EXPORT POTENTIAL OF MARINE PRODUCTS AND ITS IMPACT ON ERADICATION OF POVERTY IN ANDAMAN ISLANDS

(A Study with Special Reference to Tuna Fish Variety)

THESIS

submitted to the Pondicherry University in partial fulfillment for the award of the degree of

DOCTOR OF PHILOSOPHY
in
MANAGEMENT

by

M. SURESH
Research Scholar (Full Time)

Under the Guidance of

Dr. K. MOHAN
PROFESSOR & HEAD
DEPARTMENT OF INTERNATIONAL BUSINESS
SCHOOL OF MANAGEMENT

DEPARTMENT OF MANAGEMENT STUDIES
PONDICHERRY UNIVERSITY
PUDUCHERRY-605014

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Dr. K. MOHAN, M.B.A., M.Phil., Ph.D., M.Com., D.L.L.,
Professor & Head
Department of International Business
School of Management
Pondicherry University
Pondicherry – 605 014
India

CERTIFICATE

This is to certify that the thesis entitled **"EXPORT POTENTIAL OF MARINE PRODUCTS AND ITS IMPACT ON ERADICATION OF POVERTY IN ANDAMAN ISLANDS (A Study with Special Reference to Tuna Fish Variety)"** is the result of bonafide research work done by **Mr. M. SURESH,** during the period 2008 - 2012 at the Department of Management Studies, Pondicherry University, Pondicherry, under my supervision.

The subject on which the thesis has been prepared is his original work and it has not been previously formed the basis for the award, to any candidate, of any Degree, Diploma, Fellowship or other similar title of any University or Institution.

Place : **Puducherry** **Signature of the Guide & Supervisor**

Date :

HOD
Dept. of Management Studies

DEAN
School of Management

DECLARATION

I hereby declare that the thesis entitled **" EXPORT POTENTIAL OF MARINE PRODUCTS AND ITS IMPACT ON ERADICATION OF POVERTY IN ANDAMAN ISLANDS (A Study with Special Reference to Tuna Fish Variety) "** submitted to the Pondicherry University in partial fulfillment for the award of the degree of **DOCTOR OF PHILOSOPHY IN MANAGEMENT** is a record of original research work carried out by me under the supervision and guidance of **Prof. K. MOHAN**, Professor & Head, Department of International Business, Pondicherry University, Pondicherry and the dissertation has not formed the basis for the award of any Degree/ Diploma/ Associateship/ Fellowship or other similar title to any candidate of any University.

M. SURESH
Signature of the Candidate

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(M. SURESH)

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A&N Islands	- Andaman & Nicobar Islands
BL / AB	- Bill of Lading /Airway Bill
AEC	- Agreement on Economic Cooperation
AIELTF	- ASEAN-India Economic Linkages Task Force
ANIIDCO	- Andaman & Nicobar Islands Integrated Development Corporation
APFIC	- Asia Pacific Fisheries Commission
APTA	- Asia-Pacific Trade Agreement
ASEAN	- Association of South East Asian Nations
ASEAN	- Association of Southeast Asian Nations
BIPA	- Bilateral Investment Promotion & Protection Agreement
BIS	- Bureau of Indian Standards
BTIA	- Bilateral Trade and Investment Agreement
C&F Agent	- Clearing and Forwarding Agent
CECA	- Comprehensive Economic Cooperation Agreement
CECPA	- Comprehensive Economic Cooperation and Partnership Agreement
CMS	- Constant Market Share model
DFYWA	- District Fishermen's Youth Welfare Association
DID	- Department for International Development
DSM	- Decision Support Model
DTAC	- Double Taxation Avoidance Convention
ECGC	- Export Credit Guarantee Corporation
EEZ	- Exclusive Economic Zone
EFTA	- European Free Trade Association
EHS	- Early Harvest Scheme
EU	- European Union
EXIM Bank	- Export Import Bank
FAO	- Food and Agriculture Organization
FOB	- Free On Board
FSI	- Fishery Survey of India
GCC	- Gulf Cooperation Council

GDP	- Gross domestic product
GR Form	- Guaranteed Remittance Form
GRDP	- Gross Regional Domestic Product
HACCP	- Hazard Analysis and Critical Control Points
HRA	- House Rent Allowance
IE Code No.	- Import-Export Code Number
IHD Index	- International Human Development Index
IIPA	- Indian Institute of Public Administration
IPLC	- International Product Life Cycle Theory
ISLFTA	- India-Sri Lanka Free Trade Agreement
JSG	- Joint Study Group
LC	- Letter of Credit
MOU	- Memorandum of Understanding
MPEDA	- Marine Products Export Development Authority
MSB	- Mauritius Standards Bureau
MSY	- Maximum Sustainable Yield
MT	- Metric Tone
NZ	- New Zealand
OPRT	- Organizations for the Promotion of Responsible Tuna Fisheries
PF	- Provident Fund
PTA	- Preferential Trade Agreement
PTA	- Preferential Trade Agreement
RCMC	- Registration-Cum-Membership Certificate
SACU	- Southern African Customs Union
SB	- Shipping Bill
SEZ	- Special Economic Zone
SMEs	- Small and Medium Sized Enterprises
SPS	- Status of Sanitary and Phytosanitary
TNC	- Trade Negotiating Committee
UGPDC	- Uniform Customs and Practice for Documentary Credits
URC	- Uniform Rules for Collection
VKGUY	- Vishesh Krishi Gram Udyog Yojana
WTO	- World Trade Organization

GLOSSARY

Acceptance: Any agreement to purchase goods under specified terms. It is an agreement to purchase goods at a stated price and under stated terms.

Airway Bill: A bill of lading that covers both domestic and international flights transporting goods to a specified destination.

Arbitrage: The process of buying foreign exchange, stocks, bonds and other commodities in one market and immediately selling them in another market at higher prices.

Bigeye ,Yellowfin and Skipjack: These are the types of fishes from tuna group.

Bill of Lading: A document that establishes the terms of a contract between a shipper and a transportation company under which freight is to be moved between specified points for a specified charge.

Cash Against Documents (C.A.D.): Payments for goods in which a commission house or other intermediary transfers title documents to the buyer upon payment in cash.

Certificate of Free Sale: Certificate of free sale may be issued for biologics, food, drugs, medical devices and veterinary medicine. More information is available from the Food and Drug Administration. Health authorities in some states as well as some trade associations also issue Certificates of Free Sale.

Cost and Freight (C & F): A pricing term indicating that the cost of the goods and freight charges are included in the quoted price.

Cost and Insurance (C & I): A pricing term indicating that the cost of the product and insurance are included in the quoted price.

Cost, Insurance & Freight: A pricing term indicating that the cost of the goods, insurance, and freight are included in the quoted price.

Credit Risk Insurance: Insurance designed to cover risks of non-payment for delivered goods.

Documentary Against Acceptance (D/A): Instructions given by a shipper to a bank indicating that documents transferring title to goods should be delivered to the buyer only upon the buyer's acceptance of the attached draft.

Dinghy: A boat made up of wood and used by artisan traditionally.

Dumping: Exporting/Importing merchandise into a country below the costs incurred in production and shipment.

Exclusive Economic Zone: The exclusive economic zone is an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention.

Export Broker: An individual or firm that brings together buyers and sellers for a fee but does not take part in actual sales.

Export Commission House: An organization which, for a commission, acts as a purchasing agent for a foreign buyer.

Export License: A government document that permits the "Licensee" to engage in the export of designated goods to certain destinations.

Fibre Engine Boat: Fibre Plastered Boats Fitted with Outboard engine

Foreign Exchange: The currency or credit instruments of a foreign country.

GATT(General Agreement on Tariffs and Trade): A multilateral treaty intended to help reduce trade barriers between the signatory countries and to promote trade through tariff concessions.

Globalisation: Globalization is a common term for processes of international integration arising from increasing human connectivity and interchange of worldviews, products, ideas, and other aspects of culture. In particular, advances in transportation and telecommunications infrastructure, including the rise of the Internet, represent major driving factors in globalization and precipitate further interdependence of economic and cultural activities.

Gross Weight: The full weight of a shipment, including goods and packaging.

Hooking Rate**:** The number of fishes captured per 1000 hooks in a single yield.

Letter of Credit (L/C): A document, issued by a bank per instructions by a buyer of goods, authorizing the seller to draw a specified sum of money under specified terms, usually the receipt by the bank of certain documents within a given time.

Marine Insurance: Insurance that compensates the owners of goods transported overseas in the event of loss that cannot be legally recovered from the carrier.

Merchandise: Includes goods, wares, and chattels of every description except Prohibited Merchandise, building materials, production equipment and supplies for use in operation of a zone.

Mercantilism: Mercantilism is the economic doctrine in which government control of foreign trade is of paramount importance for ensuring the prosperity and military security of the state. In particular, it demands a positive balance of trade.

Negotiations: Negotiation is one of the most common approaches used to make decisions and manage disputes. It is also the major building block for many other alternative dispute resolution procedures.

Packing List: A list showing the number and kinds of items being shipped, as well as other information needed for transportation purposes.

Pakka House: A house built by Cement.

Pole-and-Line and Handline: An instrument used in tuna fishing. In this method quality of fish capture will be high.

Special Economic Zone: The objectives of SEZs are to Generation of additional economic activity, Promotion of exports of goods and services, Promotion of investment from domestic and foreign sources, Creation of employment opportunities and Development of infrastructure facilities.

Suresh Mohan Business (SMB) Model: It is a model developed by Mr. Suresh and Dr. Mohan, to develop Andaman Tuna Export and create job opportunities to the local people with good salary and insurance package.

Thakta House: A house built by Bamboo and roofed in leaves.

Tinned House: A house built by Bamboo (or) Semi-Cement and roofed by Tin Sheets.

Tuna: Tuna is a group of salt water fish from the family Scombridae. Tunas are fast swimmers, and some species are capable of speeds of 70 km/h (43 mph). Tunas are widely but sparsely distributed throughout the oceans of the world, generally in tropical and temperate waters between about 45 degrees north and south of the equator.

Warehouse Receipt: A receipt issued by a warehouse listing goods received for storage.

CHAPTER I

INTRODUCTION

CHAPTER I
INTRODUCTION

In this chapter the researcher has given a brief introduction about international trade and international trade theories, World and Indian history on import-export, tuna export and its opportunities in international market and steps to export fish from India and also describes upon the statement of the problem, objectives, hypotheses, methodology and limitations of the study.

1.1 INTERNATIONAL BUSINESS

Trade begins from human need. Every human being likes to lead a sophisticated and luxurious life. To lead such a life, various products and services are required. At the same time the needs of every individuals differ as per their requirement and economic back ground. In the present scenario consumers are showing more interest on high quality products especially on food products. After globalisation the demand for high quality products and services has increased throughout the globe. The globalisation brought the world into a small room which helps individuals to fulfil their needs through local and international products. Earning profit shall be main aim of any business. In every business at least two parties has to be involved namely buyer and seller. In terms of international business, the seller has been called as exporter and buyer as importer.

The simple difference between local and international business is that, in local trade, there is low transparency compared to international business. In international business every transaction is documented and submitted to concerned authority for further action. In foreign trade every single activity is planned, documented and executed as per the agreement between importer and exporter. International Business creates employment opportunities raises foreign exchange earnings and satisfies the consumers with quality goods at low price. In the present world, none of the nations shall survive independently without others' co-operation. International Business brought mutual benefits on various aspects namely cultural, educational, economical, environmental, political, etc.

1.2 DEFINITIONS

"***International Business*** means all commercial transactions either by private and governmental organization between two or more countries. Private companies undertake such transactions for profit and governments may or may not do the same in their transactions. These transactions include sales, investments, and transportation."[1]

International Business refers to business activities that involve the transfer of resources, goods, services, knowledge, skills, or information across national boundaries.

"***International Trade*** is the exchange of goods and services across national boundaries. It is the most traditional form of international business activity and has played a major role in shaping world history."[2]

"***International Trade*** is the branch of economics concerned with the exchange of goods and services with foreign countries."[3]

1.3 INTERNATIONAL TRADE THEORY

Many economists have developed various theories on international trade and provided information to understand international trade. The present international trade theories are derived from Mercantilism and Neo mercantilism theory. In 18th century, mercantilism theory was a popular theory on international business when the gold was been considered as the only currency of world trade. **Mercantilism Theory** stated that the economy shall be improved through encouraging exports and stifling imports which results positive balance of trade and leads to flow of gold into a country. **Neo mercantilism** also tried to produce a positive balance of trade without the reliance on using precious metals. But this concept was not accepted by many

[1] Marios, I. Katsioloudes., & Spyros, Hadjidakis. (2007). *International Business A Global Perspective.* Taylor & Francis.

[2] Belay Seyoum. (2007). *Export-import theory, practices, and procedures* (2nd ed.). Elsevier Inc.

[3] Alan, M, Rugman., Simon, Collinson., & Richard, M, Hodgetts. (2006). *International business* (4th ed.). Pearson Education Limited.

experts due to their strong belief on mercantilism theory as a simplistic and erroneous theory[4].

By keeping these theories as a base, a few new theories have been developed. They are Theory of Absolute Advantage, Theory of Comparative Advantage, Factor Endowment Theory and International Product Life Cycle (IPLC) Theory.

(i) *THEORY OF ABSOLUTE ADVANTAGE*

The theory of absolute advantage has been framed by considering the Labor cost (in hours) of production per unit. It describes that if a country produces goods efficiently and becomes specialized for their products against rest of the world, it gets an absolute advantage and shall develop as a successfully economy. The limitation of this theory is that it has been formulated neither forecasting exchange ratio between goods once trade opened nor resolving the division of the gains from trade between countries.

(ii) *THEORY OF COMPARATIVE ADVANTAGE*

The Theory of Comparative Advantage states that nations should produce those products for which they have the greatest relative advantage. It has concluded that the results of the theory of comparative advantage shall be same like the theory of absolute advantage and the only advantage of this theory was, it demonstrates countries' joint benefits through free trade. This theory assumes that, to increase the consumption, a nation must have absolute advantage and unique efficiency. Under free trade both the countries shall be benefited but at the same time gains shall be enjoyed by only one group within that country. It is the one of the major drawbacks on free trade.

(iii) *FACTOR ENDOWMENT THEORY*

The Factor Endowment Theory explains that a large amount of production factors are involved in producing a product. To earn huge profit and benefit the

[4] Alan M. Rugman and Simon Collinson. (2006). *International Business* (4th ed.). Pearson Education Limited.

nation, a country has to produce the products in which they have abundant production factors and import products in which they lack. This theory is also known as **Heckscher-Ohlin Theory**. This theory extends the concept of comparative advantage by considering the endowment and cost of production factors. This theory explains the relativity between large labor forces and labor-intensive goods and capital-intensive goods. The factor endowment theory has been framed with two limitations, the first limitation is that in some countries minimum wage laws implemented that result in high prices for relatively abundant labor and less expensive to import certain goods produced in home country. The second limitation is countries like United States export relatively more labor-intensive goods and import capital-intensive goods.

These limitations made **Wassily Leontief**, a Nobel Prize economist to discover **Leontief paradox**. In this theory, he explained in terms of the quality of labor input rather than just labor hours of work. For example, United States employs the highly educated labor to produce technology-intensive products and exports. The Leontief paradox describes the problems on Factor Endowment Theory and reason for avoiding the role of economic factors in trade theory.

(iv) *INTERNATIONAL PRODUCT LIFE CYCLE THEORY*

The Vernon's **international product life cycle (IPLC) theory** is one of the famous theories. The International Product Life Cycle theory addresses various stages of product life cycle. This theory helps explain reason of a product that begins as a nation's export often ends up becoming an import and also focuses on market expansion and technological innovation, concepts that are relatively de-emphasized in comparative advantage theory. The IPLC involves three stages namely New Product, Maturing Product and Standardized Product. IPLC theory has followed two important assumptions, technology and market. The technology plays a vital role in creating and developing new products. The market size and structure has to determine the trade patterns.

1.4 THE WORLD HISTORY OF INTERNATIONAL TRADE

International trade is one of the very old practices based on free exchange of goods. The free exchange of goods has started from early 2500 BC. According to archaeological discoveries the Sumerians of Northern Mesopotamia had enjoyed great wealth on trade and they traded their textiles and metals products via sea route. Before 2000 BC the Greeks had made a huge profit through the exchanging olive oil and wine for grain and metal. Around 340 BC the Greeks had adopted modern commerce like banking and credit, insurance, trade treaties. [5]

In the first century AD, Rome successor of Greece expanded their trade to East. The Romans traded through Silk Road and developed many trade routes and complex trading patterns via sea with Chinese. On the other hand, they faced dangerous travel and discouraged the movement of goods that resulted losses on export markets. Hence their trade activities came to an end by fifth century.

In the eleventh century international trade was re-introduced in West through new ideas, customs and discovered products from East. The new products are carpets, furniture, sugar, and spices imported from Egypt, Syria, India, and China markets to West. The Italian cities like Venice and Genoa became the leading centers for international commerce. The documents like Letters of Credit, Bills of Exchange and insurance for goods imported and exported had been introduced during this period. In the later fifteenth century Western Europe became the center of international commerce followed by Mediterranean, Spain, Portugal and Holland.

The most important events happened in the end of fifteenth century had made a remarkable history on world trade. It was discovery of America in 1492 and sea routes to India in 1498. During this period European market was the richest market for Indian luxury goods and food products such as sugar, tobacco, coffee etc. Europe had introduced mercantilist policy to encourage trade and expanded their colonies. The main aim of expansion of colonies was to benefit the home country through exploiting the colonies.

[5] Belay, Seyoum. (2007). *Export-import theory, practices, and procedures* (2nd ed.). Elsevier Inc.

1.5 INTERNATIONAL TRADE HISTORY OF INDIA

India has a long history of international business, the evidences are available in Indus Valley Civilization. Indus Valley Civilization evidence shows that India had undergone trade practices through utilizing advance transport facilities. Around 6th centuries Mahajanapadas has invented currency, the Silver punch-marked coins used as trade currency. It was the period of intensive trade activity and urban development. From 6th to 15th century India stood at first position and was the leading economy of the world.

In the first century and 11th century, India's share of world income was 32.9 per cent and 28.9 per cent respectively. In 1500 AD, China overtook India by 0.5 per cent on world share income. India's share was 24.5 per cent and China's was 25 per cent[6]. India's formal and systematic international trade history was started from 1600 AD.

1600 - Queen Elizabeth signed a charter incorporating into one solid body the hitherto disconnected and independent English merchants who plied the export and import trade between England and India, on the 31st December.[7]

1621 - Mr. Munn, one of the Directors of the East India Company had estimated the quantity of Indian articles imported and their prices at the places of export and import.[8]

1686 - Indian calicoes (Textile) had been banned and the French market was completely closed to Asian textiles.[9]

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[6] Angus, Maddison. (2001). *The World Economy -Volume 1: A Millennial Perspective - Volume 2: Historical Statistics.* Organisation for economic co-operation and development.

[7] Zénaïde, Alexeïevna, Ragozin. (1984). *History of Vedic India.* Mittal Publication, New Delhi.

[8] Seshayangar Srinivasa Raghavaiyangar.(1893). *Memorandum on the progress of the Madras presidency during the last forty years of British administration.* The Superintendent, Government Press.

[9] Ruth, G, Kassinge. (2003). *Dyes: From Sea Snails to Synthetics.* Twenty-First Century Books, United State of America.

1700 - Once again India has become the world's largest economy under Mughal Empire Aurangzeb and shared 24.4 per cent of world income.[10]

1793 - An agreement called Permanent Settlement was signed between East India Company and Bengali landlords. This agreement was regarding to fix land revenues with far-reaching consequences for both agricultural methods and productivity.[11]

1820 - Once again China became the world's largest economy followed by the UK and India.[12] The Industrial revolution resulted UK and India as a largest economy but due to economic policies India had been treated as an unequal partner.

1850 - India's gross domestic product was estimated at about 40 per cent and that of China and British cotton exports reach 30 per cent of the Indian market.[13]

1868 - Dadabhai Naoroji had estimated the first India's national income.[14]

1870 - Under the British Empire, India's economy had held a share of 12.2 per cent of world income.[15]

1913 - India's economy share was declined to 7.6 per cent world of income under the British Empire.

1947 - 15th August, India became independent country.

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[10] Kumar, Dharma, & Meghnad, Desai. (Eds.). (1983). *The Cambridge Economic History of India: Volume 2, c.1751-c.1970*. Cambridge University Press.

[11] Dr. Raghunath, Rai. (2011). *Themes in Indian History*. V. K. (India) Enterprises.

[12] Michael, Hennigan. (2011, March 15). China became the world's biggest manufacturer in 2010; US loses crown held since 1895. *Finfacts Business News Centre*. Retrieved from http://www.finfacts.ie/irishfinancenews/article_102183 5. shtml

[13] Marxist. (2011, August 16). Economic History of India (1526-1875). *Marxist.* Retrieved from http://radhikaranjanmarxist.blogspot.in/2011/08/economic-history-ofindia-1526-1875.html

[14] V, K. R. V. Rao. (1939). An Essay on India's National Income 1925-1929. Anstey International Affairs (Royal Institute of International Affairs 1931-1939), *18* (5), 719-721.Retrieved from http://www.jstor.org/stable/3019842

[15] Bimal, Kumar, Mukherjee. (1991). *Changing profile of the British Indian economy, 1870-1905*.Minerva Associates.

1950 - The government of India has constituted planning commission under the chairmanship of Jawaharlal Nehru. The main objective of this commission was to allocate resources to various sectors and create employment opportunities and take the economy on development path.

1951 - India's first five year plan was launched. An enormous portion of resources was directed to agricultural sector and rural infrastructure development. Its results rose to 18 per cent on food production. The Indian government had signed an agreement with the American Standard- Vacuum Oil Company on construction of a large oil-cracking plant near Bombay and also agreed for duty-free import to all the equipment for the plant and of oil for processing, and unrestricted export.

1952 - India's share of world income was 3.8 per cent.

1962 - The Government of India selected a special Exim Policy Committee to review the Govt's preceding policies of export - import (Indian Exim policy).

1966 - Devaluation of Indian currency has increased the value of export.

1975 - Asia-Pacific Trade Agreement (APTA), previously named the Bangkok Agreement was signed. [16]

1982 - 1st January, **Export Import Bank (EXIM Bank)** was established in India to finance, facilitate and promote foreign trade of India.

1988 - The Agreement establishing the Global System of Trade Preferences (GSTP) among Developing countries was signed on 13th April at Belgrade following conclusion of the First Round of Negotiations. The modalities on market access adopted by the Ministers are as under:

- Across-the-board, line-by-line, linear cut of at least 20% on dutiable tariff lines;

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[16] Department of Commerce. (2012). *International Trade - Trade Agreements – Trade Agreements.* Retrieved from http://commerce.nic.in/trade/international_ta.asp?id=2&trade=i

- Product coverage to be at least 70% of dutiable tariff lines;
- Product coverage shall be 60% for participants having more than 50% of their national tariff lines at zero duty level;
- Tariff cuts shall be made on the MFN tariffs applicable on the date of importation. Alternatively, participants may choose to apply the cuts on the MFN tariffs applicable on the date of conclusion of the Third Round;
- The Negotiating Committee shall also consider proposal for revision of the GSTP rules of origin.

1991 - India has engaged on trade with Association of South East Asian Nations (ASEAN).

1992 - India has become a Sectoral Dialogue Partner of ASEAN.

- **Indian Export and Import Policy** (1 April 1992 to 31 March 1997) system was introduced for the first time after the implementation of the Foreign Trade Act.

1994 - Bangladesh – India - Sri Lanka - Thailand Economic Cooperation (BIST-EC) was taken by Thailand to explore economic cooperation on a sub regional basis involving contiguous countries of South East & South Asia grouped around the Bay of Bengal.

1996 - India has become Full Dialogue Partner of ASEAN.

1997 - On 31st March, a new **Import Export Policy** (1997 to 2002) was announced. The main objective of this policy was to integrate Indian economy with the world economy.

1998 - India-Sri Lanka Free Trade Agreement (ISLFTA) was signed and became operational in 2000.

2001 - New **Export-Import Policy** was announced on 31st March.

2002 - ASEAN-India Economic Linkages Task Force (AIELTF) was announced in September. India made the following major announcements:-

i India will extend special & differential trade treatment to ASEAN countries based on their level of development to improve their market access to India.

ii Free Trade Agreement (FTA) within 10 years timeframe.

2003 - Joint Study Group (JSG) was established in the month of April with a view to widen the ambit of **ISLFTA**.

- MERCOSUR Preferential Trade Agreement (PTA) was signed in June.
- India - Thailand Comprehensive Economic Cooperation Agreement (CECA) was signed in November to establish Free Trade between India and Thailand.

2004 - The new Foreign Trade Policy (2004 – 2009) was announced. The basic objective of this policy was to double the India's share of global income by 2009 and make export an effective instrument for economic growth and employment generation. The Special Economic Zone (SEZ) Act, 2005 and the (SEZ) Rules, 2006 were also introduced under this policy.

- In August an Agreement on Economic Cooperation (AEC) between Republic of India and Gulf Cooperation Council (GCC) was signed.

- Agreement on Early Harvest Scheme (EHS) for elimination of tariff on a fast track basis on 82 items of export interest to the sides between India and Thailand has starred in the month of October.

2005 - In January Expansion of India-Chile Preferential Trade Agreement (PTA) was signed.

- India - Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA) negotiations. Negotiations were also held on Trade in Investments for improving the legal framework existing in both countries, including the bilateral Double Taxation Avoidance Convention (DTAC) and Bilateral Investment Promotion & Protection Agreement (BIPA). A Memorandum of Understanding related to the CECPA was signed by India and Mauritius in October, 2005 under the aegis of CECPA:

- MOU in the field of Consumer Protection and Legal Metrology.
- MOU between Bureau of Indian Standards (BIS) and Mauritius Standards Bureau (MSB).
- MOU between Indian Institute of Public Administration (IIPA) and Government of Mauritius.
- MOU on Preferential Trade Agreement (PTA)

- India - Singapore Comprehensive Economic Cooperation Agreement was signed.

2007 - India-EU Broad Based Trade and Investment Agreement. On 28th June India and EU had begun negotiations on a broad-based Bilateral Trade and Investment Agreement (BTIA) in Brussels, Belgium.

- During the Second Session (Asia-Pacific Trade Agreement) of the Ministerial Council at Goa on 26 October 2007 the following important decisions were taken:
  - i To launch the 4th Round of Negotiations;
  - ii To adopt modalities for extension of negotiations in other areas such as non-tariff measures, trade facilitation, services, and investment;
  - iii A common set of Operational Procedures for the Certificate and Verification of the Origin of Goods for APTA was approved and it was decided that the same would be implemented. w.e.f. 1st January, 2008; and
  - iv To explore the possibilities of expanding the membership of the Agreement.

2008 - India signed Comprehensive Economic Cooperation Agreement with Australia in April.

- India-European Free Trade Association (EFTA) Negotiations on broad-based Bilateral Trade and Investment Agreement was signed in October.

- In November, during the 3rd round of negotiations, a Memorandum of Understanding (MOU) was signed by the representatives of India and Southern African Customs Union (SACU). During 5th round of negotiations,

SACU has presented a revised text of the PTA as a working document. Further, both sides had agreed on the following:-

i The text on 'Dispute Settlement Procedures'.

ii To use the text proposed by India on 'Customs Cooperation and Trade Facilitation' and TBT as the working text.

iii To use the text on 'SPS' proposed by SACU as the working text.

2009 - The second Foreign Trade Policy (2004-2009) was announced. In this policy for the first time Indian government had introduced two important schemes namely Focus Market Scheme and Focus Product Scheme.

- ASEAN-India Trade Negotiating Committee (TNC), India and the ASEAN had signed the following Agreements on 13th August.
  i Trade in Goods Agreement along with its Annexes.
  ii Agreement on Dispute Settlement Mechanism.
  iii Protocol to Amend the Framework Agreement.
  iv Understanding on Article 4 of the Agreement on Trade in Goods Agreement.

- India-Canada Comprehensive Economic Partnership Agreement was signed in November.

2011 - In January, India - Indonesia Comprehensive Economic Cooperation Agreement was signed.

- India - New Zealand Free Trade Agreement / Comprehensive Economic Cooperation Agreement. So far 6 rounds of negotiations had been held.

- India-Pakistan Trading Arrangement signed.

1.6 THE PRESENT STATUS OF INDIA IN FOREIGN TRADE

To facilitate international business, government of India has established various Trade Promotion Organisations, Export Promotion Councils, Export Development Authorities, Commodity Boards, Apex Chambers, Industry Associations and an Export Import Bank of India (EXIM Bank) and Export Credit

Guarantee Corporation (ECGC). India's Foreign Trade has increased day by day and over 2 lakhs Indian Exporters and Importers are actively involved in International Business. In 2011, India has exported 98 varieties of commodities to 235 countries for **Rs. 114,264,897.18** Crores and 98 varieties of commodities imported from 229 countries for **Rs. 168,346,695.57** Crores. In 2010, India held 2.2 per cent share of world trade.[17]

1.7 AN OVERVIEW ON GLOBAL SEAFOOD MARKET

Globally fishes are produced broadly through two methods namely capture and culture method. The risk and profitability are almost same on both the methods. According to FISHSTAT Plus the world fish production in the year 2008 was 89.9 million tonnes[18]. The two-third of world fish market is supplied by captured and the remaining by cultured. As per the demand in aquaculture products shrimp products lead the first position and in captured category it is Tuna fish variety. In 2011, the average tuna export price of Vietnam reached USD 7.81 per kilogram[19].

1.8 AN OVERVIEW ON INDIAN MARINE SECTOR

India held a good potential on Agricultural sector. Agriculture shall be classified into two types, the first type is land based agriculture and the other is water based agriculture. The water based economic resources shall be broadly classified into two categories such as fresh water fisheries and Marine fisheries. The demand for the marine products in the world market is high.

Fishery is one of the important sectors to generate employment opportunity to millions of coastal populations and help the people below poverty. India fishery production has reached 6.57 million metric tonnes. India is the 3rd largest fish producing country and 17th seafood exporting country in the world. India has a long

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[17] Department of Commerce. (2012). *Export Import Data Bank*. Retrieved from http://commerce.nic.in/eidb/default.asp

[18] Food and Agriculture Organization (2010), *FISHSTAT Plus*, electronic database, U.N. http://www.fao.org/fishery/statistics/software/fishstat/en

[19] The Fishsite Latest News. (2011, August 26). Tuna Export Growth to US Maintained. http://www.thefishsite.com/fishnews/15469/tuna-export-growth-to-us-maintained

coast line of 8,129 Kms, two million sq. kms of Exclusive Economic Zone (EEZ) and 1.2 million hectors of brackish water bodies, which offer vast potential for development of fisheries. Out of the estimated fishery potential of 3.93 million tonnes from marine sector, only 3.3 million tonnes are tapped and remaining 0.6 million tonnes are untapped[20].

Indian marine fishing activities were engaged in 7 States and 3 Union Territories namely Kerala, Maharashtra, Tamil Nadu, Gujarat, West Bengal, Karnataka, Orissa, Andhra Pradesh, Goa, Pondicherry, Lakshadweep and Andaman & Nicobar Islands respectively. The estimated India's marine fisherfolk population is 30.57 lakhs and they are living in around 3,305 marine fishing villages. Of which 9 lakhs are involved directly in fishing activities and 7.6 lakhs people are involved in other fisheries-related activities. Fishing efforts are largely confined to the inshore waters through artisanal, traditional, mechanised sectors. 90 per cent of marine products yield within a depth range of 50 to 70 meters and remaining 10 per cent of yield extend to the depth upto 200 meters. 93 per cent of marine production was contributed by artisanal, mechanised and motorised sector and the remaining 7 per cent by deep sea fishing[21].

1.9 INDIAN MARINE EXPORT

India has started marine product export through exporting dried items like dried fish and dried shrimp. In 1953, the frozen shrimp was coined and it helped to overcome the value of dried items from 1961. In the year 1966, the Government of India has devaluated the Indian currency and it resulted a rise on the export value of frozen and canned items in value. Neighboring countries are the traditional buyers to Indian seafood and it was steadily changed to developed countries markets. The high demand of seafood in developed countries helped India to expand market rapidly.

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[20] MPEDA(2011), "Marine Capture Fisheries", http://www.mpeda.com/inner_home.asp?pg=overview/contents.htm

[21] International Collective in Support of Fishworkers, Fisheries & Fishing Communities in India, 10.04.2010, http://www.icsf.net/icsf2006/jspFiles/indianFisheries/overview.jsp

The markets for Indian marine dried products are Sri Lanka, Myanmar (formerly Burma), Singapore etc. The development of technology/modernization paved the way for canned and frozen items and it resulted in Indian marine product market shift from neighboring countries to developed countries like Japan, USA, Europe, Australia, etc. Indian marine export policies and subsidies boosted seafood processing units in number with modern machinery for freezing and production of value added products. The present of technology/ modernization units are not enough to utilize the full marine potential.

USA was the prime buyer for Indian frozen shrimp till 1977 and was overtaken by Japan, followed by the West European countries. Japan retained its position till 2002 through importing about 31 per cent on value of total marine products exports. During 2002-04, USA once again became the principle buyer and from 2004-06 European Union was the largest Indian marine products importer. In 2010-11, India' marine products export has reached **Rs. 12901.47** Crores. European Union (EU) has continued as largest importer by 26.78 per cent share. China maintained the second place with a share of 16.43 per cent followed by USA, Japan, Middle East and Other Countries by 15.35 per cent, 13.06 per cent, 5.19 cent and 7.79 per cent respectively. Exports to countries like Libya, Reunion islands, Australia, Puertorico, Dominican Republic, Kenya, Tanzania, Ukraine, Brazil etc. has shown positive growth[22].

Expert committee had studied the Indian deep sector and recommended to diversify the existing fishing vessels into resource specific vessels such as long lining for tuna, jigging for squid etc. To execute their recommendation India has introduced progressive conservation policy. The main objective of this policy was to support tuna fish export with high quality and reach the top position in world sashimi (Japanese dish consisting of very thin bite-size slices of fresh raw fish) market.

[22] MPEDA(2011), "Export of marine products from India 2010-11 Export trend", http://www.mpeda. com/ inner _home.asp?pg=overview

1.10 MARINE PRODUCTS EXPORT DEVELOPMENT AUTHORITY

The Government of India has established various export promotion councils to encourage, periodical supervision and measures to increase the export. In this context, to promote the marine products export the Marine Products Export Development Authority (MPEDA) was constituted in 1972 under the Marine Products Export Development Authority Act 1972 (No.13 of 1972). MPEDA was one of the autonomous bodies, functions under Ministry of Commerce, Government of India. It acts as a coordinating agency with Central and State Governments engaged in fish production and allied activities. It cover all kinds of fisheries like increasing exports, specifying standards, processing, marketing, extension and training to fish producer and processors. MPEDA is providing the following schemes to improve capture fisheries export.

1. Subsidy provided to convert existing fishing vessels into tuna long liners.
2. Interest subsidy sanctioned for constructing new tuna long liners.
3. Assistance for installation of insulated fish hold/RSW system/ice to onboard fishing vessel.
4. Training on tuna long line fishing and better handling for value addition.

1.11 THE STEPS TO EXPORT MARINE PRODUCTS FROM INDIA

Export is an art, the exporter produces goods to satisfy the unknown foreign consumers. To satisfy the international customers and consumers three important things have to be considered namely Quality, Timing and Price. The following are the steps to start marine products Export Company in India and Export:[23]

Step 1. Apply for **Import-Export Code Number** (IE Code No.) and get from Director General Foreign Trade Regional office.

Step 2. Register with concerned export promotion council. For example, to export fish products, it was essential to obtain **Registration-Cum-Membership**

[23] Justin, Paul. (2005). *International Business* (2nd ed.). Prentice-Hall of India.

Certificate (RCMC) from the **Marine Products Export Development Authority** (MPEDA) for exporting and to avail subsidy benefits.

Step 3. The process of export starts from this stage. After getting satisfaction by sample, the buyer (Importer) shall place purchase order (or) Export Order. To assure the payment the importer has to send a promissory note issued from importer bank called **Letter of Credit** (LC). By using LC exporter shall get maximum upto 80 per cent value in advance from his bank (Exporter Bank) to meet the production expenses.

Step 4. Once the Export Order has been received, the exporter starts production as per the agreement between importer and exporter. In addition, Exporter shall approach **Export Credit Guarantee Corporation** (ECGC) for payment guarantee. ECGC shall charge 0.19 per cent on value for rendering their service.

Step 5. After getting over the production, the exporters make arrangements for quality control and obtain certificate from quality control inspector. To measure the quality of food products including fish products **Hazard Analysis and Critical Control Points** (HACCP) certificate has to be obtained and for EU **Catch Certificate** has to be obtained from MPEDA.

Step 6. An exportable finished product has to be dispatched to Ports/ Airports for transit.

Step 7. With the despatch of marine products, the exporter has to apply for Marine/ Air Insurance coverage from an insurance company. In some case this has to be done through **Clearing and Forwarding** (C&F) Agent.

Step 8. At this stage the exporter shall contact the Clearing and Forwarding (C & F) Agent for storing the goods at port warehouses. The C&F Agent comes out with a document called **Shipping Bill** (SB), it is essential for allowing shipment by the Custom Authority.

Step 9. The Clearing and Forwarding Agent submits shipping bill to custom house for verification and the custom house examines the documentation.

Step 10. The C&F Agent also submits a copy of the 'verified' shipping bill to the shed superintendent and obtains carting order for exports.

Step 11. The C&F Agent presents the shipping bill to the preventive officers who oversee the transit procedure for loading exports into ships or aircraft.

Step 12. Once the product has been loaded, the captain of the ship/air craft shall issue a receipt called "Mate's Receipt" to the superintendent of the port. The superintendent calculates port charges and bills the C&F Agents for it.

Step 13. After making the payment, the C&F Agent collects mate's receipt and requests the port or airport authority to prepare Bill of Lading or Airway Bill (AB).

Step 14. After collecting the **Bill of Lading** (BL), the C&F Agent shall send BL (or) AB to respective exporter.

Step 15. Exporter has to apply for the certificate of origin with the received documents in the relevant chamber of commerce.

Step 16. Exporter needs to send shipping documents to the importer stating the date of shipment, name of the vessel, etc., with other important documents like Bill of Lading, Custom Invoice and Packing List for getting their forging counterparts.

Step 17. From this stage the exporter starts working on the payment of export. The exporter submits all important documents to his bank for scrutinize these documents against the original Letter of Credit/ Purchase Order. The bank shall follow **Uniform Customs and Practice for Documentary Credits** (UGPDC)/ **Uniform Rules for Collection** (URC) Norms.

Step 18. The exporter's bank sends all important documents to the importer's bank, which presents the documents to the importer. Then the importer accepts the bill if it is Usance Bill and pays before the due date.

Step 19. After receiving the requisite documents, the importer makes payment through bank. The export amount shall be credited in the exporter account (in case of advance the balance amount shall be credited). Simultaneously, the **Guaranteed Remittance** (GR) Form shall be sent to RBI as evidence of realization of export proceeds and in case of Electronic Data Interchange System user the **SDF** shall be sent instead of GR Form.

Step 20. The last step, exporter shall apply for benefit from the various duty drawback schemes and automatically the sanctioned amount shall be credited to the exporter account.

1.12 SIGNIFICANCE OF THE STUDY

Tuna fish is highly demanded seafood in the global market especially in Japan, Europe and China. Abundant Tuna resources are available in Indian Ocean but tunas are not consumed by Indians due to our consumption habits. The advantages of availability and global demand were utilised by few Indian seafood exporters. They are involved in tuna fish and value added products export. The Indian marine fishing has touched the maximum yield level at most of the part of India except Andaman and Nicobar Islands. In 2010, Andaman and Nicobar Islands held nearly 30 per cent of Indian EEZ with estimated marine potential of 1.48 lakhs MT on account of Tunas itself 46500 tonnes (31.42 per cent) which was untapped. Tuna Fish export has tremendous opportunities in terms of generating employment and earning Forex reserves.

In 2011, an average export price of tuna fish in Japan market was USD 5.26 per Kg, therefore yearly estimated turnover on tuna fish export from these Islands shall be around Rs. 1118 crores. Once the tuna export has been started, that were impress importers to buy other fishes in additional from these islands. By developing fishing industry nearly 30, 000 new jobs shall be created in these islands. The Government, Non-government authority and fishing communities are aware of Tuna demand in international market. To utilise the opportunity, government has taken a few measures to develop tuna fisheries like subsidy schemes for import tuna inputs, assistance to converting tuna boats and provided training to a small group of

fishermen at Port Blair. But the impact was very poor. The fact that till date none of the entrepreneur has shown interest on tuna export and the opportunity of forex earning and generating employment to eradicate poverty was missed. In this context, the researcher has chosen this topic by considering the potential, export opportunities, employment availability and welfare of the islanders.

1.13 SCOPE OF THE STUDY

This study is confined to one of the Union Territories of India, Andaman & Nicobar Islands. The study has a limited scope of analysing the various facts of fish production and potential for marketing or exporting of fish in/from Andaman & Nicobar Islands in the pre and post tsunami period. This study mainly focuses on Tuna fish export potential and to find out the problems in developing this business and measures to overcome those problems. The study covers till the period 2011.

1.14 STATEMENT OF THE PROBLEM

The Andaman and Nicobar Islands is one of the union territories of India located in the Bay of Bengal. It consists of about 572 islands both small and large of which only 38 islands were inhabitants. The census 2001 shows that, the total population of these islands was 3.56 lakhs of which 17, 496 belongs to fishing community. Majority of A&N Islands population are settlers from the mainland including fisherman community. The geographical advantage of Andaman and Nicobar Islands was suitable to generate income form three important sectors. They are (i) Agricultural Sector (ii) Tourism sector and (iii) Fisheries sector. Regarding agriculture, these islands are depending on rain water harvest and the maximum amounts of agricultural commodities are brought from mainland to fulfil the islanders' requirements. The tourism sector depends on tourists from mainland and abroad. The local tourism is very poorly attracted the islanders. The tourism sector is operated only seven months in a year (December to June) due to heavy rainfall. On the whole, a fishery is the only sector which helps to earn huge forex and creates sound job opportunities to these islands population. The marine potential of Andaman and Nicobar Islands is a long coastal-line of 1841 kms and 6, 00,000 sq. kms of Exclusive Economic Zone (EEZ) accounted nearly one-third (33 per cent) of India's

Total Exclusive Economic Zone. The estimated marine potential in Andaman and Nicobar Islands is about 1.48 lakhs tonnes of which Tuna Fish alone accounts for 31.42 per cent (46500 tonnes). In the year 2010, 33000 MT (22.3 per cent) was captured, of the total marine potential only 21.56 per cent are locally consumed, 0.74 per cent was sold to exporter in mainland and the remaining 77.7 per cent was untapped[24].

The Andaman and Nicobar Islands Administration, Government of India, Andaman and Nicobar Fisheries Department, ANIIDCO, MPEDA, Fisheries Survey of India, Non-Governmental Organizations, other Agencies and Financial Institutions are involved in developing fisheries firms but the result was none of the small and medium scale fishing enterprises has shown interest of direct export. The basic problems in developing Fishing business in these islands are:

- These islands are located more than 1000 KM. away from Mainland.
- These islands have lack of indigenous expertise, technology, trained skilled personnel.
- The entrepreneurs' interest in high capital investment is very poor.
- The standard infrastructure facilities for fish processing and marketing is below the standard level.
- The export knowledge among the fishing community is low.
- The transportation plays a vital role in export, essentially on perishable goods like fish and fish products. There is no cargo flight operation from these islands.

Tunas are neither consumed by islanders nor by majority of Indians but at the same time it has high demand in international market. The objective for establishing Andaman Tuna export industry is not only to increase fish production but to increase export units. A good marketing system is necessary to ensure the regular supply to international consumers and particularly for recovering a good price for tuna fish and its value added products. Once a high quality tuna fish and its value added products are exported from these islands then there is a chance of exporting other marine products as well.

[24] Department of Fisheries. (2010). *Andaman and Nicobar Fisheries at a Glance*. Andaman and Nicobar Administration. Port Blair.

The fish being highly perishable item, needs cleanliness and hygiene at all stages, from catching, transportation, processing, exporting and till it is consumed. The success of fishermen depends on skilful management in the area of production, processing and marketing of fishes. All private or cooperative fishing enterprises are not running on successful lines, some of them are being weak and others being strong due to above mentioned reasons. Andaman Tuna export shall yield a good return of a maximum of **Rs. 1681.092 Crores** annually and it provides suitable income. It is in this context, the researcher has carried out the research to upgrade the standard of living of the fishermen and poor of A&N Islands.

1.15 THE OBJECTIVES OF THE RESEARCH

- To study the socio-economic condition of fishing community in Andaman Islands.
- To examine the export procedure and policies and subsidy schemes provided by the Govt. of Andaman Islands.
- To analyze the trend of fish capture, marketing and exporting in pre and post tsunami in Andaman Islands.
- To examine the overall performance of Private and Cooperative fisheries enterprises in pre and post tsunami in Andaman Islands.
- To assess the potential contribution of forex earnings and employment generation by Tuna fish exports.
- To analyze the contribution of Tuna Fish and it is Value Added Products in improving standard of living of fishermen in Andaman & Nicobar Islands.
- To suggest suitable measures to improve the export potential of marine products.

1.16 RESEARCH METHODOLOGY

The present research is a descriptive study carried out in Andaman Islands. The aim of this research is to prepare an action plan for developing tuna export industry in these islands and benefiting the fishing community and others involved in fishing and its allied actives. Four taluks were selected from Andaman Islands of

which Port Blair belongs to South Andaman District, Rangat from Middle Andaman District and Mayabunder and Diglipur from North Andaman District. These Four Islands were selected for two reasons, the first reason is Tuna Hooking Rate nearer to these islands is high and the second reason is that only in these islands suitable conditions exist to develop marine export in future.

1.17 DATA COLLECTION

This study involves collection of both data primary and secondary data. The Primary Data were collected through a structured interview schedule from fishing community households and Questionnaire from head or chief of the fishery enterprises. From fishing family the decision maker was selected and interviewed. The secondary data was collected from the records, annual reports and other statutory reports of the Government departments, MPEDA and records and registers maintained by the Fishery enterprises functioning in Andaman Islands.

1.18 SAMPLING TECHNIQUE

Judgment Sampling Method was used to select a village from a taluks. The thickly populated fishermen villages were selected and interviewed. The villages so selected namely Junglighat, Nimbutala, Fishing Colony and Durgapur from Port Blair, Rangat Mayabunder and Diglipur taluk respectively. The proportional method was used to calculate the sample size for each village and through convenience sampling households were selected at the time of survey. In these islands no one was an exporter, all are export suppliers only. The fishery enterprises are classified into two strata on the basis of type of the business, viz., private and co-operative society. The private fish export suppliers were selected by convenience sampling and cooperative fishing societies were selected through Judgment sampling by discussing with the Andaman & Nicobar Islands Cooperative Registrar office officials at Port Blair.

1.19 SAMPLE SIZE DETERMINATION

Sl. No	Name of Region	2001		2005		2010(P) by 2001		10%	CSS
		Total	NF	Total	NF	Total	NF		
1	Port Blair	3354	839	4713	1011	4605	988	99	118
2	Rangat	1352	270	1743	364	1856	387	39	46
3	Mayabunder	2298	460	753	146	3160	612	61	73
4	Diglipur	3902	976	3068	664	5357	1160	116	138
Total		**10906**	**2545**	**10277**	**2055**	**14978**	**3148**	**315**	**375**

Source: Fishery Survey of India (FSI), 2005and Dept. of Statistics, 2001.
Note: (P)-Projected, NF: No. of Families CSS: Calculate Sample Size

The Fishery Survey of India (FSI) does survey once in every five years among fishing community all over India. As per their record, in 2001 Andaman Islands fishermen population for the selected four taluks was 10, 906 (2, 545 families) and in 2005 it has been reduced to 10, 277 (2, 055 families) due to tsunami on 26th December 2004. The Fisheries Survey of India's 2010 survey report is yet to be published. While discussing with FSI officials Port Blair, they revealed that the fishermen families were reoccupying these islands with additional families from mainland. Hence the population was unknown and so the projected population published by Department of Statistics, Andaman and Nicobar Islands has taken for the research. As per the National Educational Association, formula for determining sample size –

$$s = X^2 NP(1 - P) \div d^2 (N - 1) + X^2 P(1 - P)$$

s = Required sample size.

