores are 4.00 in each.

As regards the financial problems, significant difference among the three groups of exporters have been noticed in the case of inadequate working capital, inadequate capital for modernization, fluctuation in the exchange rate, and fluctuation in the prices for the products since their respective 'F' statistics are significant at five per cent level.

6.1.5 Export Related Problems faced by Seafood Exporters

The exporters' opinion on the export related problems in the present study is studied with the help of seven variables. The exporters are asked to rate these variables at five point scale according to the order of importance. The mean score of the variables in the export related problems among the exporters of MUE, MEE and OFE, have been computed separately. The one way analysis of variance has been executed to find out the significant difference among the three groups of exporters regarding their opinion on the variables in export related problems. The results are shown in Table 6.5.

Table 6.5

Export Problems faced by Seafood Exporters

S.No.	Problems in Export	Mean R	F – Statistics		
		MUE	MEE	OFE	Statistics
1	Inadequate warehouse facility in ports	3.2027	3.8182	4.00	6.593*
2	Inadequate cold storage capacity	3.5135	3.7727	3.50	2.180 NS
3	Irregular supply of containers	3.3514	3.5227	4.00	2.622*
4	Inadequate government subsidy	3.2027	3.8182	4.00	6.222*
5	Too many government regularities for export	3.4324	3.5455	4.00	1.534 NS
6	Import restrictions by other countries	3.2027	3.8182	3.6667	4.582 NS
7	Competition from other Countries	3.2838	3.2955	3.50	0.187 NS

^{*} Significant at five per cent level

The highly viewed export related problemsamong the respondents of MUE are inadequate cold storage capacity and too many government regularities for export since their mean scores are 3.5135 and 3.4324 respectively. Among the respondents of MEE, these are inadequate warehouse facility in ports and inadequate government's subsidy since their mean scores are 3.8182 and 3.8182 respectively. Among the respondents in OFE, these are inadequate warehouse facility in ports, irregular supply of containers, inadequate government's subsidy and too many government regularities for export since their mean scores are 4.00 in each.

Regarding the export problems, significant difference among the three groups of exporters have been noticed in the case of inadequate warehouse facility in ports, irregular supply of containers, and inadequate government's subsidy since their respective 'F' statistics are significant at five per cent level.

6.1.6 Reliability and validity test for problems in Seafood Exporters

The variables in each problem vary from 5 to 10. It is essential to examine the reliability and validity of variables in each problem before summarizing the score of the variables. The confirmatory factor analysis has been administered to examine it. The overall reliability of variables in each problem has been estimated with the help of Cronbach alpha. The results are given in Table 6.6.

Table 6.6

Reliability and validity test for problems in Seafood Exporters

S.No	Important Problems	Range of standardized factor loading	Range of 'T' statistics	Cronbach alpha	Composite reliability	Arrange variance extracted
1	Procurement	0.9089- 0.6297	4.0969*- 2.2645*	0.7909	0.7717	55.92
2	Storage and processing	0,8784- 0.6509	3.7342*- 2.5917*	0.7517	0.7332	53.17
3	Transportation	0.8911- 0.6345	3.8962*- 2.3916*	0.7703	0.7516	54.08
4	Financial	0.9119- 0.6446	4.1234*- 2.3916*	0.8142	0.7829	56.69
5	Export	0.8676- 0.6541	3.6546*- 2.5929*	0.7611	0.7421	52.38

^{*} Significant at five per cent level

The standardized factor loading of the variables in each problem are greater than 0.60 which reveals the content validity. The significance of 't' statistics of the standardized factor loading of the variables in problem reveals the contingent validity. It is also supported by the composite reliability and average variance extracted since these are greater than its minimum threshold of 0.50 and 50.00 per cent respectively. The Cronbachalpha of all the problems is greater than its standard minimum of 0.60. All these indicate the reliability and validity of variables in each problem.

6.1.7 Exporters' view on the Problems of Seafood Export

The exporters' view on the problems of seafood exportproblems have been examined by the mean score of the each problem among the three groups of exporters. One way analysis of variance has been administered to find out the significant difference among the three groups of exporters. The results are given in Table 6.7.

Table 6.7

Exporters' view on Important Problems

S.No.	Problems of Seafood Exporters	Mean	F – Statistics		
	Exporters	MUE	MEE	OFE	
1	Procurement	3.4892	3.8386	4.2500	3.7889*
2	Storage and processing	4.2733	3.9848	4.3333	3.1179*
3	Transportation	3.3811	3.6909	3.9333	3.0862*
4	Finance	3.4572	3.7841	3.7500	2.0869 NS
5	Export related	3.3127	3.6559	3.8809	3.1085*

^{*} Significant at five per cent level

The highly viewed problems by the respondents of MUE are storage and processing; and procurement since their mean scores are 4.2733 and 3.4892 respectively. Among the respondents of MEE, these are storage and processing; and procurement since their mean scores are 3.9848 and 3.8386 respectively. Among the respondents of OFE, these are storage and processing; and procurement since their mean scores are 4.3333 and 4.2500 respectively. As regards the seafood exporters problem, significant difference among the three groups of exporters have been noticed in respect of procurement, storage and processing, transportation and export related problems since their respective 'F' statistics are significant at five per cent level.

6.1.8 Association between the profile of the exporters and their problems

In order to study the association between the profile of the exporters and the problems faced by them one way analysis of variance has been administered. The included profile variables are gender, education, age, income, type of exporters, experience, forms of organisation, leagal status of the respondents, registration authority, membership in association, nature of approval, approval category and capital employed. The results of the one way analysis of variance are summarized in Table 6.8.

 $\label{eq:table 6.8}$ Association between the profile variables of the seafood exporters and their problems

S. No	Demographic Factors	Procurement Problem	Storage and Processing	Transportation Problem	Financial Problem	Export related problem
1	Gender	0.237 NS	0.269 NS	0.505 NS	0.395 NS	4.195*
2	Education	4.646*	2.601 NS	1.665 NS	2.117 NS	2.471 NS
3	Age	0.393 NS	0.692 NS	1.943 NS	3.257*	1.567 NS
4	Income	7.718*	1.371 NS	5.294*	6.654*	8.815*
5	Type of exporter	8.334*	6.206*	1.334 NS	1.734 NS	2.992 NS
6	Experience	4.995*	0.303 NS	2.665 NS	2.775 NS	3.378*
7	Forms of organization	0.248 NS	.000 NS	0.649 NS	1.220 NS	0.126 NS
8	Legal status of the respondents	0.330 NS	0.352 NS	0.478 NS	0.617 NS	0.772 NS
9	Registration Authority	0.904 NS	0.081 NS	0.316 NS	0.340 NS	0.280 NS
10	Membership in Association	3.545*	1.150 NS	2.184 NS	4.635*	2.420 NS
11	Nature of Approval	2.443 NS	0.592 NS	1.507 NS	3.262*	1.842 NS
12	Approval Category	2.506 NS	0.109 NS	1.343 NS	5.687*	5.523*
13	Capital employed	1.932 NS	1.202 NS	4.276*	4.162*	11.097*

^{*} Significant at five per cent level

Regarding the procurement problems the significantly associating profile variables are education, income, type of exporter, experience and membership in association since their respective 'F' statistics are significant at five per cent level. The significantly associating profile variables regarding the storage and processing problems is type of exporter whereas regarding the transportation problems, the associating profile variables are income and capital employed. Regarding the financial problems, the significantly associating profile variables are age, income, membership in association, nature of approval, approval category and capital employed whereas regarding the export related problem the associating profile variables are gender, income, experience, approval category and capital employed since their respective 'F' statistics are significant at five per cent level.

6.1.9 Impact of Seafood Exporters Problems on their Export Performance

The problems faced by the seafood exporters may have its own influence on their export performance. Hence the present study has made an attempt to examine the relative influence of problems faced by the seafood exporters on their export performance. The multiple regression analysis is administered to examine for this purpose. The fitted regression model is:

$$Y = a + b_1 X_1 + b_2 X_2 + \dots 7 b_5 X_5 + e$$

Whereas y - Score on export performance

X₁ - Score on perception on procurement problem

X₂ - Score on perception on storage and processing problem

X₃ - Score on perception on transportation problem

X₄ - Score on perception on finance problem

X₅ - Score on perception on export problem

b₁, b₂, b₅ - Regression coefficient of independent variables

a - Constant and

e - Error term

The impact of problems faced by the seafood exporters on the export performance have been measured among the three groups of exporters and also pooled data respectively. The results are given in Table 6.9.

Table 6.9

Impact of Problems relating to Seafood Exporters on the Export Performance

S. No	Problems	Notation	Regression the 3	Overall		
NU			MUE	MEE	OFE	
1	Constant	\mathbf{B}_0	-3.473*	-3.452*	-1.793*	-3.663*
2	Procurement Problems	X_1	0.266*	-0.272*	-0.183*	-0.266*
3	Storage and Processing Problems	X_2	-0.234*	-0.277*	-0.157*	-0.261*
4	Transportation Problems	X_3	0.124NS	0.199NS	-0.082NS	-0.125 NS
5	Financial Problems	X_4	-0.173*	-0.147*	-0.155*	-0.152*
6	Export related Problems	X_5	-0.166NS	-0.144NS	-0.081NS	-0.155 NS
	R ²		0.997	0.996	0.81897	0.993
	F-Test		2711.687	4540.667	263.83	8314.35

^{*} Significant at five per cent level

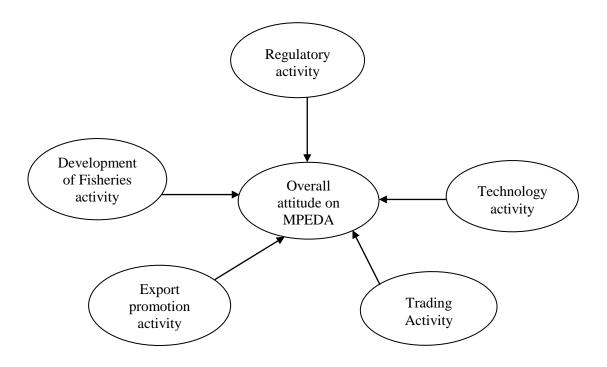
Among the manufacturer exporters (MUE), the significantly influencing problems are procurement, storage and processing and finance problems since their regression coefficients are significant at five per cent level. A unit increase in the above said problems result in a decrease in their export performance by 0.272, 0.277 and 0.147 units respectively. The changes in the problems explain the changes in their export performance to an extent of 99.60 per cent since its R² is 0.996 whereas among

the merchant exporters, these changes are to an extent of 99.70 per cent. Among the merchant exporters, a unit increase in the procurement, storage and processing, and financial problems result in a decrease in their export performance by 0.266, 0.234 and 0.173 units respectively.

Among the ornamental fish exporter (OFE) the significantly influencing problems are procurement storage and processing and financial problems. A unit increase in the above said problems results in a decrease in their export performance by 0.183, 0.157 and 0.155 units respectively. The changes in the problems explain the changes in their export performance to an extent of 81.87 per cent since its R² is 0.8187. The analysis of pooled data reveals the relative importance of procurement, storage and processing, and financial problems in the determination of the export performance of the respondents.

6.2 Role of Marine Product Export Development Authority (MPEDA)

The seafood exporters' view about MPEDA's role in the development of seafood export, the association between the profile variables of the seafood exporters and the role of MPEDA, the attitude of seafood exporters towards the role played by MPEDA for the development of seafood export and the impact of the role played by MPEDA on the overall attitude of the seafood exporters have been presented in the following section.



6.2.1 Seafood Exporters' Perception about the Regulatory functions of MPEDA

MPEDA was introduced to promote the seafood export activities. It performs many functions to promote the seafood exports. It is essential to examine the functioning of MPEDA from the point of view of the seafood exporters for the future policy implications. The functions performed are classified into regulatory, technology, trading, export promotion and development of fisheries. The exporter's views on these activities are measured with relevant variables in each category. Initially, the perception of seafood exporters about the regulatory functions of MPEDA has been measured and the results are shown in Table 6.10.

Table 6.10

Perception about the Regulatory functions of MPEDA

S.No	Variables in Regulatory function	Mean S Re	F		
		MUE	MEE	OFE	Statistics
1	Registration of processing and storage premises and conveyances	3.4189	3.6591	3.8333	2.097 NS
2	Inspection of Seafood for ensuring quality	3.4189	3.1591	3.7500	5.3080*
3	Regulating export of Seafood	3.5000	3.1591	3.5000	3.1880*
4	Regulating off shore and deep sea fishing	3.5135	3.4091	3.5000	0.1500 NS
5	Promotional Activity	3.4189	3.1591	4.0000	5.3830*

^{*}Significant at five per cent level

The above table shows the mean score of the perception on the regulatory measures taken by MPEDA among the respondents in MUE, MEE and OFE along with its 'F' Statistics. The highly viewed regulatory functions by the respondents of MUE and MEE are regulating off shore and deep sea fishing, registrations of processing and storage premises and conveyance since their mean scores are 3.535 and 3.6591 respectively. Among the respondents of OFE, the highly viewed variable is promotional activity since its mean score is 4.000.

Regarding the perception on about the regulatory function of MPEDA significant difference among the three groups of respondents have been noticed in inspection of seafood products for ensuring quality, regulating export of seafood products and promotional activity since its 'F' statistics are significant at five per cent level.

6.2.2 Perception on the Technology functions of MPEDA

The exporters' perception on the technology function of MPEDA has been examined with the help of five variables. The exporters are asked to rate these five variables at five point scale according to their order of perception. The assigned scores are from 5 to 1 respectively. The mean scores and 'F' statistics of technology functions among the respondents of MUE, MEE and OFE have been computed and the results are shown in Table 6.11.

Table 6.11
Perception on the Technology functions of MPEDA

S.No	Variables in Technology	Mean 1	F		
	G.	MUE	MEE	OFE	Statistics
1	Technology upgradation	3.0676	3.2273	3.5000	0.3130 NS
2	Waste reduction and quality improvement	3.5403	3.1591	3.0000	3.5770*
3	Market promotion	3.1351	3.1364	3.5000	0.4090 NS
4	Market Intelligence	3.6892	3.8182	3.5000	1.1090 NS
5	Trade fair participation	3.5270	3.4318	3.5000	0.5670 NS

^{*}Significant at five per cent level

The highly perceived technology function variable of MPEDA by the respondents of MUE and MEE is market intelligence since its mean scores are 3.6892 and 3.8182 respectively. Among the respondents of OFE, it is technology up gradation, market promotion, market intelligence and trade fair participation since its mean scores are 3.0000 in each.

Regarding the perception on the technology function, significant difference among the three groups of exporters have been noticed regarding waste reduction and quality improvement since its 'F' statistics is significant at five per cent level.

6.2.3 Perception on the Market Promotion functions of MPEDA

The perception about the market promotion of MPEDA among the exporters is measured with the help of five variables. The exporters were asked to rate these five variables at five point scale according to their order of perception. The mean score of each variable among the three groups of exporters have been computed separately. The one way analysis of variance have been administered to find out the significant difference among the three groups of exporters regarding the perception about the market promotion function and the results are shown in Table 6.12.

Table 6.12

Perception on the Market Promotion functions of MPEDA

S.No	Variables in Market	Mean Score among the Respondents			F
	Promotion	MUE	MEE	OFE	Statistics
1	Sponsoring trade delegations	3.4595	3.2955	4.0000	4.8350*
2	Indian seafood trade fairs	3.3784	3.2727	3.0000	1.5440 NS
3	Overseas publicity	3.4189	3.2901	2.9167	4.3920*
4	Value addition	3.4459	3.2500	3.5000	1.3640 NS
5	Support services	3.2568	3.2500	3.6000	0.8890 NS

^{*}Significant at five per cent level

The above table shows the mean scores of the variables in market promotion function of MPEDA among three groups of exporters and its respective 'F' statistics. The highly viewed variable in market promotion function by the respondents of MUE

and MEE is sponsoring trade delegation since their mean scores are 3.4595 and 3.2955 respectively. Among the respondents of OFE, it is also the same but the mean score is 4.0000.

As regards the market promotion functions of MPEDA, significant difference among the three group of exporters have been noticed in their perception on sponsoring trade delegations and overseas publicity since their respective 'F' statistics are significant at five per cent level.