X^2 = The table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = The population size.

P = The population proportion (assumed to be .50 since this would provide the maximum sample size)

d = The degree of accuracy expressed as a proportion (.05)

The projected population was 14, 978, and to calculate sample size for this population as per Determination of Sample Size table was 375. The sample size for each village was calculated by proportional method. According to family size 2001, the sample size for Port Blair was 118 families, 46 for Rangat, 73 for Mayabunder and 138 for Diglipur. In the selected Andaman Islands Six private fish export suppliers are working. Out of Six, Four private fish export suppliers had shown interest in providing data and to compare the financial performance, four cooperative fish export suppliers were selected through discussion method with the Andaman & Nicobar Islands Cooperative Registrar office officials at Port Blair.

1.20 TOOLS USED

(i) Variables

This research has studied the following variables – **independent variables** – Place & Year and **dependent variables** - Nature of the job, Size of the family, Respondent average monthly income, Total assets value, Marine fish captured in volume (MT), Marine export in volume (Kg), Current Asset, Current Liabilities, Shareholder's Fund, Total Assets, Net Sales, working capital, fixed assets, net profit.

(ii) Hypotheses

Ho1 - There is no difference between Islands and Respondents' Family Size.

Ho2 - There is no difference between Islands and Respondents' Children Studying.

Ho3 - There is no difference between Jobs and Respondents' Average Monthly Income

Ho4 - There is no difference in monthly income of various Islands fishermen.

Ho5 - There is no difference in monthly family income of various Islands fishermen.

Ho6 - There is no difference in Net Assets Value held by fishermen of the Islands.

Ho7 - There is no difference between Volume of fish captured before and after Tsunami.

Ho8 - There is no difference between Volume of fish Exported before and after Tsunami.

Ho9 - There is no difference between the Financial Performance of Private companies and Co-operative Societies.

Ho10 - There is no difference in monthly income of various Islands fishermen. (For Suresh Mohan Business Model)

Ho11 - There is no difference in monthly family income of various Islands fishermen. (For Suresh Mohan Business Model)

(iii) Statistical Tools Used

The researcher has used modern and sophisticated statistical tools like ANOVA, Garret's Ranking Technique, Independent Sample T- Test, Paired T-Test, Growth Rate, Cross Tabulation and Percentage Analysis to analyze and interpret the data.

(iv) Software and Style Used

The researcher has used SPSS 16 software package to analyze the primary data collected from Fishing Community. The researcher has used American Psychological Association (APA) Sixth Edition to write the references of this thesis.

1.21 LIMITATIONS OF THE STUDY

- The study involves only fishing community and personnel involved in this business.
- The study has taken past 10 years only for data analysis due to resource constraints.
- The empirical part of this study was confined to limited number of fishing community. The sample size may not be regarded as an exa**ct replica of the Universe.**

1.22 CHAPTERIZATION SCHEME

This study has been presented into six chapters. The first chapter gives a brief introduction on fish export and opportunities available to Indian marine industry, world and Indian history in international trade, export procedure for marine product in India, the tuna benefits and demand in world market and also touches upon the statement of the problem, objectives, hypotheses, methodology and limitations of the study.

The second chapter "Review of literature" deals with appropriate literature reviewed from various resources and the third chapter explains the Socio-economic status of fishing community and Marine Products Export Policies and Subsidy Schemes available in Andaman Islands.

Fourth chapter throws light on present trend on Fish Capture and Exporting and the overall financial performance of private and cooperative fisheries enterprises in Andaman Islands.

Fifth chapter deals with potential contribution of forex earning and employment generation by tuna fish and its value added products export and also brings out the suitable measures to improve tuna fish industry in these Islands.

The last chapter explains the Findings of the study and Suggest suitable measures to improve Tuna Export and the standard of living of fishing community and poor in Andaman and Nicobar Islands.

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CHAPTER II

REVIEW OF LITERATURE

CHAPTER - II
REVIEW OF LITERATURE

This chapter reviews past studies on socio-economic status and major portion of studies were concentrated on marine products export, tuna export, national and international trade impact on development of a economy, Indian policies and procedures on developing fisheries, poverty alleviation through domestic and international trade, export promotion programs and policies, entrepreneurship, huddles in foreign trade and food safety.

The relevant reviews were referred from different journal, annual reports, Magazines, e-news papers records, annual reports and other statutory reports of Government departments and studies conducted by different individuals. The reviews are presented in chronological order to provide better understanding to the readers.

Haberler (1971) has explained in his article entitled "Dynamic Benefits of Trade" about the benefits of trade. He had stated three benefits of trade, the prime benefit was trade shall provide material means indispensable for economic development. The second benefit, it shall be the vehicle for dissemination of technological knowledge and the transmission of ideas and finally the trade was a vehicle for the international movement of capital and the last benefit is Free international trade is the best guarantee for free competition.

Asaithambi (1988) have discussed in his thesis entitled "Evaluation of progress and problems of cooperative movement in Andaman and Nicobar Islands". The main objectives of his study was to study the problems faced by cooperative societies of Andaman and Nicobar islands, to facilitate feedback from the field to determine the plan outlay and formulate need-based policies for the development of these cooperatives by the union government and the local administration. In his chapter VIII of Fishermen Cooperative Societies, he had clearly indicated that most of the societies are lack of business operations programme, trained staff to manage the day to day work, technical and financial guidance to support their diversified activities and infrastructural facilities. It results societies to take up limited business

activities or zero remunerative business. He found that many societies were involved on low volume business due to inadequate involvement of the fishermen and managerial efficiency. The interest taken by the government for promotion and regulating the cooperatives are inadequate. No proper record was maintained for the business activities by these societies.

Williams, Bushardt and Nissan (1991), had revealed a study on "Packaging for Export - A case study of underutilized species of finfish". They had examined packaging problems associated with development of a new export market for underutilized species of finfish from USA. Their study concentrated on estimating square footage needed for shipping when the product was packed by weight, deterioration in product quality, primarily associated with the destruction of the carton during shipment, failure of packaging to portray a quality product and failure to communicate consistent information. The packaging constrain includes other constraints like processing technology, methods of transportation, the product, markets, and economies. They have recommended that there was a need for closer cooperation and coordination among the processors. Many Japanese manufacturers are fiercely competitive at home and have to coordinate their efforts in developing new markets with significant success. The cooperative arrangement has to develop in auto industry to share technology. They concluded that, these arrangements shall function as a model with adaptation for future development in fish export industry.

Hunt (1999) has revealed an article on "Fiji's fisheries: their contribution to development and their future". The main objective of the study was to analyze the contribution of fisheries on Fiji's development. He stated that, Fiji's fisheries industry has mixed fortunes. There was a rapid growth on Fiji's fresh fish and became the third important industry on export. These industries had shown positive effect on their economy. The present 'hands off' policy by government on fresh fish export industry helps these industries to reach mature. Fiji was one of the largest population island nations in South Pacific. They are around 760000 people (excluding Papua New Guinea), of which 40 percent are urbanized. The estimate direct and indirect fisheries employees are 21000 to 31000 on an account 6 to 8 per cent of the population. In tuna vessels and tuna processing plants 10,300 Islanders are directly employed including four percent of women employee in canneries. Fiji ranked 46th out of 175 in

International Human Development (IHD) Index. The estimated weekly income of an artisanal fishing households was F$ 34. This study concluded that the success of Fijian model of large catching, processing and fresh fish export industry was due to entrepreneurial skill, favourable air transport links, low tax policy and private investment.

Kumar (1999) made an attempt to explore a study on "Technology and Labour Process: A case study on fishing industry in Kerala". His research objectives were to unfold the capitalist, to explain the marginalization of the traditional fishermen in the development process of the fishery sector and to assess the responses of the fishermen community against their marginalization. He has concluded that the Kerala fisherfolk made attempt on motorisation against capitalist exploitation but it has not improved their productive efficiency of the fishery. However, the fishing remains a profitable venture due to its favourable price factor.

Lupin (1999) has written a paper on "Producing to achieve HACCP compliance of fishery and aquaculture products for export". He had explained equivalence and compliance of European Union (EU) and USA Hazard Analysis and Critical Control Point (HACCP)-based regulations for fish and fish products and importance of safety regulations on fish and fish products in international trade. He has pointed out that EU and USA imports 50 per cent of the total demand in international fish markets and HACCP-based regulations are mandatory in the both countries. He has recommended that the domestic fishery industry and exporters has to adopt a pro-active attitude regarding HACCP-based regulations for two reasons. The first reason was in spite of the shortcomings and difficulties, current regulations make them clearly responsible and liable for the fate of HACCP-based systems and the second reason was many industries has been already implemented HACCP system and making profit.

Brake (2001) prepared a master report on "The Roles of Women Fisherfolk in the Fishing Industry in India and the Impacts of Development on their Lives". He had examined the experiences of women in two fishery dependent areas of India for their wider lessons. He mentioned that Fisheries development programs in developed nations are advanced then developing countries and due to advanced technology the

fisheries stock has been declined in Western and their associated economic. He had mentioned that the impacts of fisheries and economic development programs are multifaceted. He also described the roles and needs of Indian women in fishing industry particularly in Kerala and the impacts of fisheries development programs on their work participation and life standard. He had concluded that Fisheries development programs are beneficial to many fishing villages in terms of community development, health care and education.

Dewit (2001) revealed a paper on "Intervention in risky export markets: insurance, strategic action or aid?". The main objectives of this paper were to study the official export credit insurance programmes and its strategy on export promotion and to examine the export insurance policies influence between exporting and importing countries polities. He had applied a model on official export insurance to analyze the impact of export credit insurance programees. Hence, he had concluded that governments are targeting specific industries indirectly through providing export subsidies to specific markets via export insurance and such conceal strategic rent capture less developed markets.

Ling-yee and Ogunmokun (2001) had analyzed an article on "The influence of interfirm relational capabilities on export advantage and performance: an empirical analysis". The objectives of this paper was to find the firm's relational capability contribute to its export competitive advantages and the firm's relational factors make an incremental contribution to its export advantage and performance beyond the contribution. They had pointed out that, according to the nature of export channel environment the exporting firms cannot rely only on their internal competencies to achieve competitive advantages and successful export. Hence it has been concluded that through controlling internal firm factors, the relational factors of the both competitive advantages and export performance of a firm shall be achieved.

Sarris (2001) took up a study on "The Role of Agriculture in Economic Development and Poverty Reduction". This study mainly focused on the role of agriculture in promoting overall growth and poverty reduction. He has mentioned that Globalization had created opportunities, for instance through improving agricultural terms of trade or improving market access for agricultural exports. The risk from

Globalization was it has increased domestic price instability. He suggested that globalization must be accompanied by domestic market enhancing policies in order to produce positive results on agricultural growth and poverty reduction. He has pointed out that the successes of green revolution in India and other Asian countries are well documented. He concluded that the growth of India in the past twenty years since introduction of the new varieties the poverty levels has been dropped nearly to half due to increased employment to poor in agriculture.

Ahmed, Mohamed, Johnson and Meng (2002) had undertaken a study on "Export promotion programs of Malaysian firms: an international marketing perspective". The objective of this study was to identify the channels through which firms obtain information on export promotion programs, to ascertain firms' information-seeking behaviour and to assess the level of awareness and usage of export promotion programme among firms in different industry groups. This article revealed 13 awareness programs among Malaysian firms in four industry groups namely Basic Metals, Fabricated Metals, Machinery and Equipment and Non-Metallic Mineral Products. The sample was collected from 53 manufacturing firms. They have suggested that the government agencies to do more to promote external trade and to create higher level export promotion awareness programme for small and medium-sized firms shall give greater emphasis.

Leonidou, Katsikeas and Samieec (2002) have attempted on "Marketing strategy determinants of export performance: a meta-analysis". This empirical study tried to thrown light on analysing the relationship between marketing strategy variables and export performance, to examine business concerns engaged on manufacturing consumer and/or industrial products and also focused on direct and indirect methods of export. Their research results explain that, there was a strong association between export marketing strategy and export performance measures. They had suggested that a formulated sound export marketing strategies was required to assist business managers to achieve success in international markets. There must be a connection between market segmentation, pricing strategy, dealer support, product quality and advertising to show positive performance in export markets.

Palanisamy (2002) has revealed in his research on "The Economic Conditions of the Primitive Tribes (A Case Study in the Nilgiris of Tamilnadu)". His research objectives was to study the socio-economic conditions of the four tribes, to analyze the pattern of income, expenditure and its extent of inequalities and to measure the extent of the poverty level. His research consists of both primary and secondary data. The primary data was collected from 710 households of 51 tribal villages. He concluded that, to eliminate or reduce the level of poverty, there must be fundamental change on composition of earnings from agricultural sector to inter-sectoral occupation and it indirect alleviates poverty.

Varghese (2002) prepared a thesis on "The Socio-Economic Development of Tribals in Kerala (with special reference to Wayanad District)". He analyzed the socio-economic profile of Paniya tribal community in Wayanad and found that the low wages and seasonal employment pave the way for poverty and deprivation.

Embran (2003) has prepared his thesis entitled "A Study on Women Entrepreneurship in Kerala". He assessed the effects of socio - economic environment on the development of women entrepreneurship, the status of women enterprises and the effectiveness of institutional support on Entrepreneurship development among women in Kerala. He suggested that for the successful entrepreneurship soft skills are required namely Motivation, Leadership, Determination, Feed Back and Analysis of Information, Balancing of Roles, Self-satisfaction, Election of Location, Selection of product, Product Management, Business Awareness, Documentation and Analysis of Result, Market Awareness, Decision-Making and Marketing Management.

Gangadharan (2003) has done his research on "Utilization of Health Services in Urban Kerala - A Socio-Economic Study". He examined the linkage between morbidity and socio- economic status and the extent of utilization of Government and private health services by the people in urban and urban slum. He found that, the socio-economic status has been decreased from upper class to very low class in both the slum. He mentioned that from the past two years data the utilization of private health services was 90 per cent and 66.3 per cent by urban and rural slum respectively. The reasons for choice of private health services are good treatment, doctor is known, not necessary to wait for long time, 24 hours clinic function and

availability of medicine but their only limitation was the private hospital services charges are costly to the poor.

IMM Ltd (2003) had prepared a project on "Post-Harvest Fisheries Research Project R7799" under a title "Major Trends in the Utilization of Fish in India: Poverty-Policy". Under the subtitled "Fisheries in India: An Important and Dynamic Sector" it has been stated that, in 1997 India's estimated fish production was 6.2 million tones (live weight equivalent) of which 4.7 million tonnes were consumed by domestic consumer. The fishery contribution on foreign exchange had reached US$ 1107 million and accounted for about 3.4% of total Indian export and it contributes to 1.3% on GDP. In fishing industry, technology plays a vital role which helps to earn huge foreign exchange at the same time export was not easy for traditional rural artisans. The tread in marketing had increased the demand of fish in local and international market.

Matthew (2003) has made an analytical study on "Trade in Fisheries and Human Development Country Case Study – India'. He has pointed out that according to the United Nations Development Programme Human Development Index, India stood at 124th position in the world community and 44.2 percent of Indian population were living below poverty line by earning less than $1 a day which includes a significant proportion of fishing communities. India has a coastal population of 370 million people or 36 percent of the country's total population. About 6.7 million people Indians are dependent on fisheries for their livelihood. He has concluded that fish has become a highly traded commodity and one-third of total fisheries product was traded in international markets. Comparing to the global average India's seafood exports lies below the average because only 12 per cent of Indian fish production (wet weight equivalent) was exported.

Rae and Josling (2003) have revealed in their article on "Processed food trade and developing countries: protection and trade liberalization". They had analyzed the position of developing countries on further lowered their tariff barriers against imports and to identify the impact of such policy changes on processed food exports of developing countries. In this paper they have stated that the exports of processed foods from developing countries have expanded rapidly in recent year and it highly

contribute to their economic development. They also mentioned that export policies and agricultural resource endowment of the developing country offer significant explanations for their export growth. They concluded that by reducing the agricultural trade barriers results significant increase of 6 percent above on developed countries processed food export.

Salele (2003) has prepared his thesis on "Sustainable rural development in the time of globalization: implications of the fishery export trade policy on the livelihood of fishing communities in Samoa". The main objective of his study was to identify and measure the impacts of specific export trade policy with definable global national and local forces on rural fishing economies, families, communities and villages. He concluded that fishermen income does not provide sufficient to their families. The fishery resource seems to be sustainable even though fishers experience high competition as the size of the fishing fleet steadily increased over the last few years. Due to lack of government assistance in marketing most of their fishes are sold to the middleman. Most fishers adopted modern fishing technologies which resulted in their livelihoods being better off economically and culturally. However adoption of such technologies encouraged the revival of traditional fishing skills. He concluded that globalised trade had improved the livelihoods of fishers and their families and these improvements are realized in the form of household income, children's welfare, children's schooling, family health, nutrition and quality of life.

Schmidt (2003) has written an article on "Globalisation, Industry Structure, Market Power and Impact on Fish Trade Opportunities and Challenges for Developed (OECD) Countries". He overviewed the fisheries trade and market situation on past decades and discussed the potential opportunities and challenges may be expected for developed countries in the process of globalization. He has clearly mentioned that Globalisation was growing interdependence between markets and fisheries. This happens through three channels i.e. trade in fish and fish products, foreign direct investments in harvesting and processing (localization) and through fisheries services includes harvesting, processing and fisheries management services. He also pointed out that in the last decade's commercial fisheries resources was overexploited and to overcome the demand they had developed aquaculture sector. It shows that the fish products are holding good demand in international market. He had suggested for open

access fisheries markets to reduce the traditional trade barriers. Hence he has concluded that globalisation shall bring additional wealth creation opportunity through trading fish and fish products.

Ayyappan and Krishnan (2004) had written an article titled “Fisheries Sector in India: Dimensions of Development”. They had concluded that a combined effort to understand fisheries and its nuances were necessary for comparative advantage which India held in this sector. It helps India to go a long way to assimilate the blue revolution. The fisheries sector provides employment opportunity, generates income and brings huge foreign earning from export.

Department for International Development (2004) had prepared a report on “Post-Harvest Fisheries and Poverty in Cambodia.” Their main objective was to study the post-harvest fisheries sector in the global context. The results of the study state that the post-harvest fisheries sector was under-represented in the development policies and plans in many countries. The boundaries between this sector and other economic activities (such as trade, agriculture, transport and credit) are unclear but it was an important contributor while integration with women’s affairs, food security and poverty reduction. It was estimated globally 35 million people are employed in fisheries as full-time and part-time. An approximately 85 per cent of small-scale fishers and fish farmer of the World are living in Asia. The post-harvest sector was the most important contributor of poverty reduction. FAO (2002) had estimated that nearly 5.8 million fishers are earning less than one US $ per day globally. Hence it was concluded that the fisheries sector plays very important role on poverty reduction. In Cambodia, almost 80 percent of the poor are engaged in agriculture and fisheries sectors. The post-harvest fisheries sector was main source of employment to Cambodian women. This sector provides a livelihood for over two million Cambodians and contributes 16 percent of GDP in their economic.

Dollar and Kraay (2004) have written an article on “Trade, Growth, and Poverty”. In this article they had analyzed the effect of globalization on inequality and poverty. They mentioned that over the half of the developing world lives in globalizing economies that seem large increase on trade and significant declines on tariffs. The globalisers are catching up with rich countries while the non-globalisers

fall further and further behind. They concluded that the evidence from individual cases and cross-country pave a clear view that globalization leads to faster growth and poverty reduction in poor countries.

Jose (2004) has made a research study on "Economics of Food Processing Industries in Kerala". The major objectives of his study were to trace the evolution of food processing units and to explore the economic significance of food processing industry in Kerala. His research compiled both primary and secondary data. The primary data was collected from food industries functioning in three districts namely Pathanamthitta, Kottayam and Ernakulam. From the results he concluded that the agro-processing industries are very important in terms of employment and a substantial portion of trade and commerce. In Kerala almost 27 per cent of the total population are employed in agriculture sector. In the processed food industries packaging plays a vital role on food safety and marketing.

Josupeit and Catarci (2004) had presented a paper on "The world tuna industry - an analysis of imports, prices and their combined impact on tuna catches and fishing capacity". They tried to assess the influence of tuna market against tuna catches and to provide an input for evaluation of the optimum tuna fishing capacity. Tuna contains rich Omega-3 and polyunsaturated fat which provides numerous health benefits to human beings. The consumption of rich Omega-3 fish helps to decrease risk of heart diseases, cholesterol reduction, regulation of high blood pressure, prevention of arteriosclerosis. They concluded that the steady demand of canned tuna increased the demand of raw material, catches, processing and price.

Zare (2004) has prepared a report on "High pressure processing of fresh tuna fish and its effects on shelf life". He determined the optimal pressure treatment levels for maintaining freshness of tuna meat for commercial purpose. Tuna was a highly perishable product and it implicate into histamine poison due to high level of histidine. The fresh tuna fillet and steaks has high demand in Japanese restaurants as a grilled item. Demand of fresh, additive-free and safe seafood products has inspired to discover novel methods to maximise the quality of seafood as fresh product. Hence it has been concluded that the tuna has to preserve at a pressure level of 220 MPa/30 min to maintain the freshness.

Bose and Galvan (2005) had analyzed in a paper on "Export supply of New Zealand's live rock lobster to Japan: an empirical analysis". This study was focused on rock lobster characterized as a high-valued live commodity, the rock lobster industry dependence on export and investigated on export market behaviour on fishery to predict investment decisions. They had pointed out that the New Zealand (NZ) seafood industry was heavily dependents upon export market. In fact more than 80 percent of their fish and seafood production are exported and more than 90 percent of the industry's earnings are generated from export. In 2000, New Zealand has exported seafood upto NZ $ 1.43 billion and became fourth largest seafood exporter of the world. They had concluded that the lag supply, productive capacity, seasonality and time trend are significantly influence the export supply behaviour on rock lobster to Japanese market.

Department for International Development (2005) had prepared a report on "The International Seafood Trade: Supporting Sustainable Livelihoods among Poor Aquatic Resource Users in Asia" They investigated the international trade of fisheries products and its relationship between poverty alleviation and livelihoods of poor engaged in aquatic resource in Asia and analyzed the fisheries products trade between Asia and the European Union with reference to two valuable fisheries commodities shrimp (from Vietnam) and marine ornamental species (from Indonesia and the Philippines) to identify the options to improve the effectiveness of poverty reduction by international fisheries trade. This study revealed the trade and poverty reduction at global, regional and national levels and their implications for poverty reduction and ongoing trade-related initiatives relevant to poverty reduction. The result derived for this research was the trade of fisheries products between Asia and Europe has employed millions of poor people and provides income and food to landless people in coastal communities. The domestic and international fish trade has shown a positive impact on poor producers and helped to alleviate poverty. They recommended to the developing countries to reduction tariffs on aquatic products benefit the poor.

Department for International Development (2005) expressed in their Key Sheet under titled "The Role of Fisheries in Economic Growth and Poverty Alleviation towards a Wealth-Based Approach for Fisheries Management". DID have

stated that fish resources represent natural capital and they are the potential source for sustainable wealth to many coastal, island and inland developing countries. This wealth provides livelihood to poor, contribute for economic growth and poverty alleviation. They recommended to develop linkage between fisheries wealth, benefit to the poor, other macroeconomic programmes on governance, institutional development and poverty alleviation. It was concluded that Government macroeconomic policy was an important determinant of economic growth such as free-trade, stable prices and private enterprise. The fisheries had contributed to economic growth and poverty reduction directly.

Dey, Rab, Jahan, Nisapa, Kumar and Ahmed (2005) had published paper entitled "Food safety standards and regulatory measures: implications for selected fish exporting Asian countries". This paper reviewed the implementation status of sanitary and phytosanitary (SPS) measures on fish and fish product exports in major fish-exporting countries in Asia and to analyzed the costs and benefits of compliance with these standards and regulations in these countries. They also reviewed the progress of implementation of tariff schedules as agreed in the WTO. They prepared this article on the based on both primary and secondary data. The primary data collected by the World Fish Centre and its partners in selected countries and the secondary data collected from various sources such as government documents, the FAO database and other published literature. They had concluded that health safety was a legitimate claim of the consumers in both developed and developing countries. Hence the developing countries should consider and implement comprehensive health standard measures from the farm level to till the point of distribution channel. Farmers and fishers should be provided an appropriate incentive to implement HACCP processes and food safety standards in their products.

Food and Agriculture Organization of the United Nations (2005) had prepared technical guidelines on "Increasing the contribution of Small-Scale Fisheries to Poverty Alleviation and Food Security". This technical Guideline report was focused on small-scale fisheries and their contribution to poverty alleviation and food security. In their report they had mentioned that most of the developing countries the small-scale fishermen communities are living under poverty and food insecurity.

Klasra and Fidan (2005) have analyzed a study on "Competitiveness of Major Exporting Countries and Turkey in the World Fishery Market: A Constant Market Share Analysis. They had explored the shares of fishery exports on some selected countries in the world markets by using Constant Market Share (CMS) model, thrown light on world fish production, consumption and its trade. They analyzed the fish export and fish products of the selected countries by twenty years (1980–2000) data. The analyze results clearly indicate that Turkey and other major exporting countries has increased fishery products exports of the world. The analysis on commodity-composition level shown that countries like Canada, the United States, Iceland and Turkey were targeted their fishery exports in fast-growing other countries and the results of competitiveness effects revealed that the Denmark, Netherlands and Turkey were the most non-competitive exporting countries and also they lost their export market share.

Kurien (2005) has analyzed in an article on "International Fish Trade and Food Security: Issues and Perspectives". He had exploited the important food security and contemporary issue in international fish market. Fish provides rich in proteins and fat especially in the diet of young children, infants and pregnant women. The relationship between fish trade (exports and imports) and food security was more complex and the results are not necessary to be positive always. The results may be differs from location to location, for example, in India, Gujarat was one of the major marine fishing state where majority of fishermen and domestic consumers are vegetarians. In this location the only option to the fisherman was generate income through export. Gujarat was fully concentrated on export and almost all fish their yield were exported. He had concluded that the export of surplus catches and fish like tuna won't create food security problem in India. Fish generates livelihoods, employment and income through the activities of harvesting, processing marketing and also contributes indirectly to food security.

Majocchi, Bacchiocchi and Mayrhofer (2005) have revealed in an article on "Firm size, business experience and export intensity in SMEs: A longitudinal approach to complex relationships". In this article they have studied the effect of firm size and business experience on export performance, analyzed the relationship between firm sizes and export intensity and to evaluate the role of experience. They

had selected 144 Italian manufacturing firms for this study and collected data for five years from 1997 to 2001. The authors develop a general model and test overall performance of the manufacturing firms of Italy. Their results state that there was a strong relationship between firm sizes and export intensity. Hence it was concluded that there was a possibility for this firms for explanation and significant effect on international trade due to their experience in future.

Paul (2005) had written in his book entitled "International Business". The rationale of international trade was a comparative advantage and through open and fair international trade all the countries shall be benefited. Getting Importer-Exporter Code Number (IM Code No.) from Director General Foreign trade regional office was the basic requirement to do Export-Import business. After getting the Importer-Exporter Code Number they need to register company with concern export promotion council. Once they complete theses formalities they shall go for international business as per the rules and regulations of the concern country.

Rodriguez, Garcia, and Navarez (2005) have discussed in a paper on "The Effects of Export Prices on the Demand and Supply for Fish in the Philippines". They have describes the effects of changes in export prices on Philippine fish demand, supply, prices and trade. They have also analyzed the factors affected the international fish trade in Philippines and evaluated the effects of changes in fish export prices on the domestic demand, supply and trade of different types of fishes. They had concluded that the higher export prices lead to higher output and exports for fisheries sector and such change may cause decline in domestic fish consumption.

Vallathan (2005) has taken up a study on "An Economic Analysis of Production Trends and Marketing System of Marine Fisheries in the Union Territory of Pondicherry". He examined the role of fisheries in the economy of the Union Territory of Pondicherry, analyzed the trends in fish production during post liberalization period and examined the performance of fish production in the four constituent units of this Union Territory and their fish marketing system. This study involved both primary and secondary data. The primary data was collected from primary producer, wholesale merchants, commission agents in the fish landing centres and markets, retailers and vendors. He had pointed out that the fishing

community constitutes 5 per cent and accounted 3 per cent employment generated from fisheries in this Union Territory. The fishery contributes 2 per cent on state domestic product in this Union Territory. In Pondicherry, ninety per cent of fishes were produced from marine sector and remaining from the inland sector. He had suggested that the fund allocated to fishery sector has always been less than proportionate to its contribution to the economy so in the future plans it should be considerably enhanced. The minimum facilities like sheds, cold storage and refrigerated facilities had to be developed in the landing centres. Fishermen co-operative societies should develop their own processing units at fish landing centres.

Dawson (2006) has published an article on "The export–income relationship and trade liberalisation in Bangladesh". He had examined the impact of trade liberalization in 1990 on the export - income relationship in Bangladesh. He had mentioned that the Trade liberalization in Bangladesh has aimed to reduce anti-export bias inherent in restrictive trade practices and to make exports more competitive. The Government of Bangladesh provided infrastructure on preferential terms through creating export processing zones and attract foreign capital for export. The Special Bonded Warehouse Scheme, the stock duty-free inputs and the Duty Drawback System provided to some duty-free inputs or rebates on duty levied on imported inputs were exclusively enjoyed by export and import firms. Trade liberalization has promoted employment and economic growth. The tariff reduction provided more benefit to abundant labor and less benefit to scarce capital. They enjoyed the comparative advantage through technological advance resources. Hence it was concluded that the Exports has played an important role in Bangladesh and there Gross Domestic product (GDP) is almost 12% since 1990. He suggested, to provide more incentives to exporters continue trade liberalisation and to reduce substantial anti-export bias on trade liberalization agenda.

Gopinath and Puvanesuri (2006) had revealed in a study on 'Marine capture fisheries'. They provided a broad overview on fishing industry in Malaysia particularly relating to the dependent health resources. They have also studied the constraints and contradictions in present resource management regimes. They pointed out that the Marine capture fisheries constitute an important sector in Malaysian

economy as a generator of foreign exchange and employment. Coastal resources are exploited by both commercial and traditional fishing gear and deep-sea fisheries are harvested by larger commercial boats. In 2001, about 84,496 licensed fishers were employed. They found that the rapid economic growth has result a significant movement on rural manpower to industrial and urban centres. Hence the major problems faced by Malaysian marine offshore fishery are lack of infrastructure, capital, skilled labours and technology.

Mahesh (2006) has done a research on "Poverty, inequality and natural resource degradation: An investigation into the small-scale fishery sector of South Kerala". The objectives of his research were to study income inequality among the small-scale fishing community and the causes for inequality, to find the characteristics of poorer and non-poor, to analyze the reasons for poor households in small-scale fishery households and to analyze the dependence of fishery resources for livelihood. He has found that almost all the households were involved on small-scale fishery sector and their livelihood dependent on marine resources. The average monthly per capita household income of a small-scale fisher was estimated at Rs. 1363. He suggested that the marine fishing policy should include labour-intensive methods for fishing and its related activities. An appropriate non-fishing employment opportunity should be created as a complement to provide income security to households.

Samsen and Chanboreth (2006) had prepared a report on "Trade and Poverty Link: The Case of the Cambodian Fisheries Sector". They analyzed the significance of the fisheries sector in the economy, determines to what extend trade in fisheries affects rural livelihoods and poverty of households engaging in fishing activities and workers in exporting companies and highlighted fisheries policies. They found that fishermen are earning low income due to minimum amount of fish exports, lack of skill, high transportation costs and informal fee. From their research they had concluded that the fisheries sector contributes significantly to livelihoods and direct and indirect employment for the poor in many provinces in Cambodia. The fisheries sector mainly provides daily nutrition food and prevents extreme poverty incidences. Hence they had suggested that the government has to show more interest on fisheries

industry by providing financial subsidies and training programme to unskilled fishermen to overcome the problems and help them to learn huge profit.

Selamat and Gapor (2006) had published a paper on "The Performance of Entrepreneurships Skills among Belawai Women in Sarawak, Malaysia through Collective Actions". They revealed the socio-economic activities of Belawai fishing women at Sarawak and examined the characteristics and nature of entrepreneur skills on collective action. This study had identified that the success of women enterprises was influenced by their creativity, strong character and perseverance attitude in managing their small-scale business activities, their co-operation on searching markets and multiple strategies to expand their marketing targets. The most interesting secrete for their success was many of their business products were based on primary raw materials from their own environment which pave a way for guaranteed and sustainability production especially sesar unjur (smoked shrimp). This article has suggested that to provide proper guidance to make women as significant contributor in upgrading their socio-economic status. This study has concluded that the collective actions shall improve rural community livelihoods and by utilizing the own environmental products in a sustainable manner shall help to strengthen the social structure of their community.

Wilkinson and Brouthers (2006) had analyzed in a paper on "Trade promotion and SME export performance". They had tried to develop an international resource-based view of Small and Medium Sized Enterprises (SMEs) by examining the effectiveness of a set of export promotion services. They had investigated the impact of US state-sponsored export promotion activities on the international marketing efforts of small to medium-sized enterprises. They had found that by controlling internal firm resources, use of trade shows, programs identifying agents and distributors contribute positive result on SME export performance.

Yakob, Viljoen, Jooste and Graz (2006) had prepared a paper under titled "International Trade Performance of the South African Fish Industry". They analyzed the international trade performance of South African fish Industry, the degree of concentration for fish exports and the balance of international fish trade of South Africa. They results expressed that the fish export of South Africa was highly

concentrated and their fisheries products were exported to 54 markets all over the globe mainly to Spain and Italy. After1985 the South African fisheries industry has undergone substantial changes to earn specialized, expertise and competitive. Hence these changes had brought surplus on South Africa marine products export.

Béné, Macfadyen and Allison (2007) "Increasing the contribution of small-scale fisheries to poverty alleviation and food security". It was a technical paper highlighted the contribution of inland and coastal small-scale fisheries on poverty alleviation and food security. They had suggested fisheries to maintenance of quality, diversity and availability of fisheries resources in sufficient quantities for present and future generations in the context of food security, poverty alleviation and sustainable development. They recognized the contributions of artisan and small-scale fisheries to employment, income and food security. They recommended the State Government to protect the rights of fishers and fish workers.

Food and Agriculture Organization (2007) published a report on titled "Marine capture fisheries management in the Indian Ocean: status and trends". It studied the status and trends of Indian fish capture. The primary data was collected through questionnaire method from Fisheries management experts of 30 countries. In their report it was mentioned that in 2004 Global fish production reached 95.0 million tonnes on which the marine capture fisheries production accounted 85.8 million tonnes (including inland capture production). About 75 percent (105.6 million tonnes) of estimated world fish production was used for direct human consumption and remaining 25 percent (34.8 million tonnes) was destined for non-food products particularly for manufacturing fishmeal and oil. In 2004 the world fish and fishery products export reached US$71.5 billion. The fishery was an important source of an economy particularly in developing nations. The fish export represents a significant source of foreign currency earnings, employment, income generation and food security. The developing countries import quantity of raw material for processing industry or value-added products production was increased. Many developed countries came forward to invest in developing countries on establishing processing infrastructure. Hence they had concluded that the small-scale fisheries plays potential role in poverty alleviation and prevention.

Harikumar and Rajendran (2007) had written an article in Souvenir on titled "An over view of Kerala Fisheries – with particular emphasis on Aquaculture". In this paper the researchers has explained the fish potential and infrastructure available in the state of Kerala. They had identified that the Oru Nellum Oru Meenum Scheme (for Paddy and fish) and captive breeding and ranching programme shown positive result on fish production. The present expansion on Kerala's fisheries sector was much better than the past through modernization and diversification. They had concluded that Kerala has need to introduce deep sea fishing technologies and diversification in addition to the recent trends in fish processing industry to cope with the international standards.

Koriya (2007) has taken up a study on "Deep Sea fishing Policy and its implications on the Fisheries Sector and Livelihood of the Fishing Communities in India". The objective of this study was to evaluate the present Indian Deep Sea Fishing Policy, to analyze the Indian Deep Sea Fishing Scenario and to provide implacable measures on Deep Sea Fishing Policy for the Livelihood of the Fishing Communities. It has been found that so far Letter of Permission (LOP) was issued to 21 fishing companies for 87 resource specific vessels and under this subsidy scheme the Department of Animal Husbandry, Dairying and Fisheries has converted 6 deep sea trawlers. Hence it was concluded that the deep sea fishing policy has given prime consideration to fishing community livelihood.

Mohamed (2007) had prepared his master thesis on "A Bio economic analysis of Maldivian Skipjack Tuna Fishery". He has reported that major fishery actives take place within 75 miles of shore line which was reserved to local fishermen and above 75 miles to 200 miles which is permitted under license to foreigners and joint venture in Maldives. The pole and line (bait boat) are exclusively used for fishing skipjack tuna and using seining and gill netting are prohibited in Maldivian EEZ. He had identified that due to lack of investment incentives on fisheries sector, Corruption and Social burden on the government fisheries company are the reasons for lack of development in post harvest sector. In Maldives 20 to 30 percentage of skipjack tuna consumed locally and the remaining were processed as frozen tuna and canned tuna in small scale cottage industry and sold to exporters to export them to Sri Lankan market.

Somvanshi, Varghese and Pillai (2007) had published a paper in Indian Ocean Tuna Commission publication under a topic "National Report on Tuna Fisheries and its Development in India". The main objective of this paper was to furnish information tuna fisheries in India. They had mentioned that India has vast tuna resources and they are exploited at optimum level due to lack of awareness, technology and infrastructure. The Fishery Survey of India Mumbai had successfully located various Indian tuna resources and made tuna longline fishing familiar in India.

Tsai and Huang (2007) had revealed in a study on "Openness, Growth and Poverty: The Case of Taiwan". The study analysed the contribution of international trade on poverty alleviation and the Trade and FDI policies in Taiwan, where they had concluded that the open trade regime has brought a remarkable economic growth and worked to raise the income share of the poorest quintile in Taiwan. They had concluded that the trade liberalization in Taiwan helped to alleviate poverty in course of income and distribution effects in the short and long term.

Nair, Pandey, Sharma and Sallm (2007) in their paper on "An evaluation of the business performance of fishery cooperative societies in Vasai Taluka of Thane District, Maharashtra". They evaluated the functions of fishery cooperatives in Vasai taluka, the financial performance of fishery cooperatives and to find out the constraints involved in management and operation of societies. The study has identified that the lack of resources and lack of infrastructure facilities, involvement of middlemen in marketing, lack of proper training, lack of awareness, lack of collaborative relation and coordination between financial institutions, lack of cooperation among members and lack of organizational skill in management, supervision, accounting and auditing, record keeping are the major reasons for affecting societies. Hence they recommended that the necessary step has to be taken to improve the function and business performance of fishermen cooperative societies and essential facilities like adequate credit, preservation, transport and marketing has to be developed.

Ajayan (2008) has stated in his paper entitled "Tuna fishing, exports get Rs. 14 crore in investment" that Mr. Jairam Ramesh, Minister of State for Commerce has said that Government of India has planned to invest Rs. 14 Crores in Tuna fish export project in Andaman and Nicobar Islands. Of which, Rs. 5 crores sanctioned from the Ministry of Commerce, Rs. 5 crores from the National Fisheries Development Board, and Rs. 4 crores from the Andaman and Nicobar administration. The Ministry of Commerce has also approached the Civil Aviation Ministry for setting up an international air cargo terminal in Port Blair. To achieve this action plan they had planned to convert nearly 100 fishing vessels to tuna long liners in Andaman. The estimated cost for converting traditional vessels to tuna-fishing boats was around Rs. 30 lakh per unit.

Dr. Gopal, Dr. Manjrekar and Dhond (2008) had presented a paper in the 11th Annual Convention of the Strategic Management Forum on "Growth Strategies: A case study of Maharashtra's Sea Food Exporters". They made an attempt to bench mark the top Sea Food Export companies of Maharashtra, to outlines the growth strategies employed by Maharashtra's Sea Food Export firms in the current scenario and environment of operation. They had pointed out that the Seafood Export firm has to concentrate on human skill management. Current companies are lack in innovations front, inspiring leadership and also Mergers and Acquisitions. They have suggested for developing the operational efficiencies and technical capabilities against Maharashtra's Sea Food Export companies to play vital role at global level. Indian companies are suggested to grow in size and volume to meet competition from the global level companies. Hence it was concluded that there was a high prospective growth opportunity available for Sea Food Export industry in India.

Marine Product Export Development Authority (2008) had prepared an action plan on "Proposal for the development of tuna fisheries in Andaman & Nicobar Islands". They had said that a fishery was one of the major natural resources of these islands. The present marine fish production of these islands was 30,000 M.T. it was about 12% of the estimate marine potential. There are 45 fishing villages and 57 fish landing centres involved in marine production in Andaman & Nicobar Islands. There are 1810 fishing crafts operated in marine production of which 1568 are non-mechanized traditional crafts, 102 motorized crafts and 140 mechanized boats.

Tuna was the third major fish commodity traded internationally after shrimp and ground fish. They had pointed out that Andaman & Nicobar Islands are remote islands more than 1000 KM away from Mainland, many coastal areas are inaccessible, Lack of indigenous expertise/technology and trained personnel in the Island, Lack of entrepreneurs interested in capital investment on high cost activities, Lack of infrastructure or large-scale fishing and coastal/off shore aquaculture, Lack of reliable data on resource potential of exploitable/cultivable marine resources, Inadequate infrastructure for fish processing and marketing, Lack of comprehensive policy for fishing promotion and regulation for sustainability.

Raghuram and Asopa (2008) had made a study on "Issues in Infrastructure for Export of Marine Products from India". They had studied marine Market and Supply Scenario, Supply Chain and Infrastructure, Customer and Competitor Countries Japan and Thailand. From their study it was concluded that Indian marine products got huge demand internationally especially for shrimp product and its value added Products.

Sanyang and Huang (2008) written an article named "Micro-Financing: Enhancing the Role of Women's Group for Poverty Alleviation in Rural Gambia". They analyzed the need for empower and support women's group in poverty alleviation through micro-finance in rural Gambia. They had mentioned that the Low and decreasing soil fertility, Low agricultural and labour productivity, Poor access to productive assets such as land and water, Poorly functions of input and output markets, Low prices on world markets for products such as groundnuts and certain types of rice and Poorly functions of rural institutions, including credit institutions and lack of basic social services are the causes for rural poverty in Gambia. The present Gambia government's poverty reduction strategy program has given more consideration to women empowerment in terms of training, skills and knowledge, micro-credit and business skill development. In Gambia women's groups played a greater participation for poverty alleviation and rural development programs highly improving their living conditions and created responsible positions in the households and wider community. The approach of poverty alleviation through micro finance on women empowerment and their participation in income generating activities deserves a special attention in national development. The paper concluded that micro and small enterprises provide employment to women's groups with income. Women's groups

are fully participated in self employment and operated small income generating activities. Hence the women's economic empowerment was recognized tool for poverty reduction and vibrant economic growth.

Shackleton, Campbell, Lotz-Sisitka and Shackleton (2008) had studied the Links between the Local Trade in Natural Products, Livelihoods and Poverty Alleviation in a Semi-arid Region of South Africa. They tried to find relationship between the commercialization of local natural products contribute on reduced poverty and vulnerability. For the analysis they had taken four variables namely woodcraft (furniture and carvings), reed mats, traditional brooms (''indoor'' grass and ''outdoor'' twig brooms) and a traditional beer made from the marula fruits. They had concluded that natural products trade was one of a contributor for rural livelihood security and poverty alleviation.

United Nations Environment Programme (2008) has prepared a report on Sustainable Trade and Poverty Reduction - New approaches to integrated policy making at the national level. Under a subheading "Indonesia: Integrated assessment of the Poverty Reduction Strategy Paper with a case on sustainable fishery initiatives". They had tried to provide guidelines for the government, private sector and community as development stakeholders and implement a new paradigm in poverty reduction. This study has suggested for simplifying facilitation and management of natural resources to the community. For managing resources in effective manner necessary capacity has to be build. The Central and local government policies and regulations must protect communities and help them to access to resources in a consistent manner. To get a good price the right market has to be selected by the government and support illiterate poor fishing community on marketing their goods.

United Nations Environment Programme (2008) had prepared a report on Sustainable Trade and Poverty Reduction - New approaches to integrated policy making at the national level. In this report under a subtopic "Uganda: Integrated assessment of the National Trade and Fisheries Policies". They analyzed the fish trade and trade policy of Uganda and also analyzed the market, environmental impact, social equity and poverty. This study has been recommended to spend revenues

wisely with the consultation of fishing communities and to use the revenue on community projects for human development especially in health and primary education. The maternal health care, educational and safe drinking water has to be provided. It was also necessary to involve private sector in fisheries and an effective law has be developed for enforcement mechanism.

Acharya (2009) has written an article titled “Livelihood struggle for India's fishing communities” in One World South Asia webpage. She had stated that many of the Andhra Pradesh coastlines fishing community had been migrated to Andaman Islands and they were migrated only for sustain their livelihood. In Andhra Pradesh, the wives of fishermen are fish-vendors who faced dwindling fish catches, lesser incomes, lack of proper storage and poor transportation. There was lack of transportation facility in the fishing villages to reach bigger markets. Oxfam India has helped these communities to cope by the support of District Fishermen’s Youth Welfare Association (DFYWA) in disaster-relief, infrastructure-building for fish marketing and income- augmenting activities.

Dr. Karmakar and Dr. Banerjee (2009) had analyzed in their paper on “Value Addition by The Marine Fisheries Sector”. In their article they had explained the role of Marine fisheries in Indian economy and the issues associated with value added products. They had concluded that the Value Added Products and products diversification are two sides of the same coin. India needs to diversify its exports by addition of newer species through aquaculture/mariculture. The problem on executing Value Added Products and products diversification was due to lack of financial support and technology in India.

Dr. Karmakar, Mehta Dr. Ghosh and Dr. Selvaraj (2009) has presented paper in Asia Pacific Fisheries Commission (APFIC) Regional Consultative Workshop at Philippines on a topic “Review of the development of microfinance services for coastal small scale fisheries and aquaculture for South Asia countries (including India, Bangladesh & Sri Lanka) with special attention to women”. In this paper they reviewed the status of coastal small scale fisheries sector in South Asian countries including India, Bangladesh and Sri Lanka with special focus on women. They had commented that of these three countries, India has a major thrust on the inland

fisheries sector whereas the brackish water and marine sectors are basic export earners. They had also found that there was continuously decline catches and increase in operational costs faced by Small-scale fishery. The operational has been raised due to high demand for fish in international and domestic markets. Their attractive finding was the women plays a vital role in coastal fisheries sector particularly in fish vending and post harvest processing. Interventions are necessary to upgrade fish procurement, processing, storage, transport and sale of fish. Hence the diversification of fish product was necessary for tapping better and sound marketing opportunities.

Dr. Mohan, Suresh and Prabhu (2009) had published an article on "The MPEDA's Subsidy Assistance Schemes and Its Impact on Indian Marine Export – A Critical Analysis", Export Credit Insurance (Opportunities & Challenges). They studied the subsidy schemes of MPEDA, fish export trend in India and analysed the performance of exports in terms of volume and growth. This study was fully based on secondary data. They had concluded that India has got excellent potential on marine products export and also good scope for earning enormous foreign exchange and strengthen India's forex reserves.

Reserve Bank India (2009) in their annual report "Economic Review", they had mentioned that Indian Fisheries and aquaculture contribute about 1.1 per cent to the overall GDP and about 5.3 per cent to the GDP originated from agriculture and allied activities. This sector provides employment to over 14 million people and it was exported to Rs.7, 620 crores in 2007- 08. The expected growth of fisheries in 2008-09 was ranged 5 to 6 per cent and the projected seafood export was Rs.15, 000 crores by the end of Eleventh Plan.

SeafoodSource (2009) had published an article on their webpage on 'Maldivian tuna fisheries seek MSC eco-label". They had mentioned that in Maldives Tuna fishing operate throughout the year and their catches reaches maximum for 9 months in a year (from August to April). The three pole-and-line and handline fisheries are the legalised two fishing methods in Maldivian waters approved by Republic of Maldives. Their annually tuna harvest was around 117900 metric tonnes on an account 900 metric tons of bigeye, 20,000 metric tons of yellowfin and 97,000 metric tons of skipjack. The frozen Maldivian bigeye and yellowfin higher value

handline tuna are export as fresh or frozen to Europe, United States and Japan. The Mohamed Rasheed, Deputy Managing Director of Maldivian Tuna Producer Horizon Fisheries had said the tuna has sustainable growth in Europe, UK, Asia and Germany markets.

Singh (2009) had tried to throw light on Export performance of emerging market firms. He estimated the simultaneous equations between absolute value of export and domestic sales, estimated domestic sales in the first stage of two-stage least square (2SLS) using distribution expenditure, analyzed export sales in the first stage of 2SLS using exchange rate and world GDP. He had pointed out that the global export contributes about a quarter of world's gross domestic product. It has been found that domestic sales are positive affect on export and they are interdependent. The R&D expenditure also shown positive affect in firm level on export sales but advertising expenditure has shown negative impact. Hence, comparatively the overall result had shown a positive impact on export sales.

Barclay (2010) has published in a paper titled "Impacts of tuna industries on coastal communities in Pacific Island countries". The objectives of this paper were to outline the trends in tuna industries of this region, to examine the aspirations of coastal communities towards tuna industries and to trace out the actual experiences of their operations. He has concluded that the tuna fishing and processing industries has brought economic development and cultural contact opportunities to coastal communities in Pacific Island countries with some social and environmental challenges.

Béné, Lawton and Allison (2010) had written an article titled "Trade Matters in the Fight against Poverty: Narratives, Perceptions, and (Lack of) Evidence in the Case of Fish Trade in Africa". They explain the potential role of international fish trade on economy development. They had concluded that a largest number of income-poor households depends on fisheries activities in Africa. Hence the fish export shown positive and effective improvement on food security and poverty alleviation in Africa.

Department of Animal Husbandry, Dairying & Fisheries (2010) had prepared an Annual Report, where they had revealed the Indian government's approach and Strategies on Animal Husbandry, Dairy Development and Fisheries Sectors. They had also examined the schemes, Import procedure and International Cooperation. Under the title fisheries they stated that this sector contributes significantly to the national economy and provides livelihood approximately to 14.49 million people in the country. Fisheries sector has been recognized as a powerful generator for income, employment and foreign exchange. The main challenges faced on the development of fisheries sector was sustainable technologies for fin and shell fish culture, aquaculture Certification, yield optimization, infrastructure for harvest and post-harvest operations, landing and berthing facilities for fishing vessels and uniform registration of fishing vessels. Hence they had concluded that few of the on going fisheries development schemes shown positive impact on Inland Fisheries and Aquaculture, Marine Fisheries, Infrastructure and Post Harvest Operations and Welfare of Fishermen.

Department of Commerce (2010) had published foreign trade policy on subtopic "Special Focus Initiatives". The Government of India has shown special interest and put concerted efforts to promote India's export. In this policy for the first time Indian government has introduced two important schemes namely Focus Market Scheme and Focus Product Scheme. The objective of this scheme was to offset high freight cost and other externalities to select international markets with a view to enhance our export competitiveness in these countries. Under this scheme the following benefits are enjoyed by marine sector, (i) Imports for technological upgradation under EPCG in fisheries sector (except fishing trawlers, ships, boats and other similar items) exempted from maintaining average export obligation, (ii) Duty free import of specified specialized inputs /chemicals and flavouring oils is allowed to the extent of 1% of FOB value of preceding financial year's export, (iii) To allow import of monofilament longline system for tuna fishing at a concessional rate of duty and Bait Fish for tuna fishing at Nil duty (or) Zero duty, (iv) A self removal procedure for clearance of seafood waste is applicable subject to prescribed wastage Norms, (v) Marine products are incentivized at special higher rate under VKGUY scheme and (vi) Marine sector included for benefits under zero duty EPCG scheme.

Dr. Mohan and Suresh (2010) had revealed in a paper entitled "Indian Seafood Export: Opportunities and Challenges". The main objectives of this article was to analyse India's seafood export performance on the basis of value and volume, to evaluate the Indian seafood export performance on the basis of products and countries, to assess the challenges involved in the sea food export trade and to identify the opportunities existing in the sea food export trade. This paper was purely based on secondary data collected from internet, journals, magazines, etc. They have concluded that India has a huge potential in marine sector and second largest seafood producer of the world and they are exported to various parts of the world. In the year 2008 – 09 Indian seafood exports was Rs. 8607.94 crores but there was a fall in export to USA and Japan because of their various stringent rules.

Mensah (2010) has submitted his master thesis on "An Analysis of the Performance of Ghanaian Canned Tuna Export to EU Market (1999 - 2009)". The primary objective of his thesis was to analyze Ghana's canned tuna export performance to EU market and relative performance with its competitor countries like Cote d'Ivoire, Ecuador, Madagascar and Thailand in terms of both value and volume. In the thesis he had mentioned that tuna fish industry was one of the important income and employment generating sector in Ghana. In 2009, total landing of tuna in Ghana represented about 24 per cent of total catches in the East Atlantic. Canned tuna was Ghana's most important non-traditional export commodity from which they are earning huge foreign exchange. The EU continuously imports fish and fishery products to meet their growing demand. The European Union was the world's largest importer on fish and seafood products. He has concluded that the Ghanaians are specialization and competitiveness on canned tune export compared to their competitors.

Miyake, Guillotreau, Sun and Ishimura (2010) had prepared a report on "Recent developments in the tuna industry". They had revealed the world tuna fisheries, the technological developments affects fishing operations and the socioeconomic aspects of tuna industry specifically by the recent changes in processing, trade, marketing system and consumer preferences. The market of sashimi has changed from Japan to global and the marketing system also changed instead of selling in auction market (or) selling entire catches to a single dealer now

the products are largely sold to supermarkets or other retailers. The price of fresh and frozen tuna per unit weight was higher than canned materials. In 1970s the United States of America was the largest canned tuna consumer but now it has chanced to European Union markets from the last two decades. Another most important development was relocation of tuna factories from developed countries to areas closer to raw materials. This helped the industry by cutting labour, transhipment costs and facilitated flexible export marketing. Hence it was concluded that due to these recent rapid increase in competition among fisheries, species, industries and even products (sashimi/fresh tuna vs. canned) raised the issue of resource management and allocate tuna resources among these competitors (e.g. using fishing capacity control measures and/or catch allocations).

Nair, Pandey, Sharma and Salim (2010) had written an article on "*Performance of fisheries cooperatives in India- an evaluation of primary societies in Thane District of Maharashtra".* They had made an attempt to bench mark the top Sea Food Export companies of Maharashtra and outline their growth strategies employed in the current scenario and environment of operation. This paper has concluded that to become a global player it was very essential to build operational efficiencies and technical capabilities to global level. The export firms must concentrate on human skill management and provide opportunity to develop employees' skill.

Navarro, Losada, Ruzo and Di´ez (2010) had published a paper entitled "Implications of perceived competitive advantages, adaptation of marketing tactics and export commitment on export performance". The main objective of this exploratory paper was to fill the important gap in international marketing literature by examining the influence of firm behaviour in foreign markets on perceived competitive advantages and export performance. For the purpose of analyze they had selected a sample of 150 Spanish export firms. They had recommended that export firm managers have to understand the advantage of derive adaptation on export marketing program. The adaptation of marketing tactics had not influence export performance directly but this strategy has direct effect on the assessment of competitive position in export markets. This study has found that Spanish export firms are more dedicated to their foreign markets and very much interested to adapt

elements of the marketing program. Hence adaptation of marketing tactics was worked as a key competitive strategy in exporting area. The adapted marketing program leaded the company to obtain competitive advantages and meet better way to satisfy their foreign consumers need and resulted better outcomes from export activities.

Papadopoulos and Marti´n (2010) had written a paper title "Toward a model of the relationship between internationalization and export performance". They tried to investigate the relationship between internationalization and export performance through comprehensive model, the relationship between incremental process and on export performance using structural equations model and also tested international experience, international commitment and level of internationalization. The total population was 424 regular exporting firms with 10 or more employees, of which 204 firms agreed to participate in this study. The data were collected through well structured questionnaire. The empirical result has made clear that there was interplay among the internationalization constructs which influenced the export performance. Hence this paper has concluded that the international experience leads to greater international commitment and supported the firms to carry out a higher level of internationalization. The contribution of economic dimension was larger than the strategic dimension.

Pearson, Viviers, Cuyvers and Naude´ (2010) had explored in a paper on titled "Identifying export opportunities for South Africa in the southern engines: A DSM approach". This study has examined the political and commercial risk, as well as size and growth of a country's GDP and analyzed the market concentration of countries and potential trade barriers. From the result of DSM it has been suggested that there was a substantial potential for further exports particularly to China and India and to a lesser extent for Brazil.

Salagrama and Salka (2010) had done a study on "A Study of the Fisheries Post-Harvest and Market Supply Chains in Nias Island, North Sumatera Province, Indonesia Including Fisheries Census of Nias". This study was carried out with three major objectives and they were to provide a good understanding of the post-harvest fisheries sector in Nias, to develop and support small and medium enterprises in post-

harvest and marketing in Nias and to establish a fish market information system linking with North Sumatera, Aceh and wider networks. This study explained that Nias fisheries sector was very important contributor to their local economy, livelihoods and food security. It contributes about 6.5 percent to gross regional domestic product (GRDP). Nias's fish export was account about more then 30 percent of the total production in this island (in terms of value). Hence it was concluded that to develop Nias Island fisheries sector a huge investment was required for developing basic infrastructure, capacity building and technologies at the same time huge investment may not possible to private fishing companies.

Shanthi (2010) had presented her thesis on "Status of Municipal Women Sanitary Workers - A Case of Thanjavur Town: Socio-Economic Perspectives". She has studied the Socio-Economic conditions, their Income and Expenditure and Savings pattern of the Municipal Women Sanitary Workers. She found that nearly 60 per cent of the respondents monthly income was only upto Rs.5000 and majority of them are living in Nuclear family. She suggested that some Special Medical Assistance has to be provided by the government to improve their health condition and better housing condition. To improve the socio-economic status of this community free education quota and job priority has to be provided to their children. She has suggested that the government should provide high amount of loan for family expenses which has to be deducted from their salary because the private loans providers carry high rate of interest and also they want to pay decent salary with other benefits like P.F., H.R.A., Pension, D.A, etc.

Swartzn, Sumaila, Watson and Pauly (2010) had undertaken a study on "Sourcing seafood for the three major markets: The EU, Japan and the USA". They have described the marine fish and invertebrate consumption in three major seafood markets (EU, Japan and the USA) and identified the source of seafood by each market. They had mentioned that fish was one of the most wide traded commodities in the world. Nearly 40 percent of world fish productions are sold in the international market and it was significantly more than for other food staples. It is accounted that developing countries contributes 60 percent and 50 percent on world export in quantity and value respectively. But Low-income food-deficit countries (LIFDCs) contribute only 20 percent in 2006. In fish and fish products export 97 countries are

involved all over the world of which only Europe, Japan and North America are shown trade deficit on fish.

Aswathy, Shanmugam and Sathiadhas (2011) had explored in an article on "*Economic viability of mechanized fishing units and socio-economics of fishing ban in Kerala". The important objectives of their paper was to* analyze the costs and returns of mechanised fishing units, to assess the operation cost of single day trawlers, to examine the operational costs and returns, prices and quantities of the major species caught and the capital investment in various mechanized units, to compare the financial ratios and labour productivity ratios of different fishing units. They results shown that the average cost pre single day trip of a trawler was Rs. 5, 662 (includes Fuel, Bata, Wages, Repairs, Auction charges and Fixed cost) and the total returns was Rs. 8, 095. The results of multiday trawlers (2 – 5 days) shown that the total expenditure per trip was Rs. 47,898 (includes Fuel, Bata, Wages, Repairs, Auction charges, Ice and Fixed cost) and for above 6 days Rs. 1, 19,470. The total cost of mechanized purse seiners in Cochin Fisheries Harbour was Rs. 62, 621. The total costs and returns per trip of mechanized gillnetters/liners operated single day, 2 – 5 days and above 6 days was Rs. 11,509, Rs. 32,946, Rs. 81,244 and Rs. 16,033, Rs. 36,643, Rs. 89,545 respectively. Their estimated labour income loss during ban period 39 days was around 50.30 crores and during this period the mechanized trawl sector affected badly. They had suggested that since fishing was the only source for their livelihood an alternative employment opportunity has to be arranged to traditional fisher on community based during this period. To generate additional income during non-ban period and regular income in ban period a savings cum relief scheme has to be operated.

Atuna (April, 2011) published an article titled "Tuna Is Key Export Product for Vietnam". It has revealed that the tuna export (in terms of value and volume) has shown significant growth since early 2011 and continuous increase on demand in US, EU, Israel and Canada market. The average tuna export price in 2011 was US$ 5.26 per kilogram namely US$ 6.75 per kilogram at US market, US$ 7.76 at Japan and US$ 4.94 in Israel.

Atuna (July, 2011) had mentioned in their article titled “Vietnam Sharp Boost In Tuna Exports” in the first four month of 2011, the tuna export of Vietnam had reached upto 31,000 metric tonnes and earned USD 148 million. Their major tuna importer was EU, they imports 31.7 percent of tuna production. The average tuna export price has reached USD 7.81 per kilogram.

Curry (2011) has written at Tokyo’s in Theguardine e-news paper on “Huge bluefin tuna fetches record price in Tokyo but whale is left on the shelf”. He has pointed out that in the first week January at Tokyo fish market a bluefin tuna sized 342 kg was sold at auction for £ 250,000 and broke the previous record of £155,000 by 202 kg fish.

Dr. Miyake (2011) has written an article in Organization for the Promotion of Responsible Tuna Fisheries (OPRT) webpage on “Is tuna stock overfished?”. He had clearly stated that without knowing the fact many people, mass media or specific groups are claiming tuna stocks has been overfished or being overfished on the basis of catch rate decline. He had explained the difference between overfished and has been overfished, if a stock was received excessive fishing effort means that it was being overfished but not necessarily has been overfished. He has cited that many of the international tuna management Conventions define their objective as to maintain stock size at a level of Maximum Sustainable Yield (MSY) but this was misunderstood by majority people. The MSY level was a value specified to a stock and maintaining tuna stocks at MSY level was not possible. Fish stock may not stable and the environmental conditions vary from year to year and location to location. To overcome these difficulties the reference points has been considered for management purpose. Hence claiming tuna stocks as overfished on the basis of catch rates or catches are unscientific.

MITCON (2011) had prepared a project report on “National Fish Processing Development Board”. The most important objectives of their report was to facilitate the seafood sector and to take comprehensive measures for quality and value added fish/ processed fish products at domestic and export market, to focus on Research & Development, Extension, Quality upgradation, market research and information, domestic and export market for fish/ processed fish products, to provide industry

linked services and support to the start up fish/ fish products processing companies, to build programmes on training and skill manpower development required to fisheries industry and to promote safe & hygienic fish production as per international standards. MITCON had mentioned that tuna resources are mostly harvested by traditional and small mechanized boats and at the sometime these fishers are not aware of fish handling the fish which faced problem on producing high grade Tuna meat. Hence the fishermen and the processors are need training to produce the Shasimi grade Tuna to attack high price in international market. Japan market plays vital role on Sashimi Tuna import and pays higher price upto US $ 75 per Kg. The advantage of the Andaman & Nicobar Islands was they are very closer to major world tuna markets like Singapore, Malaysia and Bangkok. To enjoy this advantage, Port Blair has to link by air or sea to these cities.

Organizations for the Promotion of Responsible Tuna Fisheries (2011) had published an article on "Tuna selected as the number one fish by consumers". OPRT has conducted a survey in Tokyo at a food festival. The objective of the survey was to find out views of the consumers on three fish namely tuna, saury and salmon, reasons for selecting particular fish and to analyze the awareness of fish market. They had selected 446 people as sample to conduct the survey. The results derived from the survey are 429 persons (96 %) of them liked tuna due to healthy food they consume sashimi tuna and 90 per cent of them were aware that Japan was the world largest for sashimi tuna market.

Pillai, Pillai and Koya (2011) had prepared a technical report on "Status report on the tuna fishery in India with particular reference to longtail tuna, Thunnus tonggol". They studied the trends in tuna production and evaluated the performance of Craft and Gear in India. They had mentioned that in India the tuna-fishing capture was operated by small-scale motorized, mechanized and non-mechanized craft up to the depth of 10 to 80 mts, artisanal pole and line and troll-line were operated in the oceanic islands of Lakshadweep and oceanic exploratory survey/ training vessels and commercial longline vessels fishing in the Indian EEZ under joint-venture schemes. The average annual tuna production during 1985-1994 was 38,286 tonnes. They had suggested that fish-aggregating devices and/or artificial reefs must be used and to develop multi-day fishing. Through increasing trolling operations and economic

utilization of live bait in pole-and-line tuna-fishing operations would enhance the production of tunas. Hence it was concluded that Tuna has high demand in the export market especially in Far Eastern countries fresh/frozen and chilled form tuna has good market. Through expanding the area of fishing, modification and multi-day operation of drift gillnetters the production of both longtail tuna and yellow-fin tuna shall be enhanced.

Salaam (2011) published an article on Tanzania Trade Centre webpage about Tanzania signing a one year deep sea fishing agreement with Japan Tuna Co-operative Association. According to this agreement the Japanese association will deploy 30 tuna trawlers in the first year and pay $200 million to the Tanzania government. This step was taken to stop illegal 200 foreign trawlers catching various types of fish from Tanzania's exclusive economic zone (EEZ) due to lack of capacity to patrol its deep sea zone.

Shyam, Salim and Aswathy (2011) in a study on "Constraint Analysis on the Impediments faced by Indian Seafood Exporters". Whose main objective was to analyze the general problems on fisheries export. The data collected through both data primary and secondary sources. The primary data has been collected from 60 fish exporter. They had identified and analyzed nine problems namely irregular supply of raw material, cut throat competition for raw material, heavy competition for target market, Low capacity utilization, higher cost of production and low margin of profit, uncertainty in Prices, dictatorship of buyers, high cost of investment and lack of market and product information. They had concluded that India was exporting seafood across 120 countries in the world and improve the seafood export further government has to take necessary action against unfair trade regulations.

Stoian, Rialp and Rialp's (2011) had analyzed a paper on "Export performance under the microscope: A glance through Spanish lenses". The objectives of providing a comprehensive picture on export performance determinants of Spanish small and medium-sized enterprises (SMEs), the influence of external antecedents on export business and to investigate the potential relationship between objective and subjective (perceptual) measures on export performance. The results explains that the managerial foreign language skills and international business knowledge, firm's

export commitment as well as the technological intensity of the industry are the most influencing antecedents on export performance and there was a strong positive relationship between the objective and subjective export performance.

Wetengere (2011) made a study on "Constraints to Marketing of Farmed Fish in Rural Areas: The Case of Selected Villages in Morogoro Region, Tanzania". He studied the constraints on marketing farmed fish in inland Tanzania. The survey method was employed and data were collected from 217 respondents randomly using questionnaire, participatory rural appraisal, observations and secondary information sources. The results revealed that 53 per cent of the respondents were involved on fish harvesting in 2005-06. Majority of these farmers sold their fish within the villages and a few sold to middlemen traders to reach urban markets. Fish sold in the urban market fetched higher prices than fish sold in the villages. He suggested that market incentives shall play a significant role on the development of aquaculture in Tanzania. To maximize profit fish farmers has to sell most of their produce in urban markets. Higher earnings will, in turn, increase production and attract middlemen traders into the fish business. The infrastructural facility has to be improved to increased fish production and profit.

World Record Academy (2012) had published in their webpage on "Most expensive tuna fish: $736000 tuna fish sets world record". On 6 January at Tokyo's Tsukiji fish market, Japan, a huge 342 Kg bluefin tuna was sold on auction for $736,000 and made the new world record. Hence it shows clear Japanese are ready pay high value for tuna fish.

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CHAPTER III

THE SOCIO-ECONOMIC STATUS OF FISHING COMMUNITY AND MARINE PRODUCTS EXPORT POLICIES AND SUBSIDY SCHEMES IN ANDAMAN ISLANDS

CHAPTER III

THE SOCIO-ECONOMIC STATUS OF FISHING COMMUNITY AND MARINE PRODUCTS EXPORT POLICIES AND SUBSIDY SCHEMES IN ANDAMAN ISLANDS

This chapter is divided into two parts. The first part explains the general information about Andaman and Nicobar Islands and socio-economic status of fishing community inhabitant of Andaman Islands. To make in-depth study on the socio-economic status of Andaman's fishing community the researcher has selected four islands namely Port Blair, Rangat, Mayabunder and Diglipur. The three important reasons for selecting these four islands was that nearer to these islands only tuna hooking rate is shown higher result. The second reason was that these islands are connected by both rode and sea route and the third reason was these islands also held high fishing community population.

The second part of this chapter reveals the marine products export policies and subsidy schemes availed in Andaman Islands to show its utilization in Andaman seafood Industry. The government of India was introducing various export subsidy schemes and refining export policies periodically. To facilitate and show a special attention on international business government of India has established 54 organisations of which 2 Trade Promotion Organisations, 23 Export Promotion Councils, 7 Export Development Authorities, 7 Commodity Boards, 4 Apex Chambers, 9 Industry Associations and one Export Import Bank of India (EXIM Bank) and Export Credit Guarantee Corporation (ECGC)[25]. India's Foreign Trade was increased day by day. In the present scenario India held over two lakhs active Exporters and Importers on foreign trade. In 2011[26], India has exported 98 varieties of commodities to 235 countries for **Rs. 114,264,897.18** Crores and 98 varieties of commodities imported from 229 countries for **Rs. 168,346,695.57** Crores. In 2010, India held 2.2 per cent share on world trade.

[25] Department of Commerce .(2010). Autonomous Bodies/ Public Sector Undertakings/ Export Promotion Councils/Other Organizations. http://commerce.nic.in/aboutus/aboutus_autonomous bodies.asp#b1

[26] Department of Commerce. (2010). System on Foreign Trade Performance Analysis (FTPA), Export of Principal Commodities Groups. http://commerce.nic.in/ftpa/comgrp.asp

3.1 THE SOCIO-ECONOMIC STATUS OF FISHING COMMUNITY IN ANDAMAN ISLANDS

3.1.1 INTRODUCTION

The Andaman and Nicobar Islands is one of the union territories of India and it consists of around 572 small and large islands, of which only 38 islands are having inhabitants. The majority of the population in these islands are settlers from mainland India including fisherman community. In 1970s the Government of India had taken an effort and encouraged the fishermen from Srikakulam district to settle down in Andaman Islands to improve the fisheries of these islands. The migrated fishermen were provided with incentives like free accommodation, concessions on travel and fishing assets includes Durga (a traditional Burmese type boats), fishing gears and working capital assistance to begin fishing operations. The advantage of this programme was also enjoyed by Sompeta, Kaviti and Mandasa mandals fisher with their families. The process of migration had taken place over few decades and the migrated fishers are considered as Andaman locals[27]. As per census 2001 the population of these islands was 3.56 lakhs including 17496 from fishing community. The Fishery Survey of India (FSI) used to conduct survey among fishing community all over India once in every five years. As per the FSI survey 2005, 103 villages are wholly or partially accommodated by 3, 275 fishers' families with a population of 15, 266 in Andaman and Nicobar Islands. While comparing to 2001 census the fishermen population was reduced in 2005 due to tsunami on December 26, 2004. The fear of tsunami forced them to move to mainland and at present once again they turned back to Andaman itself according to the FSI officials report.

The government has shown huge interest in developing fisheries in Andaman and Nicobar islands but the impact was not upto the expected level and still majority of the fishing population are living below poverty line in these Islands. To show a clear picture, the researcher has selected 375 samples from fishing community and results as follows.

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The table 3.1 furnishes island wise data regarding size of the sample, gender, no. of sample involved in fishing and its related business and educational status.

Table No. 3.1

ISLAND WISE - SIZE OF THE SAMPLE, GENDER AND EDUCATIONAL STATUS OF THE RESPONDENTS

Sl. No	Name of the Island	Size of the Sample	Gender		Educational Status			
			Male	Female	Illiterate		Literate	
					F	%	F	%
1	Port Blair	118	108	10	52	44.07	66	55.93
2	Rangat	46	46	0	38	82.61	8	17.39
3	Mayabunder	73	67	6	39	53.42	34	46.58
4	Diglipur	138	130	8	81	58.7	57	41.3
Total		**375**	**351**	**24**	**210**	**56**	**165**	**44**

Source: Primary Survey

Andaman Islands have been classified into two districts namely South Andaman District and Middle & North Andaman District. The researcher has selected an island Port Blair from South Andaman and remaining three Rangat, Mayabunder and Diglipur from Middle & North Andaman. The total size of the sample was 375 fishing community households of which Port Blair, Rangat, Mayabunder and Diglipur were 118, 46, 73 & 138 respectively. The data were collected from whole family members assuming the head of the family as base. As per the ration card, 93.6 per cent (351) of families are headed by male and remaining (24) 6.4 per cent are by female.

Education is one of the fundamental rights to every citizen. Governments of all developed and developing countries were allotting very huge amount from their budget every year to educate the poor. Various researches and studies have documented that throughout the globe the educational status of fishing communities is very low. Andaman is also not an exception to this fact, 56 per cent of the respondents were illiterates in Andaman, 82.61 per cent in Rangat, 58.7 per cent in Diglipur, 53.4 per cent in Mayabunder and 44.1 per cent in Port Blair.

Table No. 3.2

ISLAND WISE - AGE GROUPS OF THE RESPONDENTS

Sl. No	Age Group	Name of the Island								Total	
		Port Blair		Rangat		Mayabunder		Diglipur			
		F	%	F	%	F	%	F	%	F	%
1	**21-30**	25	21.2	5	10.9	17	23.3	43	**31.2**	90	24
2	**31-40**	52	**44.1**	8	17.4	17	23.3	42	30.4	119	**31.7**
3	**41-50**	26	22	17	**37**	24	**32.9**	25	18.1	92	24.5
4	**51-60**	13	11	12	26.1	8	11	20	14.5	53	14.1
5	**61-70**	2	1.7	4	8.7	5	6.8	8	5.8	19	5.1
6	**71-80**	0	0	0	0	2	2.7	0	0	2	0.5
Total		**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**	**375**	**100**

Source: Primary Survey

The above table expresses the respondents' age groups data on islands wise. To construct age group 10 years interval has been taken. The respondent's age lies between the age group of 21-30 and 71-80. This table shows that at Port Blair the age group of 31-40 held prime position with 44.1 per cent followed by 22 per cent (41-50) and 21.2 per cent (21-30). At Rangat 37 per cent respondents belong 41-50 age group followed by 26.1 per cent (51-60), 32.9 per cent of Mayabunder's respondents belong to the age group 41-50 and 31.2 per cent of Diglipur's respondent's fell on the age group 21-30. On the whole the age group 31-40 placed first position by 31.7 per cent and 71-80 shows low result by 0.5 per cent.

Table No. 3.3

ISLAND WISE – RESPONDENTS MARITAL STATUS

Sl. No	Marital Status	Name of the Island								Total	
		Port Blair		Rangat		Maya-bunder		Diglipur			
		F	%	F	%	F	%	F	%	F	%
1	Married	106	89.83	46	100	65	89.04	129	93.48	346	92.3
2	Unmarried	2	1.69	0	0	0	0	0	0	2	0.5
3	Divorcee	10	8.47	0	0	0	0	0	0	10	2.7
4	Widower	0	0	0	0	8	10.96	9	6.52	17	4.5
Total		**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**	**375**	**100**

Source: Primary Survey

The primary survey shows that 92.3 per cent of the respondents belong to Married Group of which Port Blair has 89.83 per cent, Rangat 100 per cent, Mayabunder 89.04, Diglipur 93.48 per cent and only 0.5 per cent from the total belong to Unmarried Group. At Port Blair 8.47 per cent respondents are Divorcee/ Divorcer and 10.96 per cent of Mayabunder's are Widow/ Widower.

Table No. 3.4

ISLAND WISE – RESPONDENTS FAMILY TYPE

Sl. No	Type of Family	Name of the Island								Total	
		Port Blair		Rangat		Maya-bunder		Diglipur			
		F	%	F	%	F	%	F	%	F	%
1	Join	6	5.1	10	21.74	5	6.85	20	14.49	41	**10.93**
2	Nuclear	112	94.9	36	78.26	68	93.15	118	85.51	334	**89.07**
Total		**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**	**375**	**100**

The joint family system is one of the oldest customs of India but it has been changed to nuclear family system due to various reasons especially due to cultural, social and economic development. These developments had shown high impact on Andaman's fishing community family system. From the total 89.07 per cent (334 families) has adopted nuclear family system of which 94.9 per cent of families from Port Blair, 78.26 per cent from Rangat, 93.15 per cent from Mayabunder and 85.51 per cent from Diglipur.

Table No. 3.5

ISLAND WISE – RESPONDENTS EDUCATIONAL QUALIFICATION

Sl. No	Educational Qualification	Name of the Island								Total	
		Port Blair		Rangat		Maya-bunder		Diglipur			
		F	%	F	%	F	%	F	%	F	%
1	Illiterate	52	44.07	38	82.61	39	53.42	81	58.70	210	**56.0**
2	Primary	27	22.88	3	6.52	24	32.88	39	28.26	93	**24.8**
3	Secondary	33	27.97	5	10.87	7	9.59	18	13.04	63	**16.8**
4	Higher Secondary	6	5.08	0	0	2	2.74	0	0	8	**2.1**
5	Degree/ Diploma	0	0	0	0	1	1.37	0	0	1	**0.3**
Total		**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**	**375**	**100**

Source: Primary Survey

The researcher has classified educational qualification in to five levels to simplify the result. The first level was illiterate one who never gone to school, primary lies between 1st to 5th standard schooling, Secondary lies between 6th to 10th standard schooling, Higher Secondary lies between 11th and 12th standard schooling and the last level deals with Degree/ Diploma and above qualification.

From the above table it was found that 210 respondents (56 per cent) are literates, 93 respondents (24.8 per cent) qualified primary schooling, 63 respondents (16.8 per cent) qualified secondary schooling, 8 (2.1 per cent) Higher Secondary and only one 0.3 per cent respondents has reached upto degree level. The Illiteracy Rate shows higher at Rangat by 83.61 per cent, Mayabunder placed higher position in Primary Education by 32.88 per cent, Port Blair held prime status in Secondary Education and Higher Secondary by 27.97 per cent and 5.08 per cent respectively. Except Mayabunder other islands respondents had not reached degree level. From this table it was clear that the Andaman's Fishing Community is lacking in educational awareness which is one of the reasons for their poverty.

Table No. 3.6

ISLAND WISE – RESPONDENTS' FAMILY SIZE

Sl. No	No. of Family members	Name of the Island								Total	
		Port Blair		Rangat		Mayabunder		Diglipur			
		NF	TM	NF	TM	NF	TM	NF	TM	NF	TM
1	**2**	14	28	4	8	9	18	7	14	**34**	**68**
2	**3**	35	105	3	9	**18**	54	23	69	**79**	**237**
3	**4**	**43**	172	7	28	12	48	39	156	**101**	**404**
4	**5**	22	110	**20**	100	**18**	90	**46**	230	**106**	**530**
5	**6**	4	24	7	42	11	66	18	108	**40**	**240**
6	**7**	0	0	5	35	3	21	3	21	**11**	**77**
7	**8**	0	0	0	0	2	16	2	16	**4**	**32**
Total		**118**	**439**	**46**	**222**	**73**	**313**	**138**	**614**	**375**	**1588**
MEAN		**3.72**		**4.83**		**4.29**		**4.45**		**4.23**	

Source: Primary Survey

Note: NF - No. of Families. TM - No. of family members.

The table No. 3.5 shows that, the research survey was conducted with 375 fishing families of four islands. The sample of 375 fishermen families consists of 1588 individuals' i.e., Port Blair 118 families (439 individuals), Rangat 46 (222), Mayabunder 73 (313) and Diglipur 138 (614). The average family size of Andaman's fishermen was 4.23 on an account Rangat held maximum family size by 4.83, Diglipur (4.45), Mayabunder (4.29) and Port Blair (3.72). Majority of the fishermen family at Port Blair has 3 and 4 members, 5 members at Rangat, 2 & 4 at Mayabunder and 3 & 4 at Diglipur.

From the total sample 34 fishermen families are held by two members, 79 families by three members, 101 families by four members, 106 by five members, 40 families by six members, 11 with seven members and only four families with eight members. The majority of Andaman's fishermen families held four and five members.

H_O1 – There is no difference between Islands and Respondents' Family Size

Table No. 3.6 (i)

ISLAND WISE DESCRIPTIVE STATISTICS OF RESPONDENTS' FAMILY SIZE

RESPONDENTS SIZE OF THE FAMILY					
Sl. No	**Name of the Island**	**N**	**Mean**	**Std. Deviation**	**Std. Error**
1	Port Blair	118	3.72	1.012	.093
2	Rangat	46	4.83	1.338	.197
3	Mayabunder	73	4.29	1.532	.179
4	Diglipur	138	4.45	1.209	.103
Total		**375**	**4.23**	**1.291**	**.067**

Source: Primary Survey

The size of the family plays important role in fishing business because fisheries was also a type of family business in which their family members are employed to earn more income to a family. For example the male shall catch fishes from sea and female are used to sell the fishes in the market.

Table No. 3.6 (ii)

DIFFERENCE IN RESPONDENTS' FAMILY SIZE BETWEEN ISLANDS

ANOVA					
RESPONDENTS SIZE OF THE FAMILY					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	53.866	3	17.955	11.697	**.000**
Within Groups	569.484	371	1.535		
Total	623.349	374			

Source: Primary Survey

The ANOVA table shows that the calculated significant value was **0.000.** Hence it was found that there is a significant difference between size of the family and different islands.

Table No. 3.7

ISLAND WISE – PARTICULARS OF RESPONDENTS' CHILDREN

Sl. No	**Particulars**		**Name of the Island**				**Total**
			Port Blair	**Rangat**	**Mayabunder**	**Diglipur**	
Total no. of Families			**118**	**46**	**73**	**138**	**375**
1	No. of Child	1	33	6	19	25	**83**
		2	**47**	7	14	**40**	**216**
		3	20	**21**	**15**	**53**	**327**
		4	2	5	**15**	12	**136**
		5	0	3	3	1	**35**
(A) Total no. of Children			**195**	**118**	**167**	**317**	**797**
2	No. of Child Below Age 3	1	24	4	14	16	58
		2	2	5	1	3	22
(B) Total no. of Children			**28**	**14**	**16**	**22**	**80**
3	No. of Studying Child	1	**27**	9	26	**35**	97
		2	**34**	12	13	**39**	196
		3	16	12	11	25	192
		4	0	3	2	10	60
		5	0	0	1	0	5
(C) Total no. of Children			**143**	**81**	**98**	**228**	**550**
Illiterates/ Dropouts = A - (B+C)			**24**	**23**	**53**	**67**	**167**

Source: Primary Survey

The table No. 3.7 furnishes the details of fishing household's children in each Island. The total no. of children in 375 families is 797. Diglipur has 317 children followed by Port Blair (195), Mayabunder (167) and Rangat (118). In Port Blair majority of the families (47) have 2 children, Rangat 3 children families (21), Mayabunder 3 & 4 children families (15) and the Diglipur dominated by 2 & 3 children families (40) & (53) respectively. On a total 80 children from four islands belong to the age group of below 3 years and 550 are studying. From the total by deducing children below age 3 and studying and remaining 167 (23.29 per cent) children have been assumed as illiterates/ Dropouts.

H_O2 – There is no difference between Islands and Respondents' Children Studying

Table No. 3.7 (i)
ISLAND WISE DESCRIPTIVE STATISTICS OF RESPONDENTS CHILDREN STUDYING

Sl. No	Name of the Island	N	Mean	Std. Deviation	Std. Error
1	Port Blair	118	1.21	1.069	.098
2	Rangat	46	1.76	1.251	.184
3	Mayabunder	73	1.34	1.193	.140
4	Diglipur	138	1.65	1.206	.103
Total		**375**	**1.47**	**1.183**	**.061**

Table No. 3.7 (ii)
DIFFERENCE IN RESPONDENTS' CHILDREN STUDYING BETWEEN ISLANDS

ANOVA					
NO. OF RESPONDENT CHILDREN STUDYING					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	17.518	3	5.839	4.283	**.005**
Within Groups	505.816	371	1.363		
Total	523.333	374			

Education is the most important tool for self development, socio-economic development and economy development. The awareness about the importance of education between weaker sections was very low through the global. The Andaman & Nicobar Islands was also one the evidence for this statement. The total mean value of respondents' children studying was 1.47, Port Blair achieved very low mean (1.21) and Rangat has high mean of 1.76. The significance value was 0.005 and null hypothesis was rejected. Hence, there is significant difference between the no. of respondents' children studying in different islands.

Table No. 3.8

ISLANDS WISE –HOUSING TYPES

Sl. No	Name of the Island	TYPE OF HOUSE								Total	
		Rented House		Thakta House		Tinned House		Pakka House			
		F	%	F	%	F	%	F	%	F	%
1	Port Blair	64	54.24	17	14.41	19	16.10	18	15.25	118	**100**
2	Rangat	23	50.00	10	21.74	8	17.39	5	10.87	46	**100**
3	Mayabunder	26	35.62	22	30.14	20	27.40	5	6.85	73	**100**
4	Diglipur	24	17.39	70	50.72	36	26.09	8	5.80	138	**100**
Total		137	36.53	119	31.73	83	22.13	36	9.60	375	**100**

Source: Primary Survey

Food, shelter and water are the three main basic needs to lead a human life. On the bases on ownership houses shall be differentiate into two types as rented house or owned house. The fishermen living in the rented houses shall change their house as per their requirement and their house status also has been changed but these chances are not possible in owned house of fisherman. To avoid confusions and prove more accurate result, researcher has taken only the owned house. The owned house are classified into three types, they are Thakta House – Leaf roof and Bamboo Wall, Tinned House – Iron Sheet roof and Bamboo Wall and Pakka House - Iron Sheet roof and Cement Wall. The above table present that 36.53 per cent of samples are living in rented houses, of which 54.24 per cent Port Blair fishermen are living in rented house, 31.73 per cent of Thakta House of which 50.72 per cent of fishermen

belongs to Diglipur and only 9.6 per cent fishermen are living in Pakka House of which Port Blair and Rangat fishermen are 15.25 and 10.87 respectively.

Table No. 3.9

ISLANDS WISE – OCCUPATION

Sl. No	Name of the Island	OCCUPATION										Total	
		Fish Capturer		Fish Seller		Fish Agent		Govt.		Others			
		F	%	F	%	F	%	F	%	F	%	F	%
1	Port Blair	49	42.24	24	20.69	2	1.72	21	18.10	20	17.24	116	**100**
2	Rangat	42	95.45	2	4.55	0	0	0	0	0	0	44	**100**
3	Mayabunder	60	85.71	3	4.29	0	0	0	0	7	10	70	**100**
4	Diglipur	123	89.78	6	4.38	0	0	1	0.73	7	5.11	137	**100**
Total		**274**	**74.66**	**35**	**9.54**	**2**	**0.54**	**22**	**5.99**	**34**	**9.26**	**367**	**100**

Source: Primary Survey

From the 375 a maximum of 367 respondents are involved in income generating actives and remaining eight families has been take care by their children. The respondents' occupations are divided into four types namely Fish Capturer, Fish Seller, Fish Agent, Government Servant and Non-Fisheries jobs. Of the 367 respondents 74.7 per cent are involved on fish capturing, 9.5 per cent are involved in fish selling active, 9.3 per cent are engaged as labour or non-fisheries actives, 6 per cent in government job and 2 persons on the whole were involved as sell agent. In Rangat 95.45 per cent respondents are involved in fish capturing actives and for the remaining jobs Port Blair fishermen participation were high, 20.69 per cent, 1.72 per cent, 18.1 per cent, and 17.24 per cent as fish seller, fish agent, government servant and other non fisheries jobs respectively. As per the survey none of them from Rangat are involved as fish agent, government servant and other jobs. At Mayabunder and Diglipur majority of them were involved in fish capturing and selling actives.

Table No. 3.10

ISLANDS WISE – MODE OF FISH MARKETING

Sl. No	Mode of Marketing	Option	Name of the Island							
			Port Blair		Rangat		Maya-bunder		Diglipur	
			F	%	F	%	F	%	F	%
1	**Door to Door**	Yes	72	74.23	28	60.87	18	28.13	65	48.51
		No	25	25.77	18	39.13	46	71.88	69	51.49
		Total	**97**	**100**	**46**	**100**	**64**	**100**	**134**	**100**
2	**Export Agents**	Yes	42	43.30	24	52.17	20	31.25	80	59.70
		No	55	56.70	22	47.83	44	68.75	54	40.30
		Total	**97**	**100**	**46**	**100**	**64**	**100**	**134**	**100**
3	**Street Vendors**	Yes	60	61.86	42	91.30	57	89.06	125	93.28
		No	37	38.14	4	8.70	7	10.94	9	6.72
		Total	**97**	**100**	**46**	**100**	**64**	**100**	**134**	**100**
4	**Auction**	Yes	55	56.70	39	84.78	21	32.81	79	58.96
		No	42	43.30	7	15.22	43	67.19	55	41.04
		Total	**97**	**100**	**46**	**100**	**64**	**100**	**134**	**100**
5	**Market**	Yes	48	49.48	26	56.52	12	18.75	61	45.52
		No	49	50.52	20	43.48	52	81.25	73	54.48
		Total	**97**	**100**	**46**	**100**	**64**	**100**	**134**	**100**

Source: Primary Survey

Marketing is an important area once production process finish. Earning profit through selling the goods and services at right time is the aim of any business especially in perishable goods like fish, selling in time was very important to avoid losses. The survey found that out of the total sample in 341 families are involved in fisheries, 97 families from Port Blair, 46 Rangat, 64 Mayabunder and 134 from Diglipur. Their mode of marketing are classified into five types, they are door to door selling, Export Agent, Street Vendors, Auction and Market.

Door to Door Selling – Andaman Islands are full of small hills with geographical advantage of early sun raise and set as per the India Standard Time (IST), due to this reason their day today life starts early. Majority of Andaman's population are fish consumers and they consume fish at least 3 to 4 days in a week.

The street vendors enjoy this advantage by selling fishes to their customers regularly. They start sales near from 7.00 AM, within two hours they return home by selling a minimum 5 Kgs and earn Rs. 100 profit. Mainly of the fish sellers prefer this mode because of good profit at low labour hours. At Port Blair 74.23 per cent, 60.87 per cent of Rangat, 48.51 per cent of Mayabunder and 28.13 per cent Diglipur's fish sellers undergoing this mode of marketing.

Export Agents – The fishermen sell their high economic value fishes and excess production to the export agents for two reasons in general to earn good profit and to maintain the demand level in the local market. This mode of marketing was practiced by 59.7 per cent Diglipur respondents, 52.17 per cent of Rangat, 43.3 per cent of Port Blair and 31.25 per cent of Mayabunder. **Street Vendors** – Street Vendors are the regular customers of boat owners or fish capturers. The boat owner collects a minimum of Rs. 5000 from each street Vendors to ensure the regular supply of fish and treat them as primary customer and each boat has at least 10 to 15 vendors. The mode was highly adopted by Diglipur respondents at 93.28 per cent followed by Rangat 91.3 per cent, Mayabunder 89.06 per cent and only 61.86 per cent preferred by Port Blair boat owners.

Auction – It is one of the easiest ways for earning huge profit with high risk. Surplus production in local affects and the storage strengthens this mode. Most of the boat owner who are not liable to street vendors they use to follow this mode of marketing. On this boat owners view all vendors and export agents were treated equally and they sell their fish those who asked for high price. This mode was adopted maximum by 84.78 per cent of Rangat respondents, 58.96 per cent Diglipur, 56.7 per cent Port Blair and only 32.81 per cent of Mayabunder. **Market** – Marketing the fish at market is one the traditional method followed by fish sellers. While considering the Andaman Islands buying fish from market in the morning hours were low comparing to evening hours by the general public. Only most of the customers like hotels, restaurants, etc shall purchase fishes in the morning hours. In this mode the volume of sales shall be high, working hours and profit per day may not be predicted. The highest 56.52 per cent Rangat sellers adopted this mode, 49.48 per cent of Port Blair, 45.52 per cent of Diglipur and 18.75 per cent of Mayabunder.

Some of the street vendors follow this method in addition, in case if they were not able to sell to their regular customers they bring the remaining fish to the market.

H_O3 – There is no difference between Jobs and Respondents' Average Monthly Income

Table No. 3.11 (i)

JOB WISE DESCRIPTIVE STATISTICS OF RESPONDENTS AVERAGE MONTHLY INCOME

Sl. No	Types of Job	N	Mean	Std. Deviation	Std. Error
1	Fish Capturer	274	4647.08	2259.81	136.52
2	Seller	35	3700.00	1278.79	216.16
3	Agent	2	15000.00	0	0
4	Government	22	12954.54	1396.50	297.74
5	Others	34	4561.76	2400.38	411.67
Total		**367**	**5103.27**	**3033.86**	**158.37**

Source: Primary Survey

Jobs may be differs but the only aim of any job was to earn money. The selected fishing community was engaged in different jobs like Fish Capturer, Fish Seller, Fish Marketing Agent, Government Servant and Other Non-Fisheries jobs. The average monthly income of a fish capturer was Rs. 4647, fish seller Rs. 3700, Fish Agent Rs. 15000, Government Job around Rs. 13,000 and others Rs. 4561.

Table No. 3.11 (ii)

DIFFERENCE IN RESPONDENTS' AVERAGE MONTHLY INCOME BETWEEN TYPES OF JOB

ANOVA					
RESPONDENTS AVERAGE MONTHLY INCOME					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	1687938572	4	421984643.1	90.88234	**.000**
Within Groups	1680837504	362	4643197.524		
Total	3368776076	366			

The average monthly income earned by Fish Capturer was Rs. 4647.08, Fish Seller was Rs.3700.00, Fish Agent was Rs. 15000, Government employee was Rs. 12954.54 and Non-fisheries jobs was Rs. 4561.76. The average incomes of different jobs are differs from each job but statically they all same. The calculated significance value is **0.000** so there is difference between the average monthly income of the respondent and jobs.

Table No. 3.12

ISLANDS WISE – RESPONDENTS' AVERAGE MONTHLY INCOME

Sl. No	Income Range	Name of the Island								Total	
		Port Blair		Rangat		Maya - bunder		Diglipur			
		F	%	F	%	F	%	F	%	F	%
1	0 - 3000	21	18.10	8	18.18	18	25.71	61	44.53	**108**	**29.43**
2	3001 - 6000	59	50.86	30	68.18	47	67.14	68	49.64	**204**	**55.59**
3	6001 - 9000	08	6.90	03	6.82	00	0	04	2.92	**15**	**4.09**
4	9001 - 12000	18	15.52	00	0	03	4.29	03	2.19	**24**	**6.54**
5	12001 - 15000	08	6.90	03	6.82	02	2.86	01	0.73	**14**	**3.81**
6	15001 - 18000	02	1.72	00	0	00	0	00	0	**02**	**0.54**
Total		**116**	**100**	**44**	**100**	**70**	**19.07**	**137**	**100**	**367**	**100**

Source: Primary Survey

The respondents' average monthly incomes are grouped into six categories with the class interval of Rs. 3000. The reason behind for taking Rs. 3000 as class interval was while collecting the primary data most of the respondents stated their average monthly income as Rs. 3000 and Rs. 6000. The table 3.10 express that 29.43 per cent respondents are earning only upto Rs. 3000 per month, 44.53 per cent of Diglipur's respondents under this category, Mayabunder 25.71 per cent, 18.18 per cent of Rangat and 18.10 per cent Port Blair. More then half of the sample (55.59 per cent) are earning an average monthly income between Rs. 3001 - 6000 of which majority of them are from Rangat (68.18 per cent), followed by Mayabunder (67.14 per cent), 50.86 per cent belongs to Port Blair and Diglipur 49.64 per cent. Majority of above Rs. 6001 -9000 and Rs. 12001-15000 earners are belongs to Port Blair and Rangat by 6.9 and 6.82 per cent respectively. Port Blair fishermen earns above Rs. 9001 -12000 and above Rs. 15000 by 15.52 per cent and 1.72 per cent respectively.