6.2.4 Perception on the Export Promotion functions of MPEDA

The exporters' perception on export promotion function of MPEDA is measured with the help of five variables. The exporters are asked to rate these five variables at five points scale regarding their perception. The mean scores of each variable in export promotion activity among the three group of exporters have been computed along with its 'F' statistics. The results are given in Table 6.13.

Table 6.13

Perception on the Export Promotion functions of MPEDA

S.No	Variables in Export Promotion	Mean S R	F Statistics		
	•		MEE	OFE	
1	Infrastructure development	3.3243	3.1818	2.5000	10.7020*
2	Extension and Training	3.3108	3.2045	3.0000	1.8111 NS
3	Promotional assistance	3.4189	3.1591	3.0000	4.3828*
4	Development of Capture fisheries	3.2297	3.1136	2.5000	6.6540*
5	Diversified Fishing	3.2297	3.2045	2.9401	1.2760 NS

^{*}Significant at five per cent level

The highly viewed variables in export promotion function of MPEDA by the respondents of MUE are promotional assistance and infrastructural development since their mean scores are 3.4189 and 3.3243 respectively. Among the respondents of MEE the highly viewed variables are extension and training and diversified fishing since their mean scores are 3.2045 in both the cases. Among the respondents of OFE, the highly viewed variables are extension and training and promotional assistance since its mean score is 3.000 in both the cases.

As regards the perception on export promotion function, significant difference among the three groups of exporters have been noticed in the case of infrastructure development, promotional assistance and development of capture fisheries since their respective 'F' statistics are significant at five per cent level.

6.2.5 Perception on the Development of Fisheries function by MPEDA

The exporters' views on the development of fisheries function have been measured with the help of three variables. The exporters are asked to rate these three variables at five point scale. The mean score of each variable in development of fisheries function have been computed among the three groups of exporters separately. The 'F' statistics have been computed to find out the significant difference among the three groups of exporters regarding the development of fisheries. The results are shown in Table 6.14.

Table 6.14

Perception on the Development of Fisheries function by MPEDA

S.No Variables in Development of		Mean S	0	F Statistics	
	Fisheries		MEE	OFE	Statistics
1	Resource specific fishing	3.3243	3.1818	2.0000	18.9800*
2	Development of Culture fisheries	3.0946	3.0909	2.5000	4.3530*
3	Eco friendly and sustainable shrimp aquaculture	3.1892	3.1818	2.5000	3.6350*

^{*}Significant at five per cent level

The highly viewed variable in the development of fisheries function among the respondents of MUE and MEE are resource specific fishing and eco-friendly and sustainable shrimp aquacultures since its mean scores aremore. Among the respondents of OFEthe highly viewed variables are development of fisheries and eco-friendly and sustainable shrimp aquaculture since their mean scores is 2.5000 in both the cases. Regarding the perception on development of fisheries, significant difference among the three groups of exporters have been noticed in all three variables since their respective 'F' statistics are significant at five per cent level.

6.2.6 Reliability and validity test for Role of MPEDA

The variables included in each role of MPEDA vary from 5 to 3. The score of the variables in each role have been included for confirmatory factor analysis in order to examine its reliability and validity. The overall reliability of variables in each role is estimated with the help of Cronbach's alpha. The results are shown in Table 6.15.

Table 6.15
Reliability and validity test for Role of MPEDA

S. No	Roles of MPEDA	Range of Standardized factor loading	Range of 'T' Statistics	Cronbach's alpha	Composite reliability	Average Variance Extracted
1	Regulatory	0.8417-0.6588	3.5896*-2.4089*	0.7403	0.7241	51.92
2	Technology	0.8904-0.6211	3.9909*-2.3917*	0.7862	0.7602	53.92
3	Market promotion	0.8249-0.6732	3.2961*-2.6179*	0.7317	0.7029	50.45
4	Export Promotion	0.9111-0.6089	4.1733*-2.1172*	0.7909	0.7711	54.51
5	Development of fisheries	0.8549-0.6712	3.7341*-2.6133*	0.7545	0.7302	52.11

^{*}Significant at five per cent level

The standardized factor loading of the variables in each role are greater than 0.60 which reveals the content validity. The significance of 't' statistics of the standardized factor loading of the variables in each role reveal its contingent validity. It is also supported by the composite reliability and average variance contracted since these are greater than its minimum threshold of 0.50 and 50.00 percent respectively. The Cronbach alpha of all roles is greater than 0.20 which shows the overall reliability of each role. The analysis infers the reliability and validity of variables in each role.

6.2.7 Seafood Exporters' view on the Role of MPEDA

The exporters' perception on all the five roles of MPEDA has been computed by the mean scores. The mean score of each role of MPEDA among the three groups of exporters have been computed separately with its 'F' statistics and the results are given in Table 6.16.

Table 6.16

Exporters' view on Important Role of MPEDA

S.No	Important Activity	Mean F	F		
	-	MUE	MEE	OFE	Statistics
1	Regulatory	3.4540	3.3091	3.7161	3.1881*
2	Technology	3.3919	3.3546	3.3000	0.7817 NS
3	Market Promotion	3.3919	3.2455	3.2844	0.5913 NS
4	Export Promotion	3.3027	3.1727	2.9000	2.9968*
5	Development of fisheries	3.2027	3.1515	2.5000	4.1178*

^{*}Significant at five per cent level

The highly perceived roles performed by the MPEDA among the respondents of MUE and MEE are regulatory and technology function since its mean scores are 3.4540 and 3.3546 respectively. Among the respondents of OFE, the highly perceived role is regulatory function since its mean score is 3.7161.

As regards the perception on the various roles of MPEDA, significant difference among the three groups of exporters have been noticed in the case of regulatory, export promotion and development of fisheries since their respective 'F' statistics are significant at five percent level.

6.2.8 Association between the profile variables of the exporters and the Role of MPEDA

Since the profile of the exporters may associate with their views on the role of MPEDA, the present study has made an attempt to examine the same for some policy implications. The included profile variables are the gender, education, age, income, type of exporter, experience, forms of organisation, legal status of the respondents, registration authority, membership in association, nature of approval, approval category and capital invested. The one way analysis of variance has been administrated to find out to examine its association. The results are given in Table 6.17.

 $\label{eq:table 6.17}$ Association between profile variables of the exporters and the Role of MPEDA

G.N.	D L'. F			'F' Stat	istics	
S.No	Demographic Factors	Regulatory	Technology	Market Promotion	Export Promotion	Development of Fisheries
1	Gender	0.231 NS	2.546 NS	0.803 NS	2.112 NS	0.916 NS
2	Education	1.845 NS	0.995 NS	3.853*	2.248 NS	3.231*
3	Age	3.256*	1.153 NS	1.886 NS	0.814 NS	0.117 NS
4	Income	1.338 NS	2.627 NS	0.971 NS	0.146 NS	0.239 NS
5	Type of Exporter	3.520*	0.641 NS	2.731 NS	10.193*	4.151*
6	Experience	1.033 NS	0.651 NS	1.757 NS	0.127 NS	0.837 NS
7	Forms of organisation	0.661 NS	1.447 NS	2.667 NS	1.526 NS	0.296 NS
8	Legal status of the respondents	2.883*	0.912 NS	0.212 NS	0.375 NS	0.603 NS
9	Registration Authority	1.184 NS	1.232 NS	0.072 NS	0.371 NS	0.364 NS
10	Membership in Association	2.318 NS	0.293 NS	0.544 NS	1.327 NS	0.583 NS
11	Nature of Approval	0.330 NS	0.157 NS	0.285 NS	0.030 NS	0.607 NS
12	Approval Category	1.893 NS	0.938 NS	0.877 NS	0.339 NS	0.545 NS
13	Forms of organisation	1.981 NS	6.823*	2.335 NS	0.453 NS	0.212 NS

^{*}Significant at five per cent level

Regarding the regulatory functions, the significantly associating profile variables are age, type of exporter and legal status of the respondents since their respective 'F' statistics are significant at five percent level. The significantly associating profile variable of exporters regarding the technology function is capital invested whereas in the case of market promotion, it is level of education of exporters. Regarding the export promotion function the significantly associating profile variable is type of exporters whereas in the case of development of fisheries function, these are education and type of exporter since their respective 'F' statistics are significant at five percent level.

6.2.9 Attitude of exporters towards the Role of MPEDA

The overall attitude of seafood exporters towards the role of MPEDA among the exporters have been measured at five point scale namely highly satisfied, satisfied, moderate, dissatisfied and highly dissatisfied. The distribution of respondents on the basis of their overall attitude towards the MPEDA is presented in Table 6.18.

Table 6.18

Attitude of exporters towards the Role of MPEDA

C No	Organali Attiturda	Numb	Total		
S.No	Overall Attitude	MUE	MEE	OFE	Total
1	Highly Satisfied	6(8.10)	3(6.80)	5(41.70)	14(10.80)
2	Satisfied	50(67.60)	29(65.90)	7(58.30)	86(66.20)
3	Moderate	17(23.00)	12(27.20)	0(0)	29(22.20)
4	Dissatisfied	1(1.40)	0 (0)	0(0)	1(0.80)
5	Highly dissatisfied	0(0)	0(0)	0(0)	0(0)
	Total	74(100)	44(100)	12(100)	130(100)

Source: Primary data

The above table reveals that majority (66.20 per cent) of the seafood exporters are satisfied about the role played by the MPEDA. Among the MUE, MEE and OFE most of the seafood exporters are satisfied towards MPEDA's export development functions.10.80 per cent of the seafood exporters are highly satisfied towards the role of MPEDA among them majority of them are manufacturer exporters.

6.2.10 Impact of MPEDA's role on the overall attitude of the seafood exporters

The exporters' perception about MPEDA's role may have its own influence on the overall attitude of the exporters. It is imperative to examine the relative importance of each role on the determination of the overall attitude towards MPEDA for some policy implications. The multiple regression analysis has been administered to find out the impact. The fitted regression model is:

$$Y=a+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5+C$$

Whereas Y - Score on overall attitude towards MPEDA

X₁ - Score on regulatory activity of MPEDA

X₂ - Score on technology activity of MPEDA

X₃ - Score on market promotion activity of MPEDA

X₄ - Score on export promotion activity of MPEDA

X₅ - Score on development of fisheries activity of MPEDA

 $b_1, b_2, \dots b_5$ - Regression coefficient of independent variables

a - Intercept and

e - Error term

The impact of MPEDA's role on the overall attitude of MPEDA have been measured among the respondents of MUE, MEE and OFE separately and also for pooled data. The results are given in Table 6.19.

Table 6.19

Impact of MPEDA's Role on the overall Attitude of Seafood Exporters

C No	Role of MPEDA	Regression coefficient among the respondents					
S. No	Role of MIFEDA	MUE	MEE	OFE	Pooled Data		
1	Regulatory	0.1089	0.1676*	0.1891*	0.1482*		
2	Technology	0.1779*	0.1123	0.1403*	0.1504*		
3	Maket Promotion	0.2083*	0.1482*	0.1171	0.1731*		
4	Export Promotion	0.1454*	0.1033	0.1042	0.1081 NS		
5	Development of fisheries	0.0997	0.1776*	0.0884	0.0969 NS		
	Constant	0.7338	0.5099	0.4034	0.5892 NS		
	\mathbb{R}^2	0.7709	0.7644	0.7319	0.7969 NS		
	F Statistics	8.5142*	7.9169*	7.6576*	8.6893*		

^{*}Significant at five per cent level

Among the respondents of MUE, the significantly influencing MPEDA's role on the overall attitude of the seafood exporters are technology, market promotion and export promotion roles since their respective regression coefficients are significant at five per cent level. A unit increase in the perception on above said activity results in an increase in an overall attitude towards MPEDA by 0.1779, 0.2083 and 0.1454 units respectively. The changes in the perception on MPEDA's role explain the changes in the overall attitude towards MPEDA among the respondents of MUE to an extent of 77.09 per cent since its R²is 0.7709.

Among the respondents of MEE, a unit increase in the perception on regulatory, market promotion and development of fisheries function of MPEDA result in an increase in the overall attitude of seafood exporters by 0.1676, 0.1482, 0.1482 and 0.1776 units respectively. The changes in the perception of seafood exporters towards the role of MPEDA explain the changes in the overall attitude to an extent of 76.44 per

cent since its R^2 is 0.7644. Among the respondents of OFE, a unit increase in the perception on regulatory and technology activity of MPEDA result in an increase in the overall attitude of of seafood exporters 0.1891 and 0.1403 units respectively. The R^2 reveals that the changes in the perception on the activity of MPEDA explain the changes in the overall attitude towards MPEDA to an extent of 73.19 per cent.

The analysis of pooled data reveals the relative importance of perception on regulatory, technology, and market promotion factor on the determination of the overall attitude towards MPEDA since the respective regression coefficients are significant at five per cent level.

6.3 POTENTIALS FOR SEAFOOD EXPORT

6.3.1 Factors influencing the Potentials for Seafood Export

In order to enrich the export performance of seafood among the respondents, the potential measures among them have been examined for some policy implication. Even though, the potential measures are too many, the percent study confine to only 23 measures. The exporters are asked to rate these twenty three measures at five point scale according to the order of importance. The scores of the measures among the exporters have been included for factor analysis initially in order to narrate the measures into important factors. The relationship between the variables with the narrated factors is shown in Table 6.20.

Table 6.20 Factors influencing the Potentials for Seafood Export

S.	F (P (())			Factor I	Loading		
No	Export Potentials	1	2	3	4	5	6
1	Development of fishing harbour	0.776	0.009	-0.059	0.011	0.025	-0.019
2	Improved means of fishing vessels and equipments	0.756	-0.024	-0.141	0.161	0.068	0.141
3	Tax holidays for the newly setup seafood	0.715	0.23	0.165	-0.102	0.096	0.073
4	Easy term loan facilities	0.711	-0.029	0.21	0.066	0.03	0.032
5	Support from the govt., for the modernization of storage processing units	0.69	-0.067	0.043	-0.154	0.049	0.13
6	Improved in infrastructural facilities in the port	0.671	0.093	-0.059	0.187	0.042	0.019
7	Increased export assistance for the seafood	0.671	0.22	0.113	0.174	-0.045	-0.135
8	Easy customs formalities	0.076	0.835	0.178	0.029	-0.036	0.008
9	Reasonable export duties	0.096	0.792	0.129	-0.012	0.108	-0.055
10	Government assistance to promote export	-0.016	0.746	-0.034	0.173	-0.029	0.061
11	Favourable export import policies	0.012	0.187	0.778	0.15	-0.146	0.12
12	Authorize the quality standards	-0.105	-0.062	0.719	0.157	0.237	0.123
13	Adequate clearing and forwarding services	0.198	0.039	0.662	0.26	0.295	0.129
14	Adequate capacity of cold storage	0.144	0.21	0.569	-0.154	0.326	-0.243
15	Adequate working capital	0.081	0.234	0.031	0.77	0.164	-0.066
16	Regular export order	0.114	0.058	0.172	0.715	-0.016	-0.082
17	Availability of special container	-0.006	-0.119	0.296	0.528	-0.113	0.341
18	Adequate subsidies for export	0.008	-0.021	0.04	-0.058	0.827	0.234
19	Favrouable exchange rate	0.095	0.054	0.242	0.093	0.713	-0.174
20	Financial assistance for plant modernization	0.165	0.216	0.361	0.325	0.425	0.034
21	Uninterrupted power supply	0.063	-0.051	0.159	-0.093	-0.022	0.673
22	Tax exemption	0.075	0.549	-0.016	0.092	0.111	0.586
23	Double taxation relief	0.257	0.541	-0.036	0.094	0.214	0.585

There are six factors that have been identified by the factor analysis. The highly correlated variable in the factor 1 and factor 2 are development of fishing harbour and

easy customs formalities since their factor loading are 0.776 and 0.835 respectively. The highly correlated variable in factor 3 and factor 4 are favourable export import policies and adequate working capital since their factor loading is 0.778 and 0.77 respectively. The highly correlated variable in factor 5 and factor 6 are adequate subsidies for export and uninterrupted power supply since its factor loadings are 0.827 and 0.673 respectively.

6.3.2 Identified factors for the Seafood Export Potentials

The factor analysis has been executed to narrate the measures into important factors needed to enrich the export performance. Initially, the KMO measure of sampling adequacy and Bartlett's test of sphericity has been executed to test the reliability and validity of data for factor analysis. The Eigen value and the percent of variation explained by these factors and the result of reliability and validity of data for factor analysis are given in Table 6.21.