H_O4 – There is no difference in monthly income of various Islands fishermen.

Table No. 3.12 (i)

ISLANDS WISE DESCRIPTIVE STATISTICS OF RESPONDENTS' AVERAGE MONTHLY INCOME

RESPONDENTS' AVERAGE MONTHLY INCOME					
Sl. No	**Name of the Island**	**N**	**Mean**	**Std. Deviation**	**Std. Error**
1	Port Blair	116	6510.34	3846.679	357.155
2	Rangat	44	5261.36	3066.110	462.233
3	Mayabunder	70	4672.86	2377.913	284.215
4	Diglipur	137	4081.02	1890.049	161.478
Total		**367**	**5103.27**	**3033.860**	**158.366**

Source: Primary Survey

Table No. 3.12 (ii)

DIFFERENCE IN RESPONDENTS' AVERAGE MONTHLY INCOME BETWEEN ISLANDS

ANOVA					
RESPONDENT AVERAGE MONTHLY INCOME					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	386895086.4	3	128965028.8	15.6991	**.000**
Within Groups	2981880990	363	8214548.182		
Total	**3368776076**	**366**			

Descriptive statistics of respondents on average monthly income states that, the average monthly income of Port Blair's fishermen has capture top position with Rs. 6510.34, followed by Rangat Rs. 5261.36, Mayabunder Rs. 4672.86 and Diglipur Rs. 4081.02. The ANOVA table shows the significance value of **0.000**. Hence the null hypothesis is rejected and proved there was a high significant difference between the islands and monthly average income.

H_O5 – There is no difference in monthly family income of various Islands fishermen.

Table No. 3.13 (i)

ISLANDS WISE DESCRIPTIVE STATISTICS OF RESPONDENTS FAMILY AVERAGE MONTHLY INCOME

RESPONDENTS FAMILY AVERAGE MONTHLY INCOME					
Sl. No	**Name of the Island**	**N**	**Mean**	**Std. Deviation**	**Std. Error**
1	Port Blair	118	9986.44	5563.125	512.127
2	Rangat	46	8739.13	3460.474	510.219
3	Mayabunder	73	7561.64	3738.004	437.500
4	Diglipur	138	6344.20	2900.919	246.943
Total		**375**	**8021.07**	**4388.160**	**226.604**

Source: Primary Survey

Table No. 3.13 (ii)

DIFFERENCE IN RESPONDENTS' FAMILY AVERAGE MONTHLY INCOME BETWEEN ISLANDS

ANOVA					
RESPONDENTS FAMILY AVERAGE MONTHLY INCOME					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	882962738	3	294320912.7	17.28077094	**.000**
Within Groups	6318760835	371	17031700.36		
Total	**7201723573**	**374**			

The above table 3.13 (i) show that the overall average monthly of the Andaman's fishermen family was Rs. 8021.07. Of which the Port Blair respondents' family of earns a high amount of Rs. 9986.44 followed by Rangat Rs. 8739.13, Mayabunder Rs. 7561.64 and Diglipur the least amount Rs. 6344.20. The significance value is **0.000** which is significant at 1 % level and the null hypothesis has been rejected. Hence it has been proved that there is difference between the respondents' family average monthly income between islands.

Table No. 3.14

ISLANDS WISE –DETAILS OF RESPONDENTS LOANERS

Sl. No	Loaners	Name of the Island								Total	
		Port Blair		Rangat		Maya-bunder		Diglipur			
		F	%	F	%	F	%	F	%	F	%
1	Bank Only	10	11.63	30	93.75	7	20	14	29.17	61	30.35
2	Private Only	20	23.26	2	6.25	24	68.57	26	54.17	72	35.82
3	MFI Only	5	5.81	0	0	0	0	0	0	5	2.49
4	Bank and Private	8	9.30	0	0	4	11.43	6	12.50	18	8.96
5	Bank and MFI	16	18.60	0	0	0	0	0	0	16	7.96
6	Private and MFI	0	0	0	0	0	0	2	4.17	2	1.00
7	All	27	31.40	0	0	0	0	0	0	27	13.43
Total		**86**	**100**	**32**	**100**	**35**	**100**	**48**	**100**	**201**	**100**

Source: Primary Survey

On the whole 201 respondents had borrowed loan from some of a source. The survey found that fishermen have taken loan from three sources namely Banks, Private Parties and Micro Finance Institution (MFI). On the whole 35.82 per cent of them had preferred and borrowed only from private parties, 30.35 per cent only from Banks, 2.49 per cent only from MFI, 8.96 per cent from Bank and Private, 7.96 per cent from Bank and MFI, a per cent from Private and MFI and 13.43 per cent from all the three sources. Of the 80 Port Blair's borrowers 11.63 per cent of them borrowed only from Bank, 23.26 per cent only from Private parties, 5.81 per cent from MFI, 9.3 per cent from Bank and Private, 18.6 per cent Bank and MFI and remaining 31.4 per cent from all.

The fishermen of Rangat had borrowed only from Bank and Private party 93.75 per cent and 6.25 per cent respectively. As such Rangat, Mayabunder's fishermen also preferred only the bank and private parties. 68.57 per cent of them borrowed from private party, 20 per cent from Bank and remaining 11.43 per cent from both bank and private parties. Majority of Diglipur fishers 54.17 per cent have borrowed from private parties, 29.17 per cent from bank, 12.5 per cent bank and private and 4.17 per cent from private and micro finance institution.

Table No. 3.15

ISLANDS WISE –DETAILS OF RESPONDENTS

AVERAGE LOANS AMOUNT

Sl. No	Name of the Island	Details of Respondents' Average Loans Amount				Total
		N	Bank	Private	MFI	
1	Port Blair	86	11214	25000	4509.3	40723.3
2	Rangat	32	14984.4	1562.5	0	16546.9
3	Mayabunder	35	7714.29	25771.4	0	33485.7
4	Diglipur	48	27770.8	42291.7	500	70562.5
Average		**201**	**15158.7**	**25532.3**	**2048.76**	**42739.8**

Source: Primary Survey

An average loan amount of 201 borrowers balance is Rs. 42739.8. Diglipur fishermen were the largest borrower's by Rs. 70562.5 per family. Of which Rs. 27770.8 from bank, Rs. 42291.7 from private party and Rs. 500 from microfinance institution. Port Blair's borrowers are second in place by an average loan amount of Rs. 40723.3 each, an account of Rs. 11214 from bank, Rs. 25000 from private party and Rs. 4509.3 from MFI. The Mayabunder fishermen have borrowed only from bank and private parties, an average total loan of Rs. 33485.7 each, an account of Rs. 7714.29 from bank and Rs. 25771.4 from private. While comparing with other islands Rangat fishers are held very loan average loan amount of Rs. 16546.9 each, of Rs. 14984.4 and Rs. 1562.5 from bank and private respectively.

Table No. 3.16

ISLANDS WISE –RESPONDENTS LOANS REASONS

Sl. No	Name of the Island	REASON FOR TAKING LOAN						Total	
		Business		Personal		Both			
		F	%	F	%	F	%	F	%
1	Port Blair	18	20.93	24	27.91	44	51.16	86	100
2	Rangat	29	90.63	1	3.13	2	6.25	32	100
3	Mayabunder	14	40.00	18	51.43	3	8.57	35	100
4	Diglipur	22	45.83	18	37.50	8	16.67	48	100
Total		83	41.29	61	30.35	57	28.36	201	100

Source: Primary Survey

Both business and personal loan borrowers' proportion was high in Port Blair at 51.16 per cent and remaining 27.91 per cent only for personal only and 20.93 per cent for business only. Majority of Rangat borrowers (90.63 per cent) have borrowed only for business purpose, 6.25 per cent for both reasons and only 3.13 per cent for personal. Mayabunder borrowers have given more importance for personal use by 51.43 per cent, 40 per cent for business and balance 8.57 per cent loans for both. Nearly half of the borrowers (45.83 per cent) of Diglipur have taken loan for business, 37.5 per cent for personal and remaining 16.67 per cent for both.

To furnish the real assets value of the respondents net assets value has been calculated for this analyze. The net assets value was calculated by reducing the total balance debts from the total assets value.

Formula:

NET ASSETS VALUE = TOTAL ASSETS – TOTAL LIABILITIES

H_O6 – There is no difference in Net Assets Value held by fishermen of the Islands.

Table No. 3.17 (i)

ISLANDS WISE DESCRIPTIVE STATISTICS OF RESPONDENTS NET ASSETS VALUE

Net Assets Value					
Sl. No	**Islands**	**N**	**Mean**	**Std. Deviation**	**Std. Error**
1	Port Blair	118	149854.2	167741	15441.81
2	Rangat	46	213815.2	222413.5	32793.09
3	Mayabunder	73	137506.8	149338.3	17478.72
4	Diglipur	138	151615.9	170489.8	14513.06
Total		**375**	**155944.8**	**173758.4**	**8972.847**

Source: Primary Survey

Table No. 3.17 (ii)

DIFFERENCE IN RESPONDENTS' NET ASSETS VALUE BETWEEN ISLANDS

ANOVA					
Net Asset Value in Lakhs					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	1858000	3	619400	2.069	**0.104**
Within Groups	111100000	371	299400		
Total	**112900000**	374			

Although the average respondents monthly income and family income were high at Port Blair, while comparing the net assets value they have been draw back to third position. Regarding net asset value Rangat stands at first position by holding an average net assets value of Rs. 213815.2 per respondent, followed by Diglipur Rs. 151615.9, Port Blair Rs. 149854.2 and Mayabunder Rs. 137506.8.

Even though there was a different in average income between the islands net assets value does not. The significance value was **0.104** which says that there was no difference in net assets value between islands.

Table No. 3.18

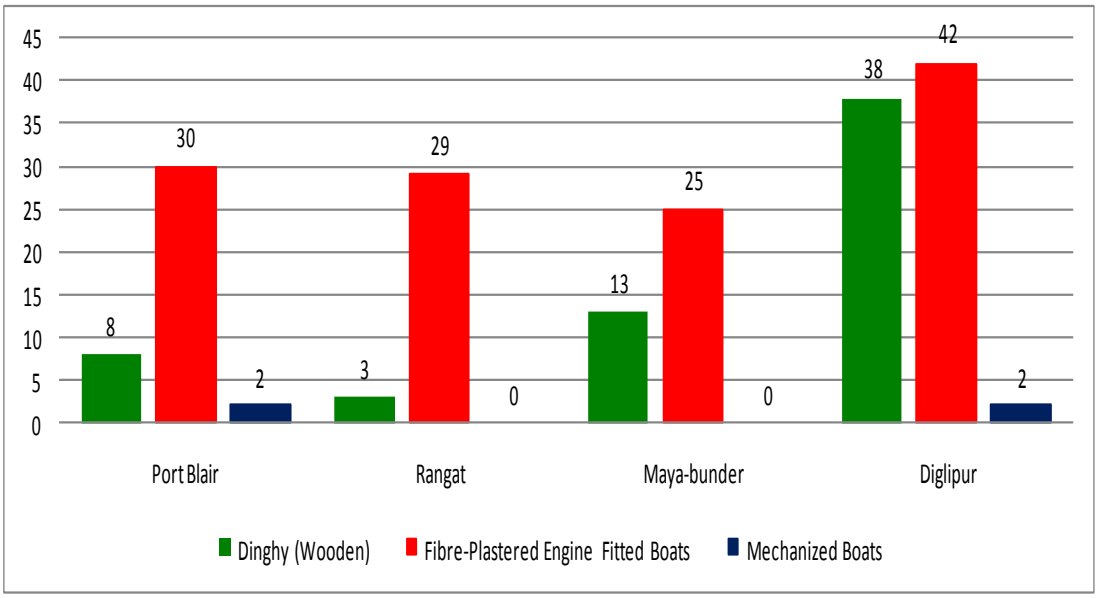
ISLANDS WISE –RESPONDENTS BOATS DETAILS

DETAILS OF THE RESPONDENTS BOATS											
Sl. No	**No. of Boats**	**Name of the Island**								**Total**	
		Port Blair		**Rangat**		**Maya-bunder**		**Diglipur**			
		F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
1	Dinghy (Wooden)	8	20	3	9.38	13	34.21	38	46.34	62	32.29
2	Fibre-Plastered Engine Fitted Boats	30	75	29	90.62	25	65.79	42	51.22	126	65.63
3	Mechanized Boats	2	5	0	0	0	0	2	2.44	4	2.08
Total No. of Boats		**40**	100	**32**	100	**38**	100	**82**	100	**192**	100

Source: Primary Survey

Chart No. 3.1

DETAILS OF THE RESPONDENTS BOATS



As it was said before boats are important instrument on marine fishing. There are three types of boats held by Andaman fishermen. They are Dinghy a wooden local made boat, Fibre Plastered Engine Fitted Boats (Outboard engine) and Mechanized boat (Inboard engine). At Port Blair 40 respondents held of which 20 per cent of Dinghies, 75 per cent Fibre Plastered Engine Fitted Boats and 5 per cent Mechanized.

The Rangat and Mayabunder fishers held only Dinghies and Fibre Plastered Engine Fitted Boats. 32 individuals held boats at Rangat on an account 90.62 per cent and 9.38 per cent and at Mayabunder 65.79 per cent and 34.21 per cent are Fibre Plastered Engine Fitted Boats and Dinghies respectively.

51.22 per cent of Diglipur fishers hold Fibre Plastered Engine Fitted Boats, 46.34 per cent Dinghies and remaining 2.44 per cent Mechanized Boats. On a whole, 65.63 per cent of respondents held Fibre Plastered Engine Fitted Boats, 32.29 per cent Dinghies and 2.08 per cent Mechanized Boats.

Table No. 3.19

ISLANDS AND ASSETS WISE – RESPONDENTS DETAILS

Sl. No	Name of the Assets	Option	Name of the Island							
			Port Blair		Rangat		Maya-bunder		Diglipur	
			F	%	F	%	F	%	F	%
1	Boat	Yes	36	30.51	30	65.22	33	45.21	77	55.80
		No	82	69.49	16	34.78	40	54.79	61	44.20
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
2	Fish Equipments	Yes	33	27.97	30	65.22	33	45.21	84	60.87
		No	85	72.03	16	34.78	40	54.79	54	39.13
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
3	Land and House	Yes	54	45.8	23	50	47	64.4	114	82.6
		No	64	54.2	23	50	26	35.6	24	17.4
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
4	Two Wheeler	Yes	21	17.80	3	6.52	6	8.22	10	7.25
		No	97	82.20	43	93.48	67	91.78	128	92.75
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
5	Mixer Grinder	Yes	103	87.29	37	80.43	52	71.23	118	85.51
		No	15	12.71	9	19.57	21	28.77	20	14.49
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
6	Refrigerator	Yes	24	20.34	18	39.13	9	12.33	12	8.70
		No	94	79.66	28	60.87	64	87.67	126	91.30
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
7	Television	Yes	110	93.22	34	73.91	48	65.75	99	71.74
		No	8	6.78	12	26.09	25	34.25	39	28.26
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
8	Music System	Yes	16	13.56	13	28.26	4	5.48	4	2.90
		No	102	86.44	33	71.74	69	94.52	134	97.10
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
9	Mobile Phone	Yes	114	96.61	30	65.22	48	65.75	92	66.67
		No	4	3.39	16	34.78	25	34.25	46	33.33
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
10	Other Valuable goods	Yes	113	95.76	40	86.96	58	79.45	120	86.96
		No	5	4.24	6	13.04	15	20.55	18	13.04
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**
11	Insurance Policies	Yes	70	59.3	23	50	11	15.1	63	45.7
		No	48	40.7	23	50	62	84.9	75	54.3
		Total	**118**	**100**	**46**	**100**	**73**	**100**	**138**	**100**

Source: Primary Survey

The above 11 items in table are the major assets of the Andaman's fishing community. Boat is one of the essential instruments for marine fishing. The Rangat has the highest proportion 65.22 per cent boat owners followed by Diglipur 55.8 per cent, Mayabunder 45.21 per cent and last Port Blair only 30.51 of respondents owning boat. The fish equipment includes nets and lines, Rangat fishermen held first position by 65.22 per cent, followed by Diglipur 60.87 per cent, 45.21 per cent Mayabunder and 27.97 per cent of Port Blair fishermen.

House is one the basic requirement of human beginnings. 82.6 per cent of Diglipur fishermen have fulfilled this basic need by having House and Land, the second place is captured by Mayabunder 64.4 per cent, 50 per cent by Rangat and finally Port Blair 45.8 per cent.

To analyze the living standard of fishing community, the researcher has taken 6 items and they are Two Wheeler, Mixer Grinder, Television, Refrigerator, Music System and Mobile Phone. Transportation is the one of the biggest problem in these islands, without a personal vehicle moving from one part to other part on time is rarely possible. From Port Blair Fishermen 17.8 per cent owned two wheeler's followed by Mayabunder by 8.22 per cent, Diglipur 7.25 per cent and 6.52 per Rangat. The Mixer Grinder and Refrigerator are consider as the two important items home appliances, regarding Mixer Grinder owned by majority of respondents in every island. Comparing the four islands, Port Blair stands at primary position by 87.29 per cent, 85.51 per cent Diglipur, 80.43 per cent Rangat and at last Mayabunder 71.23 per cent. Refrigerator was the importance equipment for preserving a small amount of fishes. Refrigerator owning respondents are less comparing to Mixer Grinder owners. At the top position Rangat's respondents stand with 39.13 per cent, 20.34 per cent Port Blair, Mayabunder 12.33 per cent and remaining 8.7 per cent Diglipur.

Entertainment options is very low in Andaman and Nicobar islands, for them Television and Music System are the only entertainment. 93.22 per cent of Port Blair, 73.91 per cent of Rangat, 71.74 per cent of Diglipur and 65.75 per cent of Mayabunder respondents owned television and 28.26 per cent of Rangat, 13.56 of Port Blair, 5.48 per cent Mayabunder and only 2.9 per cent of Diglipur

Communication gap is the one of the major reason for incurring social and economic losses. Communication is an important tool for developing a strong socio-economic environment. One of the important innovations of 21st century was mobile phone, which helps to reduce the communication gap and it has became a necessary instrument for day today life. At Port Blair 96.61 respondents held mobile phone followed by Diglipur 66.67 per cent, 65.75 per cent Mayabunder and 65.22 per cent Rangat.

After fulfilling the basic and day today expenses naturally the remaining income are converted into current and fixed assets to face the future expenditure. The current assets of the respondents' means SHG savings and short term deposits and fixed assets shall be long term deposits, gold ornament, land etc. This study found that 95.76 per cent of Port Blair respondents were involved on saving habit, Rangat and Diglipur by 86.96 per cent and Mayabunder by 79.45 per cent. Regarding Insurance Policies, the 59.3 per cent Port Blair, 50 per cent of Rangat, 45.7 per cent of Diglipur and 15.1 per cent of fishermen held insurance polices. Average 44.5 per cent fishermen held insurance polices in Andaman Islands.

Table No. 3.20

RESPONDENTS' AWARENESS ON FISHERIES SUPPORTING ORGANISATIONS

Awareness	Option	Fisheries Supporting Organisations							
		MPEDA		ECGC		FSI		INCOIS	
		F	%	F	%	F	%	F	%
	Yes	12	3.2	4	1.1	94	25.1	0	0
	No	363	96.8	371	98.9	281	74.1	375	100
Total		**375**	**100**	**375**	**100**	**375**	**100**	**375**	**100**

Source: Primary Survey

Information is Wealth- to become a successful businessman being aware of business supporting organizations is must. Without the help of supporting organization also some shall do the business but it won't be systematic and possibility for further development and shall be limited. The four organizations, the Marine

Products Export Development Authority (MPEDA), Export Credit Guarantee Corporation (ECGC), Fishery Survey of India (FSI) and Indian National Centre for Ocean Information Services (INCOIS). The FSI provides information regarding the potential of marine resources periodically and INCOIS provides everyday data of marine potential distance. These both organisations data were very useful to fishers to reducing operating expenditure and increase the profit.

The MPEDA and ECGC are working for promoting exporters and marine export. To upgrade the business from domestic to international and to do riskless payment in export business these organisations support are required for marine exporter. The survey result shows that, 96.8 per has not aware of MPEDA, 98.1 per cent about ECGC, 74.1 per cent about FSI and 100 per cent about INCOIS. Even though they are interested to do export business, due to lack of awareness on approaching the right person they were unable to start an export business or executive the existing business on profitable way.

Table No. 3.21 (i)

GARRET'S RANKS AND SCORES ON MONTHLY EXPENDITURE PATTERN

CALCULATED SUM OF GARRET'S SCORE					
Sl. No	**Garret's Score**	**Rank**	**Sl. No**	**Garret's Score**	**Rank**
1	83.74667	**1**	8	49.02933	**8**
2	60.49067	**2**	9	43.12533	**9**
3	59.56267	**3**	10	42.81067	**10**
4	53.632	**4**	11	42.76267	**11**
5	51.13333	**5**	12	41.03733	**12**
6	51.00267	**6**	13	40.25333	**13**
7	50.50133	**7**	14	31.04	**14**

Source: Henry, E, Garret. and R,S, Woodworth. 1969. *Statistics in Psychology and Education.* Vakils, Feffer and Simons Private Ltd.

The researcher has tried to find out for which purpose the selected samples are showing more importance regarding expenditure basic. From the pilot study 14 important expenses were found and on that assumption final primary data has been collected. The table furnished the Garret's Score and Ranks using Garret's Ranking Table, high scored expenses has given high rank.

Table No. 3.21 (ii)

GARRET'S RANK SCORE FOR TOTAL AND ISLANDS WISE ON MONTHLY EXPENDITURE PATTERN

Sl. No	Households	Total Rank	Port Blair Rank	Rangat Rank	Maya - bunder Rank	Diglipur Rank
No. of Samples		**375**	**118**	**46**	**73**	**138**
1	Food expenses	**1**	**1**	**1**	**1**	**1**
2	Fuel expenses for cooking	**2**	**3**	**4**	**2**	**2**
3	Transportation Expenses	**3**	**4**	**2**	**3**	**3**
4	Electricity	4	10	6	4	4
5	LIC	5	8	5	9	5
6	Cable Connection	6	9	10	6	6
7	Telephone	7	6	11	8	7
8	House Rent	8	5	7	5	8
9	Personal Loan Interest	9	7	12	11	11
10	Personal actives	10	**2**	**3**	12	14
11	Business Loan Interest	11	12	8	10	9
12	Average Education Expenses	12	11	14	13	10
13	Saving	13	13	9	7	13
14	Medicine	14	14	13	14	12

Source: Primary Survey

The Garret's Ranks for the 375 respondents shows that, the highest proportion of their income spend to face food expenses followed by fuel expenses for cooking includes fuel used to water heating due to a long rainy (nearly 8 months in a year) climatic condition they are forced to use hot water for drinking and bathing purpose. The fuel expenses scored rank 3rd and 4th at Port Blair and Rangat respectively.

Third major part of their income is spend on transportation because in general Andaman is one of the hill locations with ups and downs. Moving by walk or bicycle are difficult, the only easiest mode of transportation shall be moving by motors vehicles. While consider the fishermen transportation plays a main role on marketing their productions. Fishery is one of the family type businesses where males participate on pre-harvesting process and it dominate by female in post-harvesting process. As it explained in the table no. 3.9 majority of fish sellers adopted door to door marketing mode and their customers are living away from sellers home. In order

to continue the size of regular customer by they sells fresh fish as per as possible in the morning. This expense scored more and stands 2nd position at Rangat and scored low at stands 4th position at Port Blair.

The fourth place on the score board has been captured by Electricity Expense. Only at Mayabunder and Diglipur the electricity expense scored fourth place due to their low average monthly income but the amount spend to this expenses may be more or less same in every islands as per the primary survey data.

The amount spend to pay LIC premium stands at 5th position in general and at Rangat and Diglipur but it captured 8th rank at Port Blair due to they are high income group and 9th rank at Mayabunder due to the low amount of premium and no. of policies takers as per the primary survey data.

Next rank, 6 goes to cable connection, as the researcher explained under table no. 3.19. Entertainment facilities in these islands are very optimum except watching television. The same rank was maintained at Mayabunder and Diglipur but it scored 9th rank at Port Blair because of high income group and 10th rank at Rangat due to many of them were held television without cable connection.

The telephone charges is placed at 7th rank and the same rank is scored by Diglipur but at Port Blair it scored more and captured 6th rank due to no. of mobile used and amount spend per month are more in this island as it explained in table no. 3.17. Rangat scored 11th rank and Mayabunder scored 8th rank because of amount spends from their income was very low.

The house rent, ranked at 8th position and the same position is maintained by Diglipur and 7th rank at Rangat due to most of them are living at thakta houses cost low rate of rent. The Port Blair and Mayabunder respondents spends more amount for house rent due to cost of rent were high at these islands. It scored 5th rank in the both the islands.

The interest amount paid for personal loan stands at 9th rank on total but it scored 7th rank at Port Blair due to may have taken borrowed personal loan and

borrowers are low in others islands. The personal actives expenses include amount spend for purchase of dresses, cosmetics, liquor consumption, gifts, parties etc. The over rank scored 10th position but Port Blair scored 2nd rank and Rangat scored 3rd rank due to Port Blair fishermen follows city culture and the impact fell on the nearest town Rangat it was the opinion of the researcher on his observation from their life style.

Interest on business loans has11th rank, Port Blair (12th Rank), Rangat (8th Rank), Mayabunder (10th Rank) and Diglipur (9th Rank) scored below ranks due to at Port Blair it was explain under table no.3.10 majority were followed door to door marketing mode and to become a fish seller minimum Rs. 5, 000 and maximum Rs. 20, 000 is more then sufficient. This mode shall be only possible at Port Blair because the population, demand, purchasing power, high income group, government and private employee, etc., were high while comparing to other islands.

In general for children education the fishing community are spending very low amount and scored 12th rank but Port Blair (11th Rank) and Diglipur (10th Rank) due to nearly half of them of Port Blair's respondents prefer private schools for primary level education and sending their children for college level studies (shown in the table no. 3.7) at mainland and the same practiced followed at Diglipur with low income.

The respondents are showing less amount of interest on saving and scored 13th rank including Port Blair and Diglipur scored same but the Rangat (9th Rank) and Mayabunder (7th Rank) score above rank due to the policies amount and premium are high, it has been proved from table no. 3.16 (i) the mean assets values are high comparing to the samples and mean assets values of other islands. Comparing to all expenses they spend very low amount to medical services due to the Andaman and Nicobar Government provides medical service at free of cost but at the same time the facilities and experts are very less in the government hospitals.

3.2 INDIA'S MARINE PRODUCTS EXPORT POLICIES AND SUBSIDY SCHEMES

Export shall be the master key forever to earn foreign exchange throughout world. LPG (Liberalization, Privatization and Globalization) are important concepts drive international business. In Liberalized governments are lost their control on their economy. To control the situation the new concept of Privatization was introduced but it also created uncontrollable issues and made a way for Globalization. This new concept was accepted by many countries and after 90's India has opened its economy and tried with others further economy development. **Globalization** aimed at uniform economic growth throughout the world. It has reduced barriers to international trade as tariffs, export fees, and import quotas. It mainly shows full attention to increase material wealth, goods and services through an international division of labor by efficiencies catalyzed by international relations, specialization and competition. It describes the process by which regional economies, societies, and cultures have become integrated through communication, transportation, and trade.

Export and Import are the business between two individuals or companies or countries etc. The physical presentence was not necessary in this business, in many cases, the importer and exporter may not know socially and have not even seen each other's but have been doing business for a long period. This magic is happens only in international business between ethical business partners. Business ethics plays a vital role in international business, the importer import goods and services by believing that exporter he/she shall export only quality products and the exporter exports the products by importer whatever that the he/she shall make the payments as per the agreement. To facilitate, support and maintain the business ethics and earn huge foreign exchange for development of India, in 1962, government of India selected a special Exim Policy Committee to review the government preceding policies of export import (Indian Exim policy). On12th April 1985, the New Exim Policy of India has been announced. The primarily Export-Import Policy of India was launched for the period of three years with a main intention of boosting India export. While executing Exim policy some limitations and new problems shall be raised. To

overcome these problems and taking the international business in a constant growing path, Indian government was taking various steps periodically.

India has a high potential on Agricultural sector and also earning huge foreign exchange from it. Presently, food security has become a major issue for agricultural products. Because of this issue, demand of Indian products in developed countries was declined. To increase Indian foreign trade, expand employment opportunities and increase the foreign reserve, India has introduced the New Foreign Trade Policy (FTP) 2009-14 with various necessary remedies and benefits.

3.2.1 GENERAL PROVISIONS OF FOREIGN TRADE POLICY 2009-14

(a) ***Exports and Imports free unless regulated***

Exports and Imports shall be free as per the Foreign Trade Policy (FTP) regulation. The items are specified in ITC (HS) notified by DGFT and it amended from time to time.

(b) ***Interpretation of Policy***

Directorate General of Foreign Trade (DGFT) are the final authority to interpretation on any provision FTP or classification of any item in ITC (HS) or HBP-v1 or HBP- v2, or Schedule of DEPB rates.

(c) ***Restricted Goods***

The restricted goods under ITC (HS) shall be exported or imported in accordance with an Authorization or in terms of a public notice issued in this regard.

(d) ***Free Exports***

Without any restriction all goods shall be exported except to extent regulated by ITC (HS) or any provision of FTP or in force of any time being law.

(e) ***Realization of Export***

Exporter is realize export proceeds within time specified by RBI, in case of failure, he shall be liability without any prejudice or penalty under any law in force, be liable to action in accordance with provisions of FT (D&R) Act, Rules and Orders made there under and FTP.

(f) ***Export Promotion Councils (EPC)***

Export Promotion Councils (EPCs) are established to promote and develop Indian exports. Each council is responsible for promotion of a particular group of products, projects and services.

(g) ***Registration –cum- Membership Certificate (RCMC)***

The RCMC benefits are –

(i) There are only authorized to import / export except items listed as restricted items in ITC (HS).

(ii) There are only applicable to receive any other benefit or concession under FTP.

Certificate of Registration as Exporter of Spices (CRES) issued by Spices Board shall be treated as Registration-cum-Membership Certificate (RCMC).

FOREIGN TRADE POLICY (2009-14) is the first policy introduced with two important schemes namely Focus Market Scheme and Focus Product Scheme.

3.2.1 (i) FOCUS MARKET SCHEME (FMS)

Government of India has shown special interest and put concerted efforts to promote marine exports. The objective of this scheme was to offset high freight cost and other externalities to select international markets with a view to enhance our export competitiveness in these countries. Under this scheme, Exporters shall be

entitled for Duty Credit Scrip equivalent to 3 % of FOB value of exports (in free foreign exchange) for exports made from 27.8.2009 onwards for all products to notified countries.

The Special Focus Initiatives has been identified in few important areas for Market Diversification, Technological Upgradation and Support to status holders on Marine sectors. The following are major benefits enjoyed by marine products exporters through Special Focus Initiatives, they are:-

(a) **Market Diversification**

During 2008-10, due to financial crisis the demand in developed economies has cut down and pulled down the growth of India's exports. To handle this situation and taking India's export on growing path, the necessity of market diversification raised. India has taken this bold decision to diversify its market from developed to developing nations like Latin America, Africa, parts of Asia and Oceania. To achieve this policy the following steps are taken.

- Under this scheme 27 new countries have been included within the ambit.
- The incentive has been increased from 2.5% to 3%.
- This scheme support for exports to all countries in Africa and Latin America and in Asian markets like China and Japan.

(b) **Marine Sector**

- Under EPCG fisheries sector was permitted to imports technological goods for upgradation (except fishing trawlers, ships, boats and other similar items) and it exempted from maintaining average export obligation.
- Duty free import is applicable to import specified specialized inputs / chemicals and flavouring oils to the extent of 1% of FOB value of preceding financial year's export.

- Monofilament longline system for tuna fishing at a concessional rate of duty and Bait Fish for tuna fishing shall be imported at Nil duty.

- A self removal procedure for clearance of seafood waste is applicable subject to prescribed wastage norms.

- Vishesh Krishi and Gandhi Udyog Yojana (VKGUY) covers all items of chapter 03, ITC (HS) code 1604 (prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs) and 1605 (crustaceans, molluscs and other aquatic invertebrates, prepared or preserved).

- Under Zero duty Export Promotion Capital Goods (EPCG) Scheme, Export Oriented Units (EOUs) are allowed to import capital goods for pre production, production and post production of zero custom duty.

3.2.1 (ii) FOCUS PRODUCT SCHEME (FPS)

Table No. 3.22

LIST OF VALUE-ADDED PRODUCTS UNDER FOCUS PRODUCT SCHEME

Sl. No.	FPS Product Code	Description
1	**46**	Shrimp – breaded, battered, marinated and other such prepared products
2	**47**	Shrimp pickle
3	**48**	Shrimp Curry
4	**49**	AFD Shrimp, AFD Powder
5	**50**	Shrimp IOF raw (Consumer Pack of less than 1 Kg)
6	**51**	Shrimp IOF blanched/cooked
7	**52**	Shrimp in Tray/pouch packs
8	**53**	Squid – breaded, battered, marinated and other such prepared products
9	**54**	AFD Squid
10	**55**	Squid IQF raw (Consumer Pack of less than 1 Kg)
11	**56**	Squid IQF blanched/cooked
12	**57**	Squid in Tray/ pouch packs
13	**58**	Cuttlefish AFD

14	**59**	Cuttlefish IQF Raw (Consumer Pack of less than 1 Kg)
15	**60**	Cuttlefish IQF blanched/cooked
16	**61**	Cuttlefish in tray/pouch packs
17	**62**	Cuttlefish breaded, battered, marinated and other such prepared products
18	**63**	Fish fillets / loins / steaks etc in tray / vacuum pouches
19	**64**	Braded fish fingers / fish fillets, precooked loins and other such prepared products
20	**65**	Fish pickle
21	**66**	Fish curry
22	**67**	Lobster cooked / half cut IQF / packed in tray / pouches
23	**68**	Stuffed crab
24	**69**	Breaded crab cakes Crab cake
25	**70**	Pasteurized crab meat
26	**71**	Raw crab meat / soft shell crab
27	**72**	Mussel / clam meat pickle
28	**73**	Surimi analogues
29	**74**	Canned Tuna

Source: http://www.eximkey.com/contents/showpage1.asp?pageid=24955

Also under this scheme all Handicraft products shall be export at 5 per cent benefits namely -

- Fishing Rods.
- Fish-Hooks & Other Line Fishing Tackle.
- Fish Landing & Similar Nets.
- Decoy "Birds" (excluding of 9208/9705) & similar Hunting requisites.
- Made up Fishing Nets of Man-Made Textile Materials.

3.2.2 PROMOTIONAL MEASURES

(a) Market Access Initiative (MAI)

Financial assistance is provided by Export promotion councils (EPCs), Industry and Trade Associations (ITAs), Agencies of State Government, Indian Commercial Missions (ICMs) Abroad and other National Level Institutions for export promotion activities on focus country on the basic of focus product.

(b) Meeting expenses for statutory compliances in buyer country for Trade related Matters

Department of Commerce (DOC) reimburse the charges / expenses for fulfilling statutory requirements in the buyer country including registration charges for product registration for pharmaceuticals, bio-technology and agro-chemicals products on recommendation of Export Promotion Councils (EPCs) and also provides financial assistance for contesting litigations(s) in the foreign country concern with restrictions/anti dumping duties on particular product(s) provided under the Market Access Initiative (MAI) Scheme of DOC.

(c) Towns of Export Excellence (TEE)

Under this scheme the towns producing and exporting fish and fisheries products minimum Rs. 150 crores annually grants shall be provided to maximizing their potential and enabling them to move higher in the value chain and tap new markets.

(d) Brand Promotion and Quality

Under Market Access Initiative (MAI) Scheme, DOC provides funds for capacity building to up-gradation quality upto National Level Institutions and to organize training programmes for the skill improvement of the exporters for quality up-gradation, reduction in rejection, product improvement etc through EPCs.

(e) Test Houses

Central Government shall assist in modernization and up-gradation of test houses and laboratories to promotion them as per the international standards.

3.2.3 DUTY EXEMPTION & REMISSION SCHEMES

Under these schemes cent percent duty exemption shall be provided to import inputs for export production. The Duty Exemption Schemes consist of two schemes namely Advance Authorization scheme and Duty Free Import Authorization (DFIA)

scheme. The Duty Remission scheme enables post export replenishment / remission of duty on inputs used in export product. This scheme also consist two schemes namely Duty Entitlement Passbook (DEPB) Scheme and Duty Drawback (DBK) Scheme.

(a) ***ADVANCE AUTHORISATION SCHEME***

Under this an authorization issued in advance to import inputs physically incorporated in export product (making normal allowance for wastage) includes fuel, oil, energy, catalysts which are consumed / utilized to obtain export product on duty free.

(b) ***DUTY FREE IMPORT AUTHORISATION (DFIA) SCHEME***

Under this scheme, it shall allowed to import inputs, fuel, oil, energy sources, catalyst required for production of export product on duty free.

(c) ***DUTY ENTITLEMENT PASSBOOK (DEPB) SCHEME***

The main objective of this scheme is to neutralize incidence of customs duty on import content of export product. Component of customs duty on fuel shall also be factored in the DEPB rate. Component of Special Additional Duty shall also be allowed under DEPB (as brand rate) in case of non-availment of CENVAT credit, neutralization shall be provide a grant of duty credit against export product.

3.2.4 MPEDA's SUBSIDY ASSISTANCE SCHEMES

Government of India has providing the following subsidy assistance schemes through MPEDA for both capture and culture marine products. MPEDA's schemes for capture marine products shall been classified into three types, they are –

(i). Export Production.
(ii). Induction of New Technology, Modernization of Processing Facilities and Development of Infrastructure Facilities.
(iii). Market Promotion.

(i) EXPORT PRODUCTION

There are four schemes operated under Export Production head, all these schemes are working with an objective of increasing marine production for export. Under these schemes all small, medium and large export producers were taken care.

(a) ***Multi Day Fishing and Catch Preservation***

Under this scheme, financial assistance provided 30 per cent on total cost or maximum of Rs.5 lakh per owner to for multi day fishing and preservation of catch to Mechanized Fishing Vessel owners for installation of insulated / Refrigerated Fish Hold, Refrigerated Sea Water System (RSW) and Ice Making Machine on board mechanized fishing vessels.

(b) ***Conversion of Existing Fishing Vessels to Tuna Long Liners***

Under this scheme 50% of the cost of monofilament long line system or maximum of Rs.7.50 lakh for fishing vessels of OAL less than 20 mtrs and Rs.15 lakh for deep sea fishing vessels of OAL more than 20 mtrs shall be provided to existing fishing vessels to converting them into Tuna long liners. The objective of this scheme is to harvest deep sea tuna and other under exploited items by monofilament tuna long line system.

(c) ***Financial Assistance for constructing New Tuna Long Liners***

Financial assistance shall be provided to fishermen at 5% points on bank interest limited to Rs.10 lakh for 18-20 meter vessels and Rs.15 lakh for above 20 meter vessels to construct New Tuna Long liners.

(d) ***Scheme for conversion of small boat for preservation of Tuna catch***

This scheme provides maximum assistance of 50% of the cost including fixing or Rs.20,000/- whichever is less for integrating / installing of FRP (Fibreglass Reinforced Plastics) tank fixed inside the craft / box in small country crafts. The small country craft fishermen shall to be get approval in advance from the Regional MPEDA office to install the box.

(ii) INDUCTION OF NEW TECHNOLOGY, MODERNIZATION OF PROCESSING FACILITIES AND DEVELOPMENT OF INFRASTRUCTURE FACILITIES

(a) Financial assistance for creating basic facilities for fish curing / drying / packing / storage for export

Scheme A – For setting up of dried fish handling / curing / drying facility (with solar system with LPG back up) maximum of Rs.23.50 lakh, per beneficiary, (or) 33⅓% of the actual cost incurred shall be provided to for dry fish handling, processing, packing and storage.

Scheme B - Maximum assistance shall be Rs.8.25 lakh per beneficiary (or) 33⅓% of the actual cost incurred shall be provided for setting up dried fish packing and storage facility by dried fish processors / exporters registered with MPEDA.

(b) Financial assistance for Basic facilities (new) for Chilled fish / Chilled Tuna for export

To create adequate infrastructure for Chilled Fish/ Chilled Tuna export a maximum of Rs.35 lakh per beneficiary (or) 33⅓% of the actual cost incurred whichever is less shall be provided.

(c) Technology Upgradation Scheme for Marine Products (TUSMP)

It is a New Scheme introduced for promoting of value added seafood processing unit. Under this scheme financial assistance shall provided on two types namely Capital subsidy and Interest subsidy, the beneficiary shall avail any one of these schemes. The Capital subsidy shall be provided upto 25 % of expenditure incurred for value addition (or) maximum of Rs. 100 lakh for new units and Rs. 85 lakh for the existing units.

Under Interest subsidy scheme, assistance shall be availed from financial institutions at 5% interest of maximum Rs. 150 lakh for new units and Rs.125 lakh for existing units.

(d) Subsidy for setting up New Modern Ice Plant / Renovation of Existing Plant

The objective to this was to produce and supply quality ice to the fishermen, processor and shrimp farmers. Under this scheme Rs.31 lakh (or) 25% of the cost shall be provided to a new block ice unit, Rs.26 lakh (or) 50% of the cost for renovation to existing unit and Rs.14 lakh (or) 25% of the cost to Flake / Chip / Tube ice unit.

(e) Subsidy for acquisition of machinery for tuna cannery / processing of value added tuna product

Financial assistance provided to set up tuna cannery / processing facilities for value added tuna products at 25% of the cost of machinery & equipment (or) a maximum of Rs.65.25 lakh.

(f) Financial support for acquisition of Refrigerated Truck/Containers

To purchase Refrigerated Trucks/ Containers for transportation of raw material and finished products assistance shall be provided under this scheme at 25 % of the cost of Refrigerated Truck/ Container (or) a maximum of Rs.3.50 lakh.

(g) Financial assistance for setting up large Cold Storages

To establish Cold Storages assistance shall be provided at 25% of the cost of cold storage (or) a maximum of Rs.60 lakh to the individuals.

(h) Subsidized distribution of insulated fish boxes

To preserve raw materials under iced condition on board fishing vessel, in shrimp farms, peeling sheds and processing plants, the Moulded synthetic insulated fish boxes of various capacities are distributed at 50% subsidy. The category wise maximum subsidy amount per units follows –

(a) Small mechanized boat /country craft (< 32 ft. OAL) - Rs. 4, 500.
(b) Mechanized boat owners (Above 32 ft. OAL) - Rs. 15, 000.
(c) Peeling shed/ pre-processing plant - Rs. 50, 000.
(d) Processing plant - Rs. 100, 000.

(e) Shrimp farmers 5 ha. & less - Rs. 35, 000.

(f) Shrimp farmers above 5 ha. - Rs. 50, 000.

(g) Fresh/Chilled Fish Handling Centres - Rs. 100, 000.

(i) Interest subsidy assistance for seafood units to facilitate upgradation

The loan shall be arranged through bank (or) financial institutions at subsidy interest rate of 7 per cent to modernize the unit as per the EU standard maximum of amount Rs. 15 lakh.

(j) Subsidy for setting up Mini Laboratory

Subsidy shall be provided to setting up mini laboratory in-plant for quality control at 25 % of the cost (or) maximum of Rs. 150, 000 per unit.

(k) Assistance to seafood processors for construction / renovation of Captive Pre-processing Centres with upgraded facilities.

The aim of this scheme is to bring pre-processing activities under the control of processors and upgrade the facilities on par with HACCP/EU Regulations. Under this scheme the subsidy shall be provided at 50% of the cost of eligible expenditure (or) a maximum of Rs.15 lakh for new construction and 45% of the cost (or) a maximum of Rs.13.50 lakh for renovation of captive Pre-Processing Centres (PPCs), which is again linked to the area of the pre-processing hall.

(l) Financial assistance to pre-processors for construction /renovation of independent pre-processing centres with upgraded facilities.

Financial assistance provided under this to upgrade the facilities on par with HACCP/EU regulations. The subsidy shall be provided at 50% of the cost (or) a maximum of Rs.22 lakh for new construction and 45% of the cost subject to a maximum of Rs.19.8 lakh for renovation of independent PPCs, which is again linked to the workers and the area of the pre-processing hall. The subsidy is further restricted to maximum limits fixed for individual items.

(iii) MARKET PROMOTION

(a) Group Insurance Coverage for Workers Employed in the Pre-Processing and Processing plants

The coverage shall be claimed from the United India Insurance Company. The valid period of this policy is one year and it shall be renewable. The following are the benefits extended from this policy –

(a) It covers Rs.50, 000 for Accidental death.

(b) A coverage of Rs. 20, 000 for Loss/ Damage to the dwellings/ contents due to fire, riot, strike, malicious damage, landslide, flood, storm & earth quake

(c) Under the policy Rs. 10, 000 shall claimed for Hospitalization, treatment expenses due to accident or disease for Beneficiary, spouse, and two dependent children, in the case of married employees, and Beneficiary and two dependent parents in the case of unmarried employees on floater basis.

(d) A maximum of Rs.2, 000/- shall be claimed for Emergency medical evacuation.

(b) Sea Freight Assistance for export of specified value added products to EU/USA/ Japan and other countries

To export the specified value added products to EU, USA, Japan and other countries sea freight assistance shall be provided for the first two years of implementation at the rate of assistance per kg Rs. 4 for EU, Rs. 5 for USA and Rs. 3 for Japan and for the next two years (3^{rd} and 4^{th} years) Rs. 2 for EU, Rs. 3 for USA and Rs. 1.50 for Japan. The freight assistance shall be applicable to South East Asia, Middle East, China and Korea. The USA rate shall be applicable to Canada, Mexico etc., and EU rate shall be applicable to Australia, Africa etc.

(c) Sea Freight Assistance for import of raw material for processing and export of specified value added products.

Under this scheme sea freight assistance shall be provided to import raw material for processing at 100% for the first three years (freight differential per container) and 50% for the fourth year will be given to the units for import of raw material for processing and export of specified value added products provided there is at least 25% value addition on such material.

3.2.5 SUBSIDIES AND FINANCIAL ASSISTANCE SCHEMES OF ANDAMAN AND NICOBAR ISLANDS

(a) ***Supply of Inboard/Outboard Engines at 50 Per Cent Subsidy***

Under this scheme the A&N islands administration supply engines at 50 per cent subsidy (or) a maximum of Rs.12, 000 per inboard engine, Rs.10, 000 for outboard engine and motorized craft and Rs.20, 000 for mechanized craft to Fishermen and Tribes of the Andaman and Nicobar Islands through fisheries department.

(b) ***Subsidy for acquisition of improved craft and gear by marine fishermen, tribes and their cooperative***

The objective of this scheme is to improve craft and gear through micro-credit. The eligibility beneficiaries are fishermen, tribes and their cooperative. Under this scheme 45 per cent of the cost shall be subsidy, 45 per cent loan and 10 per cent seed money by the beneficiary. The maximum subsidy of –

- Rs. 20, 000 for boats up to 22ft OAL without engine.
- Rs. 30, 000 for boats up to 22ft. OAL with engine.
- Rs.1.20 lakhs for boats up to 25 ft OAL with engine.
- Rs.3 lakhs for boats of 30ft and above OAL with engine and
- Rs.5 lakhs for boats of 36 ft. and above but below 50 ft OAL with engine.