Table 6.21

Identified factors for the Seafood Export Potentials

S.No	Factors	No. of Variables	Eigen Value	Per cent Variation	Cumulative Per cent of Variation
1	Improvement Related factors	7	2.685	14.13	14.13
2	Govt.Norms Related factors	3	2.443	12.86	26.99
3	Export Related factors	4	1.931	10.16	37.15
4	Financial Related Factors	3	1.71	9.05	46.20
5	Market Related factors	3	1.719	9.05	55.25
6	Tax Related factors	3	1.631	8.58	63.83

*Kaiser-Meyer-Olkin measure of Sampling Adequacy : 0.755

*Bartlett's Test of Sphericity Approx Chi Square : 1023.082

Degrees of Freedom : 253
Significance : 0.000

Both the tests satisfy the reliability and validity of variables in each factor since the KMO measure of sampling adequacy is greater than 0.60 and the Chi Square value is significant at zero per cent level. The important factors narrated by the factor analysis are improvement and government norms related factors since its Eigen values are 2.685 and 2.443 respectively. The per cent of variation explained by these two factors are 14.13 and 12.86 per cent respectively. The next two factors narrated by the factor analysis are export and market related factors since their Eigen values are 1.931 and 1.719 respectively whereas its per cent of variation explained are 10.16 and 9.05 respectively. The last two factors narrated by the factor analysis are finance and tax related factors since their respective Eigen values are 1.71 and 1.631 respectively. The per cent of variation explained by these two factors are 9.05 and 8.58 per cent respectively.

6.3.3 Exporters' opinion about Improvement Related Factor

The exporters' opinion on the improvement factor has been measured with the help of the mean score of seven variables among the manufacturing, merchant and ornamental fish exporters. Regarding the opinion on the variables of improvement factor, significant difference among the three groups of exporters has been examined with the help of one way analysis of variance. The results are given in Table 6.22.

Table 6.22

Exporters' opinion about Improvement Related Factor

S.No	Variables in Improvement related factor	Mean Res	F-Statistics		
	related factor	MUE	MEE	OFE	
1	Development of fishing harbour	4.0676	3.9545	3.95	2.489NS
2	Improved means of fishing vessels and equipments	3.8514	3.7955	3.9	3.777*
3	Tax holidays for new exporters	3.7838	3.7727	4.0	0.32NS
4	Easy term loan facilities	3.8649	3.9318	3.0	7.999*
5	Support for modernization	3.7973	3.7727	4.4	3.598*
6	Improved infrastructure	3.5946	3.9773	3.5	2.691NS
7	Increased export assistance	3.7297	3.8182	4.5	0.604NS

^{*}Significant at five per cent level

The highly viewed variable in improvement factor among the manufacturer exporters is development of fishing harbour and easy term loan facilities since their mean scores are 4.0676 and 3.8649 respectively. Among the merchant exporters, these are improved infrastructure and development of fishing harbour since their mean scores are 3.9773 and 3.9545 respectively. Among the ornamental fish exporters, these are increased export assistance and support for modernisation since their mean scores are 4.50 and 4.40 respectively. Regarding the opinion on the improvement measures, significant difference among the three groups of exporters have been noticed in the case of improved means of fishing vessels and equipments, easy term loan facilities and support for modernization since their respective 'F' statistics are significant at five per cent level.

6.3.4 Exporters' opinion about Government Norms

The government norms factor consists of three variables. The mean score of the three variables among the three groups of exporters have been computed separately in order to exhibit the level of perception on the government norms. The one way analysis of variance has been executed to find out the significant difference among the three groups of exporters regarding their view on the government norms. The results are shown in Table 6.23.

Table 6.23

Exporters' opinion about Government Norms

S.No	Variables in Government Norms	Mean Res	F-Statistics		
		MUE	MEE	OFE	
1	Easy Customs formalities	3.7432	3.7727	4.0	0.355NS
2	Reasonable export duties	3.6351	3.75	4.0	0.883NS
3	Government assistance to promote export	3.6081	3.8636	4.0	1.526NS

^{*}NS – Not Significant at five per cent level

The highly viewed variable in government norms related factor among the manufacturer exporters are easy customers formalities and reasonable export duties since their mean scores are 3.7432 and 3.6351 respectively. Among the merchant exporters, these are government assistance to promote export and easy customs formalities since their mean scores are 3.8636 and 3.7727 respectively. Among the ornamental fish exporters the highly viewed variables are easy customers formalities, reasonable export duties and government assistance to promote export since their mean scores are 4.00 in all the three cases.

As regards the perception on on government norms related factor, there is no significant difference among the three groups of exporters since the respective 'F' statistics are not significant at five per cent level.

6.3.5 Export related factor leading to enhance the Seafood Export Potentials

The export related factor consists of four variables. The mean score of the variables in export related factor among the manufacturer exporters, merchant exporters and ornamental fish exporters have been computed separately in order to exhibit the level of view on export related factor. The one way analysis of variance has been executed to find out the significant difference among the three groups of exporters regarding their view on export related factors. The results are given in Table 6.24.

Table 6.24

Export related factor leading to enhance the Seafood Export Potentials

S.No	Variables in Export related Factor	Mean Res	F-Statistics		
	ractor	MUE	MEE	OFE	
1	Favourable Export Import policies	3.5541	3.6818	3.5	0.301NS
2	Authorised quality standard	3.4324	3.8182	4.5	6.005*
3	Adequate clearing forwarding services	3.4595	3.5682	4.5	5.390*
4	Adequate cold storage capacity	3.2973	3.6591	4	2.41NS

^{*}Significant at five per cent level

Among the manufacturer exporters, the highly viewed variables in export related factors are favourable export import policies and adequate clearing and forwarding services since their mean scores are 3.5541 and 3.4595 respectively. Among the merchant exporters, these are authorized quality standard and favourable export-import policy since their mean scores are 3.8182 and 3.6818 respectively.

Among the ornamental fish fxporters, these are authorized quality standard and adequate clearing and forwarding services since their mean scores are 4.5 and 4.50 respectively. Regarding the export related factors, significant difference among the three groups of exporters have been noticed in the case of authorised quality standard and adequate clearing and forwarding services since their respective 'F' statistics are significant at five per cent level.

6.3.6 Market related factor leading to enhance the Seafood Export Potentials

The exporters' view on market related factor has been measured with the help of three variables. The mean scores of the variables in market related factor among the three groups of exporters have been computed separately. Regarding the view on market related factor, the significant difference among the three groups of exporters have been examined with the help of one way analysis of variance. The results are shown in Table 6.25.

Table 6.25

Market related factors leading to enhance the Seafood Export Potentials

S.No	Variables in Market related Factor	Mear Re	F-Statistics		
	ractor	MUE	MEE	OFE	
1	Adequate working capital	3.8514	3.7727	4.0	0.239NS
2	Regular export order	3.6757	3.7273	4.0	0.634NS
3	Availability of special container	3.7432	3.7727	3.5	0.389NS

^{*}NS- Not Significant at five per cent level

The highly viewed variables in the market related factor among the manufacturer exporters are adequate working capital and availability of special container since their mean scores are 3.8514 and 3.7432 respectively. Among the

merchant exporters, these are availability of special container and adequate working capital since their mean scores are 3.7727 and 3.7727 respectively. Whereas among the ornamental fish exporters, these are adequate working capital and regular export order since their mean scores are 4.00 and 4.00 respectively.

Regarding the market related potentials, there is no significant difference among the three groups of exporters since their respective 'F' statistics are not significant at five per cent level.

6.3.7 Finance related factor leading to enhance the Seafood Export Potentials

The exporters' view on finance related factors are discussed with the help of the variables which are identified by the factor analysis. The mean scores of the three variables in finance related factors among the three groups of exporters have been computed separately in order to exhibit the potentials available to the seafood exporters. The one way analysis of variance has been administered to find out the significant difference among the three groups of exporters regarding finance related factor. The results are illustrated in Table 6.26.

Table 6.26

Finance related factor leading to enhance the Seafood Export Potentials

S.No	Variables in Finance related Factor	Mean Res	F-Statistics		
		MUE	MEE	OFE	
1	Adequate subsidy	3.5541	3.4545	3.0	1.668NS
2	Favaourable Exchange Rate	3.5135	3.75	4.5	5.979*
3	Financial assistance for modernization	3.2838	3.7045	3.5	2.714NS

^{*}Significant at five per cent level

Among the manufacturer exporters, the highly viewed variable in finance related potentials are adequate subsidy and favourable exchange rate since their mean scores are 3.5541 and 3.5135 respectively. Among the merchant exporters, these are favourable exchange rate and financial assistance for modernization since their mean scores are 3.75 and 3.7045 respectively whereas among the ornamental fish exporters, these are favourable exchange rate and financial assistance for modernization since their mean scores are 4.00 and 3.50 respectively.

As regards finance related factors, significant difference among the three groups of exporters have been noticed in their view regarding favourable exchange rate since its 'F' statistics is significant at five per cent level.

6.3.8 Tax related factor leading to enhance the Seafood Export Potentials

The seafood exporters' view on tax related factor has been studied with the help of three variables. The mean scores of the variables among the manufacturer exporters, merchant exporters and ornamental fish exporters have been computed separately in order to exhibit the level of perception relating to tax. The one way analysis of variance has been executed to find out the significant difference among the three groups of exporters regarding their view on the tax related factors. The results are shown in Table 6.27.

Table 6.27

Tax related factor leading to enhance the Seafood Export Potentials

S.No	Variables in Tax related Factor	Mean Re	F-Statistics		
		MUE	MEE	OFE	
1	Tax exemption	3.2838	3.3409	3.5	0.157NS
2	Double Taxation relief	3.027	3.0455	3.0	0.008NS
3	Tax Holidays	3.5135	3.7045	4.0	1.177NS

^{*}N.S- Not Significant at five per cent level

The highly viewed variable in tax related potential among the manufacturer exporters are tax holidays and tax exemption since their mean scores are 3.5135 and 3.2838 respectively whereas among the merchant exporters, these are tax holidays and tax exemption since their mean scores are 3.7045 and 3.3409 respectively. Among the ornamental fish exporters, these are also the same but with the mean score of 4.00 and 3.50 respectively. As regards tax related factors, there is no significant, difference among the three groups of exporters since their respective 'F' statistics are not significant at five per cent level.

6.3.9 Reliability and validity test for Seafood Export Potentials

There are six important potential factors. The variables included in each potential vary from 3 to 7. It is imperative to examine the reliability and validity of variables in each potential before summarizing the score of the variables in it. The confirmatory factor analysis has been administered for this purpose. The overall reliability of variables in each potential has been tested with the help of Cronbach alpha. The results are given in Table 6.28.

Table 6.28

Reliability and validity test for Seafood Export Potentials

S. No	Export potential	Range of standardized factor loading	Range of 'T' statistics	Cronbach alpha	Composite reliability	Arrange variance executed
1	Improvement	0.9042-0.6117	4.0914*-2.1449*	0.8048	0.7812	56.83
2	Government norms	0.8509-0.6324	3.4166*-2.3096	0.7443	0.7206	52.04
3	Export	0.8611-0.6502	3.5817*-2.4509*	0.7565	0.7314	53.17
4	Market	0.8794-0.6917	3.6509*-2.7818*	0.8011	0.7801	56.09
5	Finance	0.8868-0.6418	3.7313*-2.3886*	0.7708	0.7514	54.24
6	Tax	0.8917-0.6702	3.8188*-2.6818*	0.7819	0.7636	55.11

^{*}Significant at five per cent level

The standardized factor loading of the variables in each potential are greater than 0.60 which shows the content validity. The significance of 't' statistics of the standardized factor loading of the variables in each potential are significant at five percent level which indicates the contingent validity. It is also supported by the composite reliability and average variance extracted since these are greater than its standard maximum of 0.50 and 50.00 percent respectively. The cronbach alpha of all potentials is greater than its minimum threshold of 0.60 which reveals the internal consistency.

6.3.10 Exporters' view on Potentials for Seafood Export

The exporters' view on the potentials for seafood export has been examined by the mean score of the potential among the exporters. The score of each potential has been computed by the mean score of the variables. The mean score of each potential among the three groups of exporters have been computed separately. The one way analysis of variance has been executed to find out the significant difference among the three groups of exporters. The results are given in Table 6.29.

Table 6.29

Exporters' view on Potentials for Seafood Export

S.No	Exmant Potentials	Mean score	F Statistics		
5.110	Export Potentials	MUE	MEE	OFE	r Staustics
1	Improvement factors	3.8127	3.8604	3.7857	0.7886
2	Government norms	3.6621	3.7954	4.0000	2.1173
3	Export related factors	3.4358	3.6818	4.1250	3.8996*
4	Market related factors	3.7568	3.7576	3.5333	0.4082
5	Finance related factors	3.4565	3.6363	3.6667	1.1175
6	Tax related factors	3.2748	3.3636	3.5000	0.6896

^{*}Significant at five per cent level

The highly viewed potential by the manufacturer exporters are improvement related factors and market related factors since their respective means scores are 3.8127 and 3.7568 whereas among the merchant exporters, these are improvement related factors and government norms related factors since their mean scores are 3.8604 and 3.7954 respectively. Among the ornamental fish exporters, these are export related factors and government norms related factors since their mean scores are 4.1250 and 4.0000 respectively.

Regarding the exporters view on seafood export potentials, significant difference among the three groups of exporters have been seen in the case of export related factors since its 'F' statistics is significant at five per cent level.

6.3.11 Association between the profile variables of the exporters and Potentials for Seafood Export

The profile of the exporters may associate with the level of perception on potentials among the exporters. It is essential to examine such association for some policy implications. The one way analysis of variance has been executed for this purpose. They included profile variables like gender, education, age, income, type of exporters, experience, forms of organisation, legal status of the respondents, registration authority, membership in the association, nature of approval, approval category and capital employed. The result of one way analysis of variance is given in Table 6.30.

Table 6.30
Association between the exporters profile variables and Potentials for Seafood Export

		F Statistics						
S.No	Profile variables	Improvement related factor	Govt. Norms factor	Export related factor	Market related factor	Finance related factor	Tax related factor	
1	Gender	0.3814 NS	4.2996*	0.304 NS	2.1089 NS	4.3884*	0.4082 NS	
2	Education	4.2841*	2.3881 NS	2.4151 NS	1.8339 NS	2.0732 NS	1.4241 NS	
3	Age	0.2982 NS	1.8082 NS	0.7886 NS	2.8033 NS	1.8286 NS	1.9039 NS	
4	Income	8.0892*	7.9082*	1.5892 NS	1.2149 NS	8.9869*	5.9042*	
5	Type of Exporter	8.4413*	2.7382 NS	6.3969*	0.8942 NS	2.9346*	0.9884 NS	
6	Experience	5.0234*	3.5889*	0.7391 NS	0.3496 NS	3.6689*	1.2449 NS	
7	Forms of organisation	0.1942 NS	0.1775 NS	0.6551 NS	6.6991*	0.3894 NS	1.8143 NS	
8	Legal status of the respondents	0.3313 NS	0.2889 NS	0.2896 NS	5.8941*	0.8911 NS	0.9109 NS	
9	Registration Authority	0.4088 NS	0.2811NS	0.7089 NS	1.3841 NS	0.4096 NS	2.0143 NS	
10	Membership in Association	3.6694*	2.4111NS	0.0308 NS	5.0344*	0.3144 NS	6.3641*	
11	Nature of Approval	2.0919 NS	2.0142 NS	5.9696*	5.6449*	5.9084*	1.4094NS	
12	Approval Category	2.1132 NS	6.0996*	0.1156 NS	0.8644 NS	0.9091 NS	1.5249 NS	
13	Capital employed	5.8862*	12.0884*	1.0334 NS	1.3499 NS	11.1944*	0.9944 NS	

^{*}Significant at five per cent level

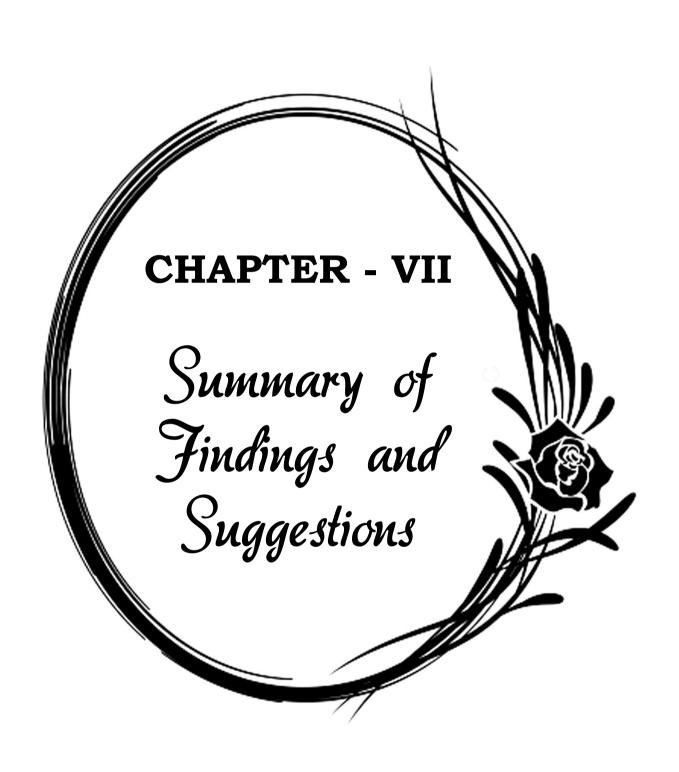
Regarding the view on the improvement related factors, the significantly associating profile of exporters are their education, income, type of exporters, experience, membership in association and capital employed since their respective 'F' statistics are significant at five per cent level. The significantly associating profile variables with the government norms related factors are gender, income, experience, approval category and capital employed whereas regarding the export related factors the significantly associating profile variables are type of exporter and nature of approval status.

Regarding the view on market related factors, the significantly associating profile variables are forms of organisation, legal status of the respondents, membership in association, nature of approval, whereas regarding the view on financial related factors, these profile variables are gender, income, type of exporter, experience, nature of approval and capital employed. Regarding the view on tax related factors, the significantly associating profile variables are income and membership in association since their respective 'F' statistics are significant at five per cent level.

6.4 CONCLUSION

The problems and prospects of the seafood exporters were analysed in this chapter. The analysis of problems faced by the seafood exporters helped the researcher to identify the highly viewed problems among the different categories of the exporters. The study exposed the significantly associating profile variables of the seafood exporters with the problems encountered among the seafood exporters.

The analysis of different roles performed by the Marine Product Development Authority (MPEDA) helped the researcher to assess the seafood exporters' attitude towards MPEDA. The potentials of seafood exportanalysis revealed the factors influencing the potentials of the seafood exports. The significantly associating profile variables with the seafood export potentials identified in the study will help the researcher to understand the potentials of the seafood export in a meaningful manner.



CHAPTER - VII

SUMMARY OF FINDINGS AND SUGGESTIONS

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CHAPTER - VII

SUMMARY OF FINDINGS AND SUGGESTIONS

7.0 INTRODUCTION

The Present study is divided in to four important parts. As the first stage, the export of Indian Marine Products-Scenario in India had been focused whereas it is followed by the discussion on the profile and profile of the exporters and performance of the exporters in Thoothukudi district at the stage. At third stage, the problems in the exports had been studied whereas at the fourth stage, the attitude towards the MPEDA and the important potentials to improve the export performance were focused.

The confined objectives of the study are: (1) To examine the trend of export of Indian seafood exports from 2001-02 to 2011-12; (2) To exhibit the profile of the exporters and the factors leading to start their export units; (3) To analyse the trend of export of Indian seafood and their export performance on the study area; (4) To study the problems of enumerated by the exporters; (5) To measure the exporters' attitude towards MPEDA and its consequences; and (6) to reveal the important potentials to enrich the export performance among the exporters.

There are 179 exporters who have registered their names and units in Marine Product Export Development Authority (MPEDA) at Thoothukudi. They are permitted to export their seafoodfrom anywhere in India. Among the 179 registered exporters only 130 exporters are exporting their seafood from Thoothukudi port. With regard to the selection of sample respondents, census method was adopted. Among 130 exporters, 74 exporters are Manufacturing Exporters, 44 exporters are in Merchant

Exporters and the remaining 12 exporters are in Ornamental Fish Exporters. All the 130 exporters who are exporting seafood are included for the study.

The present study is based on both primary data and secondary data. The primary data has been used as the main source of the study and it was collected from 130 seafood exporters in Thoothukudi district. The primary data was collected through the interview schedule carefully designed after a pilot study and the several discussions with the research guide, the officials of MPEDA and a few exporters. The interview schedule was divided into three parts. The first part of the interview schedule includes the profile of the exporters, factors leading to start the export business and their export performance. The second part of the interview schedule focuses on the problems encountered by the exporters and their attitude towards the role of MPEDA towards the seafood export. The third part of the interview schedule covers the exporters' view on the potentials for the seafood export. The relevant variables were identified with the help of exporters and also the experts in the field. A pilot study was conducted among 30 seafood exporters covering 10 manufacturing exporters, 10 merchant exporters and 10 ornamental fish exporters from the study area. Based on the feedback from the pilot study, the final draft of interview schedule was prepared with few modifications in the questions included in the interview schedule. The final interview schedule was used to collect the data from the exporters.

The secondary data was collected from the various websites, journals and MPEDA reports and publications.

The data collected from the primary and secondary sources were duly edited and tabulated in such a way to analyze and interpret them in the context of the objectives of the study. The collected data were processed with the help of appropriate statistical tools according to the relevance of information required and the nature of the scale of data. The applied statistical tools and tests are given below.

One way analysis of variance has been administered for the following purpose.

- To analyse the exporters' view on factors leading to start Marine Product Export Business and the Role of Marine Product Export Development Authority in export business.
- ➤ To examine the significant difference among the three group of exporters regarding the problems faced by them and potentials for Marine Product Export Business.
- ➤ To assess the relationship between personal profile of the exporters and their problems, factors leading to start the business, Role of MPEDA in Export Business.

Multiple Regression Analysis has been administered for the following purpose

- ➤ To measure the influence of motivating factors on the export performance.
- > To examine the impact of problems on the export performance.
- ➤ To study the impact of MPEDA's role on the export performance.

The confirmatory Factor Analysis and Cronbach Alpha have been used for the following purposes.

- ➤ To measures Reliability and Validity of variables leading to start the Marine Product Export Business
- > To study the Reliability and Validity of variables in problems of exporters, role of MPEDA and Potentials for Marine Product Export.

The Semi log linear and exponential function has been administered for the following purposes.

- To examine the growth rate of Marine Product Export from Thoothukudi.
- To measure the annual and compound growth of export performance in last ten years 2001-02 to 2011-12

7.1 FINDING OF THE STUDY

7.1.1 Findings relating to Profile of Seafood Exporters

The seafood exporters are classified into manufacturer exporter, merchant exporter, and ornamental fish exporters. They are indicated by MUE, MEE and OFE respectively. Following are the findings relating to the profile of seafood exporters.

- It is found that most (79.2 per cent) of the respondents are male. Among the male seafood exporters 57.28 per cent are Manufacturer exporter (MUE) and 31.07 per cent are Merchant exporters (MEE).
- Majority (53.10 per cent) of the seafood exporters are graduates. Among them 53.62 per cent are Manufacturer exporter (MUE) and 40.58 per cent are Merchant exporters (MEE).
- It is inferred that most (52.3 per cent) of the respondents belong to the age group of 36 to 45 years of age. Among them most (58.82 per cent) of the respondents comes under Merchant Exporters.
- It is observed that most (33.80 per cent) of the respondents are having monthly income of ₹40001 to 50000. Among them most (70.45 per cent) of the respondents are manufacturer exporters.

- ➤ It is found that most (38.50 per cent) of the respondents are having 16-20 years of experience. Among them 58 per cent are manufacturer exporters, 32 per cent are merchant exporters.
- It is observed that most (44.62 per cent) of the respondents have started their concerns as the sole proprietorship. Among the sole proprietorship concerns 50 per cent are merchant exporters and 41.38 per cent are manufacturer exporters.
- Majority (97.70 per cent) of the seafood exporters have registered their concern under Marine Product Export Development Authority (MPEDA).
- Most (98.46 per cent) of the concerns are having membership in the Chamber of Commerce.
- It is observed that 73.43 per cent of the seafood exporters are having national standard. Among them all the merchant exporters are having national standard only.
- It is found that most (59.20 per cent) of the seafood export units have invested below 10 lakhs at the beginning. Among the seafood export units who have employed capital below 10 lakhs, 50.65 per cent of the units are manufacturer exporters.
- It is identified that 68.64 per cent of the seafood exporting units are procuring the seafood through agents. Among them 61.80 per cent of the seafood exporters are manufacturer exporters. Only 30.77 per cent of the seafood exporters are having their own vessels for the fish catching.

- It is observed that 43.80 per cent of the seafood exporters are exporting dried items. Among them 50.88 per cent are manufacturer exporters and 49.12 per cent are merchant exporters. Next to dried items, frozen shrimps are being exported by 26.9 per cent of the exporters.
- Most (94.60 per cent) of the seafood exporters are exporting their products through ships only. Among them 56.10 per cent are manufacturer exporters. 34.15 per cent of the exporters are merchant exporters. Only 5.40 per cent of the seafood exporters are exporting their products through air.
- Most (59.20 per cent) of the seafood exporters are exporting their product through export trading houses. Among them 62.34 per cent are manufacturer exporters. 15.40 per cent of the seafood exporters are exporting their product through agent brokers.
- The study reveals that 74.62 per cent of the seafood exporters are exporting their products to Japan. Among them 61.86 per cent are manufacturer exporters. Next to Japan 12.31 per cent of the seafood exporters are exporting their products to South East Asia.
- It is inferred that most (72.30 per cent) of the seafood exporters are following ordinary standard for packing their products for export. Among them 43.62 per cent are manufacturer exporters. Only 18.44 per cent of the seafood exporters are following the European standard. Among them 91.67 per cent are manufacturer exporters.

- It is found that most (65.40 per cent) of the seafood exporters are exporting their products to the wholesalers. Among them 54.12 per cent belongs to manufacturer exporters. Only 20 per cent of the seafood exporters are exporting their products to the retailers. Among them 61.54 per cent belongs to manufacturer exporters.
- It is identified that most (38.50 per cent) of the seafood exporters are exporting dried items. Among them 52 per cent belongs to merchant exporters. Next to dried items exporters are exporting their products in the frozen form. Among them 75.51 per cent are seafood exporters.
- The study reveals that 96.20 per cent of the seafood exporters do not own the container used for export. Only 3.80 per cent of seafood exporters own the container.
- It is inferred from the study that 96.80 per cent of the seafood exporters are taking the container for rent. Among them 57.02 per cent are manufacturer exporters. Only 3.20 per cent of the seafood exporters are taking the containers on lease.

7.1.2 Finding relating to factors leading to start the Seafood Export Business

It is identified that the important factors leading to start the export of seafood among the exporters are product, government policy, business, management, financial, personal and environmental related factors. The most important factors are product and government policy related factors since their Eigen values are 4.379 and 2.906 respectively. The variables in the above said factors explain each factor to the extent of reliable level.

- It is observed that the highly viewed factors by the manufacturer exporters are environmental and government policy related factors since its mean scores are 3.6808 and 3.6227 respectively.
- Among the merchant exporters these are environmental and product related factors since their mean scores are 3.7768 and 3.6508 respectively.
- As regards the ornamental fish exporters, the highly viewed factors are 'environmental' and 'business' related factors since their mean scores are 3.8182 and 3.7882 respectively.
- Among the three groups of exporters significant difference has been noticed in the case of products and business related factors as their 'F' statistics are significant at five percent level.

Association between the profile of the Seafood exporters and the factors leading to start Seafood Export

Association between the profile of the Seafood exporters and Product factor

It is observed that the significantly associating profile variables of the seafood exporters regarding the product related factors are educational status, age of the exporters, type of exporter, legal status of the exporter, membership in the associations, approval category for export, and capital invested.

Association between the profile of the Seafood exporters and Government Policy Factor

As regards the government policy factor, the significantly associating profile variables of the seafood exporters are type of exporters, approval category for export and capital employed in the export business.

Association between the profile of the Seafood Exporters and Business related factors

As regards business related factors are concerned, the significantly associating profile variable is capital employed in the seafood export business.

Association between the profile of the Seafood Exporters and Management factors

As regards the management factors are concerned the significantly associating profile variables of the seafood exporters are age, income and type of the exporters.

Association between the profile of the Seafood Exporters and Financial factors

As regards the financial factors are concerned, the significantly associating profile variables of the seafood exporters are registration, authority and nature of approval status.

Association between the profile of the Seafood Exporters and Personal factors

As regards the personal factors, the significantly associating profile variables of the seafood exporters are type of exporters, experience of the exporters, forms of organization and membership in association.

Association between the profile of the Seafood exporters and Environmental factors

As regards the environmental factors are concerned, the significantly associating profile variables of the exporters are type of exporters, forms of organization and approval category for export business.

7.1.3 Finding relating to Seafood Export Performance from Thoothukudi

Product wise Performance of Seafood Export

- The export of frozen shrimp has increased from 8407 tons in the year 2001-02 to 16207 tons in 2011-12. The rate of increase during this period was 92.78 per cent. The rate of increase in the export of frozen fish and frozen cuttle fish during the study period are 1651.25 and 173.02 per cent respectively. The share of export of frozen shrimps is more (39.19 per cent) in the total seafood export. The share of export of frozen cuttle fish comes second in the ranking as its percentage of share to the total seafood export is 14.04 per cent.
- The significant annual growth rates are noticed in the export of frozen shrimp, frozen cuttle fish, frozen squid, dried items and others.
- The higher compound growth rates are noticed in the export of frozen fish and dried items since its compound growth rates are 16.681 and 11.173 per cent. But the co-efficient of variation of frozen fish very high (205.654 per cent).
- It is observed that the rate of increase in the export of frozen shrimp in terms of value is 120.49 per cent. The rate of increase in the export of frozen fish and Cuttle fish during the study period are 133.22 and 553.79 per cent respectively. The rate of increase in the export of frozen squid and dried items during the study period are 186.09 and 259.36 per cent respectively. The percentage share of the value of export of frozen shrimp is more (64.06 per cent) than all the other seafood items. In terms of value

the dried item is ranked second in the total seafood export as its percentage of share is 11.20.

The significant annual growth rate in the value of export during the study period is noticed in the export of all six commodities. The higher compound growth rate is noticed in the case of export of frozen cuttle fish since its compound growth rate is 21.34 per cent.

Country Wise Performance of Seafood Export

- It is inferred that the important export destinations to which the seafood products are exported from the study area are European Union and Japan. The percentage share of the seafood export in terms of quantity to European Union is more (33.46 per cent) compared to all the other countries. Japan comes second in the overall ranking as its percentage of share to the total export is 32.30.
- The significant annual growth rates are noticed in the case of export of seafood to European Union, China, Middle East and others since their respective annual growth rates are significant at five per cent level.
- The higher compound growth rates are noticed in the seafood export in terms of quantity to Middle East (26.91 per cent) and to China (25.1172 per cent). But their co-efficient of variation is more in both the cases.
- As regards the value of seafood export, Japan and European Union finds the place at the top of the rank during the study period. The percentage share of seafood export to Japan in the total seafood export is more

- (44.31 per cent) compared to all the other countries. European Union comes second in the rank with 27.59 per cent to total exports.
- Significant annual growth rate in terms of value is noticed in all countries except South East Asia. The higher compound growth rate in the value of export is noticed in European Union with 11.686 per cent.

7.1.4 Finding relating to profit earned by the Seafood Exporters Profit earned by the Manufacturer Seafood Exporters

- It is found that total profit earned by the manufacturer exporters have increased from 3.39 crores 5.14 crores during the study period. The higher percentage of increase is noticed in the years 2004 and 2011. The analysis reveals that there is a consistent growth in the profit earned by the manufacturer exporters during the study period. The compound growth rate of profit earned during the period is 4.71 per cent.
- It is observed that the profit earned by the merchant exporters have increased from ₹1.55 crores in the year 2002 to ₹1.86 crores in the year 2011. The increase during this period is 20.00 percent. The higher rate of increase in the profit over the previous year was reported in the years 2003 and 2005 among merchant exporters.

The analysis reveals that there is a consistent growth of profit earned by the merchant exporters during the study period. It is revealed through the compound growth rate 2.09 per cent.

It is identified that the profit earned by the ornamental fish exporters is increased by 27.97 percent during the study period. The higher percentage of increase in the profit is seen in the years 2004 and 2005 among the ornamental fish exporters.