(c) ***50 per cent subsidy for construction/purchase of mechanized boat to fishermen/tribes and their cooperative***

Under this scheme, the subsidy provided at 50 per cent on actual cost (or) –

- A maximum of Rs. 30,000 /- for a boat up to 22ft. OAL.
- A maximum Rs. 1, 50,000 /- for a boat up to 25ft. OAL.
- A maximum Rs. 2, 55,000 /- for a boat up to 30ft. OAL.
- A maximum Rs. 3, 00,000 /- for a boat up to 36ft. OAL.
- A maximum Rs. 5, 00,000 /- for a boat up to 36ft. OAL.

(d) ***Supply of fishing material like hooks, lines, cast net at 100 per cent subsidy to primitive tribes of the Andaman and Nicobar Islands***

Under this scheme the fishing material like hooks, lines, cast net shall be supplied at 100 per cent subsidy to primitive tribes of the Andaman and Nicobar Islands. The Primitive tribes of A&N Islands are Onges, Jarawas, Sentinels, Shompens and Great Andamanes. These inputs shall be distributed to the primitive tribes in coordination with the Tribal Welfare Department of Andaman and Nicobar Administration or Adim Adivasi Janjathi Vikas Sangh (AAJVS).

(e) ***Supply of Fishing Inputs and Spare Parts of Engines at 50 per cent subsidy***

Under this scheme the fishing inputs such as fishing hooks, lines, sinkers, floats, nylon twine, nylon webbing, coal tar, salt, swivel, spare parts of boat engines and other fishing gear were supplied at 50 per cent subsidy.

(f) ***Subsidy to fishermen/ tribal cooperative societies for purchase of Deep Freezer, Fish Transport Vehicle***

This scheme helps to purchase Deep Freezers, Fish Transport Vehicles (Insulated/ Refrigerated Van) and Tricycles at 50 per cent subsidy rate (or) a maximum of Rs.25, 000/- per deep freezer, Rs.2, 00,000/- per fish transport vehicle and Rs.2, 000/- per tricycle.

(g) Supply of Life Saving Appliances at 50 per cent subsidy

The life saving and fire fighting appliances including navigational GPS, VHF and RT were supplied at 50 per cent subsidy under this scheme to fishermen, tribes possessing non-motorized, motorized, mechanized boats.

(h) Financial Assistance to Fishermen for the Loss Due to Natural Calamities

Under this scheme 25 per cent of the assessed cost of the lost fishing material and fish shall be provided to fishers.

3.2.6 MAJOR MARINE ITEMS WHICH ARE EITHER PROHIBITED / RESTRICTED ARE AS FOLLOWS:-

- Sea Shells, including polished sea shells and handicrafts made out of those species included in the Schedules of the Wild Life (Protection) Act, 1972.
- All types Seaweeds including G-edulis but excluding brown seaweeds and agarophytes of Tamil Nadu Coast origin in processed form.
- Fresh (or) Chilled (or) Frozen Silver Pomfrets of weight less than 300gms.
- Beche-de-mer
- Sand Lobster (under sized)

Table No. 3.23

DETAILS OF SCHEMES, AMOUNT SPEND AND BENEFICIARIES IN ANDAMAN &NICOBAR ISLANDS (in. Rs)

Sl. No	Name of the Scheme		2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	Supply of Inboard Engine	V	15,99,750	15,78,420	0	0	9,59,850	0	0	0	0	4,26,600
		NB	**75**	**74**	**0**	**0**	**45**	**0**	**0**	**0**	**0**	**20**
2	Supply of fishing material (Port Blair)	V	12,91,796	4,79,828	5,26,408	2,87,350	4,02,024	0	15,646	29,456	20,53,522	50,930
		NB	**346**	**304**	**256**	**174**	**134**	**0**	**7**	**7**	**415**	**6**
3	Supply of Deep Freezer from RKVY	V	0	0	0	0	0	0	0	0	0	16,66,000
		NB	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**136**
4	Construction/purchase of mechanized boat	V	0	0	0	0	0	0	0	0	0	11,200,000
		NB	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**50**
5	Purchase of Deep Freezer, Fish Transport Vehicle	V	0	0	0	0	0	0	0	0	0	16,00,000
		NB	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**
6	Savings -cum-relief-scheme	V	2,25,000	0	2,24,400	0	2,01,600	0	0	1,36,800	1,68,000	95,400
		NB	**375**	**0**	**374**	**0**	**336**	**0**	**0**	**228**	**280**	**159**
7	E.F.R Distribution	V	15,70,689	26,22,066	24,91,302	36,74,000	5,82,485	79,006	2,93,000	6,22,000	21,00,000	**NA**
8	Group Accident Insurance Scheme (No. of Family assured)		**2,524**	**2,524**	**2,717**	**2,763**	**3,812**	**3,448**	**5,514**	**4,098**	**5,426**	**6,792**
9	No. of Renovation of house.		0	0	0	37	0	19	0	0	0	0
10	No. of Replacement of roof.		0	0	0	14	0	06	0	0	0	0
11	No. of Old age pensioner		0	0	0	16	36	57	0	0	0	0
12	No. of Loss of craft & gear		0	0	0	11	0	8	0	0	0	0

Source: Department of Fisheries, Port Blair **V: Value of the Benefit.** **NB: No. of Beneficiaries** **NA: Not Available**

The table No. 3.23 furnished the details of schemes availed in Andaman and Nicobar Islands to develop captured marine products trade and welfare schemes for fishing community. The schemes are Supply of Inboard Engine Scheme, Supply of fishing material Scheme, Supply of Deep Freezer from RKVY Scheme, Construction/purchase of mechanized boat Scheme, Purchase of Deep Freezer Scheme, Fish Transport Vehicle Scheme, Savings -cum-relief-scheme, Scheme on E.F.R Distribution, Group Accident Insurance Scheme, Scheme on Renovation of house, Scheme on Replacement of roof, Old age pension Scheme and Replacement of Loss of craft & gear Scheme.

From the table one thing was found that the government had implemented various subsidies schemes to develop fishing industries but the level of utilisation was very low. While compiling the past 10 years data from 2000-10 of Supply of Inboard Engine scheme 241 beneficiaries has been benefited by the amount of Rs. 45, 64, 620. Under supply of fishing material scheme in Port Blair itself 1649 of them were benefited by Rs. 51, 36, 960.

The Supply of Deep Freezer from RKVY, Construction/purchase of mechanized boat and Purchase of Deep Freezer, Fish Transport Vehicle new schemes. The utilisation of this scheme started from 2009-10 only. The responses for these schemes are very high, under Deep Freezer 136 were benefited by Rs. 1666000, Construction/purchase of mechanized boat 50 were benefited by Rs. 11200000 and Purchase of Deep Freezer, Fish Transport Vehicle 8 of them were benefited by Rs. 1600000.

Savings -cum-relief-scheme has been benefited 1752 by Rs. 1051200. Under E.F.R Distribution Rs. 14034548 has been distributed from 2000-09. The renovation of house scheme was utilised by 37 fishermen in the 2003-04 and 19 in 2005-06. The replacement of roof scheme was enjoyed by 20 fishermen. Till 2005-06, old age pension was handled by fisheries development and 109 fishers benefited, after 2006 it was handed over to the Panchayati Raj Institutions (*PRIs).*

Table No. 3.24

DETAILS OF TSUNAMI RELIEF PROJECT

Sl. No	Name of the Programmee	No. of Beneficiaries	Total amount spent (in Rs.)
1	Replacement of the Engine Fitted Boats Fully Damaged	421	4,09,50,656
2	Full damage (or) Lost dinghies - upgraded to Engine Fitted Boat	126	1,22,78,609
3	Engine Fitted Boats partially damaged	376	2,34,45,638
4	Local Made dinghies fully damaged (or) lost	577	3,03,64,935
5	Local Made dinghies partially damaged	564	56,50,000
6	Loss of fishing implements to vendors	117	2,34,000
7	Loss of fishes from freshwater ponds (Pisciculture)	448	8,96,000
8	Loss of fishery related projects to companies	2	3,13,145
9	Loss of Crab / Lobster fattening units	3	44,350
10	Loss of fishing gears	709	76,81,399
TOTAL		**3, 343**	**12, 18, 58, 732**

Source: Department of Fisheries, Port Blair

Tsunami was one of the biggest natural disasters made huge damages and many of them lost their life and livelihoods. Many government and non-governmental organizations worked for tsunami relief. The Government of India allotted a huge fund of RS. 12, 18, 58, 732 to replace the loss and repaired the damages through fisheries department A&N Is. By ten heads they distributed the funds and 3343 of the fishers were benefited.

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CHAPTER IV

PRESENT TREND ON FISH CAPTURE, SALES AND EXPORT AND OVERALL PERFORMANCE OF FISHERIES ENTERPRISES IN ANDAMAN ISLANDS

CHAPTER IV

PRESENT TREND ON FISH CAPTURE, SALES AND EXPORT AND OVERALL PERFORMANCE OF FISHERIES ENTERPRISES IN ANDAMAN ISLANDS

In this chapter the researcher has tried to throw light on fish potential, infrastructure facilities available for fisheries development, captured, sold at Andaman and Nicobar islands and also made an overview on financial performance of fisheries enterprises working at Andaman Islands.

Fishery is one of the trust areas of these islands. There was huge micro and few small and medium level fish enterprises are functioning in these islands of which eighteen private and a government enterprise have been registered under the Department of Fisheries, Andaman & Nicobar Islands for marine products export supplier. From the total only four enterprises are exporting captured fishes and remaining enterprises are exporting aquaculture fishes and crabs. The researcher had collected data from all the four enterprises and to compare the performance of private fish enterprises four fisheries cooperative societies had been selected after a deep discussing with A&N Is. state cooperatives officials four fisheries cooperative societies has been selected.

The Andaman Sea has a tremendous marine potential, the marine shall been classified into three types on depth basis. The marine resources available less than 50 mts depth are known as Demersal Resources. In Andaman Sea 22 verities of demersal resources has been identified and estimated 32000 metric tonnes of which 15028 metric tonnes has been exploited in the year 2009-10. The Resources avail between the depth of 50 mts to 150 mts in sea are called as Pelagic Resources, it has been estimated 56000 metric tonnes of 14 verities an account of 17785 metric tonnes has been exploited in the year 2009-10. The resources available above 150 mts are known as Oceanic Resources, it has been estimated 60000 metric tonnes of which only 187 metric tonnes has been exploited in the 2009-10.

4.1 DEMERSAL RESOURCES

The demersal resources are mostly exploited by the all micro and small scale formal and informal enterprises. The formal enterprise does business in the name of a company and keeps record for every transaction but informal enterprises are the fishermen involved in fishing and selling who are doing the business without proper record.

Table No. 4.1

DETAILS OF DEMERSAL RESOURCES POTENTIAL AND YEAR WISE EXPLOITATION

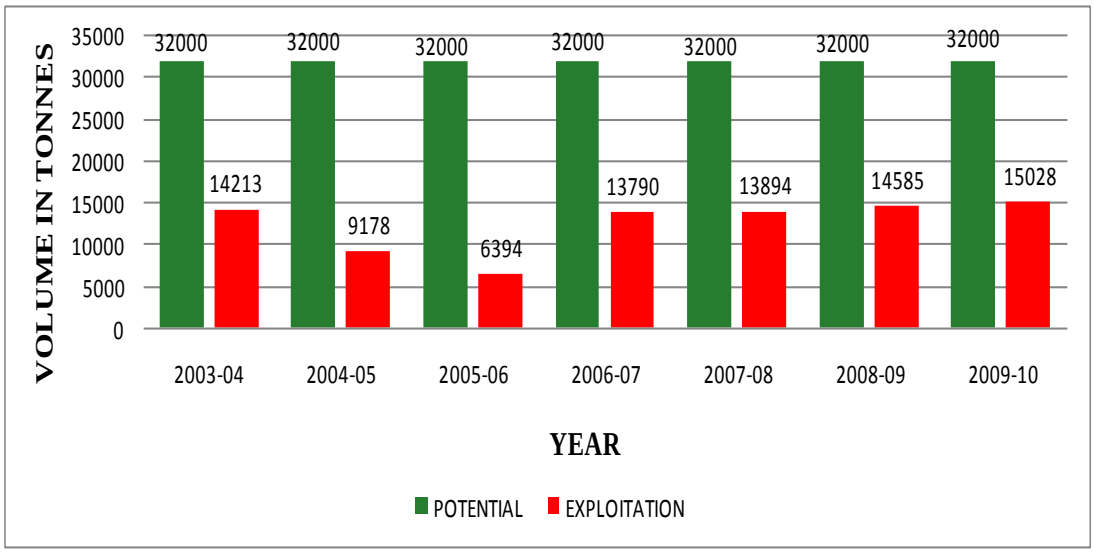
DEMERSAL RESOURCES								
Sl No	**Species/group**	**Poten -tial**	**Exploitation (in tones)**					
			03-04	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**
1	Elasmobranch	4200	329	257	52	1208	1215	1290	2327
2	Silver bellies	5000	747	982	255	1980	2000	2050	3153
3	Perches	8000	8920	6299	4367	5498	5518	5665	3723
4	Pomfrets	1900	322	214	278	309	314	323	300
5	Cat fish	1000	135	383	44	279	286	379	262
6	Thread fins	400	17	12	9	50	50	53	46
7	Croakers	1200	58	17	39	890	895	886	897
8	Gerrids	1400	0	0	0	135	139	218	220
9	Goat fishes	900	0	0	0	9	10	08	9
10	Silver grunt	100	0	0	0	8	13	16	19
11	Drift fish	300	0	0	0	0	0	0	0
12	Threadfin breams	500	0	0	0	247	254	282	273
13	Lizard fish	150	0	0	0	10	12	13	13
14	Flat fish	50	0	0	0	10	11	26	25
15	Bulls eye	100	0	0	0	0	0	0	0
16	Cephalopods	100	0	0	0	45	46	43	41
17	Penaeid shrimps	800	613	260	128	565	586	594	632
18	Crabs	1000	552	168	208	513	514	563	641
19	Deepsea lobster	120	38	65	53	22	12	07	36
20	Deepsea shrimps	110	0	0	0	0	0	0	0
21	Deepsea fishes	1970	0	0	0	0	0	0	0
22	Others	2700	2482	521	961	2012	2019	2169	2411
Total		**32000**	**14213**	**9178**	**6394**	**13790**	**13894**	**14585**	**15028**
Growth %		**100**	**0**	**- 35.4**	**- 30.3**	**115.7**	**0.75**	**4.97**	**3.03**
Exploitation %		**100**	**44.42**	**28.68**	**19.98**	**43.09**	**43.42**	**45.58**	**46.96**

Source: Fisheries Dept. A&N Is.

The Fishery Survey of India (FSI) estimated the demersal resources potential was 32000 metric tonnes (MT). The exploitation of Elasmobranch, Silver Bellies and Croakers has been increased year by year and it also identified that the exploitation of these fish are more from 2006-07. Pomfrats, Cat fish, Penaeid Shrimps, Crabs, Deepsea Lobster, Thread fins and other fishes are maintained the level of exploitation more or less equal for the past seven years. Gerrids, Goat fishes, Silver Grunt, Threadfin Breams, Flat fish and Cephalopods are started to exploited from 2006-07 onwards. Deepsea Fishes, Drift fish, Deepsea Shrimps and Bulls Eye were still unexploited. In the 2009-10, as per the record of fishery department of Andaman and Nicobar islands the demersal resources potential consist of 8000 MT Perches of which 46.54 per cent (3723 MT) has been exploited, Silver Bellies 5000 MT 63 per cent 3153 MT exploited, Elasmobrach 4200 55.41 per cent 2327 MT exploited, Croakers 1200 MT 74.75 per cent 897 exploited, Threadfin Breams 500 MT 54.6 per cent 273 MT exploited, Flat fish 50 MT 50 per cent 25 MT exploited, Deepsea Shrimps 120 MT 30 per cent 36 MT exploited, Cephalopods 100 MT 41 per cent 41 MT exploited, Crabs 1000 MT 64.1 per cent 641 MT exploited, 2700 Others 89.29 per cent 2411 MT exploited and remaining are other verities fishes of demersal resources. The majority of demersal resources are exploited by the fishermen and fishing companies.

Chart No. 4.1

YEAR WISE DEMERSAL RESOURCES EXPLOITATION



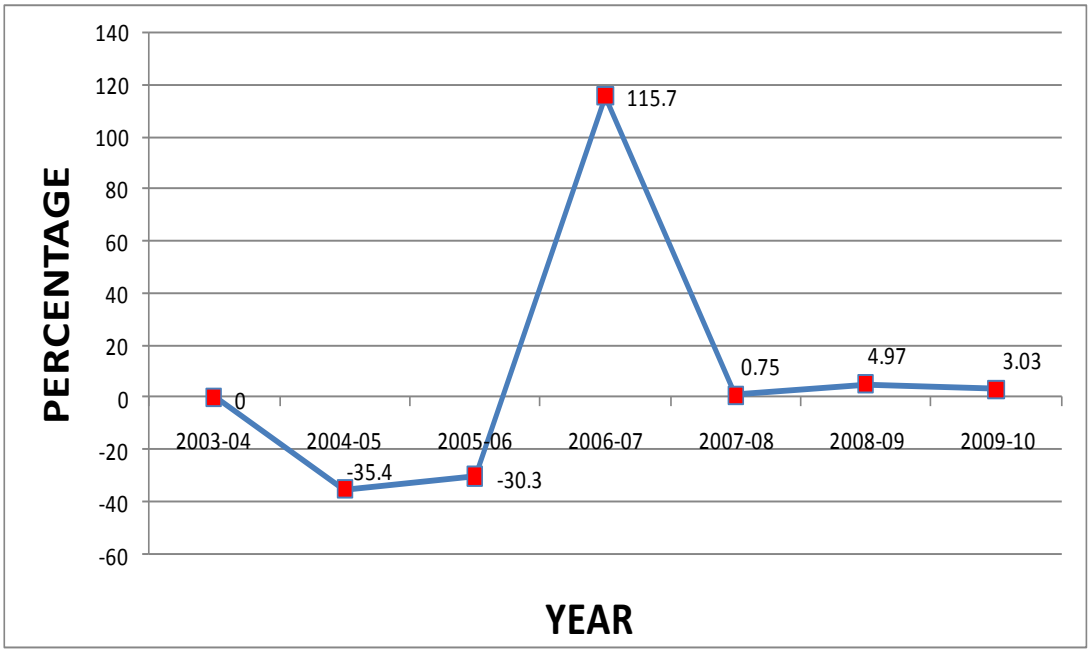
Source: Fisheries Dept. A&N Is.

The estimated demersal resources of Andaman and Nicobar islands were 32000 MT. In the year 2003-04, 14213 MT (44.42 Per cent) has been exploited, in 2004-05 the exploitation was reduced to 9178 MT (28.68 Per cent) and in 2005-06 it was future reduced to 6394 MT (19.98 Per cent) due to the impact of tsunami. From 2006-07 onwards the fish capture has raised once again to 13790 MT (43.09 Per cent), 13894 MT (43.42 Per cent) in 2007-08, 14585 (45.58 Per cent) in 2008-09 and 15028 MT (46.96 Per cent) in 2009-10.

Chart No. 4.2

YEAR WISE DEMERSAL RESOURCES EXPLOITATION

GROWTH PERCENTAGE



Source: Fisheries Dept. A&N Is.

From the total estimated demersal resources potential 32000 MT, 14213 MT has been exploited in the 2003-04 and the exploitation has been reduced to 9178 MT (- 35.4 per cent of growth) and 6394 MT (- 30.3 per cent of growth) in 2004-05 and 2005-06 respectively due to tsunami. The fish capture has been suddenly rose and continued from 2006-07 by 115.7 per cent (13790 MT), by 0.75 per cent (13894 MT) in 2007-08, by 4.97 per cent (14585 MT) in 2008-09 and 3.03 per cent (15028 MT) in 2009-10.

4.2 PELAGIC RESOURCES

The Pelagic resources are exploited by the Motorized and Mechanised Boats fishermen. An average yearly exploitation of pelagic resources was low comparing to the demersal resources exploitation in Andaman Sea.

Table No. 4.2

DETAILS OF PELAGIC RESOURCES AND YEAR WISE EXPLOITATION

PELAGIC RESOURCES								
Sl No	**Species/group**	**Poten-tial**	**Exploitation (in tones)**					
			03-04	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**
1	Anchovies	6200	1161	1116	579	2095	2115	2206	2364
2	Sardines	8000	2988	2392	686	2900	3010	3640	3727
3	Hilsa shad	2500	251	143	100	153	168	261	281
4	Wolf Herring (Chirocentrids)	600	37	43	0	75	77	68	80
5	Mackerel	4500	1518	833	422	2000	2016	2225	2551
6	Round scads (Decapterids)	1300	0	0	0	175	173	171	183
7	Other carangids	6000	4571	1812	1675	1070	1082	2285	2645
8	Ribbon fish	1000	85	68	46	232	252	214	202
9	Half beaks & full beaks(Belonids)	600	79	51	22	294	232	215	254
10	Barracuda	2200	1249	350	547	611	508	677	826
11	Mullets	2500	1325	768	405	938	944	1010	986
12	Seer fish	1800	1679	456	547	1236	1238	1215	990
13	Neritic tunas	18000	626	233	189	2076	2400	2640	2425
14	Others	800	741	155	287	994	734	905	271
Total		**56000**	**16310**	**8420**	**5505**	**14799**	**14949**	**17732**	**17785**
Growth %		**100**	**0**	**-48.38**	**-34.62**	**168.83**	**1.01**	**18.62**	**0.30**
Exploitation %		**100**	**29.13**	**15.04**	**9.83**	**26.43**	**26.69**	**31.66**	**31.76**

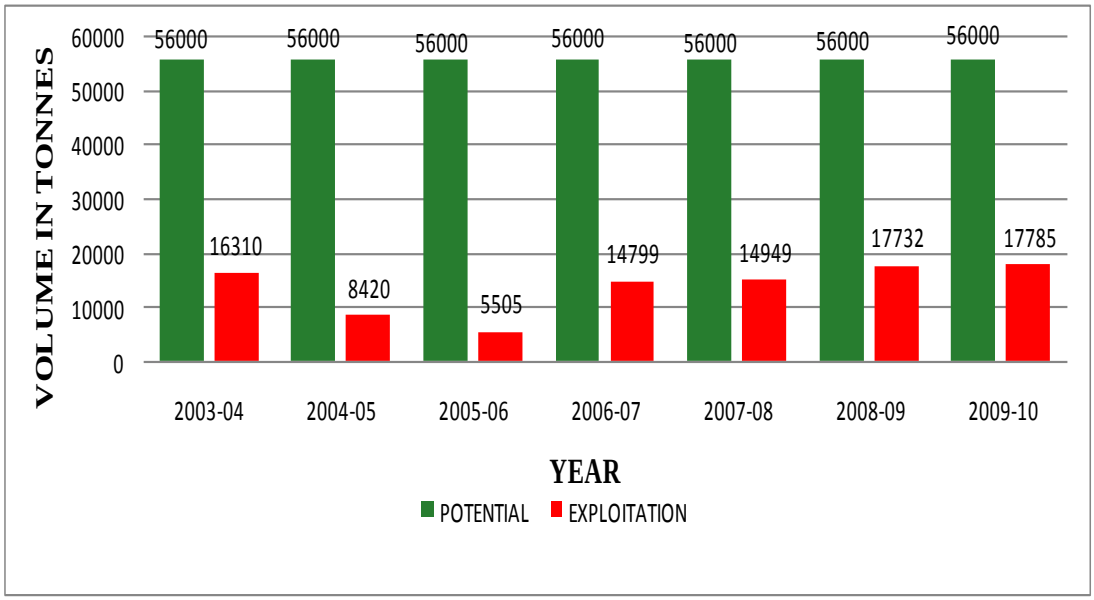
Source: Fisheries Dept. A&N Is.

As the researcher discussed before the Pelagic Resources avail between the depth 50 mts to 150 mts in sea. Regarding the estimated potentiality, the Neritic tunas by 18000 MT (32.14 per cent), followed by Sardines 8000 MT (14.29 per cent),

Anchovies 6200 MT (11.07 per cent), Other carangids 6000 MT (10.71 per cent) Mackerel 4500 MT (8.04 per cent), Hilsa shad 2500 MT (4.46 per cent), Mullets 2500 MT (4.46 per cent), Barracuda 2200 MT (3.93 per cent), Seer fish 1800 MT (3.21 per cent), Round scads (Decapterids) 1300 MT (2.32 per cent), Ribbon fish 1000 MT (1.79 per cent), Wolf Herring (Chirocentrids) 600 MT (1.07 per cent), Half beaks & full beaks (Belonids) 600 MT (1.07 per cent) and Others 800 MT (1.43 per cent)

Chart No. 4.3

YEAR WISE PELAGIC RESOURCES EXPLOITATION WITH PERCENTAGE



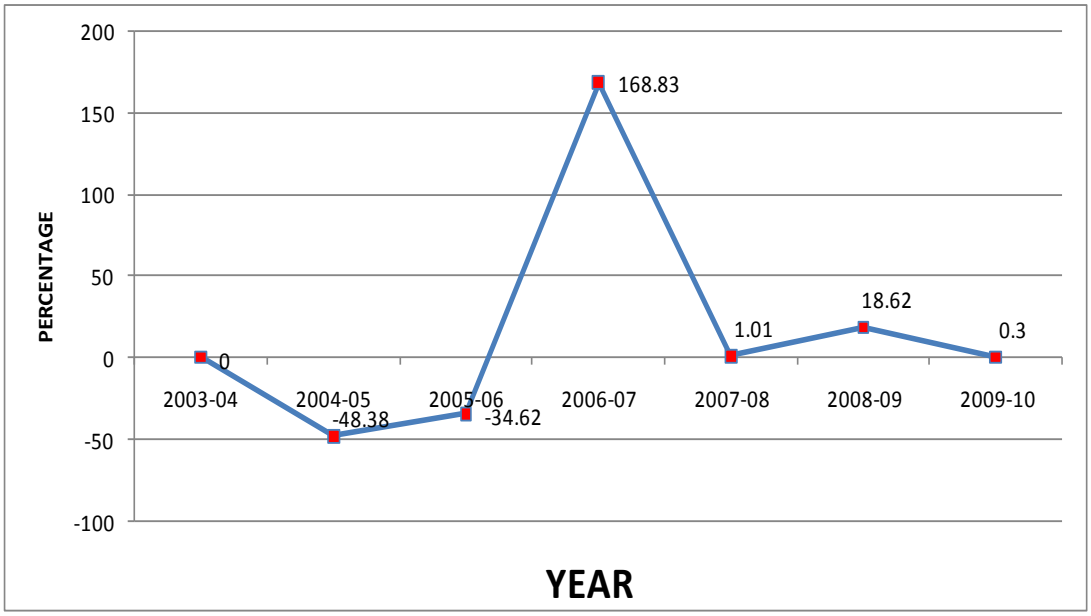
Source: Fisheries Dept. A&N Is.

The estimated potential of Andaman Sea Pelagic resources was 56000 MT, of which 16310 MT (29.13 per cent) was exploited in 2003-04, it had reduced to 8420 MT (15.04 per cent) and 5505 MT (9.83 per cent) in 2004-05 and 2005-06 respectively. From 2006-07 onwards the exploitation percentage of Pelagic resources had increased to 26.43 per cent (14799 MT in 2006-07), 26.69 per cent (14949 MT) in 2007-08, 31.66 per cent (17732 MT) in 2008-09 and 31.76 per cent (17785 MT) in 2009-10. While comparing to the average exploitation and estimated pelagic resources potential, it was less than one third on the potential.

Chart No. 4.4

YEAR WISE PELAGIC RESOURCES EXPLOITATION

GROWTH PERCENTAGE



Source: Fisheries Dept. A&N Is.

The growth per cent of Pelagic Resources exploitation was minus 48.38 per cent in 2004-05, minus 34.62 per cent in 2005-06. An unexpected exploitation growth percentage happened in 2006-07 by 168.83 per cent due to the impact remedies of tsunami. In 2007-08 the growth percentage was only 1.01 per cent but it was rose to 18.62 per cent in 2008-09. In the last year 2009-10 the growth percentage has been pulled to 0.30 per cent.

4.3 OCEANIC RESOURCES

Oceanic Resources are deep sea marine resources available above the depth of 150 mts. The Andaman Sea oceanic resources consist of 11 types of fishes. Oceanic resources are exploited by Mechanised Boats fishermen. Only 2 per cent of the Mechanised Boats operated in Andaman and Nicobar Islands and the annual average capture was less than one per cent on estimated oceanic resources. Regarding Mechanised Boats, the cost of boat, capacity, operating expenses and profitability are very high. Deep sea fishes are having high demand on world market.

Table No. 4.3

DETAILS OF OCEANIC RESOURCES AND YEAR WISE EXPLOITATION

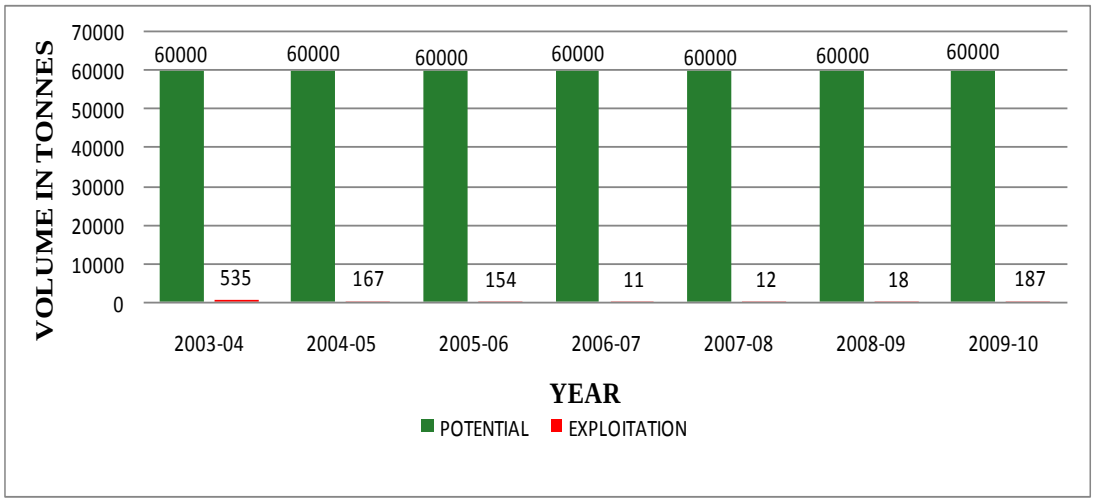
OCEANIC RESOURCES									
Sl No	**Species/group**	**Poten-tial**	**Exploitation (in tones)**						
			03-04	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**
1	Yellowfin tuna	24000	97	36	29	2	02	05	45
2	Skipjack tuna	22000	88	32	26	0	0	0	26
3	Bigeye tuna	500	2	1	2	1	1	1	0
4	Bill fishes	2800	348	98	97	1	1	2	102
5	Wahoo	200	0	0	0	0	0	0	0
6	Pelagic sharks	7000	0	0	0	6	7	9	9
7	Dolphin fish	200	0	0	0	0	0	0	0
8	Barracuda	200	0	0	0	0	0	0	0
9	Flying fish	300	0	0	0	0	0	0	0
10	Oceanic squids	2000	0	0	0	0	0	0	0
11	Others	800	0	0	0	1	1	1	5
Total		**60000**	**535**	**167**	**154**	**11**	**12**	**18**	**187**
Growth %		**100**	**0**	**- 68.79**	**-7.78**	**- 92.86**	**9.09**	**50**	**938.89**
Exploitation %		**100**	**0.89**	**0.28**	**0.26**	**0.02**	**0.02**	**0.03**	**0.31**

Source: Fisheries Dept. A&N Is.

The total estimated oceanic resources of Andaman's EEZ were 60000 MT, which consists of 24000 MT (40 per cent) Yellowfin tuna. The potential of Skipjack tuna had been occupied the second position by 22000 MT (36.67 per cent). A maximum of 97 MT Yellowfin tuna and 88 MT Skipjack tuna had been exploited during the period 2003-04. The potential of Pelagic Sharks was 7000 MT (11.67 per cent) and it has been started exploitation from 2006-07 on words. Bill fishes consist of three types of fish namely Marlin, sailfish and swordfish. On the whole the Bill fishes has been estimated as 2800 MT (4.67 per cent) and it was the only oceanic resources which was exploited in huge volume 348 MT in 2003-04. The Bigeye tuna potential was 500 MT (0.83 per cent) on an average only a MT had been exploited every year. The remaining potential are Oceanic squids 2000 MT (3.33 per cent), Flying fish 300 MT (0.50 per cent), Wahoo 200 MT (0.33 per cent), Dolphin fish 200 MT (0.33 per cent), Barracuda 200 MT (0.33 per cent) and Others 800 MT (1.33 per cent).

Chart No. 4.5

YEAR WISE OCEANIC RESOURCES EXPLOITATION

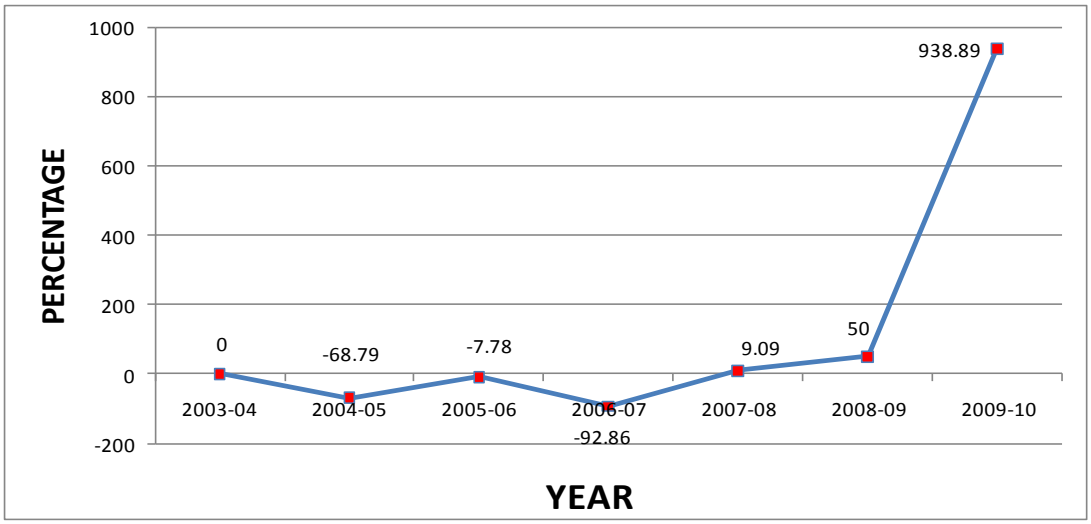


Source: Fisheries Dept. A&N Is.

The Andaman Sea estimated oceanic resources potential was 60000 MT. In the year 2003-04, 535 MT (0.89 Per cent) has been exploited from Oceanic Resources, 167 MT (0.28 Per cent) in 2004-05, the exploitation has reduced to 154 MT (0.26 Per cent) in 2005-06 due to the impact of tsunami, 11 MT (0.02 Per cent) in 2006-07, 12 MT (0.02 Per cent) 2007-08, 18 MT (0.03 Per cent) in 2008-09 and 187 MT (0.31 Per cent) in 2009-10.

Chart No. 4.6

YEAR WISE OCEANIC RESOURCES EXPLOITATION GROWTH PERCENTAGE



Source: Fisheries Dept. A&N Is.

To analyze the growth percentage of Oceanic Resources exploitation 2003-04 has been taken as base year. The base year Oceanic Resources exploitation was 535 MT and for the next three years the exploitation growth percentage has shown negative growth by 68.79 Per cent (167MT) in 2004-05 followed by 7.78 Per cent (154 MT) in 2005-06, 92.86 Per cent (11 MT) in 2006-07 and from 2007-08 the Oceanic Resources exploitation shown positive growth. In 2007-08 the growth was 9.09 Per cent, 50 Per cent in 2008-09 and 938.89 Per cent in 2009-10. Hence the oceanic resources exploitation was low in volume comparing with demersal and pelagic resources.

Table No. 4.4

DETAILS OF POTENTIAL RESOURCES AND YEAR WISE EXPLOITATION

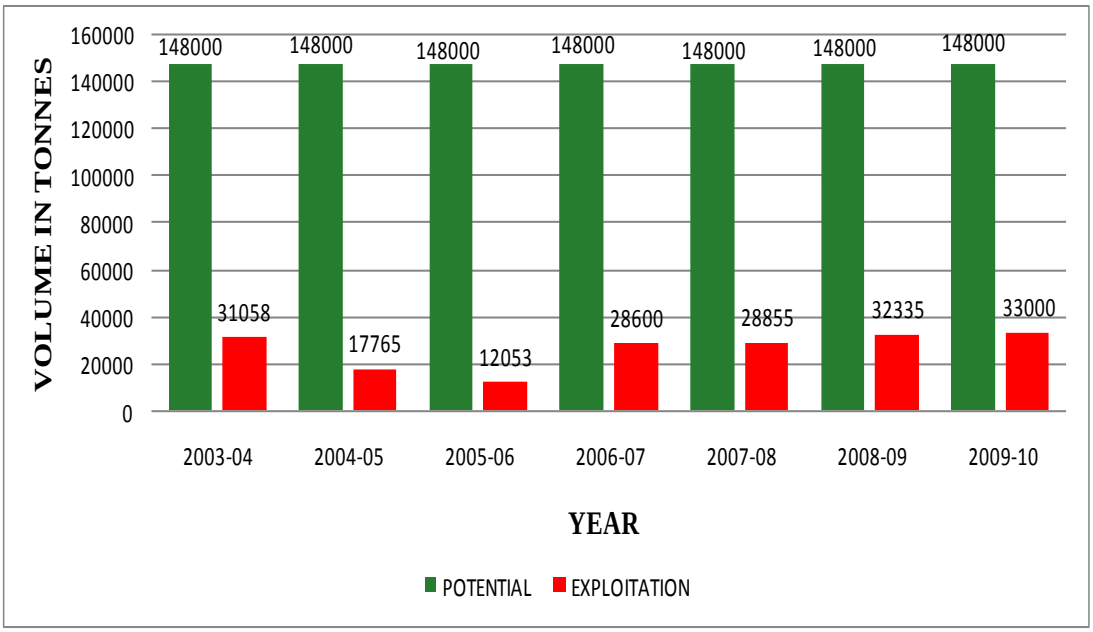
MARINE RESOURCES										
Sl No	**Resources**	**Poten -tial**	**%**	**Exploitation (in tones)**						
				03-04	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**
1	Demersal	32000	**21.7**	14213	9178	6394	13790	13894	14585	15028
2	Pelagic	56000	**37.8**	16310	8420	5505	14799	14949	17732	17785
3	Oceanic	60000	**40.5**	535	167	154	11	12	18	187
Total		**148000**	**100**	**31058**	**17765**	**12053**	**28600**	**28855**	**32335**	**33000**
Growth %		**100**		**0**	**- 42.80**	**- 32.15**	**137.29**	**0.89**	**12.06**	**2.06**
Exploitation %		**100**		**20.99**	**12.00**	**8.14**	**19.32**	**19.50**	**21.85**	**22.30**

Source: Fisheries Dept. A&N Is.

The marine sector was the one of the important contributor from Andaman people. It provides a huge employment opportunity to the local people. The estimated marine potential of these islands was 148000 MT an account of 32000 MT (21.7 per cent) of Demersal Resources, 56000 MT (37.8 per cent) of Pelagic Resources and 60000 (40.5 per cent) of Oceanic Resources. During the 2004-05 and 2005-06 the Demersal Resources was hugely exploitation and expected these periods Pelagic Resources exploitation was high. The Oceanic Resources was under exploited over the period of study.

Chart No. 4.7

YEAR WISE MARINE RESOURCES EXPLOITATION

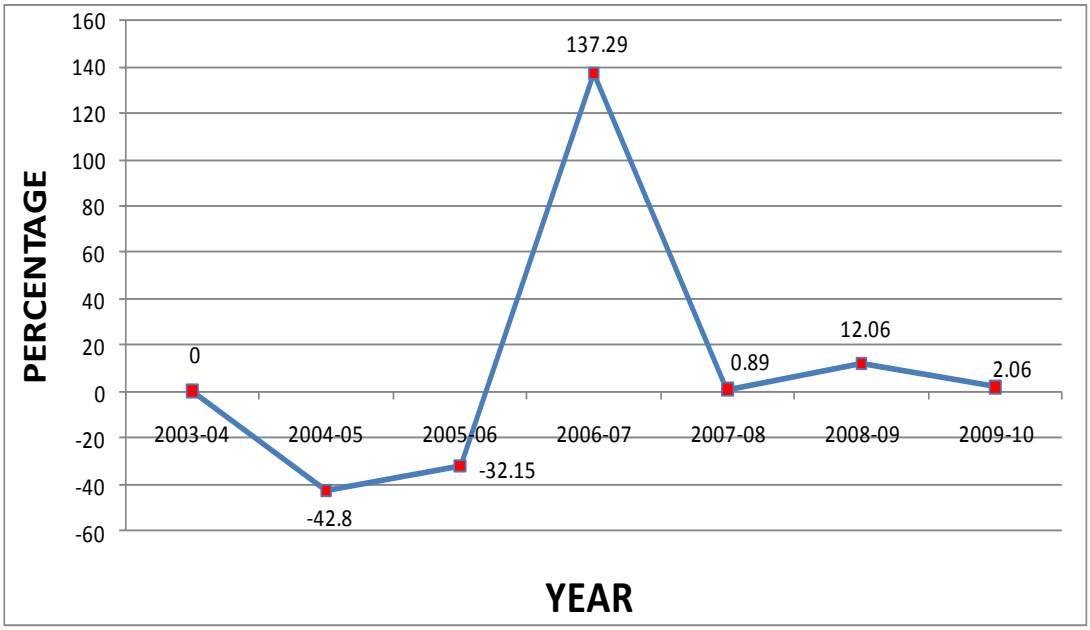


Source: Fisheries Dept. A&N Is.

From the estimated potential of 148000 MT, 31058 MT (20.99 Per cent) has been exploited in 2003-04. There was a fall of exploitation in 2004-05 to 17765 MT (12 Per cent) and 2005-06 it was further fell to 12053 MT (8.14 Per cent). From 2006-07 onwards the volume of marine resources exploitation rose to 28600 MT (19.32 Per cent), 28855 MT (19.5 Per cent) exploited in 2007-08, 32335 MT (21.85 Per cent) in 2008-09 and 33000 MT of 22.3 Per cent in 2009-10. The marine resources exploitation performance over the period of 2003 to 2010 shows that the Andaman Sea marine resources exploitation was touched only one-fourth on availability. Hence it was very clear that the local demand for marine products shall be fulfilled by 25 per cent of the estimated potential and remaining resources shall exported or utilised for the fulfilment of mainland and foreign customers without food security problem.

Chart No. 4.8

YEAR WISE MARINE RESOURCES EXPLOITATION GROWTH PERCENTAGE



Source: Fisheries Dept. A&N Is.

The marine exploitation volume of 2003-04 has been taken as base year for calculation of growth rate. In the year 2004-05 the tsunami had caused heavy damaged to Andaman's fishery and declined the volume of fish capture by 42.8 per cent. The same situation continued to 2005-06 and results minus 32.15 per cent on growth rate. The central government, state government and non-governmental organization had taken various remedies to bring back Andaman fisheries into normal situation. The impact of remedies had shown a sudden positive growth on capture by 137.29 per cent from 2006-07 onwards till the study period 2009-10. In 2007-08 the growth was an optimum by 0.89 per cent, 12.06 per cent in 2008-09 and 2.06 per cent in 2009-10.

Table No. 4.5
REGION WISE VOLUME OF FISHES LANDED FROM 2000-2008

(In Tonnes)

Sl. No	Name of Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total	Average	RANK
1	South Andaman	24661	21523	21161	27157	22834.8	6584.7	13871	15124	18687	171604	19067.1	**1**
2	Diglipur	637	1031	1125	1336	1374.93	914.04	6823.3	9823	10432	33496	3721.78	**2**
3	Rangat	2780	2729	1659	847	192.49	159.56	801.4	769	790	10727	1191.89	**3**
4	Little Andaman	1013	823	791	619	498.88	35.85	170.75	261	982	5194	577.11	**4**
5	Mayabunder	578	547	381	221	201.1	174.08	714.3	687	688	4191	465.67	**5**
6	Nancowry	270	299	319	331	275.83	73.28	264.55	217	153	2203	244.78	**6**
7	Kadamtala	0	0	0	0	387.09	224.49	365.45	231	123	1331	147.89	**7**
8	Campbell bay	378	203	116	119	121.5	27.03	107.05	99	131	1302	144.67	**8**
9	Neil	0	0	0	0	591.59	218.64	219.75	157	113	1300	144.44	**9**
10	Havelock	0	0	0	0	391.76	162.1	232.75	180	142	1109	123.22	**10**
11	Billiground	0	0	0	0	8.27	36.49	338.45	222	154	759	84.33	**11**
12	Car Nicobar	22	18	9	6	8.52	0	71.26	64	264	463	51.44	**12**
13	Katchal	0	0	0	0	20.3	5.18	62.08	93	63	244	27.11	**13**
14	Teressa via Car Nicobar	0	0	0	0	0	0	42.61	66	54	163	18.11	**14**
15	**Fishery Survey of India**	0	0	0	0	13.4	19.91	11	12	9	65	7.22	**15**
Total		**30339**	**27173**	**25561**	**30636**	**26920.5**	**8635.4**	**24096**	**28005**	**32785**	**234151**	**26016.78**	

Source: Fisheries Dept. A&N Is.

Fishery Survey of India had stated that in these islands 14 taluks are involved in fishing consists of 57 fish landing centres. The table no. 4.5 reveals that every year the volume of fishes landed at South Andaman (Port Blair) was high and in few islands the landing was zero, which was not mean that the fishing actives has not taken placed in these islands. The real reason was they had fished and landed in other islands were their buyers asked to land. The fishermen of Neil and Havelock islands land their fishes at Port Blair, Billigound and Kadamtala at Rangat and Katchal and Teressa at Car Nicobar.

The table no. 4.5 shows the islands wise fish landing data for the period of nine years from 2000 to 2008. The islands are ranked through the 10 years average fishes landing volume. The South Andaman (Port Blair) held prime position by an average yield of 19067.1 MT and it had a high yield in the year 2003 of 27157 MT. The second place held by Diglipur with an average yield of 3721.78 MT and it had a high yield in the year 2008 of 10432 MT. Rangat captured the third position captured by an average yield of 1191.89 MT and it had a high yield in the year 2000 of 2780 MT. Fourth position held by Little Andaman (Hutbay) with an average capture of 577.11 MT and it has a maximum yield of 1013 MT in 2000. Mayabunder was placed at fifth rank for an average capture of 465.67 MT and it had a high yield in the year 2006 of 714.3 MT. Sixth rank held by Nancowry for an average yield of 244.78 MT and it had a high yield in the year 2003 of 331 MT.

Seventh, Eighth and Ninth ranks held by Kadamtala, Campbell bay and Neil, where only a slight difference on average yield volume among these three islands. Kadamtala 147.89 MT and it has maximum yield in 2004 of 387.09 MT, Campbell bay 144.67 MT and it has maximum yield in 2000 of 378 MT and Neil Island 144.44 MT and it has maximum yield in 2004 of 591.59 MT. The tenth rank has been held by Havelock with an average yield of 123.22 MT and a high amount of yield in 2004 of 391.76 MT. Eleventh position held by Billigound with an average yield of 84.33 MT and highest yield of 338.45 MT in 2006. Twelfth rank held by Car Nicobar with an average yield 51.44 MT and maximum yield in 2008 of 264 MT. Katchal at thirteenth rank by 27.11 MT with a highest yield of 93 MT in 2007 and the last position held by Teressa with an average yield of 18.11 MT and maximum yield at 2007 of 66 MT.