The analysis reveals that there is a consistent growth of profit earned by the ornamental fish exporters during the study period since the compound growth rate is 3.28 per cent.

Impact of factors Leading to start the export business on Export Performance

- It is inferred that the significantly influencing factors to start the seafood export business on the export performance among the manufacturer exporters are product factors, management factors, personal factors and environment related factors since their respective regression coefficients are significant at five per cent level.
- Among the merchant exporters the significantly influencing factors to start the export business on the export performance are product factors, management factors, finance related factors, personal factors and environmental factors.
- Among the ornamental fish exporters the significantly influencing factors to start the export business on the export performance are product factors, government policy related factors, business factors, personal factors and environment related factors since their respective regression coefficients are significant at five per cent level.

The analysis of pooled data reveals that the important factors influencing the export performance of the exporters are product factors, management factors, personal factors and environment related factors.

7.1.5 Finding relating to problems faced by Seafood Exporters

Procurement problems faced by Seafood Exporters

- It is observed that the high cost of seafood is found to be the significant procurement problems among the manufacturer exporters and merchant exporters since its mean scores are 4.1212 and 4.0682 respectively.
- Among the ornamental fish exporters the lack of international services is found to be the significant procurement problems since its mean score is 5.00.
- Regarding the procurement problem, the significant difference among the three group of exporters have been noticed in the case of high cost of seafood, inadequate supply of seafood, wastages, decomposition of seafood, procurement from the different locations, dishonesty of procurement staff, lack of international services, inferior quality and underweight of seafood since their respective 'F' statistics are significant at five per cent level.

Storage and processing problems faced by Seafood Exporters

The highly viewed variables in storage and processing problems regarding seafood manufacturing exporters are labour problems and technical problems since their means are 4.5405 and 4.2027.

- As regards the seafood merchant exporters the highly viewed storage and processing problems are labour problems and low storage capacity since its mean scores are 4.4545 and 4.1364.
- Among the ornamental fish exporters the highly viewed variables relating to storage and processing problems are labour problems and high maintenance cost of the plant since their mean scores are 5.0.
- Among the three groups of exporters significant difference have been noticed in the case of storage and processing problems regarding high maintenance cost of plant, power shortage and high replacement cost of plant and machinery as their respective 'F' statistics are significant at 5 per cent level.

Transportation problems faced by Seafood Exporters

- The highly viewed variables among the manufacturer exporters about the transportation problems are the time delay in transportation and short supply of special containers since their mean scores are 3.6081 and 3.473 respectively.
- As regards the merchant exporters are concerned the highly viewed transportation problems are high shipment cost and high air cargo tariff its mean scores are 3.8182.
- Among the ornamental fish exporters the highly viewed transportation problems are short supply of special containers and high shipment cost since its mean scores are 4.50 and 4.3333 respectively.

As regards transportation problems are concerned significant difference exists among the three groups of exporters in respect of high shipment cost, high air cargo tariff and short supply of special containers since its 'F' statistics are significant at 5 per cent level.

Financial problems faced by Seafood Exporters

- It is identified that the highly viewed financial problems by the manufacturer exporters are fluctuation in the exchange rate and high rejection rate since its mean scores are 3.8636 and 3.7162 respectively.
- Among the merchant exporters the highly viewed financial problems are the high rejection rate, inadequate working capital, inadequate capital for modernization and fluctuation in prices for the seafood since the mean scores are 3.8636 and 3.8182.
- Among the ornamental fish exporters the highly viewed financial problems are inadequate working capital and inadequate capital for modernization since its mean scores are 4.00.
- As regards the financial problems significant difference exists among the three groups of seafood exporters in case of inadequate working capital, inadequate capital for modernization, fluctuation in the exchange rate and fluctuation in the prices for the seafood since its 'F' statistics is significant at 5 per cent level.

Exportproblems faced by Seafood Exporters

- It is observed that the highly viewed variables in export problems by the manufacturer exporters are inadequate cold storage capacity and too many government regularities for export since its mean score are 3.5135 and 3.4324 respectively.
- Among the merchant exporters the highly viewed export problems are inadequate warehouse facility in ports, inadequate government subsidy and import restrictions by other countries since its mean scores are 3.8182.
- Among the ornamental fish exporters, the highly viewed export problems are inadequate warehouse facility in ports, irregular supply of containers, inadequate government subsidy and too many government regularities for export as its mean scores are 4.00.
- As regards the export problems, significant difference exists among the three groups of exporters in case of inadequate warehouse facility in ports, irregular supply of containers and inadequate government subsidy since their respective 'F' statistics are significant at five per cent level.
- The highly viewed problem of seafood exporters among the manufacturer exporters, merchant exporters and ornamental fish exporters is storage and processing since their mean scores are 4.2733, 3.9848 and 4.3333 respectively. Among the three group of seafood exporters significant difference exists regarding procurement, storage and processing, transportation and export problems since their 'F' statistics are significant five per cent level.

Association between Profile Variables of the Seafood Exporters and their Problems

Association between Profile Variables of the Seafood Exporters and Procurement problem

It is inferred that the significantly associating profile variables of the seafood exporters regarding the procurement problems are education, income, type of exporter, experience and membership in association since their 'F' statistics are significant at 5 per cent level.

Association between Profile Variables of the Seafood Exporters and Storage and processing problem

As regards the storage and processing problem, the significantly associating profile variable is type of exporter since its 'F' statistics is significant at 5 per cent level.

Association between Profile Variables of the Seafood Exporters and Transportation problems

The significantly associating profile variables regarding the transportation problems are income and capital employed since their 'F' statistics are significant at 5 per cent level.

Association between Profile Variables of the Seafood Exportersand Financial problem

As regards the financial problem, the significantly associating profile variables are age, income, membership in association, nature of approval, approval category and capital employed since their 'F' statistics are significant at 5 per cent level.

Association between Profile Variables of the Seafood Exporters Export related problem

Regarding the export related problem, the significantly associating profile variables are gender, income, experience, approval category and capital employed since their 'F' statistics are significant at 5 per cent level.

Impact of Seafood Exporters Problems on their Performance

- It is observed that the significantly influencing problems on the export performance among the manufacturer exporters, merchant exporters and ornamental fish exporters are procurement problems, problems of storage and processing and financial problems as their regression co-efficient are significant at five per cent level.
- As regards the overall influence of the problems on the export performance among the three groups of exporters, significant influence is noticed case of procurement, storage and processing and financial problems.

7.1.6 Finding relating to the Role of Marine Product Export Development Authority (MPEDA) in Export Development

Perception on the Regulatory Functions of MPEDA

As regards the seafood exporters perception on the regulatory functions of MPEDA, it is identified that the highly viewed variable among the manufacturer exporters is the off-shore and deep sea fishing regulatory measures.

- Among the merchant exporters and ornamental fish exporters the highly viewed variable relating to regulatory functions of MPEDA is the registration of processing and storage premises since its mean scores are 3.6591and 4.0 respectively.
- Regarding the overall perception on the regulatory functions of MPEDA significant difference exists among the three groups of exporters in the case of inspection of seafood for ensuring quality, regulating export of seafood and promotional activities since their respective 'F' statistics are significant at five per cent level.

Perception on the Technology Functions of MPEDA

- It is observed that the highly viewed perception variable on technology functions of MPEDA among the manufacturer exporters and the merchant exporters is market intelligence since its mean scores are 3.6892 and 3.8182 respectively.
- As regards the ornamental fish exporters the highly viewed perception variables on technology functions of MPEDA are 'technology up gradation' market intelligence and trade fair participation since its mean scores are 3.50 and 3.0 respectively.
- As regards the overall perception on the technology functions of MPEDA significant differencehave been noticed among the three groups of exporters in respect of waste reduction and quality improvement since its 'F' statistics is significant at five per cent level.

Perception on the Market promotion Function of MPEDA

- It is inferred that the highly viewed variable regarding the market promotion functions of MPEDA among the manufacturer exporters are 'sponsoring trade delegations' and value addition since its mean scores are 3.4595 and 3.4459 respectively.
- As regards the merchant exporters the highly viewed variable regarding the market promotion functions of MPEDA are sponsoring trade delegations' and 'overseas publicity' since its mean scores are 3.2955 and 3.2901 respectively.
- Among the ornamental exporters the highly viewed variable regarding the market promotion functions of MPEDA are 'sponsoring trade delegations' and 'support services' since its mean scores are 4.0 and 3.6 respectively.
- Significant difference among the three groups of exporters perception have been noticed in the market promotion function of MPEDA in respect of 'sponsoring trade delegation' and 'overseas publicity' since their respective 'F' statistics are significant at five per cent level.

Perception on the Export promotion Function of MPEDA

It is found that the highly viewed variables regarding the seafood export promotion functions of MPEDA among the manufacturer exporters are 'promotional assistance' and 'infrastructure development' since its mean scores are 3.4189 and 3.3243.

- Among the merchant exporters the highly viewed variables in respect of export promotion functions of MPEDA are 'extension and training' and diversified fishing since its mean score are 3.2045 in both the cases.
- Among the ornamental fish exporters the highly viewed variables regarding the export promotion functions of MPEDA are 'extension training' and 'promotional assistance' since their mean scores are 3.0in both the cases.
- Significant difference among the three groups of exporters have been noticed in their perception on the export promotion function of MPEDA in respect of 'infrastructure development', 'promotional assistance and 'development of capture fisheries' since their respective 'F' statistics are significant at five per cent level.

Perception on the Development of Fisheries Function of MPEDA

- It is identified that the highly perceived variable in the development of fisheries function among the manufacturer exporters and merchant exporters are 'resource specific fishing' and 'eco friendly and sustainable shrimp aquaculture' since its mean scores are 3.3243, 3.1892 and 3.1818 respectively.
- Among the ornamental fish exporters the highly perceived variables in the development of fisheries function are 'development of culture fisheries' and 'eco friendly and sustainable shrimp aquaculture' since its mean scores is 2.50 respectively.

Significant difference among the three groups of exporters have been noticed in respect of the perception on the development of fisheries function of MPEDA regarding all the three variables included for the study since their respective 'F' statistics are significant at five per cent level.

Exporters view on the Role of MPEDA

- It is observed that the highly viewed MPEDA's function among the manufacturer exporter is regulatory functions since its mean score is 3.4540. Among the merchant exporters the highly viewed functions of MPEDA is 'technology' since its mean score is 3.3546 whereas among the ornamental fish exporters the highly viewed MPEDA's function is 'regulatory function' since its mean score is 3.7161.
- Significant difference among the three groups of exporters have been noticed in the case of 'regulatory functions', 'export promotion function' and 'development of fisheries function' of MPEDA since their 'F' statistics are significant at five per cent level.

Association between the Profile variables and the Role of MPEDA

- ➤ It is inferred that the significantly associating profile variables of exporters regarding the regularity functions of MPEDA are 'age', 'type of exporter' and 'legal status' since their mean scores are 3.256, 3.520 and 2.883.
- As regards the technology functions of MPEDA the significantly associating profile variable of the exporters is 'capital invested' since its mean score is 6.823.

- In the case of trading functions of MPEDA the significantly associating profile variable of exporters is 'education' since its mean score is 3.853.
- In the case of export promotion functions of MPEDA the significantly associating profile variable of the exporters is 'type of exporter' since its mean score is 10.193.
- Regarding the development of fisheries functions of MPEDA the significantly associating profile variables are 'type of exporters' and 'education' since its mean score are 4.151 and 3.231 respectively.

Attitude of Seafood Exporters towards the role of MPEDA

- Majority (66.20 per cent) of the seafood exporters are satisfied about the role of MPEDA.
- The significantly influencing role of MPEDA on the overall attitude among the manufacturer exporter are 'market promotion', 'technology' and 'export promotion' since their respective regression coefficients are significant at five per cent level.
- Among the merchant exporters the significantly influencing role of MPEDA are development of fisheries, regulatory functions, and market promotion functions since their respective regression coefficients are significant at five per cent level.
- As regards the ornamental fish exporters the significantly influencing role of MPEDA are regulatory functions and technology functions since their respective regression coefficients are significant at five per cent level.

The role MPEDA as regards the regulatory functions, technological function and market promotions are having more influence on the overall attitude of the exporters since their respective regression coefficients are significant at five per cent level.

7.1.7 Finding relating to Potentials of Seafood Export

Factors influencing the Potentials for the Seafood Export

- The highly correlated variables are development of fishing harbour, easy customs formalities, favourable export formalities, adequate working capital, adequate subsidies for export and uninterrupted power supply since their factor loadings are 0.776, 0.835, 0.778, 0.77, 0.827 and 0.673 respectively.
- It is observed that the important factors identified for the seafood export potential among the exporters are improvement related factors and government norms related factors since their Eigen value are 2.685 and 2.443 respectively.

Seafood Exporters opinion about Improvement Related Factor

- It is inferred that the highly viewed improvement related factors among the manufacturer exporters and merchant exporters are 'development of fishing harbour' and 'improved infrastructure' since its mean scores are 4.0676 and 3.9773 respectively.
- Among the ornamental fish exporters the highly viewed improvement related factors are increased export assistance and support for modernization since its mean scores are 4.5 and 4.4 respectively.

Regarding the exporters opinion about the improvement related factors significant difference among the three groups of exporters have been noticed in the case of 'improved means of fishing vessels and equipments', 'easy term loan facilities' and 'support for modernization' since their respective 'F' statistics are significant at five per cent level.

Seafood Exporters opinion about Government norms Related Factor

- It is found that the highly viewed variable in the government norms related factors among the manufacturer exporters and merchant exporters are 'easy customs formalities' and 'Government assistance to promote export' since their mean scores are 3.7432 and 3.8636 respectively.
- Among the ornamental fish exporters the highly viewed variables in the government norms related factor are 'easy customs formalities', 'Government assistance to promote export' and 'reasonable export duties' since its mean scores are 4.00.
- Regarding the exporters' opinion about the government norms related factor, there is no significant difference among the three groups of exporters since their respective 'F' statistics are not significant at five per cent level.

Export related factors leading to enhance the Seafood export potentials

Regarding the export related factors leading to enhance the seafood export potentials, the highly viewed variables among the manufacturer exporters and merchant exporters are 'favourable export-import policies' and 'authorised quality standard' since their mean scores are 3.5541 and 3.8182 respectively.

- Among the ornamental fish exporters the highly viewed export related factors leading to enhance the seafood export potentials are 'authorized quality standard' and 'adequate clearing and forwarding services' since their mean scores are 4.5 respectively.
- Regarding export related factors leading to enhance the seafood export potentials, significant difference among the three groups of exporters have been noticed in the case of 'authorized quality standard' and 'adequate clearing and forwarding services' since their respective 'F' statistics are significant at five per cent level.

Market related factors leading to enhance the Seafood export potentials

- As regards the market related factors leading to enhance the seafood export potentials the highly viewed variables among the manufacturer exporters and merchant exporters are 'adequate working capital' and 'availability of special container' since their mean scores are 3.8514 and 3.7727 respectively.
- Among the ornamental fish exporters the highly viewed market related factors leading to enhance the seafood export potentials are 'adequate working capital' and 'regular export orders' since their mean scores are 4.00 respectively.
- As regards the market related factors leading to enhance the seafood export potentials there is no significant difference among the three groups of exporters since their respective 'F' statistics are not significant at five per cent level.

Finance related factors leading to enhance the Seafood export potentials

- In the case of finance related factors leading to enhance the seafood export potentials the highly viewed variables among the manufacturer exporters and merchant exporters are 'adequate subsidy' and 'favourable exchange rate' since their mean scores are 3.5541 and 3.750 respectively.
- Among the ornamental fish exporters the highly viewed finance related factor leading to enhance the seafood export potentials is 'favourable exchange rate' since its mean score is 4.50.
- Regarding the finance related factors leading to enhance the seafood export potentials, the significant difference among the three group of exporters have been noticed in the case of 'favourable exchange rate' since its 'F' statistics is significant at five per cent level.

Taxrelated factors leading to enhance the Seafood export potentials

- ➤ It is found that the highly viewed tax related factors leading to enhance the seafood export potentials among the manufacturer exporters, merchant exporters and ornamental fish exporters is the 'tax holidays' since its mean scores are 3.5135, 3.7045 and 4.00 respectively.
- Regarding the tax related factors leading to enhance the seafood export potentials there is no significant difference among the three groups of exporters since their respective 'F' statistics are not significant at five per cent level.