4.4 INFRASTRUCTURE FACILITY

The infrastructure plays a vital role on every production especially for the perishable goods like fish need good infrastructure facility till the period of consumption. Huge investments are required for developing infrastructure facility which would not be possible for micro and small traders. To promote the trade and traders the government of India has developed necessary infrastructure facility across the country for different sectors. In Andaman and Nicobar islands, to promote the marine products trade, infrastructure facility has been developed by three parties namely Government, Private and Corporation.

Table No. 4.6

DETAILS OF INFRASTRUCTURE FACILITIES IN ANDAMAN AND NICOBAR ISLANDS

Sl. No	Place	Capacity (in tonnes/day)		Ownership
		Ice	Cold Storage	
GOVERNMENT				
1	Port Blair	10	15	Department of Fisheries
2	Rangat	10	15	-do-
3	Hutbay	10	15	-do-
4	Campbell bay	10	15	-do- (Damaged due to Tsunami)
PRIVATE				
5	Dhanikhari	30	100	M/s Islanders Marine Products Ltd.
6	Sippighat	10	0	M/s Rubin Sea Foods.
7	Lamba Line	05	25	M/S Andabar Cold storage
8	Dandaspoint	05	0	M/S Meenakshi Fishing & Trading Company
UNDERTAKING				
9	Garacharma	05	100	AFL (ANIIDCO) (Not Functioning)
10	Havelock	05	10	ANIIDCO
11	Durgapur	05	10	ANIIDCO
TOTAL		**105**	**305**	

Source: Fisheries Dept. A&N Is.

The infrastructure required for marine products are ice and cold storage facility. Both of them are used to preserve the freshness of fishes. Ice shall be used in pre and post harvesting of marine products but cold storage used only at post harvesting period. Normally ice shall be used in the ratio of one fifth at both pre and post periods. The average price per kilogram of ice at Port Blair in 2010 was Rs. 1.65 and at Diglipur Rs. 3 because at Port Blair the ice has been sold by Government Plant and at Diglipur by ANIIDCO (Andaman and Nicobar Integrated Islands Development Corporation).

Infrastructure has been established in 11 villages of these islands of which four belongs to Government, four to private and remaining three held by corporation. The government's Ice Plants and Cold Storages are established at Port Blair, Rangat, Hutbay and Campbell bay with a per day capacity of 10 tonnes for each ice plant and 15 tonnes for each cold storage.

Four private companies have also developed these infrastructure facilities on the own, they are M/s Islanders Marine Products Ltd. at Dhanikhari with 30 tonnes capacity ice plant and 100 tonnes capacity cold storage, M/s Rubin Sea Foods at Sippighat with 10 tonnes capacity ice plant, M/S Andabar Cold storage at Lamba Line with 05 tonnes capacity ice plant and 25 tonnes capacity cold storage and M/S Meenakshi Fishing & Trading Company at Dandaspoint with 05 tonnes capacity ice plant. All the private companies' held own infrastructure facilities are in Port Blair.

The ANIIDCO was a corporation functioning in Andaman and Nicobar Islands. It has rendering various services and introduced schemes for the development of these islands. They are supplying groceries, milk, vegetables, liquor etc., to these islanders at subsidiary rate. It has development at Garacharma with the capacity of 05 tonnes ice plant and 100 tonnes cold storage for AFL (Andaman Fisheries Ltd), from 2007 it was not functioning. At Havelock they have facilities with the capacity of 05 tonnes ice plant and 10 tonnes cold storage and at Durgapur with the capacity of 05 tonnes ice plant and 10 tonnes cold storage.

Table No. 4.7
DETAILS OF UTILIZATION OF INFRASTRUCTURE

(Quantity in Tonnes)

Sl. No	Year	Nature of Disposition						Total	
		Fresh Fish		Freezing		Salting & Drying			
		Qty	%	Qty	%	Qty	%	Qty	%
1	2000-01	19332.6	70	2761.8	10	5523.6	20	**27618**	**100**
2	2001-02	18914.7	70	2702.1	10	5404.2	20	**27021**	**100**
3	2002-03	19807.2	70.17	2870.4	10.17	5550.4	19.66	**28228**	**100**
4	2003-04	21801.1	70.19	3166.3	10.19	6090.6	19.61	**31058**	**100**
5	2004-05	11547.25	65	4441.25	25	1776.5	10	**17765**	**100**
6	2005-06	7834.45	65	3013.25	25	1205.3	10	**12053**	**100**
7	2006-07	18590	65	4292	15.01	5718	19.99	**28600**	**100**
8	2007-08	18756	65	4329	15	5770	20	**28855**	**100**
9	2008-09	NA	NA	NA	NA	NA	NA	**32335**	**100**
10	2009-10	NA	NA	NA	NA	NA	NA	**33000**	**100**

Source: Fisheries Dept. A&N Is. NA = Not Available

For the first four years the per cent of utilisation was more or less equal, in 2000-01, 70 per cent (19332.6 MT) has been sold as chilled/fresh form through utilization of ice, 10 per cent (2761.8 MT) on frozen form and remaining 20 per cent 5523.6 MT dried form. In 2001-02 also the per cent has been continued the same 18914.7 MT as fresh, 2702.1 MT as frozen and 5404.2 MT as dried. At the third year 2002-03, 70.17 per cent (19807.2 MT) sold on chilled form, 10.17 per cent (2870.4 MT) on frozen form and 19.66 per cent (5550.4 MT) on dried. In 2003-04, 70.19 per cent (21801.1 MT), 10.19 per cent (3166.3 MT) and 19.61 per cent (6090.6 MT) as fresh, frozen and dried form respectively.

For the next two years the volume of fresh and dried fish reduced and frozen volume increased. In 2004-05, 17765 MT has been harvested on an account with 65 per cent (11547.3 MT) sold as fresh form, 25 per cent (4441.25 MT) frozen form and 10 per cent (1776.5 MT) as dried. In 2005-06, 65 per cent (7834.45 MT) chilled form, 25 per cent (3013.25 MT) for frozen form and 10 per cent (1205.3 MT) dried. In 2006-07, 65 per cent (18590 MT) consumed as fresh fish, 15.01 per cent (4292

MT) frozen fish and 19.99 per cent (5718 MT). In the year 2007-08, 65 per cent (18756 MT) sold in chilled form, 15 per cent (4329 MT) frozen and 20 per cent (5770 MT) dried.

Table No. 4.8

DETAILS OF THE FISHING BOATS AND LICENCED FISHERMEN

Sl. No	Year	No. of Licenced Fishermen	NO. OF FISHING BOATS						Total
			Mechanised Boats		Motorised Boats		Dinghies		
			F	%	F	%	F	%	
1	2000-01	2673	18	0.91	325	16.39	1640	82.70	**1983**
2	2001-02	2964	14	0.69	208	10.18	1821	89.13	**2043**
3	2002-03	2791	6	0.29	296	14.34	1762	85.37	**2064**
4	2003-04	2973	0	0	356	17.00	1738	83.00	**2094**
5	2004-05	3812	0	0	523	28.16	1334	71.84	**1857**
6	2005-06	3448	0	0	953	41.13	1364	58.87	**2317**
7	2006-07	5617	5	0.18	1274	45.45	1524	54.37	**2803**
8	2007-08	4098	12	0.44	1257	46.21	1451	53.35	**2720**
9	2008-09	5426	12	0.44	1257	46.21	1451	53.35	**2720**
10	2009-10	7204	63	2.02	1431	45.95	1620	52.02	**3114**

Source: Fisheries Dept. A&N Is.

The above table furnishes the details of number of boats and licenced fishermen of Andaman and Nicobar islands. In the year 2000-01, 2673 fishermen were employed in 1983 boats of which 18 (0.91 per cent) belongs to Mechanised Boats, 325 (16.39 per cent) are Motorised Boats and 1640 (82.7 per cent) are local made Dinghies. In 2001-02 no. of Dinghies has increased and others reduced, 2964 fishermen employed in 2043 boats an account 14 (0.69 per cent) were Mechanised Boats, 208 (10.18 per cent) Motorised Boats and 1821 (89.13 per cent) local made Dinghies. In 2002-03 no. of Motorised boats has increased and others reduced, 2791fishermen employed in 2064 boats of which 6 (0.29 per cent) belongs to Mechanised Boats, 296 (14.34 per cent) Motorised Boats and 1762 (85.37 per cent) Dinghies.

In the next three years the numbers of Mechanised Boats employed were zero and motorised boats has increased. In 2003-04, 2973 fishermen has been employed in

2094 boats of which 356 (17 per cent) were Motorised Boats and 1738 (83 per cent) were local made Dinghies. During 2004-05, 3812 fishermen has been employed in 1857of which 523 (28.16 per cent) were Motorised Boats and remaining 1334 (71.84 per cent) are Dinghies. In 2005-06, 3448 fishermen has been employed in 2317 boats an account 953 (41.13 per cent) are Motorised Boats and 1364 (58.87 per cent) are local made Dinghies.

In 2006-07, 5617 fishermen engaged in 2803 boats of which 5 (0.18 per cent) belongs to Mechanised Boats, 1274 (45.45 per cent) Motorised Boats and 1524 (54.37 per cent) local made Dinghies. In 2007-08, 4098 fishermen employed in 2720 boats an account 12 (0.44 per cent) belongs to Mechanised Boats, 1257 (46.21 per cent) Motorised Boats and 1451 (53.35 per cent) local made Dinghies. 5426 fishermen employed in 2720 boats in 2008-09 of which 12 (0.44 per cent) belongs to Mechanised Boats, 1257 (46.21 per cent) Motorised Boats and 1451 (53.35 per cent) Dinghies. In 2009-10, 7204 fishermen employed in 3114 boats on an account 63 (2.02 per cent) belongs to Mechanised Boats, 1431 (45.95 per cent) Motorised Boats and 1620 (52.02 per cent) Dinghies. From 2005-06 onwards the tread of used traditional dinghies reduced and modern fishing equipments has been used.

Table No. 4.9

YEAR WISE DETAILS OF FISH TRADE

(Qty in MT)

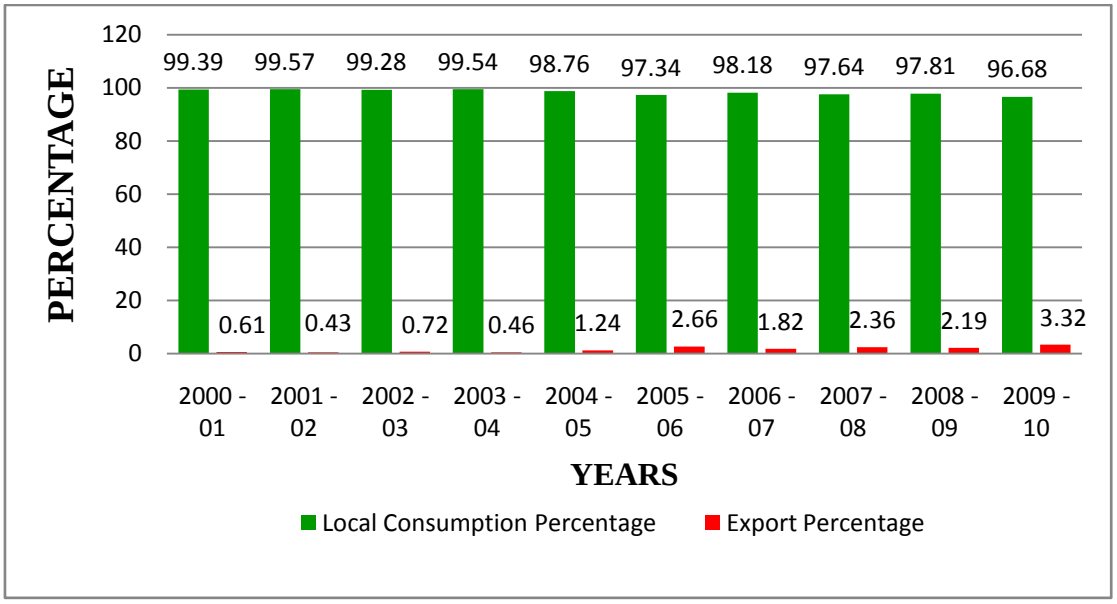
Sl. No	Year	Total Exploited		Export		Local Consumption	
		Volume	%	Volume	%	Volume	%
1	2000 - 01	27618	**100**	167.55	**0.61**	27450.45	**99.39**
2	2001 - 02	27021	**100**	116.89	**0.43**	26904.11	**99.57**
3	2002 - 03	28228	**100**	203.16	**0.72**	28024.84	**99.28**
4	2003 - 04	31058	**100**	143.01	**0.46**	30914.99	**99.54**
5	2004 - 05	17765	**100**	219.72	**1.24**	17545.28	**98.76**
6	2005 - 06	12503	**100**	332.37	**2.66**	12170.63	**97.34**
7	2006 - 07	28600	**100**	519.88	**1.82**	28080.12	**98.18**
8	2007 - 08	28855	**100**	682.13	**2.36**	28172.87	**97.64**
9	2008 - 09	32335	**100**	707.07	**2.19**	31627.93	**97.81**
10	2009 - 10	33000	**100**	1094.98	**3.32**	31905.02	**96.68**

Source: Fisheries Dept. A&N Is.

In 2000 – 01, 27618 MT has been captured of which 27450.45 MT (99.39 per cent) sold at local market and 167.55 MT (0.61 per cent) exported. In 2001-02, exploitation was 27021 MT out of 26904.11 MT (99.57 per cent) had locally consumed and 116.89 (0.43 per cent) were exported. In the year 2002–03, 28228 MT has been captured an account 28024.84 MT (99.28 per cent) used for local consumption and 203.16 MT (0.72 per cent) were exported. During 2003-04, the marine capture was 31058 MT of which 30914.99 MT (99.54 per cent) was locally consumed and 143.01 MT (0.46 per cent) has been exported. From 2004-05 onwards the marine export raised above one percent on exploitation and in this year 17765 MT has been captured of which 17545.28 MT (98.76 per cent) used for inter islands consumption and remaining 219.72 (1.24 per cent) has been exported.

Chart No. 4.9

DETAILS OF PERCENTAGE OF FISH CONSUMED AND EXPORTED



Source: Fisheries Dept. A&N Is.

In 2005 – 06, 12503 MT was captured of which 12170.63 MT (97.34 per cent) were locally consumed and 332.37 MT (2.66 per cent) was exported. In 2006 – 07, 28600 MT were captured on an account 28080.12 MT (98.18 per cent) was sold at local market and remaining 519.88 MT (1.82 per cent) at foreign market. In 2007 – 08, 28855 MT were captured of which 28172.87 MT (97.64 per cent) was traded in inter island markets and the rest 682.13 (2.36 per cent) in global market. In 2008 – 09,

32335 MT has been harvested of which 31627.93 MT (97.81 per cent) sold at local market and remaining 707.07 MT (2.19 per cent) exported. In 2009 – 10, 33000 MT captured of which 31905.02 (96.68 per cent) was consumed by local customers and remaining 1094.98 (3.32 per cent) were exported.

While comparing the Export Volume with capture and availed Andaman's marine potential, the share of export was very low at 3.32 per cent on capture and only 0.73 per cent on marine potential. This happened due to lack of infrastructure like Ice Plant, Cold Storage and transportation. Till date Air freight service are not operative from these islands and the Air Cargo services has been provided by passenger flights which was sufficient for marine export. The maximum capacities for cargo in passenger flights are only two tonnes of which more than the half space is occupied by passenger's lounge. There are five daily passenger flights operated to Andaman from different cities of mainland. For example, through utilising these flights only at a minimum of 5 tonnes shall be exported per day which was enough for developing marine export.

H_O7 - There is no difference between Volume of fishes captured before and after Tsunami.

Table No. 4.9 (i)

PAIRED SAMPLES STATISTICS

Period	Mean	N	Std. Deviation
Fish Captured Per-Tsunami	26338	5	5036.16218
Fish Captured Post-Tsunami	27058.6	5	8375.695332

Table No. 4.9 (ii)

PAIRED SAMPLES TEST

Period	Paired Differences		t	df	Sig. (2-tailed)
	Mean	Std. Deviation			
Fish Captured Per-Tsunami - Fish Captured Post-Tsunami	720.6	10752.78	0.150	4	**0.888**

The above table has revealed the volume of fishes captured for a ten year period from 2000-01 to 2009-10. Tsunami has been taken as beach mark because after tsunami a huge amount of subsidies and free equipment were provided through Government and NGO in Andaman and Nicobar Islands. In the tsunami fishermen were affected badly. The annual average volume of fishes captured during pre-tsunami period was 26338 MT and 27058.6 MT in post-tsunami period. The difference on mean is only 720.6 MT. The calculated significant value **0.888**, hence the null hypothesis has been accepted at 5 per cent level and proved that, there is no difference between Volume of fishes captured before and after Tsunami.

H_O8 - There is no difference between Volume of fishes exported before and after Tsunami.

Table No. 4.10 (i)

PAIRED SAMPLES STATISTICS

Period	Mean	N	Std. Deviation
Fish Export Per-Tsunami	172788.75	5	42885.38
Fish Export Post-Tsunami	675469.75	5	290475.43

Table No. 4.10 (ii)

PAIRED SAMPLES TEST

Period	Paired Differences		t	df	Sig. (2-tailed)
	Mean	Std. Deviation			
Fish Export Per-Tsunami - Fish Export Post-Tsunami	502681	266569.10	4.217	4	**.014**

The yearly average volume of fishes export in pre-tsunami period was 172788.75 MT and post-tsunami 675469.75 MT, the difference was very high 502681 MT. The calculated significant value is **0.014**, hence the null hypothesis is rejected at 5 % level. There is a difference between Volume of fish Exported before and after Tsunami.

Table No. 4.11

DETAILS OF FISH AND FISHERY PRODUCTS EXPLORED DURING 2000-2001 TO 2009-2010

(Quantity in Kg)

Sl. No	Name of the fishery Product	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	Chilled Fish	43255	36981	0	397	121233	151715	308536	536602	530362	611124
2	Chilled Grouper	0	0	50878	63522	0	0	0	0	0	0
3	Chilled Lobster	7660	34345	5480	4348	6070	9916	17355	0	0	0
4	Chilled Prawn	10261	6711	4768	2043	2130	2546	731	64	225	275
5	Chilled/ Live Crab	27159	23394	18477	14817	39693	53255	70822	21893	27055	34539
6	Deep sea Fish	39250	5400	0	0	0	0	0	0	0	0
7	Deep sea Prawn	0	0	3783	0	0	0	0	0	0	0
8	Deep sea Lobster	0	0	35446	0	0	0	0	0	0	0
9	Dog Shark Meat	0	0	0	0	0	0	0	0	0	49920
10	Dry Fish	0	0	0	0	0	1200	0	2960	15401	28963
11	Frozen Fish	0	0	0	0	0	47420	0	0	0	40230
12	Frozen Lobster	0	0	0	0	0	0	0	8588	4741	4771
13	Other specify (cuttle)	19	0	0	0	0	0	0	0	0	0
14	Seer Fish	0	0	10	0	0	0	0	0	0	0
15	Shark Fin	6735.5	166	6650.15	4599.1	4214	1718	6264	3503	2525	12906
16	Shark Flesh	35891	11767	80918	55573	49900	56520	124080	92941	101229	329264
17	Shark Liver Oil	0	0	0	0	0	0	0	25965	36190	0
18	Shell	0	0	0	0	0	0	0	0	400	0
19	Shrimp Nauplii	0	0	0	0	0	934.5	407.25	529.5	260	503.5
Total		**170231**	**118764**	**206410**	**145299**	**223240**	**325225**	**528195**	**693046**	**718388**	**1112496**

Source: Fisheries Dept. A&N Is.

The marine products from Andaman and Nicobar islands have been exported by 19 heads. They are namely Chilled Fish, Chilled Grouper, Chilled Lobster, Chilled Prawn, Chilled and Live Crab, Deep sea Fish, Deep sea Prawn, Deep sea Lobster, Dog Shark Meat, Dry Fish, Frozen Fish, Frozen Lobster, Other specify (cuttle), Seer Fish, Shark Fin, Shark Flesh, Shark Liver Oil, Shell and Shrimp Nauplii. The value of export in the year 2000-01 was 170231 Kgs, followed by 118764 Kgs in 2001-02, 206410 Kgs in 2002-03, 145299 Kgs in 2003-04, 223240 Kgs in 2004-05, 325225 Kgs in 2005-06, 528195 Kgs in 2006-07, 693046 Kgs in 2007-08, 718388 Kgs in 2008-09 and 1112496 Kgs in 2009-10.

In the past ten years 2340205 Kgs of Chilled Fish, 114400 Kgs of Chilled Grouper, 85174 Kgs of Chilled Lobster, 29754 Kgs of Chilled Prawn, 331104 Kgs of Chilled/ Live Crab, 44650 Kgs of Deep sea Fish, 3783 Kgs of Deep sea Prawn, of 35446 Kgs of Deep sea Lobster, 49920 Kgs Dog Shark Meat, 48524 Kgs of Dry Fish, 87650 Kgs of Frozen Fish, 18100 Kgs of Frozen Lobster, 10 Kgs of Seer Fish, 49280.75 Kgs of Shark Fin, 938083 Kgs of Shark Flesh, 62155 Kgs of Shark Liver Oil, 400 Kgs of Shell, 2634.75 Kgs of Shrimp Nauplii and 19 Kgs of Other specify (cuttle).

4.5 OVERALL PERFORMANCE OF FISHERIES ENTERPRISES IN ANDAMAN ISLANDS

Overall financial performance of fish exporting private enterprises and co-operative societies has been analyzed through using Ratio Analysis. A comparative study also has been made between the private and cooperative fish enterprises. By using average calculated ratios the independent sample has been tested. The ratios used to study the financial performance are Current Asset Ratio, Proprietary Ratio, Working Capital Turnover Ratio, Fixed Assets Turnover Ratio, Net Profit Ratio and Return on Shareholder's Fund. The calculated value of ratios has been interpreted as per the Farm Financial Ratios and Benchmarks Calculations & Implications Developed by Dr. David Kohl, Agricultural Economist, Virginia Tech University and modified by Greg Blonde, Waupaca County UW-Extension Agriculture- Agent, March 2009 and general Benchmark.

H_O9 - There is no difference between the Financial Performance of Private companies and Co-operative Societies.

4.5.1 CURRENT ASSETS RATIO

Current Asset Ratio reveals the relationship between current assets and current liabilities of a firm for a particular period. It measures the ability of the firm to meet their short term liability by comparing the current assets and current liabilities of the firm. In other words Current Asset Ratio used to test the short-term solvency of a company in terms of financial soundness. In general 2:1 ratio has been accepted as strong performance of Current Asset Ratio.

Formula

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table No. 4.12

CURRENT ASSETS RATIO

(Result in Unit)

Sl. No	Year	Private Companies				Cooperative Companies			
		A1	A2	A3	A4	B1	B2	B3	B4
1	2000 - 01	1.36	1.25	1.05	1.20	0.21	0.92	2.39	1.25
2	2001 - 02	1.33	1.25	1.13	1.25	0.43	2.98	1.78	1.20
3	2002 - 03	1.47	1.25	1.29	1.21	1.05	1.71	1.09	1.24
4	2003 - 04	1.25	1.50	1.25	1.18	0.43	1.29	3.00	1.22
5	2004 - 05	0.05	0.49	1.22	0.80	0.53	0.83	1.77	0.08
6	2005 - 06	1.50	0.95	1.14	1.09	0.04	0.42	3.60	1.14
7	2006 - 07	1.62	1.11	1.14	1.20	1.08	0.94	3.63	1.31
8	2007 - 08	1.64	1.24	1.41	1.24	0.08	1.18	3.79	1.46
9	2008 - 09	1.67	1.67	1.42	1.33	2.10	1.11	2.54	1.45
10	2009 - 10	1.67	1.34	1.43	1.25	1.83	1.07	1.67	1.55
MEAN		**1.36**	**1.20**	**1.25**	**1.17**	**0.78**	**1.25**	**2.53**	**1.19**

Source: Primary Survey

According to Dr. David Kohl's **Farm Financial Ratios and Benchmarks Calculations & Implications Developed** chart stated that the unit lay between 0 to 1 is weak, 1 to 1.5 is stable and above 1.5 is strong.

From the table the current asset ratio performance of private company (A1) was stable between 2000-01 to 2003-04, due to tsunami the performance was very low in 2004-05 and after 2005 it has gradually increased and continued in strong position. The performance of company (A2) in 2004-05 and 2005-06 are weak, only in 2008-09 it performed strongly and for remaining periods it was in stable condition. Throughout the period company (A3) and company (A4) shows stable position expect for 2004-05.

Regarding Co-operative societies, B1 performed strong only in the last two years, in 2003-04 and 2006-07 it was in stable position and remaining periods in weaker position. The society (B2) performed weaker in 2000-01 and 2004-07, in 2001-03 it was in strong position and in remaining periods at stable position. The society (B3) has functioned in strong position throughout the periods due to managerial subsidy. The society (B4) was weaker in 2004-05 but in the last year 2009-10 at strong position and in remaining periods at stable position.

H_O9 (i) - There is no difference between Current Asset Ratio of Private companies and Co-operative Societies.

Table No. 4.12 (i)

GROUP STATISTICS OF CURRENT ASSET RATIO

	Current Asset Ratio Code	N	Mean	Std. Deviation
CURRENT ASSET RATIO	Private Companies	10	1.2450	.236
	Cooperative Societies	10	1.4350	.300

The average current asset ratio mean value of private companies was 1.2450 and cooperative societies 1.4350. Both of them are shown stable condition but the performances of co-operative societies are better than the private companies.

Table No. 4.12 (ii)

INDEPENDENT SAMPLES TEST OF CURRENT ASSET RATIO

t-test for Equality of Means				
	t	**df**	**Sig. (2-tailed)**	**Mean Difference**
CURRENT ASSET RATIO	-1.572	18	**0.133**	-.19000

The independent sample t-test calculated significance value is **0.133** and the null hypothesis has been accepted at 5 % level. Hence there is no difference between the current asset ratio of privates and co-operative societies.

4.5.2 WORKING CAPITAL TURNOVER RATIO

Working Capital Turnover Ratio indicates the speed at which the working capital has been utilised in business operations. It indicates the number of times the working capital has turned over in the course of a year. A higher ratio indicates efficient utilisation of working capital and a low ratio indicates the lack of working capital utilised. Working Capital Turnover Ratio analyzes each rupee of working capital in production or how much of sale. The higher unit of ratio shows better performance always.

Formula

$$\text{Working Capital Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Net Working Capital}}$$

Table No. 4.13

WORKING CAPITAL TURNOVER RATIO

(Result in Unit)

Sl. No	YEAR	Private Companies				Cooperative Companies			
		A1	A2	A3	A4	B1	B2	B3	B4
1	2000 - 01	37.50	55.47	40.00	24.00	-3.83	0.00	58.76	22.73
2	2001 - 02	45.00	65.28	20.00	22.31	-5.97	13.51	46.07	32.18
3	2002 - 03	25.00	54.00	12.00	39.23	84.72	6.49	79.57	59.44
4	2003 - 04	44.00	27.12	16.00	56.07	-2.91	13.52	17.88	28.73
5	2004 - 05	-13.16	0.00	30.00	-70.00	-2.30	11.03	16.62	-4.69
6	2005 - 06	25.00	0.00	24.00	97.50	-1.89	-17.23	25.31	17.72
7	2006 - 07	23.08	94.50	26.00	112.00	15.63	-61.79	13.04	5.97
8	2007 - 08	7.58	5.34	1.82	9.76	1.64	1.69	7.23	1.77
9	2008 - 09	27.50	29.17	10.71	64.00	4.48	33.00	13.71	9.14
10	2009 - 10	25.00	69.23	10.67	76.50	5.33	50.41	23.17	8.26
MEAN		**24.65**	**40.01**	**19.12**	**43.14**	**9.49**	**5.06**	**30.14**	**18.13**

Source: Primary Survey

The average Working Capital Turnover Ratio (WCTR) of company (A1) was 24.65. In the 2004-05 the performance of A1's working capital turnover ratio was negative, in 2007-08 it was very poor and for the remaining periods above average or good.

The average WCTR of A2 was 40.01. In 2003-04 and 2008-09 A2 performed was below average, in 2004-06 and 2007-08 was very poor and in the remaining periods was below average but in the last year 2009-10 the performance was very high at 69.23. The A3's average WCTR was 19.12 while comparing to other private enterprises its average was low. In 2007-08 A3 performed very poor, in 2002-04 and 2008-10 it performed below average and remaining above average. The average ratio of A4 was 43.14. In the first three years it performed below average, in the year 2004-05 and 2007-08 performed very poor and above average for the remaining periods.

The average WCTR of B1 was 9.49. In the year 2002-03 it performed very high and above average in 2006-07 and very poor performance for the remaining

periods. The average WCTR of Society B2 was 5.06. The B2 WCTR performance in the year 2005 to 2007 was very poor and 2008 to 2010 very high. The society B3 performed above average (30.14) in the first three years and it remained below average for the remaining periods. The society B4's average WCTR was 18.13. For the first four years it performed high and below average for the remaining years.

H_O9 (ii) - There is no difference between Working Capital Turnover Ratio of Private companies and Co-operative Societies.

Table No. 4.13 (i)

GROUP STATISTICS OF WORKING CAPITAL TURNOVER RATIO

GROUP STATISTICS				
	Working Capital Turnover Ratio Code	**N**	**Mean**	**Std. Deviation**
WORKING CAPITAL TURNOVER RATIO	Private Companies	10	126.9165	84.77
	Cooperative Societies	10	62.81593	69.39

Table No. 4.13 (ii)

INDEPENDENT SAMPLES TEST OF WORKING CAPITAL TURNOVER RATIO

t-test for Equality of Means				
	t	**df**	**Sig. (2-tailed)**	**Mean Difference**
WORKING CAPITAL TURNOVER RATIO	1.850	18	**0.081**	64.1

The average working capital turnover ratio of Co-operative Societies was 62.82 and Private Companies 126.92. The average WCTR of Private Companies was double than Co-operative Societies WCTR. The calculated Independent samples test of Working Capital Turnover Ratio value is **0.081**. Hence the null hypothesis is rejected at 10 % level. Therefore it is clear that there is a difference between Working Capital Turnover Ratio of Private companies and Co-operative Societies.

4.5.3 PROPRIETARY RATIO

Proprietary ratio used to analyze the financial position of the enterprise. This ratio helps the creditors who can ascertain the proportion of shareholders' funds in the total assets employed of a firm. In general the high unit of proprietary or equity ratio shows better/stable performance of a companies or creditors.

Formula

$$\text{Proprietary or Equity Ratio} = \frac{\text{Shareholders' Funds}}{\text{Total Assets}}$$

Table No. 4.14

PROPRIETARY RATIO

(Result in Unit)

Sl. No	Year	Private Companies				Cooperative Companies			
		A1	A2	A3	A4	B1	B2	B3	B4
1	2000 - 01	0.32	0.25	0.25	0.50	0.14	0.87	0.06	1.00
2	2001 - 02	0.27	0.27	0.22	0.54	0.15	0.75	0.09	0.71
3	2002 - 03	0.25	0.30	0.30	0.55	0.15	0.11	0.10	0.66
4	2003 - 04	0.33	0.33	0.27	0.63	0.14	0.12	0.12	0.73
5	2004 - 05	0.40	0.36	0.29	0.44	0.14	0.11	0.13	0.79
6	2005 - 06	0.42	0.33	0.27	0.38	0.15	0.08	0.15	0.34
7	2006 - 07	0.46	0.27	0.29	0.35	0.16	0.09	0.15	0.32
8	2007 - 08	0.38	0.23	0.30	0.32	0.16	0.09	0.14	0.34
9	2008 - 09	0.40	0.22	0.32	0.30	0.17	0.10	0.14	0.35
10	2009 - 10	0.45	0.20	0.35	0.30	0.18	0.10	0.15	0.36
MEAN		**0.37**	**0.28**	**0.29**	**0.43**	**0.15**	**0.24**	**0.12**	**0.56**

Source: Primary Survey

According to Dr. David Kohl the proprietary ratio value above 230% belongs to weak, 42 to 230 % belongs to stable and below 42 % belongs to strong position. As per the 10 years average proprietary ratio (or) equity ratio except the enterprises A4 and B4 all fell under strong performance group.

The A1's proprietary ratio shows that in the years 2006-07 and 2009-10 performance was stable and maintained strong condition for the remaining periods. The company A2 and A3 performed at strong position for the whole period. The performance of company A4 was stable still 2004-05 and became strong for the remaining periods. The co-operative society B1 and B3 performed at strong position for the whole period. Expect in the first two years of society of B2 and five years of B4 performed strong position.

H_O9 (iii) - There is no difference between Proprietary Ratio of Private companies and Co-operative Societies.

Table No. 4.14 (i)

GROUP STATISTICS OF PROPRIETARY RATIO

	Proprietary Ratio Code	N	Mean	Std. Deviation
PROPRIETARY RATIO	Private Companies	10	0.3400	.025
	Cooperative Societies	10	0.2710	.116

Table No. 4.14 (ii)

INDEPENDENT SAMPLES TEST OF PROPRIETARY RATIO

t-test for Equality of Means				
	t	**df**	**Sig. (2-tailed)**	**Mean Difference**
PROPRIETARY RATIO	1.823	18	**0.085**	0.069

The mean ratios of private companies and cooperative societies are showing strong position. The independent samples test of proprietary ratio's calculated value was **0.085**. Hence the null hypothesis has been rejected at 10 % level. Therefore there is a difference between Proprietary Ratio of Private companies and Co-operative Societies.

4.5.4 FIXED ASSETS TURNOVER RATIO

Fixed assets turnover ratio is also known as sales to fixed assets ratio. This ratio measures the efficiency and profit earning capacity of the concern or in other words how much a rupee of fixed asset has generated sales. Higher ratio shows greater intensive utilization of fixed assets. Lower ratio means under-utilization of fixed assets.

Formula

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Net Fixed Assets}}$$

Table No. 4.15

FIXED ASSETS TURNOVER RATIO

(Result in Unit)

Sl. No	Year	Private Companies				Cooperative Companies			
		A1	A2	A3	A4	B1	B2	B3	B4
1	2000 - 01	0.64	3.70	2.67	6.00	0.51	0.00	3.44	0.51
2	2001 -02	0.63	3.73	4.00	6.44	0.48	4.11	6.48	0.44
3	2002 - 03	0.53	2.70	16.00	7.36	0.55	0.82	13.21	0.56
4	2003 - 04	0.52	3.39	32.00	10.51	0.50	0.57	8.13	5.04
5	2004 - 05	0.50	0.00	9.60	3.04	0.53	0.62	5.96	1.55
6	2005 - 06	0.44	0.00	3.43	1.34	0.34	0.55	14.63	0.93
7	2006 - 07	0.49	1.89	3.25	3.40	0.23	0.28	4.61	0.46
8	2007 - 08	0.66	1.57	3.11	2.96	0.20	0.30	4.18	0.40
9	2008 - 09	0.58	2.50	3.13	2.95	0.22	0.32	3.58	0.40
10	2009 - 10	0.64	2.58	3.20	3.40	0.26	0.33	4.16	0.39
MEAN		**0.56**	**2.21**	**8.04**	**4.74**	**0.38**	**0.79**	**6.84**	**1.07**

Source: Primary Survey

The private company A1's average Fixed Asset Turnover Ratio (FATR) was 0.56. In the first two years and last three years the FATR was higher than the average and for the remaining periods it was below average. The average FATR of A2 was 2.21, for 2004 to 2008 it was below average and remaining periods the performance ratio was higher than the average. The A3's average FATR was 8.04, the performance

was higher only in the years 2002-03 to 2003-04. The A4 shows that for the first four years ratios was higher and fixed assets was under-utilized for the remaining periods.

The B1's FATR shows that in the opening four years its performance was higher than the average 0.38. For the first five years 2000-05, B1's performed above average and below average to the remaining years. Except the years 2001-02 and 2002-03 the FATR of B2 was lower than the average 0.79. The average FATR of B3 was 6.84. The FATR performance was higher in the years 2002-03, 2003-04 and 2005-06 and below the average for the remaining periods. The average FATR of B4 was 1.07. Only in the years 2003-04 and 2004-05, the B4 ratio was above the average and below the average for the remaining periods.

H_O9 (iv) - There is no difference between Fixed Assets Turnover Ratio of Private companies and Co-operative Societies.

Table No. 4.15 (i)

GROUP STATISTICS OF FIXED ASSETS TURNOVER RATIO

	Fixed Assets Turnover Ratio Code	N	Mean	Std. Deviation
FIXED ASSETS TURNOVER RATIO	Private Companies	10	15.5490	12.30720
	Cooperative Societies	10	9.0780	4.82750

Table No. 4.15 (ii)

INDEPENDENT SAMPLES TEST OF FIXED ASSETS TURNOVER RATIO

	t-test for Equality of Means			
	t	df	Sig. (2-tailed)	Mean Difference
FIXED ASSETS TURNOVER RATIO	1.548	18	**0.139**	6.47100

The calculated mean of fixed asset turnover ratio of private companies was 5.549 and Co-operative Societies was 9.078. The calculated independent samples test of fixed asset turnover ratio was **0.139**. Hence the hypothesis is accepted at 10 % level. Therefore it is scientifically proved that there is no difference between Fixed Asset Turnover Ratio of Private companies and Co-operative Societies.

4.5.5 NET PROFIT RATIO

A ratio of net profit to sales is called Net Profit Ratio. It indicates sales margin on sales and it determine the overall profitability and efficiency of the business. It indicates the extent to which management has been effective in reducing the operational expenses. Higher net profit ratio helps the business to run in better condition.

Formula

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

Table No. 4.16

NET PROFIT RATIO

(Result in Percentage)

Sl. No	Year	Private Companies				Cooperative Companies			
		A1	A2	A3	A4	B1	B2	B3	B4
1	2000 - 01	9.12	7.37	4.00	4.66	9.67	0.00	1.70	4.40
2	2001 -02	9.61	7.00	4.00	4.55	-12.89	7.40	2.17	3.11
3	2002 - 03	9.85	7.63	4.67	4.67	23.39	15.41	1.26	5.20
4	2003 - 04	9.99	6.89	4.55	4.89	25.57	7.40	0.77	3.48
5	2004 - 05	9.40	0.00	4.67	4.85	-49.14	-42.85	-3.41	-25.18
6	2005 - 06	8.96	0.00	4.73	4.40	2.24	20.39	1.49	5.64
7	2006 - 07	9.63	6.99	5.28	4.96	86.88	-1.62	2.85	-16.76
8	2007 - 08	8.76	7.11	5.31	5.63	-4.37	4.66	4.68	-21.54
9	2008 - 09	9.58	6.94	5.26	4.76	24.80	9.23	4.85	5.56
10	2009 - 10	9.68	6.77	4.93	5.58	34.48	11.41	4.20	7.84
MEAN		**9.46**	**5.67**	**4.74**	**4.9**	**14.06**	**3.14**	**2.06**	**-2.83**

Source: Primary Survey

The Net Profit Ratio table shows that the company A1's average NPR was 9.46. Only during the years 2001-02, 2004-05, 2005-06 and 2007-08 A1's performed was below average. A2 performed above the average of 5.67 except for the periods 2004-05 and 2005-06. The A3 average NPR was 4.74, till 2006 it has performed below average and shown better performance for the remaining periods. The A4's average NPR was 4.9, except the periods 2006-07, 2007-08 and 2009-10 its performance was the below average. The society B1 shows that during the period

2001-02, 2004-05 and 2007-08 it has faced huge loss. At the same time it has shown strong performance during 2002-03, 2003-04, 2006-07, 2008-09 and 2009-10. The average NPR of B2 was 3.14, except for 2000-01, 2004-05 and 2006-07 B2 performed above the average. The average NPR of B3 was 2.06, in the years 2001-02 and 2006-10 it performance was above the average. The overall performance of B4 was very poor by the average NPR -2.83.

H_O9 (v) - There is no difference between Net Profit Ratio of Private companies and Co-operative Societies.

Table No. 4.16 (i)

GROUP STATISTICS OF NET PROFIT RATIO

	Net Profit Ratio Code	N	Mean	Std. Deviation
NET PROFIT RATIO	Private Companies	10	24.7654	3.37322
	Cooperative Societies	10	16.4367	54.87544

Table No. 4.16 (ii)

INDEPENDENT SAMPLES TEST OF NET PROFIT RATIO

t-test for Equality of Means				
	t	df	Sig. (2-tailed)	Mean Difference
NET PROFIT RATIO	0.479	18	**0.638**	8.32871

The Net Profit Ratio average mean of private companies was 24.77 per cent and Co-operative Societies was 16.44 per cent. The calculated independent samples test of the Net Profit Ratio value was **0.638**. Hence the null hypothesis has been accepted at 10 % level. Therefore is no difference between Net Profit Ratio of Private companies and Co-operative Societies.

4.5.6 RETURN ON SHAREHOLDER'S FUND

Return on Shareholder's Fund study the relationship between net profit (after interest and tax) and share holder's/proprietor's fund. In other words, the amount earned by each equity shareholder. Higher result of Return on Shareholder's Fund was always better.

Formula

$$\text{Return on Share Holder's Investment} = \frac{\text{Net Profit (After Interest and Tax)}}{\text{Share Holder's Fund}} \times 100$$

Table No. 4.17

RETURN ON SHAREHOLDER'S FUND

(Result in Percentage)

Sl. No	Year	Private Companies				Cooperative Companies			
		A1	A2	A3	A4	B1	B2	B3	B4
1	2000 - 01	17.09	81.74	32.00	29.85	33.29	0.00	90.54	2.00
2	2001 -02	21.63	91.44	40.00	69.41	-40.37	27.82	114.14	1.77
3	2002 - 03	19.70	54.93	37.33	56.77	76.54	85.25	55.59	4.21
4	2003 - 04	14.65	62.32	48.53	61.26	83.14	28.73	31.41	12.25
5	2004 - 05	11.75	0.00	56.02	28.29	-144.45	-190.73	-80.75	-48.35
6	2005 - 06	8.96	0.00	28.35	13.20	5.01	126.83	62.06	10.83
7	2006 - 07	9.63	57.48	29.87	40.85	104.26	-4.83	58.86	-18.35
8	2007 - 08	14.60	53.44	27.55	45.07	-5.19	13.63	90.79	-22.22
9	2008 - 09	13.18	81.00	26.31	39.06	29.23	28.58	87.49	5.47
10	2009 - 10	12.91	87.03	22.54	51.45	44.06	35.65	81.51	7.50
MEAN		**14.41**	**56.94**	**34.85**	**43.52**	**18.55**	**15.09**	**59.16**	**-4.49**

Source: Primary Survey

The average Return on Shareholder's Fund (ROSF) of A1 was 14.41. The maximum return was 21.63 per cent which was earned in the 2001-02 and minimum in 2005-06 of 8.96 per cent. The company A2's return was zero in 2004-05 and 2005-06. It has earned a maximum of 91.44 per cent in 2001-02 and the average return was 56.94 per cent. The average ROSF of A3 was 43.52 per cent, from 2001 to 2005 ROSF was more than average and in the remaining periods below the average. Company A4 was earned average 43.52 per cent. During 2001-04, 2007-08 and 2009-10 A4 was above the average.

The society B1's average ROSF was 18.55 per cent. In the year 2006-07, it has earned a high return of 104.26 per cent and faced a huge loss of 144.45 per cent in

2004-05. The society B2 faced a heavy loss of 190.73 per cent in the year 2004-05 and profit of 126.83 in 2005-06. The B3's average return was 59.16 per cent, this society yield high profit of 114.14 per cent in 2001-02 and loss of 80.75 per cent in 2004-05. The society B4 was functioning in a poor condition in a average. Its maximum return was 12.25 per cent in 2003-04 and loss of 48.35 per cent in 2004-05.

There is no difference between Return on Shareholder's Fund of Private companies and Co-operative Societies.

Table No. 4.17 (i)

GROUP STATISTICS OF RETURN ON SHAREHOLDER'S FUND

	Return on Shareholder's Fund Code	N	Mean	Std. Deviation
RETURN ON SHAREHOLDER'S FUND	Private Companies	10	149.719	48.04532
	Cooperative Societies	10	88.319	198.8857

Table No. 4.17 (ii)

INDEPENDENT SAMPLES TEST OF RETURN ON SHAREHOLDER'S FUND

t-test for Equality of Means				
	t	**df**	**Sig. (2-tailed)**	**Mean Difference**
RETURN ON SHARE HOLDER'S FUND	0.949	18	**0.355**	61.4

The average Return on Shareholder's Fund of private companies was 149.179 per cent and co-operative societies were 88.319 per cent. The calculated independent samples test of Return on Shareholder's Fund value was **0.355**. Hence the null hypothesis has been accepted at 10 % level. Therefore it was statically proved that there is no difference between Return on Shareholder's Fund of Private companies and Co-operative Societies.

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CHAPTER V

ACTION PLAN FOR DEVELOPING TUNA EXPORT AND ERADICATION OF POVERTY IN ANDAMAN ISLANDS

CHAPTER V

ACTION PLAN FOR DEVELOPING TUNA EXPORT AND ERADICATION OF POVERTY IN ANDAMAN ISLANDS

In this chapter the researcher has tried to prepare SMB Model for Andaman Tuna Fishes Export. As it was discussed in the previous chapters Tuna has good demand in international markets especially in Japan. The researcher has selected Tuna for his research work mainly for two reasons, Tuna fishes and its products are having good demand in international markets and other most importance reason was an abundant Tuna potential has been availed in Andaman Sea.

5.1 INTRODUCTION

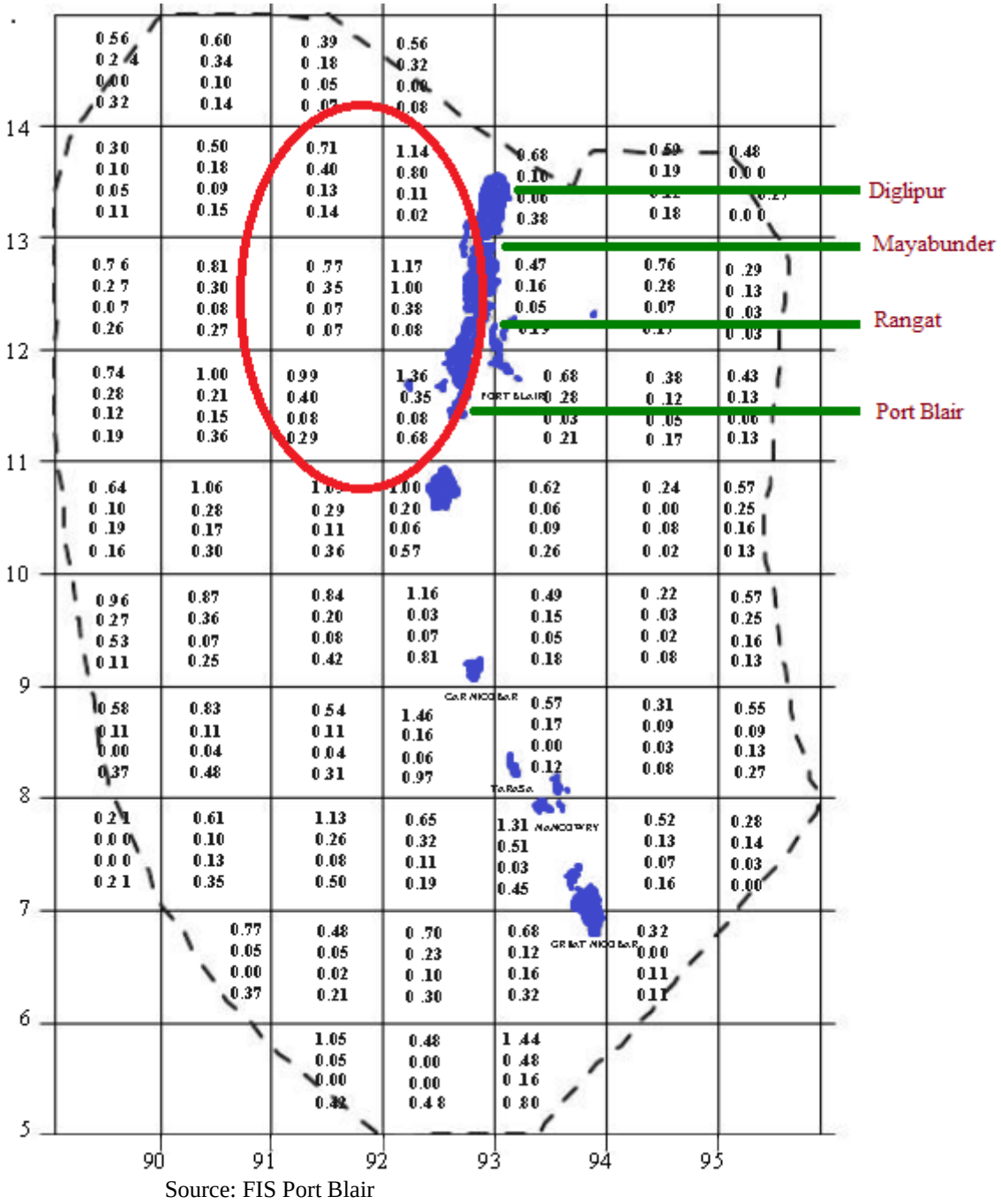
In August 2011[28], Globalfish has published an article on their webpage that, the PNA (Parties to the Nauru Agreement) countries are going to adopt Vessel Days Scheme for the purse seiner fisheries in their Exclusive Economic Zones. Papua New Guinea planned to construct four new canneries and tuna processing plants to overtake Philippines and to become a major tuna processing country. Their forecasted production volume was 1, 330 tonnes per day in the next three years. Under an Economic Partnership Agreement, Papua New Guinea shall sell tuna and tuna by-products to EU on tariff free and also to source tuna from anywhere in the world, providing EU sanitary and IUU regulations are adhered to. In Italy market, the cooked and cleaned frozen skipjack tuna loins sold at USD 5, 600 DDP (Delivered, Duty Paid) and USD 7, 800 per tonne for yellowfin loins. In Bangkok, the import price of frozen skipjack was USD 1, 900 per tonne in the last three months and the predict price was USD 2, 000 per tonne.

The above paragraph has provided a clear picture on demand and price of tuna in the world markets. The researcher has selected four islands to conduct the study for a most important reason that is, only the area nearer to these islands are scored high tuna hooking rate as per the fishing survey of Fishery Survey of India. The area nearer to Nancowry also has high hooking rate but due to transport measure in the initial stage it has been deducted.

[28]Globalfish. 2011. Tuna - Rising raw material prices and political uncertainty make for nervous markets, August 2011. http://www.globefish.org/tuna-august-2011.html

Chart No. 5.1

ABUNDANCE INDICES (HOOKING RATE) OF TUNAS, BILL FISHES AND SHARKS IN LAT 1^0 x LONG 1^0 DURING THE PERIOD 2003-09



Source: FIS Port Blair

Hooking Rate Date without Use Fish Aggregating Device and Fish Finder

- Aggregate Hooking rate
- Hooking rate of Tunas
- Hooking rate of Billfishes
- Hooking rate of Sharks

As per the FSI compiled sample hooking data from 2003-07 shows that the aggregate hooking rate between the Latitude 13^0 to 14^0 and Longitude 92^0 to 93^0 was 1.14 per cent of which 0.80 per cent Tunas, 0.11 per cent Billfishes and 0.02 per cent Sharks. The aggregate hooking rate between the above Latitude and Longitude 91^0 to 92^0 was 0.71 per cent on an account 0.40 per cent Tunas, 0.13 per cent Billfishes and 0.14 per cent Sharks. Both these areas are nearest to Diglipur and Mayabunder.

The Aggregate Hooking rate of the Latitude 12^0 & 13^0 and Longitude 92^0 & 93^0 was 1.17 per cent of which 1.00 per cent was Tunas, 0.38 per cent Billfishes and 0.08 per cent Sharks. The Aggregate Hooking rate in the same Latitude and Longitude 91^0 to 92^0 was 0.77 per cent on an account 0.35 per cent was Tunas, 0.07 per cent Billfishes and 0.07 per cent Sharks. Both these areas are nearest to Mayabunder and Rangat.

The Latitude 11^0 to 12^0 and Longitude 92^0 to 93^0 were lay nearer to Port Blair. The aggregate hooking rate of this area was 1.36 per cent of which 0.34 per cent Tunas, 0.08 per cent Billfishes and 0.68 per cent Sharks. The aggregate hooking rate between the Latitude 11^0 to 12^0 and Longitude 91^0 to 92^0 was 0.99 per cent on an account 0.40 per cent Tunas, 0.08 per cent Billfishes and 0.29 per cent Sharks. The hooking rate data ensured that through developing tuna export industries at Port Blair, Rangat, Mayabunder and Diglipur shall help the exporters and the fishermen to yield huge profit.

According to Fishery Survey of India's Hand Book for Field Identification of fish Species Occurring in the Indian Seas tunas are two types- Neritic Tunas and Oceanic Tunas. The Neritic Tunas are classified into five types. They are Bullet Tuna, Frigate Tuna, Kawakawa, Longtail Tuna and Striped Bonito. The Oceanic Tunas are classified into four types they are, Bigeye Tuna, Skipjack Tuna, Yellowfin Tuna and Albacore. The Tunas of Andaman Sea are majorly classified into four different varieties; they are Neritic Tunas, Yellowfin Tuna, Skipjack Tuna and Bigeye Tuna. These tuna are untapped by A&N Islands fishermen mainly for two reasons, the primary reason was the local consumers are unwilling to consume these fish varieties and other reason was lack of infrastructure facilities available in these islands for export actives.

5.2 NERITIC TUNAS

(a) Common Name : **Bullet Tuna**
Scientific Name : **Auxis Rochei Rochei**

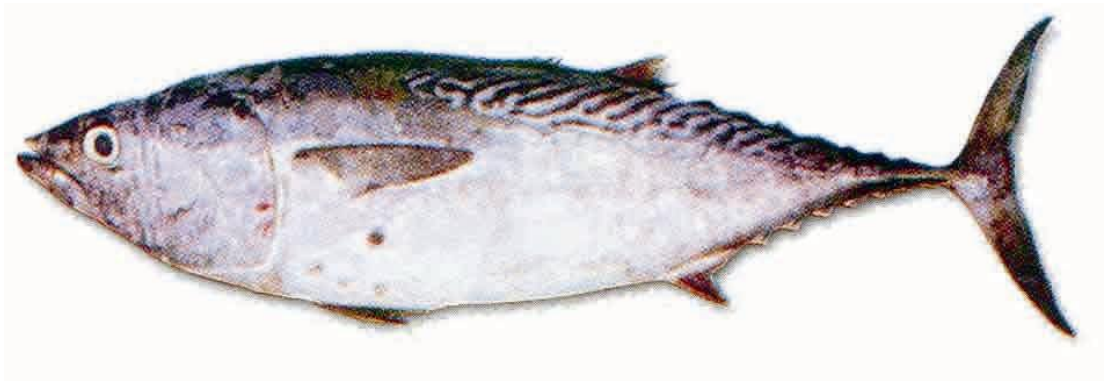
The Bullet Tuna shall be found in oceans surface water to the depth of 50 mtrs (164 ft) and its maximum length is 50 cm. Its maturity size has been 35 cm (FL) for two years old fish. The estimated fecundity shall be range between 31,000 and 103,000 eggs per spawning according to the size of the fish.

(b) Common Name : **Frigate Tuna**
Scientific Name : **Auxis Thazard**

The common size in catches ranges between 25 to 40 cm and maximum length of 65 cm. In the southern Indian Ocean, the spawning season extends from August to April; north of the equator it is reported from January to April.

(c) Common Name : **Kawakawa**

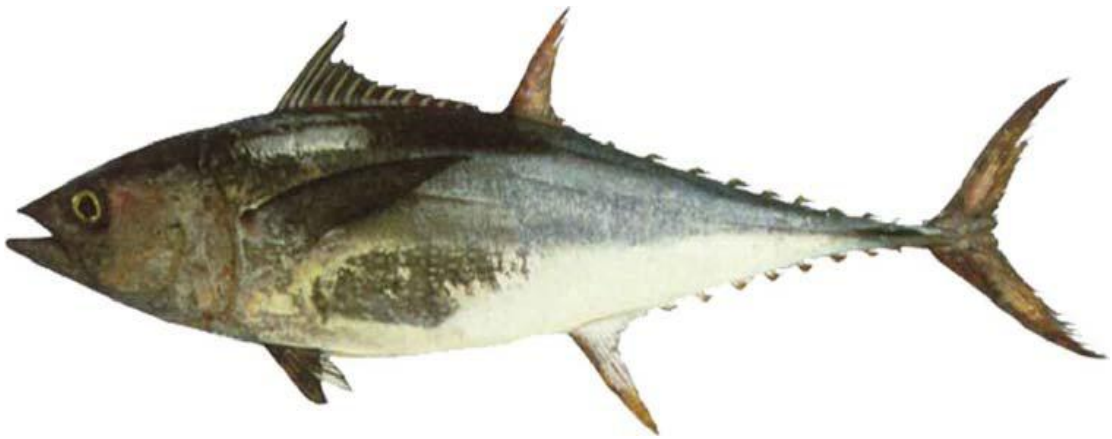
Scientific Name : **Ethynnus Affinis**



Kawakawa can reach a length of 100.0 cm FL for a weight of 13.6 kg but common size is around 60 cm. In Indian Ocean it reached upto 50 to 65 cm in the third years.

(d) Common Name : **Longtail Tuna**

Scientific Name : **Thunnus Tonggol**



The longtail tuna lives throughout the Indo-West Pacific, it is most abundant over areas of broad continental shelf. Longtail grow rapidly to reach 40 to 46 cm in FL in one year. It can reach around 145 cm FL or 35.9 kg but the most common size in Indian Ocean ranges from 40 to 70 cm.

(e) Common Name : **Striped Bonito**

Scientific Name : **Sarda Orientalis**

Striped Bonito shall grow upto a maximum length (FL) 102 cm and 5 kg.

5.3 OCEANIC TUNAS

(a) Common Name : **Bigeye Tuna**

Scientific Name : **Thunnus Obesus**

This tuna was usually found in warmer tropical and subtropical waters in the Atlantic, Pacific and Indian Oceans. Bigeye tuna can grow up to about 6 feet in length and weigh up to about 400 pounds (180 Kg). The bigeye has a lifespan up to 12 years.

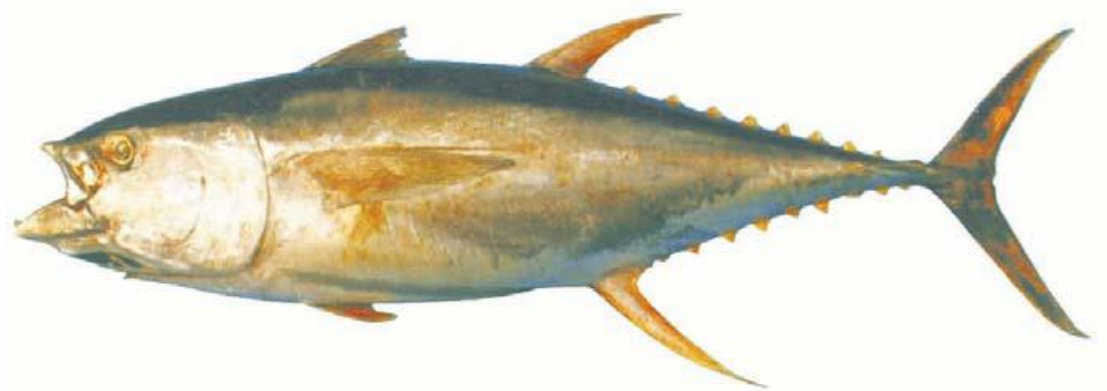
(b) Common Name : **Skipjack Tuna**

Scientific Name : **Katsuwonus Pelamis**

Skipjacks are a smaller tuna that grow to about 3 feet and weigh up to about 41 pounds. The maximum length of a Skipjack tuna is about 108 cm fork-length with a maximum weight of 32.5 to 34.5 kg. However, nowadays a more common size is about 35 cm fork-length and 3.0 kg in weight.

(c) Common Name : **Yellowfin Tuna**

Scientific Name : **Thunnus Albacares**



The average length of Yellowfin Tuna was 40-180 cm and weighted about 5 to 20 kg. Its maximum length was 280 cm total length and the maximum weight is 400 kg. The lifespan of Yellowfin Tuna was around 6-7 years.

(d) Common Name : **Albacore**

Scientific Name : **Thunnus alalunga**

Average length of Albacore was 68 cm and weighted about 9 to 18 kgs, peak weight. The maximum fork length shall be 127 cm and weighted around 40 kgs.

In order to develop a SMB Model for Andaman Tuna export, the researcher has made an in-depth logical analysis for an Action plan.

5.4 THE REASON FOR TUNA DEMAND

In nineteenth century sardine was the highly demanded seafood. At this periods Tuna did not had commercial value because many of them thought that tuna is an unfit fish to eat mainly Samurai. In 1903 shortage of sardine leaded the fish canning industry to use albacore tuna for commercial purpose[29]. Once tuna started to be commercialized, various researches have been done and positive results have been got. Most of the studies concluded that tuna consumption is good for health and it helps to prevents various ***Diseases.*** By this time the demand of tuna products steady increased. At the present, Japanese are the largest tuna consumers in the world.

[29] Seafood. (2011, October 28). The Health Benefits of Tuna. Nice to Me. http://092.me/the-health-benefits-of-tuna/

THE HEALTH BENEFITS FROM TUNA

Tuna has excellent source of protein and vitamin like omega-3 fatty acids EPA and DHA, protein, potassium, selenium, and vitamin B12 and also very good source of niacin and phosphorus.

(a) ***Improve the memory***

The tuna contain very high level of omega 3 polyunsaturated fatty acids. Many studies on epidemiological and animal have supported that omega 3 polyunsaturated fatty acids plays a protective role and they suggested that consumption of tuna has a positive effect on learning and memory.

(b) ***Stroke Prevention***

A study was conducted to find the association between fish consumption and stroke risk was investigated. To analyze the results 4775 adults were selected from the age group of 65 to 98 year. It found from this study, the fried fish consumption have a positively association with total stroke and ischemic stroke. Hence the tuna helps in reducing the overcome of stroke.

(c) ***Blood Pressure***

The tuna contain omega-3 fatty acid at high level and the omega-3 fatty acid intake shall be beneficial in preventing high blood pressure levels.

(d) ***Cardiovascular Disease Prevention***

Several studies and clinical trials have provided strong evidence that modest consumption of fish or fish oil substantially reduces the risk of coronary heart disease death.

(e) ***Alzheimer's Disease Prevention***

A study on the dietary intake of EPA and DHA fatty acids from fish concluded that moderate fish consumption could postpone cognitive decline in the elderly. The Cardiovascular Health Cognition Study concluded that consumption of

fatty fish more than twice per week was associated with a reduction in risk of dementia by 28 per cent and Alzheimer's disease by 41 per cent in comparison to those who ate fish less than once a month. Hence dietary intake of n-3 fatty acids and weekly consumption of fish may reduce the risk of incident Alzheimer's disease.

(f) ***Cancer Prevention***

The consumption of fatty fish such as tuna could reduce the occurrence of renal cell carcinoma (kidney cancer).

(g) ***Macular Degeneration Prevention***

The omega-3 fatty acid intake and fish consumption is associated with a reduced risk of age-related macular degeneration. A high dietary intake of Omega-3 fatty acids is also associated with a decrease in dry eye syndrome.

(h) ***Arthritis***

The double blind, placebo-controlled clinical have found that, the increase of dietary omega-3 fatty acids consumption shall result positive effects in rheumatoid arthritis.

Table No. 5.1

ISLANDS WISE DETAILS OF THE SAMPLE FOR THE PROJECTED SURESH MOHAN BUSINESS (SMB) MODEL

Sl. No	No. of Families in Fisheries	Islands				Total	%
		Port Blair	Rangat	Maya-bunder	Diglipur		
1	Total Sample Size	118	46	73	138	375	**100**
2	At least one member in Fisheries Actives	97	46	64	134	341	**90.93**
3	Interested on Tuna Export	89	34	40	107	270	**72**
4	Families involved Only in Fisheries Actives	53	34	37	107	231	**61.6**
5	Families involved Only in Fisheries Actives and interested in Tuna Export	45	25	27	85	182	**48.53**

Source: Primary Survey

The total sample size for the research was 375 families, of which 118 families belongs to Port Blair, 46 families belongs to Rangat, 73 families belongs to Mayabunder and 138 families belongs to Diglipur. To prepare the Andaman Tuna export Model the fishermen families were classified into four different groups namely At least One Member of the family involved in fisheries actives, No. of Families interested to involved in Tuna Export, No. of families involved only in fisheries actives and No. of families both involved only in fisheries actives and interested in Tuna Business. From the total 375 fishermen families in 341 families (90.93 per cent) at least one of the family members has been involved in fisheries actives. It consists of 97 families from Port Blair, 46 families from Rangat, 64 families from Mayabunder and 134 families from Diglipur. For the success of any development (or) schemes interest of the targeted group plays very important role. As per the preliminary survey 72 per cent (270 families) have shown their interest on tuna export actives like fishing, packing, administrative jobs in the tuna export companies and other relative activities. Of these 270 families, 89 families are from Port Blair, 34 families from Rangat, 40 families from Mayabunder and remaining 107 families from Diglipur.

Fisheries business is also a type of family business, where the males are involved on the pre-harvesting process like fishing, nets & hook lines making, ice making etc., and females are undergoing post-harvesting process like selling the fishes at local market, packaging and preserving actives etc. As per the researcher survey and observation that many of the fisher family members area engaged in alternative jobs due to low income on their family business in Andaman Islands. The survey also found that only 231 families (61.6 per cent) are pursuing their family business at present and remaining families has been involved of alternative jobs. Of these 231 families, 53 families are from Port Blair, 34 families from Rangat, 37 families from Mayabunder and 107 families from Diglipur.

To develop Suresh Mohan Business Model only the families who shown interest on Tuna Export Business and the families involved only on fisheries actives have been selected. Under this condition 182 families have been selected of which 45 families belongs to Port Blair, 25 families from Rangat, 27 families from Mayabunder and 85 families from Diglipur.

Table No. 5.2

DETAILS OF FAMILIES INVOLVED IN SMB MODEL

Sl. No	Families involved in SMB Model		Place				Total
			Port Blair	Rangat	Maya-bunder	Diglipur	
1.	No. of Families		**45**	**25**	**27**	**85**	**182**
2.	No. of Members		177	122	114	369	782
3.	Mean Family Size		3.93	4.88	4.22	4.34	4.30
4.	Gender	Male	53	35	35	114	237
		Female	47	28	35	98	208
		Total	**100**	**63**	**70**	**212**	**445**
5.	**Present Occupations**						
5.A	No. of Fisher		42	33	35	104	214
5.B	No. of Fish Seller		39	17	9	46	111
5.C	No. of Fish Agent		2	0	0	0	2
Total			**83**	**50**	**44**	**150**	**327**
6.	Unemployed		**17**	**13**	**26**	**62**	**118**
7.	**Educational Qualification of the Members**						
7.A	No. of Children Below Age 3		10	2	10	21	43
7.B	No. of Illiterate		50	42	31	105	228
7.C	No. of Primary		50	34	33	140	257
7.D	No. of Secondary		63	32	32	82	209
7.E	No. of Higher Secondary		2	9	7	19	37
7.F	No. of Degree/ Diploma		2	3	1	2	8
Total			**177**	**122**	**114**	**369**	**782**
8.	No. of Families ready to attend Training		**39**	**22**	**24**	**78**	**163**
9.	No. of Days ready to spend for Training by Govt.	7 days	4	1	0	6	11
		10 days	37	21	24	63	**145**
		15 days	0	0	0	4	4
		20 days	0	0	0	4	4
		30 days	2	0	0	1	3
10.	Interested designation	Fisher	29	28	31	70	158
		Seller	8	2	0	20	30
		Processor	37	15	7	55	114
		Office work	4	7	13	16	40
Total			**78**	**52**	**51**	**161**	**342**

Source: Primary Survey

For developing SMB model 182 families of 782 individuals have been selected, of which Port Blair 45 families by 177 individuals, Rangat 25 by 122,

Mayabunder 27 by 114 and Diglipur 85 of 369 individuals. The average family size of Port Blair was 3.93, followed by Mayabunder 4.22, Diglipur 4.34 and Rangat 4.88. The total No. of adults of the selected group was 445, which consist of 237 males and 208 females.

The present occupations of selected group were 214 are fishers, 111 are fish sellers, 2 are fish agents, 118 are unemployed and remaining are students. As per the educational qualifications 32.86 per cent have undergone Primary Level Education, followed by 29.1 per cent (228 individuals) are illiterate, 26.73 per cent (209 individuals) have undergone Secondary Level Schooling, 43 individuals are in the age group of below 3 years, only 4.73 per cent have undergone Higher Secondary Level and remaining only 1 per cent College Education.

Training plays a vital role in export business especially in the fish export business. The importer shows interest only to the products produced by trained employees. Of the 182 families 163 were interested to attending training programme arranged by Government and majority of them were ready to attend training upto 10 days.

From the selected samples the job preference data has been collected for the every individual. A total of 342 individuals have given their interest on tuna fish export industry of which 158 preferred as a fisher in Tuna Industry, which means they are ready to work as an employee. They shall go for tuna fishing if they get fishing boats and equipments. 30 of them preferred to be suppliers, through utilizing their boats and inputs they are ready to catch tuna fishes and supply to the export units. In the International Market only quality is given importance then the price and the quality product shall get good price and retain its demand. In the fisheries sector quality can be maintained through systematic handling and packing. This process starts from offshore and majority processing works done at onshore. To work in the onshore fish processing units 144 individual has been shown interest and 40 persons were interested to do official job in tuna export units.

To estimate the economic impact of tuna export industries in Andaman Islands, the present status must be analyzed. The following analyze will exhibiting the present economic status of the targeted population.

H_O10 – There is no difference in monthly income of various Islands fishermen.

Table No. 5.3 (i)

ISLAND WISE DESCRIPTIVE STATISTICS OF RESPONDENT AVERAGE MONTHLY INCOME

Sl. No	Islands	N	Mean	Std. Deviation	Std. Error
1	Port Blair	45	5377.778	2678.1	399.2276
2	Rangat	25	5980	3798.245	759.649
3	Mayabunder	27	5388.889	3253.204	626.0793
4	Diglipur	85	4171.765	1849.943	200.6545
Total		**182**	**4898.901**	**2695.832**	**199.8284**

Source: Primary Survey

To measure the status of a person in the society income plays a important The above shows the islands wise average month income of the respondents. The average month income of Andaman Islands was Rs. 4898.90. The respondents of Rangat have higher income through fishing business of Rs. 5980, followed by Mayabunder Rs. 5388.89, Port Blair Rs. 5377.78 and Diglipur Rs. 4171.76.

Table No. 5.3 (ii)

DIFFERENCE IN RESPONDENTS' AVERAGE MONTHLY INCOME BETWEEN ISLANDS

ANOVA					
RESPONDENT AVERAGE MONTHLY INCOME					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	90963100.48	3	30321033	4.407787	**.005**
Within Groups	1224456680	178	6878970		
Total	1315419780	181			

The significance value is **0.005** and the null hypothesis has been rejected**.** Hence it was scientifically proved that there is a difference in average monthly income of the respondent between different islands.

H_O11 – There is no difference in monthly family income of various Islands fishermen.

Table No. 5.4 (i)

ISLAND WISE DESCRIPTIVE STATISTICS OF RESPONDENT FAMILY AVERAGE MONTHLY INCOME

Sl. No	Islands	N	Mean	Std. Deviation	Std. Error
1	Port Blair	45	8133.33	3212.900	478.951
2	Rangat	25	9800.00	3316.625	663.325
3	Mayabunder	27	7444.44	4238.862	815.769
4	Diglipur	85	6105.88	2851.581	309.297
Total		**182**	**7313.19**	**3468.603**	**257.110**

Source: Primary Survey

As it has explain before fisheries was one type of family business. The above table expresses the island wise average monthly income of a family. The overall average monthly income of a family in Andaman Islands was Rs. 7313.19. Results of individual average monthly income says that also Rangat stands at first position by Rs. 9800.00, followed by Port Blair Rs. 8133.33, Mayabunder Rs. 7444.44 and Diglipur Rs. 6105.88. There is very large different in monthly family income between Rangat and Diglipur. The difference is around Rs. 3694.12 each month.

Table No. 5.4 (ii)

DIFFERENCE IN RESPONDENTS' FAMILY AVERAGE MONTHLY INCOME BETWEEN ISLANDS

ANOVA					
Average Family Income					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	309234626.2	3	103078208.7	9.820	**.000**
Within Groups	1868413725	178	10496706.32		
Total	2177648352	181			

The significance value is **0.000** and the null hypothesis has been rejected at 1 % level. Hence it has been proved that there is a difference in average monthly income of a respondent family between islands.

Table No. 5.5

ISLAND WISE AVAILABLE TUNA FISHING EQUIPMENTS

Sl. No	Details of Tuna Fishing Equipments	Islands				Total
		Port Blair	Rangat	Maya-bunder	Diglipur	
1	SMB Model Sample Size	45	25	27	85	182
2	Having Boat	16	18	13	53	100
3	No. of Boats	18	20	17	56	111
4	No. of Wooden Dinghy	4	1	4	23	32
5	No. of Engine Fitted Boats	14	19	13	33	79
6	No. of Lines	0	21	0	41	62
7	No. of Boxes	0	0	0	4	4

Source: Primary Survey

To develop a Suresh Mohan Business (SMB) Model for Andaman Tuna export 182 respondents has been selected. The above table shows the available inputs for Tuna Fishing. On the whole 100 fishers held 111 Boats (32 Wooden Dinghies and 79 Engine Fitted Boats), Lines and Boxes Zero.

From Port Blair 45 fishermen have been selected, of which 16 individuals have 18 Boats (4 Wooden Dinghies and 14 Engine Fitted Boats) Lines and Boxes Zero. The 25 samples of Rangat hold 20 boats by 18 fishers (1 Wooden Dinghies and 19 Engine Fitted Boats) 21 Lines and Boxes Zero.

At Mayabunder 27 fishermen have been selected, of which 13 fishers hold 17 Boats (4 Wooden Dinghies and 13 Engine Fitted Boats) Lines and Boxes Zero. The 85 of Diglipur hold 111 boats by 100 fishers (32 Wooden Dinghies and 79 Engine Fitted Boats) 62 Lines and 4 Boxes.

5.5 SURESH MOHAN BUSINESS MODEL FOR ANDAMAN TUNA EXPORT

The following table shows the potentiality of Tunas in Andaman Sea. There are four different varieties of tunas available in these islands. For the convenience of calculation purpose the volume of tuna potential has been converted into kilogram.

5.5.1: Calculation of Tunas Potential in Andaman Sea

Table No. 5.6

TUNAS POTENTIAL IN ANDAMAN SEA

Metric Tone = 1016 Kgs

Sl. No	Name of the Fish	Volume in Metric Tonnes	Volume in Kilogram
1	Yellowfin Tuna	24000	24384000
2	Skipjack Tuna	22000	22352000
3	Bigeye Tuna	500	508000
4	Neritic Tunas	18000	18288000
Total		**64500**	**65532000**

Source: Fishery Survey of India

The Fishery Survey of India estimated the tuna potential in Andaman Sea to be 64500 MT (Metric Tonnes) or 6, 55, 32,000 Kgs. As per their record Yellowfin Tuna potential stood first with 24000 MT or 2,43,84,000 Kgs, followed by Skipjack Tuna 22000 MT or 2, 23, 52,000 Kgs, Neritic Tunas 18000 MT or 1,82,88,000 Kgs and Bigeye Tuna 500 MT or 5, 08,000 Kgs.

5.5.2: Calculation of No. of Fishermen Required to Capture Tuna Potential

Assumptions:

- Tuna fishing is an additional in to the Fishermen with their regular fishing.
- The operational cost of fishing shall be cover from their regular fishing.
- Each fisherman must capture at least 25 Kgs per day.
- There should be a minimum of 300 working days in a year.

Table No. 5.7

DETAILS OF ESTIMATED EMPLOYMENT OPPORTUNITY

FOR FISHERS IN TUNA EXPORT INDUSTRY

Sl. No	Name of the Fish	No. of Kgs	Capture / person/ day	Total Man Power	No .of Working days in a year	Employee Requirement/ day
1	Yellowfin Tuna	24384000	25 Kgs	975360	300	3251.2
2	Skipjack Tuna	22352000	25 Kgs	894080	300	2980.27
3	Bigeye Tuna	508000	25 Kgs	20320	300	67.73
4	Neritic Tunas	18288000	25 Kgs	731520	300	2438.4
Total		**65532000**	**25 Kgs**	**2621280**	**300**	**8737.6**

Source: Primary Survey

The total tunas estimated potential was 6, 55, 32,000 Kgs. For the calculation purpose it was assumed that each fisherman shall catch 25 Kgs Tuna per day and work for 300 days in a year.

5.5.3: Calculation of Estimated Employment Opportunity through Tuna Export

Formula:

$$\text{Total Man Power} = \frac{\text{Volume of Fish Available}}{\text{Estimate Catch per person in a Day}}$$

$$\text{Employee Requirement} = \frac{\text{Total Man Power}}{\text{No. of Working Days in a Year}}$$

The calculated man power to capture Yellowfin Tuna is 975360 and it shall engage 3251.2 employees per year, to capture Skipjack Tuna 894080 man power needed and 2980.27 employees shall be engage, to capture Bigeye Tuna 20320 man power require and it provide employment to 67.73 individuals and to capture Neritic Tunas 731520 man power needed and it create jobs to 2438.4 persons. Hence through developing tuna export business **8737.6** persons shall be engaged only in fishing active itself.

5.5.4: Calculation of Estimated Volume of Tuna Export per Day

Formula:

Total Estimated Tuna Export per Day	**=**	**Total Potential / No. of Working days**
		(OR)
	=	**Estimated Employment X Average catch per Person/Day**

Total Estimated Tuna Export per Day	=	Total Potential / No. of Working days
	=	65532000 Kgs / 300 days
	=	**218440 Kgs (or) 218.44 tonnes**
	(OR)	
Total Estimated Tuna Export per Day	=	Estimated Employment X Average catch per Person/Day
	=	8737.6 Employees X 25 Kgs
	=	**218440 Kgs (or) 218.44 tonnes**

From the above calculation, it has been proved that by developing infrastructure and logistic facilities for Tuna Export, an average 218.44 tonnes or 218440 Kgs can been exported from Andaman and Nicobar Islands every day. As explained in the table No. 4.8, through using the cargo service of passenger flights the fishing industry could not move in the development path.

5.5.5: Calculation of No. of Tuna Export Companies shall be established in Andaman and Nicobar Islands as per the estimated tuna export per day.

Assumption:

- A minimum of **2 tonnes** and maximum volume of **5 tonnes** shall be export by a Company per Day.

Formula:

$$\textbf{Total No. of Tuna Export Companies} = \frac{\textbf{Total Estimated Tuna Export per Day}}{\textbf{Minimum (Or) Maximum Volume of Tuna Export by a Company per day}}$$

$$\text{Total No. of Tuna Export Companies} = \frac{218.44 \text{ tonnes}}{2 \text{ (or) } 5 \text{ Tonnes}}$$

$$= \textbf{109.22 (or) 43.688 Companies.}$$

Hence in Andaman & Nicobar Islands **a Minimum of 44 to a Maximum of 109 Tuna Export Companies** can be established in the future in various islands as per the population and marine potentiality nearer to those Islands. For the Systematic Management, regular supervision by Fisheries Department, provide maximum services developing fisheries sector and reduce transportation expenses within the islands to the exporters, a separate area should be allocate to this industry.

5.5.6: Calculation of Monthly Income to fisher through Tuna Fishing

Assumptions:

- The average price given for the raw Tuna to the fishermen is Rs. 20/-.
- Tuna fishing shall be an additional income to Fishermen.
- Each fisherman must capture 25 Kgs per day along with their regular fishing.
- There should be a minimum of 300 working days in a year.

Table No. 5.8

AVERAGE ADDITIONAL INCOME YIELD FROM TUNA FISHING

Sl. No	Name of the Fish	Esti. Local Price / Kg	Capture/ Person/ day	No .of Working days in a year	Annual Income	Monthly Income
1	Yellowfin Tuna	20	25	300	150000	12500
2	Skipjack Tuna	20	25	300	150000	12500
3	Bigeye Tuna	20	25	300	150000	12500
4	Neritic Tunas	20	25	300	150000	12500
Total		**20**	**25**	**300**	**150000**	**12500**

Source: Primary Survey

The above table No. 5.8 shows that the average price per kilogram paid to a fisherman was Rs. 20/-. Every fisherman must catch at least 25 Kgs a Day and assumed work 300 days in a year. Through developing tuna export a fisherman shall yield an additional income of Rs. 1, 50, 000 per year or Rs. 12, 500 per month.

5.5.7: Calculation Tuna Export from Andaman & Nicobar Islands on CIF and FOB value.

(i) Cost, Insurance and Freight (CIF) Rate:

The export shall be done through CIF value, while exporting the goods in CIF value exporter should take care of Cost, Insurance and Freight till importers destination. In CIF trade risk and burden are high to the exporter but by profit wise there may not be must difference between FOB trades. By CIF trade the foreign currency inflow shall be high.

(ii) Free On Board (FOB)

The importer shall been take care of the product from the stage of finished product. The FOB trade reduce the risk and burden of the exporter. In the FOB trade the inflow of foreign currency shall be low.

Assumptions:

- To total tuna potential shall been exported on fresh or chilled form.
- The exchange value of a USD was equal to **Rs. 50**.
- The Average Cost, Insurance and Freight (CIF) tuna price in US $5.5 (or) Rs. 275 per kilogram.
- The Free On Board tuna price is Rs. 60 per kilogram.

Table No. 5.9

ESTIMATED VALUE OF TUNA EXPORT ON CIF & FOB PER YEAR

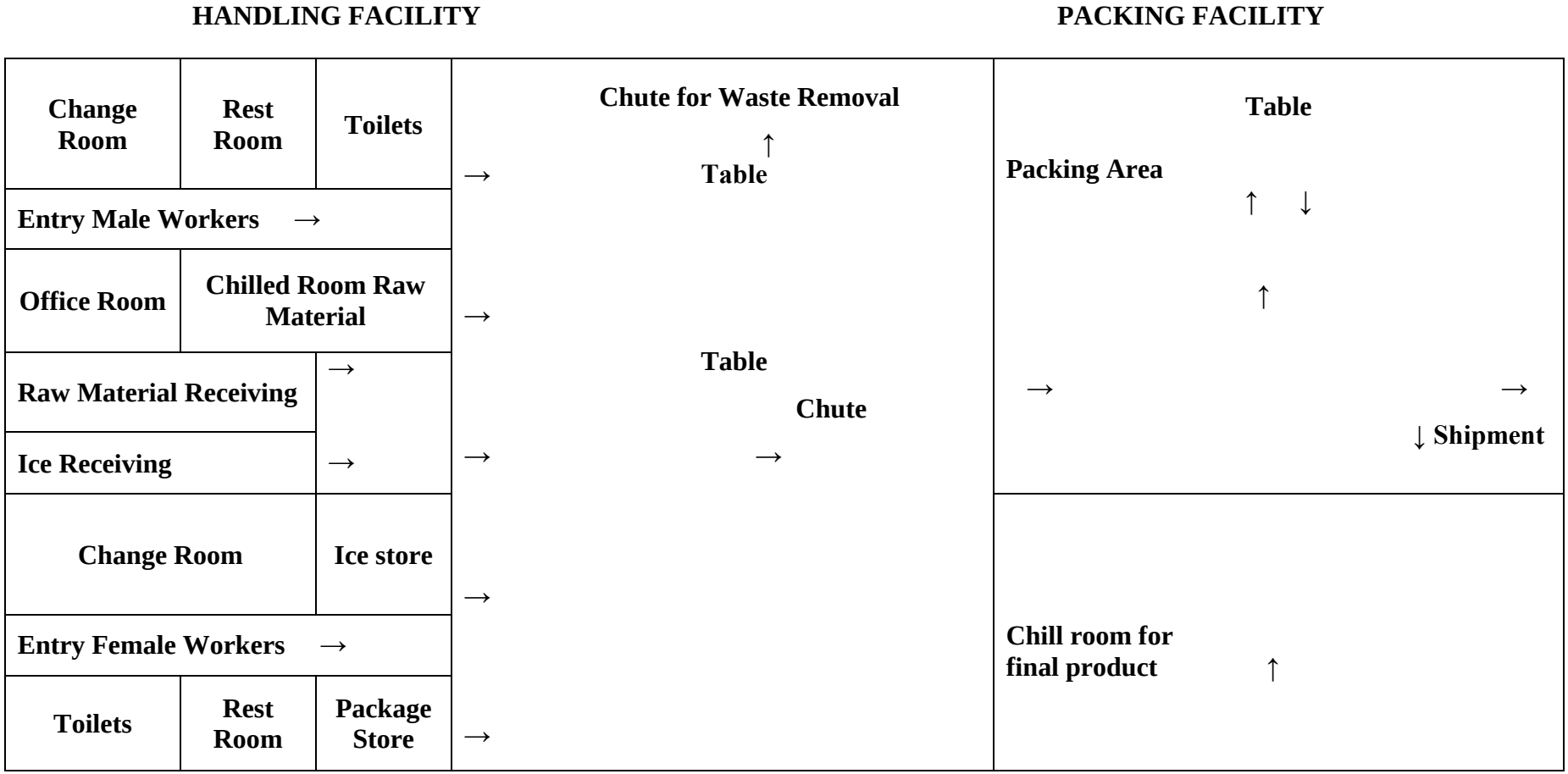
Sl. No	Name of the Fish	No. of Kgs	On CIF Value		On FOB Value	
			Avg. Price/ Kg	Export Value (Rs. in Crores)	Avg. Price/ Kg	Export Value (Rs. in Crores)
1	Yellowfin Tuna	24384000	275	670.56	60	146.304
2	Skipjack Tuna	22352000	275	614.68	60	134.112
3	Bigeye Tuna	508000	275	13.97	60	3.048
4	Neritic Tunas	18288000	275	502.92	60	109.728
Total		**65532000**	**275**	**1802.13**	**60**	**393.192**

Source: Primary Survey

The price of low demanded Tuna in the international market has been taken for calculating CIF and FOB value. The CIF price Rs. 275 and FOB price Rs. 60 was fixed as per suggestion by Seafood Export Agents. The bar chart expresses the estimated value to tuna export from Andaman Islands, the Green Colour mentions the CIF value and Red Colour mentions the FOB value. In case, the total tuna potential of these islands have been exported on CIF value of Rs. 275 per Kg means then the export value Yellowfin Tuna 2,43,84,000 Kgs shall be Rs. 670.56 Crores, Skipjack Tuna 2,23,52,000 Kgs at Rs. 5614.68 Crores, Bigeye Tuna 5,08,000 Kgs at Rs. 13.97 Crores and Neritic Tunas 18288000 Kgs at Rs. 502.92 Crores. On the whole the total **65532000 Kgs** can be exported upto **Rs. 1802.13 Crores** annually.

Chart No. 5.2

LAY OUT OF A CHILLED TUNA HANDLING/ PACKING FACILITY



Source: www.mpeda.com/subsidy/Brfishtu.pdf

Table No. 5.10

ESTIMATED COST FOR DEVELOPING CHILLED TUNA HANDLING / PACKING FACILITY

Rs. in lakh

SL NO.	DESCRIPTION OF FACILITY & RATE	CHILLED TUNA
1	(a) Handling Packing Area (with raw material / ice (optional) receiving area, workers facility like change / rest rooms, toilet (@ one per 10 workers), chutes for waste disposal, food operator, hand washing facility, washable wall, floor with slop and drainage etc. – The facility should have unidirectional flow, air curtain, fly catchers at all entry points, sufficient lighting / ventilation etc preferably with centralized air conditioning for maintaining temperature 15 degree centigrade in fish handling / packing area – (b) Dresses / hooks for holding large fish (Optional) **TOTAL**	For 2000 sq feet @ Rs.900 per sq. feet. Rs.18.00 Rs.2.00 ***Rs. 20.00***
2	Toilet block with showers / change / rest rooms – 500 sq feet @ Rs.700	***Rs. 3.50***
3	Big tables – 2 Nos. – one for grading / washing and another for packing	***Rs. 0.50***
4	Weighing Machine – 2 Nos -	***Rs. 0.40***
5	Fish cutting equipment (Optional)	***Rs. 0.30***
6	Utensils + copper coil	***Rs. 4.00***
7	Hydraulic hand trolleys	***Rs. 2.00***
8	Chill room - 2 Nos – One for raw material and one for finished products	***Rs. 24.00***
9	Flake / chip tube ice making machine @ Rs.10 lakh per machine	***Rs. 20.00***
10	Insulated vehicles – 2 Nos @ Rs.7 lakh per vehicle – For raw material collection and end product transportation	***Rs. 14.00***
11	Generator set – 1 No.	***Rs. 10.00***
12	Water purification system	***Rs. 28.00***
13	Storage room for detergent / cleaning material 500 sq. feet @ Rs.400 per sq feet.	***Rs. 2.00***
14	Storage room for packing material – 500 sq feet	***Rs. 2.00***
15	Effluent treatment system	***Rs. 10.00***
	Total	**Rs.140.70**
	Maximum Subsidy (25% on the Total Cost)	**Rs.35.00**

Source: www.mpeda.com/subsidy/Brfishtu.pdf

The Chart No. 5.2 is the Lay of Chilled Tuna Export Company and the table No. 5.7 shows the budget to establish a Chilled Tuna Export Company. A minimum of 3500 Sq. ft. Land was required to establish a Chilled Tuna Export Company. As per the MPEDA standard, to setup a Chilled Tuna Export Company Rs. 1.407 Crores has to be invested excluding the land of which 25 per cent (or) Rs. 35 lakhs shall be the maximum subsidy.

After this stage, to start tuna export business mainly two elements are required. The preliminary required is Financial Assistance and the other Human Resource. The financial requirement shall be fulfilled under Technology Upgradation Scheme for Marine Products (TUSMP). Under this scheme, MPEDA has made an arrangement to provide financial assistance from financial institutions at 5 per cent interest rate upto a maximum loan amount of Rs. 150 lakhs to New Value Added Seafood Processing Unit and Rs. 125 lakhs for existing Units. By excluding the subsidy amount Rs. 35 lakhs, a New Export Units shall be started by Rs. 106 lakhs.

The aim of the research is to eradicate poverty from these islands. As per the table No. 3.9, **367 respondents (97.87 per cent)** are employed against 375 samples. Of the 367 respondents, **311** (274 Fish Capturers, 35 Fish sellers and 2 fish selling Agents) of them are involved on fishing industry i.e., 84.74 per cent as per the table No. 3.11(i). As per the table No. 5.1, **48.53 per cent** (182 fishermen) have shown interest on Tuna Export Business. Hence it is a clear view that the fishers are very much interested in pursuing Tuna Export. By increasing their income and uplifting the standard of life through Tuna Export poverty shall be eradicated from these islands.

The table No. 3.11(i) shows that, the present average incomes of Andaman Islands is Rs. 4647.08 and maximum average income in these islands is Rs. 5388.89 as per table 5.3 (i). According to the table No. 5.8, through developing tuna export industries the fishermen shall yield an addition of Rs. 12500 per Month. By this practice the average income shall be raised from Rs. 4898.90 to Rs. 17147.08, it is roughly 350 per cent increase on income of the fisher.

To uplifting standard of life four policies must taken care, they are –

(a) Education Policies to their Children,
(b) Health Policy for their Family,
(c) Pension Policy to the employee and
(d) Life Insurance Policy.

To provide the above mentioned policies, the Life Insurance Corporation of India has introduced various policies of which four policies are apt to fulfil the above mentioned requirements. These four are identified and calculated with a assumption of Age. The assumed age of the employee was 30 and has an age old child. The identified Policies are -

(a) New Bima Gold 179 - Life Insurance & Money Back
(b) Chid Career Plan 184- Chid Education Plan
(c) Jeevan Saral – 169 Life Insurance & Savings
(d) Jeevan Arogya 903 - Health

New Bima Gold is a 20 years Plan. It covers Life Insurance cum Money Back. The Money Back returns shall be issue in four intervals of Rs. 10,000 between every four years. This amount shall be used for their child School Level Education. **Chid Career Plan** is a 22 years Plan but premium paid only upto 17 years. This plan helps for their child Degree Level Education because the return amount shall be issued for 5 years from 18^{th} year to 23^{rd} year.

Jeevan Saral is a 25 years Plan. This is Life Insurance & Savings plan. This saving shall be converted into monthly pension plan if case of employee acceptance. By this plan the employee shall get Rs. 8530 per month as pension from the date of maturity. **Jeevan Arogya** is a 50 years plan. Under this plan, the insurance covered the Spouse and their two Children. Under this plan each member is eligible to claim Rs. 1 Lakh every year. To provide detailed picture a work sheet has been furnished below with same assumption, age of the employee was 30 and has an age old child.

Table No. 5.11

DETAILS OF FOUR TYPES OF PLANS AND PERIODICAL RETURNS

Sl. No.	Plan Name	Table No.	Type	Term	Premium Paying Term	Coverage	Premium (yly)	Premium (mly)	Maturity	Details of Periodical Returns
1	Jeevan Arogya	903	Health Plan	50	50	100000	5239	436.58	Nil	Spouse age 24 taken+ 2 Child. Every member's coverage of Rs. 1 lakh each
2	Jeevan Saral	169	Life Insurance & Savings	25	25	250000	12010	1021.00	1365101	If maturity amount is converted into pension then pension per month is Rs. 8530/- (App) as per today's rate & after death of policy holder nominee will receive Rs. 1365101/-
3	New Bima Gold	179	Life Insurance & Money Back	20	20	100000	3932	352.00	10000	4th year
									10000	8th year
									10000	12th year
									10000	16th year
									158632	Full & Final Maturity (Free insurance Coverage upto 10 years of Rs. 50000)
4	Chid Career Plan	184	Chid Education Plan	22	17	100000	5600	466.67	115000	At Child's 18 year age
									15000	At Child's 19 year to 22 year age every year
									35000	At Child's 23 year age
TOTAL						550000	26781	2276.25	**1728733**	

Source: www.licindia.com/www.licindia.in

The table No. 5.11 furnish the full details of four different LIC plans. The maturity period of **Jeevan Arogya** Health Plan is 50 years and coverage amount is Rs. 1, 00,000 for four members in family. The coverage amount of Rs. 1, 00,000 is eligible to each member every year. The yearly premium amount is Rs. 5239 (or) Rs. 436.58 per month. The maturity amount is NIL in this plan.

Under **Jeevan Saral** Life Insurance and Saving Plan the premium must be paid for 25 years. The coverage amount is Rs. 2, 50,000. The yearly premium amount is Rs. 12,010 (or) Rs. 1,021 per month. The maturity amount of Rs. 13, 65,101 can be collected on the date of maturity (or) on the acceptance of the policy holder it can be convert to a pension plan. In case if it is converted into pension plan, the policy holder shall get Rs. 8,530 per month and maturity amount of Rs. 13, 65,101 shall be issued to the nominee after the death of the policy holder.

New Bima Gold is a Life Insurance and Money Back Plan. The maturity period is 20 years and coverage amount is Rs. 1, 00,000. The yearly premium amount is Rs. 3,932 (or) Rs. 352 per month. Under this plan, a money back amount of Rs. 10,000 can be issued for every four years from forth year onwards. It also covers a free insurance of Rs. 50,000 for the first 10 years. At the time of maturity Rs. 1, 58,632 shall be issued as maturity amount.