- It is observed that the highly viewed factor leading to enhance the potentials for the seafood export among the manufacturer exporters, merchant exporters and ornamental fish exporters are 'improvement related factor' and 'export related factors since their mean scores are 3.8127, 3.8604 and 4.1250 respectively.
- Significant difference among the three groups of exporters relating to factor leading to enhance the potentials for the seafood export have been seen in the case of export related factors since its 'F' statistics is significant at five per cent level.

Association between the Profile variables of Seafood Exporters and the Potentials for Seafood Export

Association between Profile of the Seafood Exporters and the Improvement Factor

As regards the association between the profile of the exporters and the improvement factor which enhances the potential for seafood export the significantly associating variables are 'education', 'income', 'type of exporter', 'experience', 'membership in association' and 'capital employed'.

Association between the Profile of the Seafood Exporters and Government norms factor

In respect of the association between the profile of the exporters and the improvement factor which enhances the potential for the seafood export the significantly associating variables are gender, income, experience, category of approval and capital employed.

Association between the Profile of the Seafood Exporters and Export Promotion Factor

As regards the association between the profile of the exporters and the export promotion factor which enhances the potential for the seafood export the significantly associating variables are type of exporter and nature of approval status.

Association between the Profile of the Seafood Exporters and Market Promotion Factor

In respect of association between the profile of the exporters and the market promotion factor which enhances the potential for the seafood export the significantly associating variables are forms of organisation, legal status of the exporters, membership in association and nature of approval status.

Association between the Profile of the Seafood Exporters and Finance Factor

As regards the association between the profile of the exporters and the finance related factors which enhances the potential for the seafood export the significantly associating variables are gender, income, type of exporter, experience, nature of approval status and capital employed.

Association between the Profile of the Seafood Exporters and Tax related factors

In respect of association between the profile of the exporters and the tax related factors which enhances the potential for the seafood export, the significantly associating variables are income and membership in associations.

7.2 SUGGESTIONS

7.2.1 Suggestion to the seafood Exporters

Following are the suggestions based on the findings of the seafood export performance and potentials of marine fishing industry in Thoothukudi district.

- As the exports are mainly confined to the selected marine food products, like dried seafood and frozen seafood especially shrimps, the market for the other seafood items need to be explored. Moreover, exporters are not dealing with value addition to seafood. Therefore the seafood exporters must explore the potentials for the seafood value addition and the market for the same.
- The seafood exports from Thoothukudi are mainly confined to Asian Countries and Middle East Asian Countries. Therefore the exporters must explore new market potentials in other countries especially in the European Union and USA.
- Majority (68.46 per cent) of the seafood exporters are procuring the seafood through agents. Therefore the seafood exporters can think about the ways and means to procure the seafood directly from the fishermen or through direct auction. This will help the exporters to reduce the high procurement cost of seafood.
- Majority (43.80 per cent) of the seafood exporters are exporting dried items. The exporters must find market for the other seafood items which are available in the study area.

- Only 18.44 per cent of the seafood exporters are having European standard code for packing the seafood. Seafood exporters from the study area must follow the European standard code for increasing their export to European countries. Likewise only 8.46 per cent of the seafood exporters are following USA packing code. The seafood exporters must follow the USA code also to increase the seafood export.
- Majority (94.60 per cent) of the seafood are exported through sea. The
 export through air is very meager (5.40 per cent). So the exporters can
 think of using the air transport for delivering the seafood quickly.
- Majority (65.40 per cent) of the seafood are exported to the wholesalers.
 The state buying organizations are very less (7.70 per cent). The seafood exporters must find other state buying organizations to increase the seafood export.
- The seafood exporters must create awareness among the owners of the fish trawlers and those who are using the country boats for catching fish not to use the banned fish nets and other unfair means for catching fish.
- The labour problem is identified as the significant problem among the seafood exporters. In order to reduce this problem the associations involved in the seafood export promotion must organize training programmes to the unemployed youths.
- Improper time management among the exporters increases the carrying cost, transport cost and other costs. The exporters should manage the time loss and also the cost involved in it. The optimal time management may

improve the profitability of the exporters and also increase the marketability of the exporters.

• The export performance analysis indicates that the growth of exports of frozen shrimp and frozen cuttlefish are higher from the study area. Hence, the exporters are advised to focus on the export of multi seafood to the foreign countries instead of concentrating on one or two products. This will help the exporters to diversify their risk in export marketing.

7.2.2 Suggestion to the Government

- As most (43.80 per cent) of the seafood exporters are exporting dried items, the Government must organize trade fairs for the other seafood in the foreign countries where there is a scope for exporting the Indian seafood.
- The most (74.62 per cent) preferred destination for the export of seafood from Thoothukudi district is Japan. The export of seafood to European countries is very meager (2.31 per cent) from the study area. So the Government must encourage the exporters by extending the export assistances to increase the seafood exports to other countries.
- Government of India must enter in to agreement with USA and European countries to reduce the restrictions and other formalities for exporting seafood. The relaxation in the restrictions imposed by the EU and USA will help the seafood exporters to increase the export to those countries.

- Government of India can send a high level delegates comprising of seafood exporters to USA and European countries to explore the potentials for Indian seafood.
- The favorable government policies in respect of export will encourage the seafood exporters to enhance their export.
- The tax holidays to the seafood exporters will help the exporters enter in to the export business.
- The irregular supply of the seafood found to be the significant problem among the manufacturer exporters and merchant exporters. So the Government of India could introduce new regulations for catching fish and the means used for catching fish. Government must explore the coastal ecology and take necessary steps to enhance the coastal resources.
- Government must give training to the micro and small enterprises to produce value added seafood in order to increase the export of seafood.
- Government must provide uninterrupted power supply to the storage and processing plants to reduce the wastage due to the power shortage.
- The government must conduct training programmes to the seafood exporters and to those who are interested in starting the seafood export business about the value added products that are in greater demand in the foreign countries like USA and EU.

- As the inadequacy of working capital is found to be the significant problem among the seafood exporters, government must initiate necessary measures to provide working capital through banks at the reduced rate of interest in order to enhance the seafood export.
- Government must give special fund for the modernization of storage and processing plants. This will encourage the micro and small entrepreneurs to take advantage of this and involve themselves in the seafood export business.
- The inadequate government subsidies for the promotion of seafood exports are found to be one of the significant problems. So the government may introduce new subsidy schemes or enhance the subsidies to the seafood exporters.
- Irregular supply of containers is found to be one of the problems among the seafood exporters. In order to reduce the irregular supply of containers the government must extend soft loans to the seafood exporters to acquire the necessary containers. As the seafood exporters need special containers, the government must initiate some special drives in this regard to provide this facility to the seafood exporters.
- The government shall pay special attention for the development of fishing harbour in order to increase the fish catch. This will increase the availability of seafood and boost the export of seafood from the study area.

- Easy custom formalities will encourage the seafood exporters to entre in to the business.
- There exists uncertainty in prices in the international market with the economic recession spreading to most of the target markets. The price uncertainties lead todelay in payments, loss in revenue and delay in realizing new markets. The uncertainty in prices often lead to additional cost of storage and the material getting delayed in shipment and increased demurrage. Government must take this into account and must give necessary export assistance and subsidies to meet the additional cost and to meet the demand.

7.2.3 Suggestion to the Supporting Institution

- The registration formalities and other related norms for the export of seafood may be relaxed for the micro and small entrepreneurs to enter in to the seafood export business.
- MPEDA and other supporting institutions must conduct survey to assess
 the seafood market potentials in the foreign countries and can organize
 trade fairs in the foreign countries to expose the Indian seafood in the
 foreign countries.
- Since the exporters and fishermen are in need of special training on their activities, the supporting institutions may establish some regional training centers to provide adequate training to the exporters and fishermen to export their products.

- MPEDA must involve themselves in the exploration of marine resources using the latest technologies and by using the Indian satellites for this purpose.
- MPEDA must encourage deep sea fishing and necessary infrastructural facilities must be provided to the fishermen.
- The lack of market and product information leads to demand and supply constraints. On the supply side, the awareness on eco-labeling, catch certificate and numerous trade regulations and quality standards becomes important. The lack of proper market intelligence and poor market news leads to the lag in equipping the seafood exporters. So the supporting institutions must take this in to consideration and awareness need to be created about all the formalities to be fulfilled in order to increase export market for the seafood.

7.3 CONCLUSION

The study revealed that the high cost of marine products, irregular supply of marine products, labour problems, low storage capacity, short supply of special containers inadequate working capital, high rejection rate, inadequate government subsidy, import restriction by other countries government regularities for export were the major impediments faced by the exporters. It is to be noted that amidst the global recession and economic meltdown the sector performed well. Contrary to the major competitors slowdown in export growth the country's sea food trade grew in quantum as well as value. But it has to be taken care that the seafood exports has been the one sector which had been consistently growing and registered a sustained growth amidst competition from other countries. Indian seafood trade continues unabated amidst

numerous non-tariff barriers and regulations remain as a major delicacy across the world. Governmental support is a requisite to ensure that the sector does not suffer in the backdrop of unfair trade regulations and equivocal quality standards by the target markets.

Export of seafood plays a vital role in fisheries development in India by providing employment and income to millions engaged in fishing, aquaculture, processing and allied activities. This sector, if developed appropriately could make India one of the top exporters of seafood in the world. Despite India's great potential, the export sector has not been able to realise this owing to various constraints. In order to overcome these barriers and to achieve steady growth, it is necessary to set firm goals with a long term perspective and work assiduously towards achieving these goals.

The present study will help the planners and the decision makers to review the existing policies to amend the provisions of the existing Act which governs the seafood industry. Based on the experience gained by doing this research the researcher has identified the following issues for an in depth study.

SCOPE FOR FUTURE STUDIES

- A study on the Export Potentials of value added Marine products in Tamil Nadu.
- A study on the future strategies for the growth of seafood industry in Tamil Nadu.
- A study on the Market Potentials and Economic viability of the Value added Marine products in Tamil Nadu.
- 4. A Study on the Role of Marine Product Export Development Authority in the Export of Marine Products from Thoothukudi District.
- Constraints analysis on the impediments faced by the Indian Seafood
 Exporters with special reference to Tamil Nadu.

The researcher will feel amply rewarded if the present study helps to undertake similar studies in the areas suggested above.



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APPENDIX - I

A STUDY ON THE SEAFOOD EXPORT PERFORMANCE AND POTENTIALS OF MARINE FISHING INDUSTRY IN THOOTHUKUDI DISTRICTS

INTERVIEW SCHEDULE

Personal Profi	le:

erso	nai Profile:		
1.	Name of the concern:		
2.	Sex		
	a) Male	b) Female	
3.	Educational Qualification		
	a) Up to X std	b) SSLC	c) HSC
	d) Graduate	e) Diploma	f) Professional
4.	Age		
	a) Below 25 years	b) 25-35 Years	
	c) 35-40 Years	d) Above 45 years	
5.	Monthly Income In ₹		
	a) Upto 10000	b) 10000-20000	c) 20001-30000
	d) 30001-40000	e) 40001-50000	e) above 50000
Busii	ness Profile:		
1.	Type of Exporter		
	a) Manufacturer Exporter	b) Merchant I	Exporter
	c) Ornamental fish exporter		
2.	Year of establishment		
3.	How long have you been doi	ng this business?	
	a) Upto 5 Years	b) 5-10 Years	c) 11-15 years
	d)16-20 Years	e) Above 20 Years	

4.	Forms of Organisation		
	a) Sole proprietorship	b) Partnership Firm	c) Limited Company
5.	Is it a registered concern?		
	a) Yes	b) No	
6.	If yes state the Authority und	ler which it is registere	ed
	a) MPEDA	b) DIC	
7.	State your membership the fo	ollowing organization	
	a) Chambers of Commerce	b) Export Promotion	Council
	c) RCMC under the EXIM p	olicy	
8.	Is your plant approved for Se	eafood Export?	
	a) Yes	b) No	
9.	If yes state the Category for	which it is approved	
	a) National STD	b) USA STD c)	European STD
10.	Capital Employed at the begin	inning ₹ in Lakhs	
	a) Below 10	b) 10-30	c) 3-50 d) above 50
11.	Sources of Sea foods		
	a) Fish catch through own ve	essels b) By Agents	
	c) Direct Auction	d) Others	
12.	What kind of Sea foods expo	orted by you	
	a) Frozen Shrimp	b) Frozen Cuttlefish	c) Frozen Fish
	d) Frozen Squid	e) Dried Items	f) Live Items
	g) Chilled Items	h) Others	
13.	What mode of transport do y	ou use for exporting th	ne Sea foods?
	a) Sea	b) Air	

14. Please give the Rank for using Sea Transport

S. No	Reason	Rank
1	Comparatively lesser cost	
2	Nearness to Port	
3	Availability of Container facilities	
4	Value added Seafood	
5	Preference of the Importer	
6	Availability of Special container for shipment	

15. Please give the Rank for using Air Transport

d) European Std code

S. No	Reason	Rank
1	Urgent Order	
2	Perishability of the product	
3	Live item	
4	Nearness to port	
5	Lesser volume of cargo space	
6	Good air cargo facility	

	4	inearness to p	OIt				
	5	Lesser volum	e of car	go space			
	6	Good air carg	o facili	ty			
16.	Mentio	on the channel t	through	used for expo	ort of Sea foods		
	a) Exp	ort Merchants		b) Export Tra	ading Houses		
	c) Trac	ding Companie	s	d) Export dro	op shipper	e) Ag	gent Broker
17.	State ti	he countries for	r which	the Sea foods	are exported		
	a) Japa	ın	b) US	A	c) European U	Jnion	
	d) Chi	na	e) Sou	th East Asia	f) Middle Eas	t	g) Others
18.	Are yo	ou following an	y stand	ard for packing	g?		
	a) Yes		b) No				
19.	If yes	state the standa	rd follo	wed			
	a) Brit	ish Std packing	code	b) US	SA Code	c) Ord	dinary Std

20.	State the	whom	the Sea	a foods	are exp	orted							
	a) Distri	butor			b) Who	lesaler							
	c) Retail	ers			d) State	Buying	g organ	ization					
21.	State ho	w the S	ea food	ls are ex	kported								
	a) Frizz				b) Chill			c) Live	e				
	d) Ready	y to Eat			e) other	forms							
22	ъ 1	ı	C	0									
22.	Do you l	nave ov											
	a) Yes			b) No									
23.	If no hov	w you p	rocure	contain	er for S	Sea food	ls expo	rt					
	a) Rent		1	b) Leas	e								
24.	Profit ea	rned fo	r the ex	port bu	ısiness i	in last te	en vear	s					
	Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	\Box_2	011	
		2002	2003	2004	2005	2000	2007	2008	2009	2010		W11	
	Profit												
25.	Reasons	for star	t the So	eafood	export l	busines	S						
	SA -	\$	Strongl	y Agre	e	A	-	Agree					
	NO -	ľ	No Opi	nion		DA	-	Disagn	ree				
	SDA -	9	Strongl	y Disag	gree								
S. No			Rea	asons				SA	S N	O D	A	SDA	
1	Ancestral	Busine	SS										
2	Association	on with	fishery	activit	ies								
3	Support from	om fina	ncial ir	nstitutio	n								
4	Belonging	ness to	fishern	nen con	nmunity	V							
5	Easy avail	ability (of the p	roduct									
6	Good dem	and for	the pro	oduct									
7	Reasonabl	e Profit	ability	of the b	ousiness	S							
8	Favorable	policies	s of the	import	ing cou	ntries							
9	Availabilit	ty of dif	ferent	Modes	of trans	portatio	on						
10	Availabilit	ty of Int	ermedi	ate serv	vices								
11	Access to	finance					T						•

S. No	Reasons	SA	S	NO	DA	SDA
12	Availability of seafood at reasonable price					
13	Adequate variety of seafood products					
14	Steady export opportunities for the seafood					
15	Adequate Profitability of seafood					
16	Comparatively less financial requirements					
17	Availability of Government subsidies					
18	More coastal area					
19	Presence of the major port					
20	Availability of fishing harbor					
21	Infrastructural facilities and Intermediate services					
22	Favorable export policy and Government subsidies					
23	Receptive Policies of importing countries					

26. Problems relating to export of Marine products

SA - Strongly Agree A - Agree

NO - No Opinion DA - Disagree

SDA - Strongly Disagree

Procurement Problems	SA	A	NO	DA	SDA
High cost of marine products					
Irregular supply of marine products					
Inadequate supply of marine products					
Wastages					
Decomposition					
Procurement from different location					
Dishonesty of procurement staff					
Lack of intermediate services					
Inferior quality					
Underweight					
Storage and processing problems					_
Labour problems					

Less storage capacity		
High maintenance cost of plant		
Power shortage		
Technical problems		
High replacement cost of plant & machinery		
Lack of trained personnel		
High depreciation rate of plant		
Under utilization of capacity		
Transportation problems		
High shipment cost		
High Air cargo tariff		
Inadequate supply of freezer container		
Short supply of special containers		
Time delay in transportation		
Financial problems		
Inadequate working capital		
Inadequate capital for modernization		
Lack of capital for increasing infrastructural facilities		
Fluctuating in the exchange rate		
Fluctuating in the prices for the products		
High rejection rate		
Export related problems		
Inadequate warehouse facility in ports		
Inadequate cold storage capacity		
Irregular supply of containers		
Inadequate government subsidy		
Too many government regularities for export		
Import restrictions by other countries		
Competition from other countries		

27. Pease give your opinion for following statements regarding export potentials of seafoods.

SA - Strongly Agree A - Agree

NO - No Opinion DA - Disagree

SDA - Strongly Disagree

No.	Opinion	SA	A	NO	DA	SDA
1.	Development of fishing harbor					
2.	Improved means of fishing vessels and equipments					
3.	Tax holidays for the newly setup seafood					
4.	Easy term loan facilities					
5.	Support from the Government for the modernization of storage processing units					
6.	Improved in infrastructural facilities in the port					
7.	Increased export assistance for the seafood					
8.	Easy customs formalities					
9.	Reasonable export duties					
10.	Government assistance to promote export					
11.	Favourable export import policies					
12.	Authorize the quality standards					
13.	Adequate clearing and forwarding services					
14.	Adequate capacity of cold storage					
15	Adequate working capital					
16	Regular export order					
17.	Availability of special container					
18.	Adequate subsidies for export					
19.	Favourable exchange rate					
20.	Financial assistance for plant modernization					
21.	Uninterrupted power supply					
22.	Tax exemption					
23.	Double taxation relief					

28. Marine Products Exports Development Authority (Role)

SA - Strongly Agree A - Agree

NO - No Opinion DA - Disagree

SDA - **Strongly Disagree**

No.	Opinion	SA	A	NO	DA	SDA
	Regulatory					
1	Registration of pre processing and storage premises and conveyances					
2	Inspection Seafood for ensuring quality					
3	Regulating export of Seafood					
4	Regulating off shore and deep sea fishing					
5	Promotional Activity					
	Technology					
6	Technology up gradation					
7	Waste reduction and quality improvement					
8	Market promotion					
9	Market intelligence					
10	Trade fair participation					
	Market Promotion					
11	Sponsoring trade delegation					
12	Indian seafood trade fair					
13	Overseas publicity					
14	Value addition					
15	Support services					
	Export Promotion					
16	Infrastructure development					
17	Extension and training					
18	Promotional assistance					
19	Development of capture fisheries					
20	Diversified fishing					
	Development of Fisheries					
21	Resource specific fishing					
22	Development of culture fisheries					
23	Eco friendly and sustainable shrimp aquaculture					



APPENDIX - II

LIST OF PUBLICATIONS

Sl. No.	Title	Journal / Seminar Publisher	Organizer and Date
1.	A study on the Growth of Export of Indian Marine Products	Interdisciplinary Research Journal for Humanities ISSN No. 2249-250X	St. Xavier's College (Autonomous), Palayamkottai, Tirunelveli-2. April 2013
2.	A study on the Problems of Marine Products Exporters in Thoothukudi District	Intercontinental Journal of Marketing Research Review ISSN No. 2321-0346 Online ISSN No. 2347-1670. (Impact Factor 0.612)	IJMRR February 2014

ISSN 2249-250X

INTERDISCIPLINARY RESEARCH JOURNAL for HUMANITIES



Volume 3 April 2013



St. Xavier's College (Autonomous), Palayamkottai - 627002, South India (Re-accredited with "A" Grade by NAAC Recognized as College with Potential for Excellence by UGC)

A. MUTHARASI & P. LOURDES POOBALA RAYEN

A STUDY ON THE GROWTH OF EXPORT OF INDIAN MARINE PRODUCTS

Introduction:

Export has a major role in economic development of a country. Export expands the market for a product, improves its marketability, increases the scale of operation and capacity utilization and enhances its profitability. Thus export ensures the viability of an industry. In developing countries like India, fisheries play a significant role in the economy not only by serving as a source of protein and as a sector providing maximum employment opportunities, but also as a main source of foreign exchange. Marine products especially fish and fish products, constitute a major part in the export revenue and balance of payment of the country. Export orientation to marketing of marine products has brought a lot of changes in marine fishing industry. Fish export has a major impact in the economic growth of India and the exporters play a vital role in development of marine fishing industry.

Marine Product export trade has grown significantly in the last half century and it is the main lifetime for many fishing and post-harvest operations. Exports are dominated by shrimp, which accounts for 70 percent of export earnings. The European Union, United States and Japan account for major proportion of the exports in value terms, but new export markets are emerging mainly for non-shrimp species since 1990s. Estimates show that fish production in the country is likely grow from 4.8 million tons in 1998 to over 8 million tons in 2020 with the increase coming mainly from aquaculture which might

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mean that seafood exports would become more important for India in the coming years.¹

Objectives of the Study:

- 1. To study the export performance of Indian marine Products
- 2. To analyze the Growth of Exports of Indian Marine Products
 - 3. To Summarize the finding and suggestions based on the analysis of the study

Marine Products Export -Indian Scenario:

The modernization of Indian seafood industry began in 1950s and it is inextricably linked to the growth of shrimp export trade. Shrimp continues to dominate the fisheries sector in general and the seafood export sector in particular. Its contribution to overall exports went up from a mere 13 MT in 1953 to 110275 MT during 1999-2000. Over time fish exports also have shown rapid growth in the export basket accounting for nearly 35 per cent of the volume of export trade in fisheries in 2004-05. However, Shrimp still accounts for 63.50 per cent of the total value of the exports². Shrimp remains crucial for survival of operations in the mechanized and coastal aquaculture sectors. Modern processing and export activities are shrimp-centered and many artisanal fishing operations also target and derive a significant proportion of their income from shrimp.

Till the end of 1960, export of Indian sea food products mainly consisted of dried items like dried fish and dried shrimp. Although frozen items were present in the export basket from 1953 onwards in negligible quantities, it was only since 1961 the export of dried marine products was overtaken by export of frozen items leading to a steady progress in export earnings. With the devaluation of Indian currency in 1966 the export of frozen and canned items registered a significant rise. Frozen items continued to dominate the trade. Markets for Indian

products also spread fast to developed countries from the traditional buyers in neighbouring countries.

Before 1960, the markets of Indian marine products were largely confined to neighbouring countries like Srilanka, Myanmar (formerly Burma), Singapore etc, when our exports were dominated by dried items. This situation changed with the development of technology /modernization; dried products gave way to canned and frozen items. The product shift also resulted in market shift. More sophisticated and affluent markets namely, Japan, USA, Europe, Australia, etc., became our important buyers³. Several seafood processing units with modern machinery for freezing and production of value added products were set up at all important centers in the country for export processing.

The main importers of Indian seafood today are Japan, the European Union, the United States of America, South East Asia (including China) and Middle East, with Japan, USA and EU accounting for a lion's share (75 per cent of overall revenues and 89 per cent of shrimp revenues)⁴. In 2004-05, the EU emerged as the largest market for Indian marine products, with a share of 25.5 per cent in terms of volume and 27 per cent in terms of value. The US slide to the second rank, accounting for 11 per cent of exports by volume and 23 per cent by value, which is a decline of 15 per cent in volume terms and 10 per cent in value terms compared to the previous year. This is reported to be mainly due to the antidumping duty imposed on the import of frozen shrimp from India⁵. The exclusive dependence on specific export markets reduces the Indian exporters to the position of price takers and they are unable to charge higher prices in spite of rising costs of fuel, labour, maintenance and basic necessities.

China, Thailand, Vietnam, Indonesia, Mexico, Greenland and Ecuador are the major competitors to India in the marine shrimp export markets. The relative compound growth rate of shrimp export from India indicates that the country is lagging behind other shrimp exporting countries both in terms volume and value. Moreover, some of these countries import Indian shrimp for reprocessing and, as Kulkararni notes, the final consumers of Indian fish in the northern

markets are not aware of the origin of their as more than 60 per cent of India's export to South East Asia are re-exported after processing.6

India is a net fish exporting country imports have not been very important to the economy. Though there was a small spurt in imports in and the mid 1990s (which accounted for a little under 1 per cent of the net exports), this was mainly to address the under-utilization of processing factories in some states (notably Kerala), and when this did not work out to be viable, the share of imports slide back once again.

The Trend in Marine Product Export

The share of marine product exports has steadily grown over the years, from a mere `3.92 crore in 1961-62 to ` 12901.47 crore in 2010-2011

The Marine Products export growth showed a negative trend in 2002-03 in dollar terms but it increased sharply due to the liberal measures adopted by the Government of India. In the year of 2006-07 the export of marine products increased because of the sharp increase in the exports to European Union. The European Union emerged as the largest market for Indian marine products with a share of 1,49,760 tons (24 per cent) out of 6,12,641 tons. In the same year the export of marine products increased due to the increased demand for Indian marine products in Japan, China and South East Asia.

The growth of export increased in 2010-11 because of the fourth forward looking foreign trade policy announced by the Government of India on 29th August 2009 for the next five years from 2009-14. This policy came into existence in a scenario when Indian and the global economy are grappling with one of the worst economic crises. Though the world economy faced severe economic crisis it has not affected the Indian marine products export. In that year the marine product exports to Japan, China and South East Asia was unaffected. The export of marine products declined in the years 2003-04 and 2007-08 due to the decline in the export of marine products to Japan, Middle East and USA.

The above Table presents the average marine product export in India to various countries over the period of ten years. 28.26 percentage of marine products are exported to European Union. Followed by this 18.72 percentage of marine products are exported to USA. Next to USA the marine products are exported to Japan. In total 63.98 percentage of the total marine product are exported to European union, USA and Japan.

The above table explains the items of marine products exported from India during 2001 -02 to 2010-11. Out of the various products exported, frozen shrimps forms 53.98 per cent. Followed by this frozen fish forms 16.26 per cent to the total marine products exported from India. Though the other marine products like frozen cuttle fish, frozen squid, dried items, live items and other items are also exported from India, the percentage of all these items are comparatively less.

Magnitude of Growth and Variability of Marine Product Export

The trend in the growth and the magnitude of the growth are measured in terms of quantity, value in ' and US \$ with the help of Regression Coefficient, Compound Growth Rate and Coefficient of Variation.

The trend in the growth of Indian Marine products are measured with the help of Regression Coefficient. The test result shows that the trend in the growth of marine products is positive and statistically significant at one per cent level in terms of volume, value in ' and in US \$ terms. It shows that the growth of marine products export in India made a significant progress during the period 2001-02 to 2010-11. As per the results of Compound Growth Rate, the volume of marine product exported during the period under study increases at the rate of 7 per cent whereas the value of marine product increases at the rate of a little over 8 per cent in terms of US \$ realisation.

To study the magnitude of variability in the growth of marine products export, the Coefficient of Variation is calculated. As per the test results the coefficient of variation is less in the case of growth of marine products export in terms of volume than the value. It reveals that the growth of marine product exports is more or less consistent.

Summary of the Findings:

Following are the important findings of the study.

- ➤ Due to the liberal measures adopted by the Government of India the marine product exports increased in the year of 2006-07. The European Union emerged as the largest market for Indian marine products with a share of 1,49,760 tons (24 per cent) out of 6,12,641 tons in the year 2006-07. In the same year the export of marine products increased due to the increased demand for Indian marine products in Japan, China and South East Asia.
- ➤ The growth of export increased in 2010-11 because of the foreign trade policy announced by the Government of India for 2009-14.
- The Global Economic crisis has not affected the export of Indian marine products. In fact, the marine product exports to Japan, China and South East Asia during that period was unaffected.
- ➤ On an average 28.26 percentage of marine products are exported to European Union. Followed by this 18.72 percentage of marine products are

exported to USA. Next to USA the marine products are exported to Japan. In total 63.98 percentage of the total marine product are exported to European Union, USA and Japan.

- Among the various products exported, frozen shrimps forms 53.98 per cent. Followed by this frozen fish forms 16.26 per cent to the total marine products exported from India. Though the other marine products like frozen cuttle fish, frozen squid, dried items, live items and other items are also exported from India, the percentage of all these items are comparatively less.
- ➤ The study reveals that the trend in the growth of marine products is positive and statistically significant at one per cent level in terms of volume, value in ' and in US\$ terms so the growth of marine products export in India made a significant progress during the period 2001-02 to 2010-11. As per the results of Compound Growth Rate, the volume grows on an average of 7 per cent whereas the value of marine product grows on an average a little over 8 per cent in terms of US\$.
- ➤ The magnitude of variability in the growth of marine products export is less in the case of volume than the value. It reveals that the growth of marine product exports is more or less consistent.

Conclusion:

Indian marine products are wanted internationally. There is a potential for a higher per capita consumption in our importing countries including Japan and US. Thus there is a good scope for impreving both the quantum and value of Marine product export including the primary product of shrimp through a whole range of regulatory and infrastructural measures.

A STUDY ON PROBLEMS OF MARINE PRODUCTS EXPORTERS IN THOOTHUKUDI DISTRICT

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ABSTRACT

There are four distinct channels by which fish is marketed in the country. They are Local Fresh Fish Trade, Processed Fish Trade, Export Trade, and Domestic urban Trade. Exports of marine products have played a key role in developing the fishing and aquaculture sectors in India and this makes the fishery sector a key player in poverty alleviation and employment. The problems encountered by the exporters in their exports are too many. It is imperative to examine these problems in order to formulate suitable remedy measures in future. Even though the problems are too many, the present study confine to procurement, storage and processing, transportations, finance and export related problems.

Keywords: Marine Products, Marine Product Exporters, Problems of Exporters.

Introduction

Seafood export trade has grown significantly in the last half century and it is the main lifetime for many fishing and post-harvest operations. Exports are dominated by shrimp, which accounts for 70 percent of export earnings. The EU, US and Japan account for major proportion of the exports in value terms, but new export markets are emerging mainly for non-shrimp species since 1990s. Estimates show that fish production in the country is likely grow from 4.8 million tonnes in 1998 to over 8 million tonnes in 2020 with the increase coming mainly from aquaculture which might mean that seafood exports would become more important for India in the coming years.¹

The problems encountered by the exporters in their exports are too many. It is imperative to examine these problems in order to formulate suitable remedy measures in future. Even though the problems are too many, the present study confine to procurement, storage and processing, transportations, finance and export related problems.

Objectives of the Study

- To study the Marine Product Export Business
- To identify the problems faced by the exporters in Marine Product Export Business
- To analyze the problems encountered by the Marine Product Exporters in Thoothukudi District
- To summarize the findings and suggestions based on the analyzes

Scope of the Study

This study was analyse the problems faced by the exporters in Marine Product Export Business in Thoothukudi district. This study area was conducted in Thoothukudi district mainly because of the



¹ Sustainability Impact Assessment of proposed WTO negotiation, Case study of India

ISSN: 2321-0346 -Online ISSN: 2347-1670 -Print

INTERCONTINENTAL JOURNAL OF MARKETING RESEARCH REVIEW

concentration of more number of exporters are placed fishing villages in Thoothukudi district. Thoothukudi district is one of the coastal area in Tamil Nadu.

Sampling

There are 179 exporters who have registered their names and units in Marine Product Export Development Authority (MPEDA) in Thoothukudi. They are permitted to export their Marine Products at anywhere in India. Among these out 179 exporters only 130 exporters are export their Marine Products from Thoothukudi port. With regard to the selection of sample respondents, Census Method was adopted.

Data Collection

This analytical study is based on both primary data and secondary data. Primary data has been used as the main sources of the study and it was collected from 130 seafood exporters in Thoothukudi district. The primary data was collected through the interview schedule. The secondary data was collected from internet, journals and MPEDA reports and publications.

Marine Products

India with a long coast line of 8129 Km, 2 million sq. Km of Exclusive Economic Zone and 1.2 million hectors of brackish water bodies, offer vast potential for development of fisheries. Against an estimated potential of 3.9 million tonnes from marine sector, only 2.6 million tones are tapped. Fishing efforts are largely confined to the inshore waters through artisanal, traditional and mechanised sectors. The major marine products exported from the state include Frozen Shrimp, Prawn, Fish, Cuttle Fish, Squid, Dried Items like Shrimp, Shark Fins, Cuttle Fish Bones, Fish Maws, Canned Shrimps, Fish, Lobster, Crab, Clam, Mussel, Squid Tubes, Aquarium fishes, Fresh fish, etc.

Marine Product Export

There are four distinct channels by which fish is marketed in the country. They are Local Fresh Fish Trade, Processed Fish Trade, Export Trade, and Domestic urban Trade. Exports of marine products have played a key role in developing the fishing and aquaculture sectors in India and this makes the fishery sector a key player in poverty alleviation and employment. India has a share of 2.58 per cent of the world seafood export trade. In terms of shrimp production India occupies the fifth position in the world and it is the top most suppliers of cephalopods to Europe. Aquaculture contributes 19 per cent by volume and 55 per cent by value of total seafood exports whereas farmed shrimp contributes 61 per cent by volume and 83 per cent by value of the shrimp exports².

Problems in Marine Products Export Business

Since the problem perception among the exporters may inference their export performance, it is imperative to study the important problems encountered by the importers of Marine Products. Even though, the problems are too many, the present study confines to only five important problems namely procurement, storage and processing, transportations, financial and export problems. The present analysis



² Marine Product Export Development Authority News letter

focus on the exporters' view on the important problems in export of marine products and also the its impact on export performance among the exporters.

- **Procurement Problems** includes High cost of marine products, Irregular supply of Marine products, Inadequate supply of marine products, Wastages, Decomposition, Procurement from different location, Dishonesty of procurement staffs, Lack of international services, Inferior Quality, Underweight.
- Storage and Processing Problems includes Labor problems, Less storage Capacity, High maintenance cost of plant, Power shortage, Technical problems, High replacement cost of plant & machinery, Lack of trained personnel, High depreciation rate of plant, Under utilization of capacity.
- Transportation Problems includes High shipment cost, High Air cargo Tariff, Inadequate supply of freezer container, Short supply of special container, Time delay in transportation.
- **Financial Problems** includes Inadequate working capital, Inadequate capital for modernization, Lack of capital for increasing infrastructure, Fluctuating in the exchange rate, Fluctuating prices for the Products, High rejection rate.
- Export Problems includes Inadequate warehouse facility in ports, Inadequate cold storage capacity, Irregular supply of containers, Inadequate government 's subsidy, Too many government regularities for export, Import restrictions by other countries, Competition from other Countries

Perception on procurement problems in export of marine products

One of the important problems included in the present study is procurement problems. The exporters' view on the procurement problems have been measured with the help of ten variables. The exporters are asked to rate the variables at five point scale according to their orders of importance. The assigned scores on these scales are from 5 to 1 respectively. The mean score of variables among the respondents in MUE, MEE and OFE have been computed separately. The one way analysis of variance have been executed to find out the insignificant difference among the three group of exporters regarding their view on variables in procurement problems. The results are given in Table 1.

Table 1 Perception on the owners towards procurement problems

S.No.	Problems in procurement	Mean Score	Mean Score among the Respondents		
5.110.	1 Toblems in procurement	MUE	MEE	OFE	F – Statistics
1	High Cost of Marine products	4.1212	4.0682	3.5	3.887*
2	Irregular supply of Marine products	3.9189	3.9773	4	0.218 NS
3	Inadequate supply of marine products	3.6892	3.6591	4.5	6.111*
4	Wastages	3.473	3.8182	4.5	5.640*
5	Decomposition	3.2027	3.8182	4	6.222*
6	Procurement from different location	3.2838	3.8409	4.5	9.750**
7	Dishonesty of procurement staffs	3.2703	3.6136	4	3.839*
8	Lack of international services	3.2162	3.8182	5	20.130**
9	Inferior Quality	3.3108	3.8409	4	6.010*
10	Underweight	3.4054	3.9318	4.5	8307**

^{*} Significant at five percent level



The highly viewed variables in procurement problems by the respondents in MUE are high cost of marine products and irregular supply of marine products since their respective mean scores are 4.1212 and 3.9189. Among the respondents in MEE, these two are also the same but with the mean score of 4.0682 and 3.9773 respectively. Among the respondents in OFE, this is lack of international services since its mean score is 5.00. Regarding the view on the variables in procurement problem, the significant difference among the three group of exporters have been noticed in their view on high cost of marine products, inadequate supply of marine products, wastages, decomposition, procurement from the different locations, dishonesty of procurements staffs, lack of international services, inferior quality and underweight since their respective 'F' statistics are significant at five percent level.

Perception on storage and processing problems in export of marine products

The exporters' view on the storage and processing problems in export of marine products have been measured with the help of nine variables. The exporters are asked to rate the nine variables at five point scale according to the order of importance they have given on it. The mean score of each variable in storage and processing problem among the respondents in MUE, MEE and OFE have been computed separately in order to exhibit the intensity of problems among them. In order to examine the significant difference among the three group of exporters regarding their view on variables in storage and processing problems have been examined with the help of one way analysis of variance. The results are given in Table 2

Table 2
Perception of the owners towards storage and processing problems

S.No.	Problems in storage and processing	Mean Score among the			
		Responde	Respondents		
		MUE	MEE	OFE	
1	Labor problems	4.5405	4.4545	5	2.017 NS
2	Less storage Capacity	3.9865	4.1364	4.5	2.82 NS
3	High maintenance cost of plant	4.0405	4.0682	5	9.807**
4	Power shortage	3.2027	3.8182	4.3333	8.933**
5	Technical problems	4.2027	3.9318	4.5	2.438 NS
6	High replacement cost of plant & machinery	3.2027	3.8182	3.6667	5.116*
7	Lack of trained personnel	4.1081	4.0455	4.5	1.236 NS
8	High depreciation rate of plant	4.1216	3.8182	3.5	2.946 NS
9	Under utilization of capacity	3.8514	3.7727	4	0.280 NS

^{*} Significant at five percent level

The highly viewed variable in storage and processing problem among the respondents in MUE, are labor problems and technical problems since their mean scores are 4.5405 and 4.2027 respectively. Among the respondents in MEE, these two labour problems and less storage capacity since their mean sources are 4.4545 and 4.1364 respectively. Among the respondents in OFE, these are labor problems and high maintenance cost of plant since their scores are 5.00 and 5.00 respectively. Regarding the view on variables in storage and processing problem, the significant difference among the three group of exporters have been noticed in their view on high maintenance cost of plant, power storage and high



replacement cost of plant and machineries since their respective 'F' statistics are significant at five percent level.

Exporters' view on transportation problems in export of marine products

One transportation problems in the export of marine products among the exporters have been studied with the help of five variables. The exporters are asked to rate these five variables at five point scale according to the order of importance given on them. The mean score of the variables in transportation problem among the three groups of exporters have been executed to find out the significant difference among the three groups of exporters regarding their view on variables in transportation problems. The results are summarized in Table 3

Table 3

Perception on the owners towards Transportation problems

		Mean	Score	among the	
S.No.	Problems in Transportation	Respond	F- Statistics		
		MUE	MEE	OFE	
1	High shipment cost	3.2027	3.8182	4.3333	8.933
2	High Air cargo Tariff	3.2027	3.8182	3.3333	4.619
3	Inadequate supply of freezer container	3.4189	3.4318	4	1.904 NS
4	Short supply of special container	3.473	3.7727	4.5	6.749
5	Time delay in transportation	3.6081	3.6136	3.5	0.057 NS

^{*} Significant at five percent level

The highly viewed variable in transportation problem by the exporters in MUE are time delay in transportation and short supply of special container since their mean scores are 3.6081 and 3.4730 respectively. Among the respondents in MEE, these are higher shipment cost and high air cargo tariff since their mean scores one 3.8182 and 3.8182 respectively. Among the respondents in OFE, these are short supply of special container and high shipment cost since their mean scores are 4.5000 and 4.3333 respectively. Regarding the view on variables in transportation problem, the significant difference among the three group of exporters have been noticed in the case of high shipment cost, high air cargo tariff and short supply of special containers since their respective 'F' statistics are significant at five percent level.

Exporters view on the financial problems

The exporters view on the financial problems in the present study is measured with the help of seven variables. The exporters are asked to rate the variables in financial problems at five percent level according to their order of importance given on them. The mean score of the variables in financial problems among the respondents in MUE, MEE and OFE have been computed separately in order to exhibit the level of perception on variables in financial problem. The one way analysis of variable have been executed to find out the significant difference among the type of exporters regarding their view on variables in financial problems the results are given in Table.4



Table 4
Perception on the owners towards financial problems

		Mean Score among the			
S.No.	Problems in Financial	Respondents			F – Statistics
		MUE	MEE	OFE	
1	Inadequate working capital	3.2027	3.8182	4	6.222*
2	Inadequate capital for modernization	3.2027	3.8182	4	6.593*
3	Lack of capital for increasing infrastructure	3.5811	3.6364	3.5	0.166 NS
4	Fluctuating in the exchange rate	3.8378	3.75	3	4.187*
5	Fluctuating prices for the Products	3.2027	3.8182	4	6.222*
6	High rejection rate	3.7162	3.8636	4	0.727 NS

^{*} Significant at five percent level

The highly viewed variable in financial problem by the respondents in MUE are fluctuating in the exchange rate and high rejection rate since their mean scores are 3.8378 and 3.7162 respectively. Among the respondents in MEE, these are inadequate working capital and capital for modernization since their mean scores are 3.8182 and 3.8182 respectively. Among the respondents in OFE, these are inadequate working capital, inadequate capital for modernization, fluctuating prices for the products and high rejection rate since their mean scores are 4.00 in each regarding the view on variables in financial problems, the significant difference among the three groups of exporters have been noticed in their view on inadequate working capital, inadequate capital for modernization, fluctuating in the exchange rate, and fluctuating prices for the products since their respective 'F' statistics are significant at five percent level.

Exporters' view on export problems

The exporters' view on the export problems in the present study is studied with the help of seven variables. The exporters are asked to rate these variables at five point scale according to their order of importance given on it. The mean score of the variables in export problem among the exporters in MUE, MEE and OFE, have been computed separately. The one way analysis of variance has been executed to find out the significant difference among the three groups of exporters regarding their view on the variables in export problems. The results are shown in Table.5

Table 5
Perception of the owners towards Export problems

		Mean Score among the			
S.No.	Problems in Export	Respondents			F – Statistics
		MUE	MEE	OFE	
1	Inadequate warehouse facility in ports	3.2027	3.8182	4	6.593*
2	Inadequate cold storage capacity	3.5135	3.7727	4	2.180 NS
3	Irregular supply of containers	3.3514	3.5227	4	2.622*
4	inadequate government 's subsidy	3.2027	3.8182	4	6.222*
5	Too many government regularities for export	3.4324	3.5455	4	1.534 NS
6	Import restrictions by other countries	3.2027	3.8182	3.6667	4.582 NS
7	Competition from other Countries	3.2838	3.2955	3.5	0.187 NS

^{*} Significant at five percent level



The highly viewed variable in export problem by the respondents in MUE are inadequate cold storage capacity and too many government regularities for export since their mean scores are 3.5135 and 3.4324 respectively. Among the respondents in MEE, these are inadequate warehouse facility in ports and inadequate government's subsidy since—their mean scores are 3.8182 and 3.8182 respectively. Among the respondents in OFE, these are inadequate warehouse facility in ports, cold storage capacity irregular supply of containers, inadequate government's subsidy and too many government regularities for export since their mean scores are 4.00 in each. Regarding the view on variables in export problems, the significant difference among the three group of exporters have been noticed in their view on inadequate warehouse facility in ports, irregular supply of containers, and inadequate government's subsidy since their respective 'F' statistics are significant at five percent level.

Exporters' view on important problem

The exporters' view on important problems have been examined by the mean score of the each important problems among the three group of exporters. The score of each important problems has been computed by the mean score of the variables in each important problem. Regarding the view on important problem, the significant difference among the three group of exporters have been searched with the help of one way analysis of variance. The respondents given in Table.6

Table 6
Respondents view on important problems

S.No.	Important Problems	Mean Score amo	F – Statistics			
	Important Froblems	MUE	MEE	OFE	r – Staustics	
1	Procurement	3.4892	3.8386	4.2500	3.7889*	
2	Storage and processing	4.2733	3.9848	4.3333	3.1179*	
3	Transportation	3.3811	3.6909	3.9333	3.0862*	
4	Finance	3.4572	3.7841	3.7500	2.0869	
5	Export	3.3127	3.6559	3.8809	3.1085*	

^{*} Significant at five percent level

The highly viewed important problem by the respondents in MUE are storage and processing; and procurement since its mean scores are 4.2733 and 3.4892 respectively. Among the respondents in MEE, these are also the same but with the mean score of 3.9848 and 3.8386 respectively. Among the respondents in OFE, these are also the same but with the mean score of 4.3333 and 4.2500 respectively. Regarding the view on important problems, the significant difference among the three group of exporters have been noticed in their view on procurement, storage and processing, transportation and export problems since their respective 'F' statistics are significant at five percent level.

Finding and Suggestions

The problems in the export of Indian marine products among the exporters have been examined with the help of five important problems namely procurement, storage and processing, transportation, finance and export. The highly perceived variable in the procurement problem among the manufacturer exporters are high cost of marine products and irregular supply of marine products. Among the Merchant Exporters, these are also the same variables whereas among the Ornamental Fish Exporters, these are wastages and underweight. Regarding the view on variables in procurement problems, the significant



difference among the three group of exporters have been noticed in the view on all variables in procurement problems except the irregular supply of marine products.

The highly viewed variables in storage and processing problems by the Manufacturer Exporters are labour problems and high depreciation rate of plant whereas among the Merchant Exporters, these are labour problems and less storage capacity. Among the Ornamental Fish Exporters, these are less storage capacity and lack of trained personal. Regarding the view on variables in storage and processing problems, the significant difference among the three group of exporters have been noticed in their view on high maintenance cost of plant, power shortage and high replacement cost of plant and machinery.

The exporters' views on transportation problem have been studied with the help of five variables. The highly viewed variable by the Manufacturer and Merchant exporters is Time delay in transportation and high shipment cost respectively. Among the Ornamental Fish Exporters, it is short supply of special container. Regarding the view on variables in transportation problems, the significant difference among the three group of exporters have been noticed in their view on high shipment cost, high air cargo tariff and short supply of special container.

The highly viewed variable by the manufacturer and merchant exporters is fluctuating exchange rate and high rejection rate respectively. Among the Ornamental Fish Exporters, it is inadequate working capital, inadequate capital for modernization, fluctuating prices for the products and high rejection rate. Regarding the view on variables in financial problems, the significant different difference among the three groups of exporters has been noticed in their view on four out of six variables in financial problems.

The highly viewed variable in export problem by the Manufacturer and Merchant exporter are inadequate cold storage capacity and inadequate warehouse facility in plants respectively. Among the Ornamental Fish Exporters, these are inadequate warehouse facility in plants, cold storage capacity, irregular supply of container, inadequate government subsidy and many government regularities for export. Regarding the view on variables in export problems, the significant difference among the three groups of exporters have been noticed in three out of seven variables in export problems.

The variables included in each important problem explain it to a reliable extent. The highly viewed important problems by the manufacturer and ornamental fish exporters are storage and processing and procurement whereas among the merchant exporters, these are also the same problems. Regarding the view on important problems, the significant difference among the three group of exporters have been noticed in their view on procurement, storage and processing, transportation and export problems.

The significantly affecting important problem on the export performance among the Merchant Exporters is procurement, storage and processing and financial problems whereas among the Manufacturer Exporters, these problems are procurement, storage & process and financial problems. Among the Ornamental Fish Exporters, these problems are procurement, storage and processing problems and financial problems. The rate of impact of the important problems on the export performance is higher among the Merchant Exporters than that among the Manufacturer and Ornamental Fish Exporters.



Conclusion

The present study concluded that the Problems faced by the exporters of Indian marine products from Thoothukudi . The highly viewed problems by the exporters in their business are storage and processing problems. The significantly influencing problems on the export performance are procurement, storage and processing and financial problems.