Child Career Plan for the education of their Child. It is a 20 years plan but the premium amount has to be paid upto 17 years. At the age of 18 of the child an amount of Rs. 1, 15,000 shall be issued, Rs. 15,000 for next fours and at the age of 23 of the child Rs. 35,000 shall be issued. This plan shall be helpful at the time of degree level education.

The details of implementation of these policies are shows in the Estimated Employees Salaries table No. 5.14.

5.6 ANDAMAN TUNA PRODUCT CYCLE

There are six important steps involved in Andaman tuna export with an assumptions TUSMP loan Rs. 1.15 Crores has taken and export 2 tonnes/day by a unit. They are

1. Exporter.
2. Processing Unit.
3. Exporter Port (Port Blair Airport).
4. Connecting Port (Chennai Airport).
5. Importer Port (Foreign Airport).
6. Importer.

Step 1: EXPORTER

In this SMB model, Exporter means a Company. It shall be a small group of Fishermen (or) Cooperative Society (or) Partnership Firm (or) Private Party. The aim of this study is to eradicate poverty through international business, by keeping this aim it is assumed that the poor (or) fishermen are the Employer-Cum-Employee. While catch the tuna as raw material and getting salary every month they are treated as employees and at the time of sharing the profit they are Employers. The raw tuna collected from 80 fishermen, 25 Kgs from each at Rs. 20 per Kg.

Step 2: PROCESSING UNIT

From the fishermen total of 2000 Kgs of raw tuna has been brought to the processing unit. In the processing unit, the raw tuna are cut and packed with ice in carton boxes. The Icing has to been done twice, at the time of fishing it is an offshore process and second time while packing. The present cost of Ice per Kg is Rs. 1.5 in Andaman Islands. Usually standard as per the shipper on Fish Export, each carton should not exist 20 Kgs. To maintain the quality 5 Kgs Ice should used per 15 Kgs fish. The present cost of a carton box for fish product shall be Rs. 50. Hence 2000 Kgs of tuna shall be packed into 133.33 (or) 133 carton boxes and the finished products gross weight shall be 2667 Kgs. In case of FOB the finished goods has to be handed over to the import at Export Unit itself. FOB was Rs. 60 per Kg means **Rs. 1, 20,000** shall be paid to Exporter.

REASON FOR FIXING 2 TONNES / DAY PER EXPORT UNIT

Table No. 5.12

BREAK EVEN POINT (BEP) IN KG/UNIT

Particulars		Rs	Rs
Sales (Or) Export on FOB (Refer table No. 5.9) Per Kg			**60**
Sales (Or) Export on CIF (Refer table No. 5.9) Per Kg			**275**
Fixed Cost (Refer table No. 5.13)			
	Average Fixed Cost per Day (30 day/Month)		**48288.6**
Variable Cost			
1	Cost of Raw Material (Fish) (Refer table No. 5.8)	20	
2	Package Material Cost / Kg (Refer table No. 5.13)	3.33	
3	Icing twice required for seafood export Kg Ice = Rs. 1.5 340 gms Ice required for one Kg fish Ice cost/ Kg Fish = 340 gms Ice x 2 (twice) x Rs. 1.5	1.02	
Total Variable Cost per Kg on FOB			**24.35**
4	Freight to Japan	146	
5	Insurance to Japan Rs. 2.5 per Rs. 100(For Rs. 275)	6.785	
Total Variable Cost per Kg on CIF (24.35 + 146 + 6.785)			**177.135**

Source: Primary Survey

The table No. 5.12 shows that the average fixed cost per day of an Andaman Tuna Export company is Rs. 48288.6 includes Total Employees Salary, Telephone expense, Internet expenses, Fax expenses, EMI for Loan, Stationary expenses, Petty Expenses, Refreshment Expenses, Electricity Bill, Local Transportation and other Miscellaneous Expenses. The variable cost on FOB was Rs. 24.35 includes raw tuna cost, Packaging cost and Ice cost. The variable cost on CIF was Rs. 177.135 includes raw tuna cost, Packaging cost, Ice cost, Freight Charges and Insurance.

Break Even Point (BEP) in Kg/Unit

$$\text{BEP in Units is (BEP) in Kg/Units} = \frac{\text{Total Fixed Cost}}{\text{Sale Price per Unit – Variable Cost per Unit}}$$

Therefore, BEP in Kg on FOB equal to

$$= \frac{48288.6}{60 - 24.35} = \textbf{1354.51 Kgs}$$

Therefore, BEP in Kg on CIF equal to

$$= \frac{48288.6}{275 – 177.135} = \textbf{493.420 Kgs}$$

The above calculation shows that to reach the Break Even Point in FOB approximately 1354.51 Kgs has to be exported every day but only 493.420 Kgs are enough in CIF to reach Break Even Point which is nearly 3 times lesser than FOB's Break Even Point. It was very clearly expressed that to reach the Break Even Point through CIF trade was easy then FOB trade due to margin of profit was very high in CIF but at the same time risk is also high. In practice, all the consignment won't be on CIF or FOB. In majority of the fishing it shall be mixed and the proportion may be differing between companies.

Through considering the risk on Andaman Tuna Export with an intention of creating mass job opportunity to Andaman Islands people, Availability of Tuna in Andaman Sea, Minimum weight of a Tuna and to provide handful profit to Andaman Tuna Export Companies the minimum export of 2000 Kg or 2 tonnes day has been fixed by the researcher.

Chart No. 5.3
DETAILS OF ANDAMAN TUNA PRODUCT CYCLE

Table No. 5.13

DETAILS COST SHEET ON TUNA PRODUCTION PER KG

	Variable Cost	**Rs/Kg**	**Total (Rs)**
1	Cost of Raw Material (Fish) 2000 Kgs	20	40000
2	Package Material Cost = **Rs. 50**/ Box = 2000 X 20 / 15 = 2667 Kgs Gross Weight = 2667 Kgs / 20 Kg per Box = 133 Boxes	3.3	6667
3	Ice per Kg (5 Kg Ice per Box) Icing twice = 340 Kgs Ice used per 1000 Kgs = 680 Kgs x (Rs. 1.5 + Rs. 1.5)	1.02	2040
Total Variable Cost			**48707**
	Fixed Cost Per Month		
1	Total Salary (Refer Table No.5.14)	1219683	
2	Telephone/ Internet/Fax	10000	
3	EMI for Loan @5% for 1.15 Crores/ 10 yrs	121975	
4	Stationary	2000	
5	Petty Expenses/ Refreshment Exp	20000	
6	Electricity Bill	5000	
7	Local Transportation	60000	
8	Miscellaneous Expenses	10000	
Total Fixed Cost Per Month			**1448658**
Average Fixed Cost per Day (30 day/Month)			**48288.6**
Total Expenditure per Day			**96995.6**
Cost of Production per Kilogram			**48.5**

Source: Primary Survey

The information regarding salaries and policies are explained in the table 5.14. The cost of tuna production per Kg is Rs. 48.5 and the average price to the lowest demanded tuna was exported at Rs. 60 on FOB. Hence, the exporter's gross profit shall be Rs. 11.5 per Kgs i.e., 19.16 per cent shall be the gross profit margin. The profit margin shall increase on huge volume export in a day if the trade on FOB ends and CIF starts at this stage. The Salary details given below -

Table No. 5.14

DETAILS OF ESTIMATED EMPLOYEE SALARIES IN TUNA EXPORT COMPANY

Sl. No.	Designation	No.	Gross Pay	Basic 60% of Gross Pay	Allow-ance 30% Gross Pay	Bonus 10 % Gross Pay	HRA / TA	INSURANCE PACKAGE			PF 12% of Basic		Net Salary	Gross Salary	Comp-any Cost per Employee	Total Salaries Co. Cost
								EE	ER 8.3%	Total	EE (12%)	ER (3.7%)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	Export Manager*	1	10000	6000	3000	1000	2500	1778	498	2276	720	222	12500	14998	15718	15718
2	Office Manager*	1	10000	6000	3000	1000	2000	1778	498	2276	720	222	12000	14498	15218	15218
3	Accountant*	1	9000	5400	2700	900	2000	1361	448	1810	648	200	11000	13009	13657	13657
4	Account Asst.*	1	8000	4800	2400	800	0	390	398	789	576	178	8000	8966	9542	9542
5	Driver	2	7000	4200	2100	700	0	440	349	789	504	155	7000	7944	8448	16896
6	Receptionist	1	4500	2700	1350	450	0	128	224	352	324	100	4500	4952	5276	5276
7	Factory Worker	20	5880	3528	1764	588	390	59	293	352	423	131	6270	6753	7176	143518
8	Fishermen	80	8885	5331	2666	889	500	1834	442	2276	640	197	9385	11858	12498	999857
Total Salary per Month		**107**													**87534**	**1219683**
*** Incentives shall be provided to the Managers and Account officials as per the Export performance**																

Source: Primary Data

Note: EE = Employee
ER = Employer

The systematic Human Resource Management plays a vital role in success of any business. As per this SMB Model, a company required 107 employees to run this business. Under this model, the employees are classified into eight posts. These eight posts shall be classified into three level of management. They are Upper Level, Middle Level and Operational Level.

In the Upper Level the Owners and Management Committee shall hold the chair, the Middle Level held by Managers and Office Staff and at the Operation Level On and Off Factory Workers shall be operated. To facilitate the Tuna Export Business two Manager posts has to be created namely Export Manager and Officer Manager. All the outside contracts shall be managed by Export Manager and Officer Manager shall take care of the activities inside the organisation.

To handle the accounting jobs two post has to be created one Accountant and Account Assistant. The Receptionist shall be an office staff treated at Operational level. In the Operational level, two Drivers, 20 Factory Worker and 80 Fishermen were employed.

As per the table No. 5.8, the addition income to fishermen through Tuna export has been mentioned as Rs. 12,500. This amount shall be paid on monthly salary basis due to providing Insurance Package and Provident Fund facilities.

The House Rant Allowance (HRA) and Travelling allowance has been provided to Export Manager, Office Manager, Accountant, Factory Worker and Fishermen. **Incentives shall be provided to the Managers as per the Export performance of the Company.**

Insurance Package has been given to all employees but the no. of policy shall be differs according to the amount of salary. The employer shall pay the insurance amount of 8.3 per cent on the basic salary of employee. In case of both husband and wife working **Jeevan Arogya** policy cut from anyone of them. All the four policies have been provided to Export Manager, Office Manager and Fishermen. Jeevan Arogya, Jeevan Saral and New Bima Gold plans will be provided to Accountant.

Jeevan Arogya and New Bima Gold plans will be provided to Account Assistant and Drivers. Only New Bima Gold plan will be provided to the Factory workers.

To calculate monthly fixed salary, the fishermen salary of Rs. 9,99,857 has to be deduce from the total salary amount of a export company Rs. 12,19,683 because the fishermen salary is the Cost of Raw Material.

Provident Fund has been provided to all employees. The Provident Fund constitutes by the employees of 12 per cent on their basic salary and 3.7 per cent on the basic from employer.

Table No. 5.15

ESTIMATED MINIMUM PF RETURNS OF ANDAMAN TUNA INDUSTRY EMPLOYEES

(In Rs.)

Sl. No	Year	PF Paid/ Month	PF Paid Year	8% interest / Year	Total PF Invested in 25 Years	Total Interest Amount	Total PF Return
1	Export / Office Manager	942	11304	904	282600	293904	**576504**
2	Accountant	848	10174	814	254340	264514	**518854**
3	Account Assistant	754	9043	723	226080	235123	**461203**
4	Driver	659	7913	633	197820	205733	**403553**
5	Receptionist	424	5087	407	127170	132257	**259427**
6	Labour	554	6648	532	166200	172848	**339048**
7	Fishermen	837	10044	804	251100	261144	**512244**

Source: Primary Data

The employee of Andaman Tuna Export Company has been classified into eight posts of which Export Manager and Office Manager belongs to same basic salary group. As per the above table the estimated minimum PF return to Export / Office Manager was Rs. 576504, Accountant Rs. 518854, Account Assistant Rs. 461203, Driver Rs. 403553, Receptionist Rs. 259427, Labour Rs. 339048 and Fishermen Rs. 512244 with the insurance package amount Rs. **1728733.**

Step 3: EXPORTER PORT (Port Blair Airport)

These steps shall be only for CIF value exporter and from this stage actives were carried out by Clearing and Forwarding (C&F) Agents. Port Blair airport consider as the Exporter port, from where the tuna finished products shall be exported to Chennai Airport and from here to Rest of the world. The average logistic cost charged to transport products from Port Blair to Chennai by Air is Rs. 30 per Kg on gross weight. For example, Calculation of Logistic Cost of Net Weight 2000 Kgs Tuna.

Net Weight of Tuna = 2000 Kgs.

Total Production Cost = 2000 Kgs x Rs. 31.84 per Kg

= **Rs. 63680**

Ice per 1000 Kgs fish = 340 Kgs (or) 340 grams per Kg.

Gross weight of Tuna = Net weight in Kgs + (Net weight in Kgs X 0.34)

= 2000 + (2000 X 0.34)

= 2000 + 680

= **2680 Kgs.**

Therefore, the cost of logistic from Port Blair to Chennai is equal to

Average logistic cost = Rs. 30 per Kgs

Therefore, for 2680 Kgs = 2680 X 30

= Rs. 80400

Hence, the logistic cost for transporting 2000 Net weight Tuna is equal to Rs. 80400. The CIF at Chennai was Rs. 144080 (or) Rs. 72.04 per Kg.

DETAILS OF PORT BLAIR AIRPORT

The airport has a single runway of 3,290 m (10,794 ft) in length, accommodating most wide-body aircraft, although the most recent reports indicate no airliners larger than Airbus 320 types regularly serve Vir Savakar Airport.

Table No. 5.16

DETAILS OF AIR SERVICE FROM CHENNAI TO PORT BLAIR

Sl. No	Current Service providers of Passenger Air Craft Flew From Chennai to Port Blair			
	Aircraft	**Airline Name**	**Timing**	**Cargo Capacity**
1	IT-3631	Kingfisher Red	04:25	2 Tonnes
2	IT-3633	Kingfisher Red	09:45	2 Tonnes
3	AI-549	Air India	05:50	2 Tonnes
4	S2-3361	Jetlite	10:00	2 Tonnes
5	9W-2361	Jet Airways Konnect	10:00	2 Tonnes
Total Cargo Capacity				**10 Tonnes**

Source: www.domesticflights.yatra.com/

There are five aircrafts providing passenger services to Port Blair from Chennai. Through utilisation the services of all the aircraft maximum 10 tonnes shall be exported Port Blair has a very small terminal so very few passenger flights are operated and they are expensive. In the passenger flights the Maximum Loading Capacity for cargo is only 2 Tonnes but they give priority to their Passengers baggage. In case of excess amount of passenger baggage the carrier will off load the cargo. The other important drawback is cancellation of flights due to bad climatic conditions most of the times Flights are cancelled.

Table No. 5.17

RECOMMENDED TYPES OF CARGO AIR CRAFTS AND CAPACITY

	TYPES OF CARGO AIR CRAFTS AND ITS CAPACITY			
	Aircraft Manufacturer	**Category**	**Capacity in MT**	**Cargo Door Dimensions (Inches/CM)**
	Boeing 727	Airliner	25,000	120 x 84/305 x 212
	Boeing 737	Airliner	25,000	137 x 80/348 x 203

The Boeing 727 and 737 are the suitable aircraft to marine export develop from A&N Islands.

Step 4: CONNECTING PORT (Chennai Airport)

The Chennai Airport shall be the connecting port between Andaman and rest of the globe. The Air freight shall been classified to two mode, they are Normal Mode and Express Mode. The Normal Mode Rate shall be less than the Express Mode Rate. The calculation of Air freight cost sheet from Chennai to foreign countries consists of the following items. They are –

1. Air Fright (AF).
2. Fuel Surcharges (FS).
3. Security Surcharges (SS).
4. X - Ray Fee (XRF).
5. Airport Authority of India (AAI).
6. Miscellaneous Expenses (ME).
7. Air Way Bill Fee (AWB)
8. Customs Clearance Charges (CCC).
9. Electronic Data Interchange (EDI).
10. Advance Manifest System (AMS). - Only for US and Canada (or) European Union Charges (EUC). – Only for European Union

The Air Fright and Fuel Surcharges shall differ from one port to other. For Security Surcharges Rs. 7 per Kg, X - Ray Fee Rs. 2 per Kg, Airport Authority of India Fee Rs. 0.75 per Kg and Miscellaneous Expenses Rs. 1 per Kg shall been collected. Electronic Data Interchange Rs. 140, Air Way Bill Fee Rs. 300 and Customs Clearance Charges Rs. 5,500 shall been collected per Shipment. The Advance Manifest System Rs. 650 charged only for US and Canada shipments and like same Rs. 650 European Union Charges charged only for European Union.

Step 5: IMPORTER AIRPORT

In the international business, the cost of logistic seems very high where compared to the cost of the marine products. Sometimes the logistic cost shall be more than the cost of the product for that Tuna export is one of the examples.

Table No. 5.18

DETAILS OF AIR FREIGHT FROM CHENNAI TO FIVE DIFFERENT INTERNATIONAL MARKETS PER KG

SL. No.	Items	Chicago (America)		Saopaulo (Mid Atlantic)		London (European Union)		Tokyo (Japan)		Sydney (Australia)	
		Normal	Express	Normal	Express	Normal	Express	Normal	Express	Normal	Express
1	Air Fright	375200	589600	611040	852240	233160	324280	134000	321600	174200	428800
2	Fuel Surcharges	142040	142040	155440	155440	125960	125960	142040	142040	134000	134000
3	Security Surcharges	18760	18760	18760	18760	18760	18760	18760	18760	18760	18760
4	X-Ray Fee	5360	5360	5360	5360	5360	5360	5360	5360	5360	5360
5	Airport Authority of India	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010
6	Misc. Expenses	2680	2680	2680	2680	2680	2680	2680	2680	2680	2680
7	Customs Clearance	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500
8	Electronic Data Interchange	140	140	140	140	140	140	140	140	140	140
9	Advance Manifest System/ European Union Charges	650	650	650	650	650	650	NA	NA	NA	NA
10	Airway Bill Fee	300	300	300	300	300	300	300	300	300	300
Total Cost		**552640**	**767040**	**801880**	**1043080**	**394520**	**485640**	**310790**	**498390**	**342950**	**597550**
International Fright Cost per Kg		**206**	**286**	**299**	**389**	**147**	**181**	**116**	**186**	**128**	**223**
Fright till Chennai per Kg		30	30	30	30	30	30	30	30	30	30
Total Fright Charges Per Kg		**236**	**316**	**329**	**419**	**177**	**211**	**146**	**216**	**158**	**253**
Insurance of Export Value		**0.25%**	**0.25%**	**0.25%**	**0.25%**	**0.25%**	**0.25%**	**0.25%**	**0.25%**	**0.25%**	**0.25%**

Source: Primary Survey Note: 1. NA= Not Applicable. 2. Calculations of freight made for the minimum export weight of 1000 Kg.

5.7 CALCULATION OF BREAK EVEN PRICE TO DIFFERENT MARKETS

The CIF for Tuna till connecting Port (Chennai Airport) was Rs. 144067. The above table No. 5.16 shows the detailed calculation of Air fright from Chennai to five different International Airports per Kilogram excluding Insurance charges (0.25 % on Sales). The following Break Even Price calculation has been excluded the Insurance charges.

Formula:

$$\textbf{BREAK EVEN PRICE} = \frac{\textbf{Production Cost Per Kg} \times \textbf{Net Weight} + \textbf{Total Fright Cost per Kg} \times \textbf{Gross Weight}}{\textbf{Net Weight}}$$

1. **BREAK EVEN PRICE for Chicago (America)**

$$\text{Normal} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 236 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 348.08 per Kg.**

$$\text{Express} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 316 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 455.28 per Kg.**

2. **BREAK EVEN PRICE for Saopaulo (Mid Atlantic)**

$$\text{Normal} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 329 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 472.7 per Kg.**

$$\text{Express} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 419 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 593.3 per Kg.**

3. **BREAK EVEN PRICE for London (European Union)**

$$\text{Normal} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 117 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 188.62 per Kg.**

$$\text{Express} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 211 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 314.58 per Kg.**

4. **BREAK EVEN PRICE for Tokyo (Japan)**

$$\text{Normal} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 146 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 227.48 per Kg.**

$$\text{Express} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 216 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 321.28 per Kg.**

5. **BREAK EVEN PRICE for Sydney (Australia)**

$$\text{Normal} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 158 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 243.56 per Kg.**

$$\text{Express} = \frac{(\text{Rs. } 31.84 \times 2000 \text{ Kg}) + (\text{Rs. } 253 \times 2680 \text{ Kgs})}{2000 \text{ Kgs}}$$

= **Rs. 370.86 per Kg.**

Table No. 5.19

BREAK EVEN PRICE OF TUNA TO DIFFERENT MARKETS

Sl. No	Name of International Airport	Rate per Kg (in Rs.)	
		Normal	Express
1	Chicago (America)	348.08	455.28
2	Saopaulo (Mid Atlantic)	472.27	593.3
3	London (European Union)	188.62	314.58
4	Tokyo (Japan)	227.48	321.28
5	Sydney (Australia)	243.56	370.86

The Break Even Price (BEP) means the Cost of Production per Unit plus Distribution Cost per Unit (or) Sales minus Profit. The above table furnish the Break Even Price for Andaman Tuna in the different Markets of the world. From the above table it was clear that, exporting to London (European Union), Tokyo (Japan) and Sydney (Australia) shall be more beneficial to the exporter then exporting to Chicago (America) and Saopaulo (Mid Atlantic) markets. The BEP to Chicago (America) in Normal was Rs. 348.08 and Express Rs. 455.28, to Saopaulo (Mid Atlantic) Rs. 472.27 and Rs. 593.3, to London (European Union) Rs. 188.62 and Rs. 314.58, Tokyo (Japan) Rs. 227.48 and Rs. 321.28 and to Sydney (Australia) Rs. 243.56 and Rs. 370.86.

Step 6: IMPORTER

Once the product reached the importer, he has to make arrangement for the payment as per the agreement signed between imported and exported.

CONCLUSION

From this chapter it was found that the marine resource also one of the important natural gift through which a country shall develop its economy. Tuna export was the one of the industry which helps a lot to develop the economy and upgrade the standard of living of the poor. Through developing Andaman Tuna Export Industry nearly 9000 jobs shall be created and get an opportunity to earn foreign exchange of Rs. 1802.13 crores. It shall be an initiative measure for poverty alleviation. Through developing tuna industry a chance for educating poor children, food to poor, house to poor and other essential facility for improving the standard of living shall be provided.

Hence it is clear that except tuna industry no other industries of Andaman can provide this much job opportunity and earn huge forex. The government and other developing agencies should take necessary steps to educate awareness among public and develop Andaman Tuna Export Industry.

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CHAPTER VI

FINDINGS AND SUGGESTIONS

CHAPTER VI
FINDINGS AND SUGGESTIONS

Major findings of the study are-

1. The sample survey states that literacy rate among the Andaman's fishermen community was only 44 per cent as per the table No. 3.1. This study has found that there was significant difference between the no. of respondents' children studying and islands. Under the age group between 3 to 20, 23.29 per cent (167 persons) are illiterates or dropouts from studies.

2. More than 50 per cent of the respondents belong to the age group of below 40 i.e., 24 per cent between 21-30 age and 31.7 per cent 31-40 age group.

3. Majority of the families in Andaman fishing community has adopted nuclear family system. The average family size of Andaman Islands fishing community is 4.23 and there is a significant difference between the size of the family and islands.

4. From this study it has been derived that only 63.53 per cent of fishermen families are living in rented houses an accounting for 31.73 per cent in Thakta House (house made by bamboo), 22.13 per cent in Tinned House and remaining very few 9.6 per cent living in Pakka House.

5. Of the 375 samples, 367 respondents are involved in income generating activities. Of which, 74.7 per cent are involved on fish capturing, 9.5 per cent in fish selling activity, 9.3 per cent are engaged in daily wages labour work or non-fisheries activity, 6 per cent in government job and 2 persons (0.54 per cent) are selling agents.

6. The Door to Door marketing strategy is adopted by the fishing community to sell their products. In this mode of marketing, they sell their products within 2 hours to their regular customers and return home with a minimum profit of Rs. 100 per day.

7. As per the ANOVA table 3.10 (ii), it has been found that, the average monthly income between jobs differ from each other. The income in Government Job

and Fish Agency are higher than the income from fishing, fish selling and other private jobs.

8. About half of the respondents i.e., 55.59 per cent are earning between Rs. 3001 – 6000 and nearly 30 per cent are earning less than Rs. 3000 on an average per month. The significant difference between islands and average monthly income is high as the average monthly income at Port Blair Rs. 6510.34, Rangat Rs. 5261.36, Mayabunder Rs. 4672.86 and Diglipur Rs. 4081.02.

9. From the total sample as per the table No. 3.13, 53.6 per cent i.e., 201 respondents have taken loan from different sources. Of which 35.82 per cent have taken loan from private parties and 30.35 per cent from banks. The average loan amount they need to pay is Rs. 15,158.7. The Business loan was taken by 41.29 per cent, Personal loan by 30.35 per cent and both the loans by 28.36 per cent.

10. The average net asset value of the fishers was Rs. 1, 55,944.8. As per the ANOVA table value, the average net assets held by respondents of different islands were equal.

11. The respondents are lacking awareness about the fisheries supporting organisations. It is also be one of the reasons for the failure of various government policies and schemes.

12. The Garret's Rank Score states that, fishermen's major part of their income is spent for Food Expenditure, Cooking Fuels and Transportation. They are giving very low preference for their Saving and Children Education.

13. From the total potential of marine products only fifty per cent in **Demersal Resources,** 30 per cent in **Pelagic Resources** and less than 1 per cent in **Oceanic Resources** are exploited every year. To put it in nutshell, only 12.75 per cent is exploited at maximum level.

14. South Andaman (Port Blair), Diglipur, Rangat, Little Andaman and Mayabunder are the first five islands that capture maximum fishes from Andaman sea.

15. At present, a maximum of 105 tonnes Ice are produced and cold storage capacity of 305 tonnes per day are available in Andaman Islands. Of which 55 tonnes of Ice and 125 tonnes of cold storage capacity are held by private enterprises. On an average 90.40 tonnes are captured in these islands per day, which require 45 tonnes Ice while fishing and 45 tonnes at the time of selling, because 65 to 70 per cent of fishes were sold in fresh form in the local markets, Maximum of 3.32 per cent are exported and remaining fishes are allowed to go dry.

16. In these islands 7204 licenced fishermen are employed in 3114 boats of which 52.02 are Dinghies, 45.95 are motorised Boats and very small number of 2.02 per cent of mechanised boats are operated from Andaman & Nicobar Islands fishers.

17. The paired sample T-test at 5 per cent level reveals that there is no difference between the Volume of fish captured before and after Tsunami. But there is difference between Volume of fish Exported before and after Tsunami. The export volume has been raised after Tsunami. Form Andaman the Chilled Fish, Chilled Grouper, Chilled Lobster, Chilled Prawn, Chilled/ Live Crab, Shark Fin and Shark Flesh are exported in larger quantity.

18. While comparing the financial performance of private and co-operative fishing enterprises, the performance of private is better than cooperative. The private enterprises are running without taking any subsidies from any organisations.

19. Nearly 72 per cent of the fishers were interested to involve in Tuna fishing and its related activities and majority of them are ready to take-up training regarding fishing and processing Tuna.

20. By developing the tuna fish export industries in these islands, the fishermen will get a chance to earn an additional income of Rs. 12,500 per month.

21. By supporting tuna export from A&N Islands, the Government of India can raise the foreign exchange earnings with a minimum of Rs. 393.192 crores in FOB trade and a maximum of Rs. 1681.092 crores in CIF trade every year.

22. To build a tuna export unit with all facilities it requires around 3500 sq. ft of land and the capital required to build an export unit is Rs. 140.70 lakhs of which a maximum subsidy of Rs. 35 lakhs can be claimed. The financial requirement shall be fulfilled under the Technology Upgradation Scheme for Marine Products (TUSMP), provided through MPEDA upto 150 lakhs Loan at the rate of interest 5 per cent.

23. New Bima Gold, Chid Career Plan, Jeevan Saral and Jeevan Arogya are the four suitable LIC policies to the fishermen and poor to uplift their standard of life and eradicate poverty from these islands. With these LIC policies an individual will get a minimum of Rs. 17, 28,733 at the time of maturity excluding the pension amount Rs. 8,530/ - per month.

24. The estimated minimum PF return to employee as per the SMB Model is Rs. 259427 and maximum Rs. 576504.

25. At present separate cargo aircrafts are not operated due to less volume of cargo from A&N Islands. But to develop Tuna Export Industries, operating cargo aircrafts is must. Only Indian government carriers shall be operated because due to do security measures foreign carriers may not be operated. In case, the foreign carriers are allowed, the Aircraft must reach the international markets via Chennai Airport.

26. Only five passenger aircraft are providing service from Chennai to Port Blair every day. At present the maximum capacity of cargo that is transported using these five flights are 10 tonnes per day, which is totally inadequate.

27. For Tuna Export a minimum infrastructure facility to transport 25 tonnes per day should be developed otherwise operating Boeing 727 and Boeing 737 shall be risky to the carriers to cover the cost.

28. The transportation cost in flight from Port Blair to Chennai is Rs. 30 per Kg (Gross Weight). The Break Even Price (BEP) in Normal fright and Express fright to Chicago (America) is Rs. 348.08 and Rs. 455.28, to Saopaulo (Mid Atlantic) Rs. 472.27 and Rs. 593.3, to London (European Union) Rs. 188.62 and Rs. 314.58, Tokyo (Japan) Rs. 227.48 and Rs. 321.28 and to Sydney (Australia) Rs. 243.56 and Rs. 370.86 respectively. The BEP includes Port Blair to Chennai tariff Rs. 30 per Kg.

SUGGESTIONS

1. The tuna fish export industry can create 11663 new jobs (107 persons per Unit x 109 Tuna Units) directly and nearly 2000 jobs indirectly like input supplies, Package material suppliers, Export Agents, C&F Agents and other small scale shop around the industrial area. The Andaman sea water has high potential not only for the marine capture but also for marine culture. Nearly equal to the estimated marine jobs the aquaculture shall also be created. Thus, by developing the Tuna Export industry the A&N Islands Government would sow the seed for a mega project of eradication of poverty by creating a maximum of 36000 jobs to their islanders.

2. To develop Tuna Export, the present marine product development and subsidy policies offered in Andaman & Nicobar Islands are inadequate and require some more subsidy schemes like supply of fuel at subsidised rate to the tuna fishers and Proper Training Programmee to the right persons.

3. The age group of the employees selected at the operational level should be Maximum of 35 years selected for fishing and 40 years for processing job.

4. A minimum of 50 Tuna Export Units must be developed in Andaman Islands of which 15 units in Port Blair, Rangat 10 Units , Mayabunder 10 Units and Diglipur 15 Units as per the population and fish availability. For developing Andaman Tuna Export like the Special Economic Zone (SEZ) setup, the Government of Andaman & Nicobar Islands should allocate 5 acres for 15 Units at outer part of the town and nearer to the sea shore where the land is capable to setup mineral water plant to prepare Ice as per HACCP standard.

The remaining lands shall be used for the occupation of the tuna export units employees.

5. Diesel should be provided at subsidiary rate to the tuna and other export units at Special Economic Zone (SEZ).

6. A minimum of 20 litres fuel to a Tuna and other Export fishing Boats should be provided at subsidiary rate every day after getting confirmation from the export company about fishing boat.

7. Every Unit in the SEZ must provide the New Bima Gold, Chid Career Plan, Jeevan Saral and Jeevan Arogya of LIC policies and HRA, PF, TA and Incentivise Schemes to their Employees. Otherwise the licences should be cancelled.

8. Only the SEZ Units recommended persons shall be considered for the export training programme. The above condition is not for every training programme but for the training programme relating to the tuna export and small scale industry level.

9. The Andaman & Nicobar Islands should take necessary action to operate minimum of Boeing 727 and Boeing 737 between port Blair and Chennai as soon as possible. Because the present period is suitable period to develop infrastructure facilities and to capture foreign market. Through the help of Parties to the Nauru Agreement, the Papua New Guinea aimed to overtake the Philippines to become a major tuna processing country and their forecasted production volume is 1, 330 tonnes per day in the next three years.

10. Without the help of A&N Administration, Andaman Fisheries Department, MPEDA and Government of India the tuna and other high demand marine products shall not be able to export from A&N Islands. So everyone should show equal interest for the development of this industry and the poor people of these Islands.

CONCLUSION

SCOPE FOR FUTURE RESEARCH

The future researchers can undertake research in the following areas:

1. A study on socio-economic status of Andaman & Nicobar Islands Fishing Community.
2. Comparative study between the Fish trade between Andaman Islands and Nicobar Islands.
3. An Analysis on supply chain management in Andaman Marine Products Export.
4. Evaluation of Foreign Trade Policy and its impact on Andaman Marine Product Industry.
5. An approach for Marketing Andaman Marine Products.

CONCLUSION

The demand for the food products all over the world shall continue forever. The export business is one of the solutions for unemployment problem and it brings a huge foreign exchange to the exporting country. In the present scenario, the developing and under developed countries are showing more interest in international business and to support these countries the developed countries are ready to invest as per the requirements and the government policies.

Through export and import not only the currencies are exchanged but also the culture, idea, knowledge, technology and other important things to improve the standard to living and sophisticated life to a common man shall reach each and every corner of the globe. On a blind assumption by viewing the world trade history, once upon a time India held upto 32.9 per cent share of total world trade and dominated the world market. This has periodically changed due the new inventions and demands. In this life cycle, India has very good chance to play the dominant role once again very soon.

India is an Agri-based nation, holding a very good potential in food production both land and water. In the marine resources, thousands of varieties are available in Indian Seas of which all of the fishes are not consumed by Indian. In this

list Tuna also is one of the seafood usually not consumed. By this it is clear that by exporting Tuna Fishes, there won't be any food security problem in India. At the same time it has a good demand in international market. Andaman & Nicobar Islands is one of the locations where maximum potential is untapped especially Tuna potentiality is abundant in these islands.

In Andaman & Nicobar Islands except the marine industry, other industries cannot provide this much huge jobs opportunity and bring forex reserves. The total budget required to develop the infrastructure is nearly Rs. 160 Crores which can be completely recovered by the government in the name of income tax within three years. The estimated income tax at 30 per cent from tuna export industries shall be approximately 55 crores per annum.

Through Operating Air Freight Service, arrangement finance, proper training, guidance and supervision in Andaman Tuna Export shall help to reach the success very soon.

Old Proverb:-

"Give a man a fish and you feed him for a day;
teach a man to fish and you feed him for a lifetime."

New Proverb:-

Give a man a fish and you feed him for a day;
train a man to fish and export and he eradicates poverty from his society."

With this proverb, the researcher concludes the research that, Tuna Export is the one and only solution to solve unemployment problems, uplifting the standard of living of the poor and eradication of poverty from Andaman & Nicobar Islands.

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E- RESOURCES

E–Databases

96. EBSCO	- Social Sciences and Humanities
97. ECONLIT	- Economics, Business & Management
98. OECD	- Organisation for Economic Co-operation and Development
99. SCOPUS	- STM and Social Sciences

Consortium

100. J-Gate Custom Content for Consortium (JCCC)	- http://jccc-ugcinfonet.in or http://www.jccc-ugcinfonet.in

101. INFLIBNET - http://www.inflibnet.ac.in

E- Publishers

102. Annual Reviews - http://arjournals.annualreviews.org/
103. Blackwell publishing - http://www3.interscience.wiley.com/
104. Cambridge University Press - http://journals.cambridge.org/
105. Elsevier Science - http://www.sciencedirect.com/
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107. ISID - http://isid.org.in/
108. Jstor - http://www.jstor.org/
109. Oxford University Press - http://www.oxfordjournals.org
110. Project Euclid - http://projecteuclid.org/
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112. Sciencedirect - http://www.sciencedirect.com/
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ANNEXURE

EXPORT POTENTIAL OF MARINE PRODUCTS AND ITS IMPACT ON ERADICATION OF POVERTY IN ANDAMAN ISLANDS
(A Study with Special Reference to Tuna Fish)

INTERVIEW SCHEDULE FOR FISHING COMMUNITY

Researcher: **M. SURESH** Supervisor: **Prof. K. MOHAN**
PONDICHERRY UNIVERSITY

Date:

Name : Age & Gender : _____/ (M / F)
Marital Status : M / UM/ D/ W Place :
Edu. Qualification: Size of the Family:

1. Details of Family Members including respondent (Head):

Sl.	Name	Sex	Age	Edu. Qulf.	Occptn	Avg. Monthly Income	Intd. to work as in Tuna Industry
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
Total							

2. Are you undertake fisheries Activity :(Yes / No).
   (a) If yes,
   (i). Nature of Work (fish capturer/ Seller/ processor/Agent/ others). _____.
   (ii). Mode of Marketing

Sl.	Mode of Marketing	Primary	Secondary
1.	Door to Door		
2.	Export Agent		
3.	Street Vendor		
4.	Auction Market		
5.	Market		

   (iii). Average fish capture/ sales/ process/export per day? _____ Kg.
   (iv). Average price per Kg. Rs. _____.
   (v). High capturing/sales/orders months in a year: _____.
   (vi). Low capturing/sales/orders months in a year: _____.

   (b) If No, Presently pursuing job/business name: _____.
   - Regular Business/ Job
   - Seasonal Business/ Job

(c) Average earning per day? Rs. _____. / Rs. _____Per Month.
(d) Additional business/ job? :(Yes / No).

- Name of the Job: _____.
- If yes, what kinds the job it is?
  (1) Regular : (Yes / No).
  (2) Seasonal : (Yes / No).
- What is your additional Income per month? Rs.

3. Are you interested to work in the tuna fishing industry? :(Yes / No).

- If yes, Intd. to work as tuna fish capturer/Processor/Seller/Agent. _____.
- Ready to attend training programme provided by Government? :(Yes / No).
- Ready to attend the training programme outside of Native Island? :(Yes / No).
- How many days you can spend for the training Programme? _____ Days.

4. Interested to do Tuna Fish Business. :(Yes / No).

5. Do you know

MPEDA : (Yes / No).
ECGC : (Yes / No).
FSI : (Yes / No).
INCOIS : (Yes / No).

6. Do you hold any fishing equipments? :(Yes / No).

7. Did NGO/SHG/ MFI/ Fisheries Dept. had provided any facility? :(Yes / No).

- If yes, Name of the Organization: _____.
- What kind of facility they are providing? _____.

8. Boat repairing facility is available in your islands :(Yes /No).

9. Boat machine repairing facility is available in your islands :(Yes /No).

10. Do you have any loans to be paid to any bank or MFI or others? :(Yes /No).

a. Loan from a Bank or Private or Micro Finance Institution (MFI) or All? ____.
   i. Bank loan Amount: Rs._____. Date of Loan: _____.
   ii. Pvt. Loan Amount: Rs. _____. Date of Loan: _____.
   iii. MFI Loan Amount: Rs. _____. Date of Loan: _____.
b. The total loan amount you have repaid so far?
   i. For Bank : Rs. _____.
   ii. For Pvt. Party : Rs. _____.
   iii. For MFI : Rs. _____.
c. Reason for taking loan and the amount of loan borrowed.
   - Business: Rs. _____.
   - Personal: Rs. _____.

11. Expenditure details (Per month):

i.	LIC policy premium	:	Rs._____.
ii.	Savings/ RD/ Others premium	:	Rs._____.
iii.	Interest paid for personal use Loan	:	Rs._____.
iv.	Interest paid for Business use Loan	:	Rs._____.
v.	Rent paid for house	:	Rs._____.
vi.	Food expenses for the family	:	Rs._____.
vii.	Fuel expenses for cooking	:	Rs._____.
viii.	Fuel expenses for the vehicles & transportation	:	Rs._____.
ix.	Electricity paid	:	Rs._____.
x.	Telephone paid	:	Rs._____.
xi.	Medicine expenses	:	Rs._____.
xii.	Cable connection	:	Rs._____.
xiii.	Expenses for children's education average	:	Rs._____.
xiv.	Expenses for personal actives	:	Rs._____.

12. Did any big medical/ domestic expenses occur in the past 3 years? Rs._____.

13. Assets details of the Respondent:

i.	Value of the Land and House owned.	Rs. _____.
ii.	Value of the Vehicles owned.	Rs. _____.
iii.	Value of the Home appliances.	Rs. _____.
iv.	Value of Deposits/ Gold ornament/ Policies Hold.	Rs. _____.
v.	Value of any other assets.	Rs. _____.

14. Reasons for weakness of Tuna fish export business

(a) Lack of Knowledge about Export Business	(b) Lack of Financial Support
(c) Lack of Risk Taking capacity	(d) Lack of Ice/ Storage Facility
(e) Lack of Marketing Facility in A& N Is.	(f) Lack of Export Opportunity.
(g) Lack of beneficial Scheme	(h) Lack of Fish Availability.

15. Your future plan: _____

_____.

Phone No.: **(Signature of the Respondent)**
Mobile : **NAME**

PONDICHERRY UNIVERSITY
DEPARTMENT OF MANAGEMENT STUDIES
SCHOOL OF MANAGEMENT

R.V. Nagar, Kalapet, Pondicherry – 605014.
Mr. M. SURESH Ph: (0413) 2654306; Cell: (0)9940240754
Research Scholar Email: sureshscholar1@gmail.com

Date:

Dear Sir/ Madam,

Greetings to you. I, **M. SURESH**, am carrying out a research leading to the award of Ph.D. Degree entitled" ***EXPORT POTENTIAL OF MARINE PRODUCTS AND ITS IMPACT ON ERADICATION OF POVERTY IN ANDAMAN ISLANDS (A Study with Special Reference to Tuna Fish)***" under the guidance of **Dr. K. MOHAN**, Prof & Head, Dept. of International Business, Pondicherry University, Pondicherry. I request you to kindly spare some of your valuable time to fill up the questionnaire by providing the necessary details. I assure you that any information furnished will be kept confidential and will be only used for academic purpose. I thank you for your kind support.

Thanking you,

Yours Sincerely,

(M. SURESH)

QUESTIONNAIRE FOR FISHING COMPANY

Name of the Respondent:	**Designation:**
Name of the Company :	**Place :**
Experience :	**Edu. Qualification:**

1. Type of the Business: (Capture/Sale/Process/Storage) : _____.
2. Date of establishment of the Company : _____.
3. Date of commencement of the Business : _____.
4. Type of firm. (Public/ Private/Co-operative) : _____.
5. What was your owned initial capital? : Rs. _____.
6. What was your borrowed capital? : Rs. _____.
7. Nature of the Business (a) Domestic (b) Export (c) Both: _____.
8. No. of Employees in your firm : _____.

9. No. of boats in your company : _____ No.

(a) Average Km per trip :
(b) No. of trips in a Month :
(c) No. of liters of fuel required for a trip :
(d) Average fuel price per liter :
(e) Other expenses for a trip :

10. **Details of Boat:**

Sl. No	Name & Type of the Boat	Boat Size in ft	Purchase Date	Boat Cost (Rs)	Capacity	No. of Nets used	Cost of Net
1.							
2.							
3.							
4.							
5.							

11. Are you interested to do Tuna Fish Business? :(Yes / No).

If No, Reason: _____.

- How much owned capital you can invest in your new business? Rs. _____.
- Why you didn't start it so far? Due to lack of Knowledge about Business/ Financial Support/ Risk Taking capacity/ Storage Facility/ Marketing Facility availability in A& N Is./ Export Opportunity._____ _____.

12. Boat repairing facility is available in your islands :(Yes / No).

13. Boat machine/ motor repairing facility is available in your islands :(Yes / No).

14. Month Electricity City Bill : Rs. _____.

15. Local Transportation/ Fish collecting Expenses per Month : Rs. _____.

16. Cost of the Ice per Kg/ Ton in you Island : Rs. _____.

17. No. of tonnes Ice required to preserve a ton fish per day. : _____.

18. Are you having own cold storage facility :(Yes / No).

- If yes, the cold storage capacity in tonnes : _____.
  - Maintenance cost per month : Rs. _____.
- If No, whose cold storage is used by you. (a) Govt. (b) Private. (c) Both: ____.
  - Amount paid for cold storage per day per ton. : Rs. _____.

19. **Detail Financial Performance Data:**

Sl. No	Particulars	00 - 01	01 - 02	02 - 03	03 - 04	04 - 05	06 -07	07 - 08	08 - 09	09-10
1.	Current Assets									
2.	Current Liabilities									
3.	Cost of Sales									
4.	Shareholders' Funds									
5.	Fixed Assets									
6.	Net Profit									
7.	Subsidies									
8.	Loan									

20. Future development plan of your company: _____

_____.

Name :
Phone No :

Signature with Office Seal

TABLE FOR DETERMINING SAMPLE SIZE

FROM A GIVEN POPULATION

N	***S***	***N***	***S***	***N***	***S***
10	**10**	220	**140**	1200	**291**
15	**14**	230	**144**	1300	**297**
20	**19**	240	**148**	1400	**302**
25	**24**	250	**152**	1500	**306**
30	**28**	260	**155**	1600	**310**
35	**32**	270	**159**	1700	**313**
40	**36**	280	**162**	1800	**317**
45	**40**	290	**165**	1900	**320**
50	**44**	300	**169**	2000	**322**
55	**48**	320	**175**	2200	**327**
60	**52**	340	**181**	2400	**331**
65	**56**	360	**186**	2600	**335**
70	**59**	380	**191**	2800	**338**
75	**63**	400	**196**	3000	**341**
80	**66**	420	**201**	3500	**346**
85	**70**	440	**205**	4000	**351**
90	**73**	460	**210**	4500	**354**
95	**76**	480	**214**	5000	**357**
100	**80**	500	**217**	6000	**361**
110	**86**	550	**226**	7000	**364**
120	**92**	600	**234**	8000	**367**
130	**97**	650	**242**	9000	**368**
140	**103**	700	**248**	10000	**370**
150	**108**	750	**254**	15000	**375**
160	**113**	800	**260**	20000	**377**
170	**118**	850	**265**	30000	**379**
180	**123**	900	**269**	40000	**380**
190	**127**	950	**274**	50000	**381**
200	**132**	1000	**278**	75000	**382**
210	**136**	1100	**285**	1000000	**384**

Source: http://people.usd.edu/~mbaron/edad810/Krejcie.pdf

Note. — *N* is population size.
S is sample size.

FARM FINANCIAL RATIOS AND BENCHMARKS CALCULATIONS & IMPLICATIONS

(> = greater than; < = less than)

	CALCULATION	STRONG	STABLE	WEAK
Current Ratio	Total Current Farm Assets ÷ Total Current Farm Liabilities	> 1.50	1.00 - 1.50	< 1.00
Working Capital	Total Current Farm Assets – Total Current Farm Liabilities	Compare with business expenses; amount varies by size of operation		
Working Capital Rule**	Working Capital ÷ Total Expenses	> 50%	20 - 50%	< 20%
Debt / Asset Ratio	Total Farm Liabilities ÷ Total Farm Assets	< 30%	30 - 70%	> 70%
Equity / Asset Ratio	Total Farm Equity ÷ Total Farm Assets	> 70%	30 - 70%	< 30%
Debt / Equity Ratio	Total Farm Liabilities ÷ Total Farm Equity	< 42%	42 - 230%	> 230%
Rate of Return on Farm Assets (ROA) *(mostly owned)*	(NFIFO* + Farm Interest Expense – Operator Management Fee) ÷ Average Total Farm Assets	> 5%	1 - 5%	< 1%
Rate of Return on Farm Assets (ROA) *(mostly rented or leased)*	(NFIFO* + Farm Interest Expense – Operator Management Fee) ÷ Average Total Farm Assets	> 12%	3 - 12%	< 3%
Rate of Return on Farm Equity (ROE)	(NFIFO* – Operator Management Fee) ÷ Total Farm Equity	Look at trends and compare to other farm and non-farm investments		
Operating Profit Margin	(NFIFO* + Farm Interest Expense – Operator Management Fee) ÷ Gross Revenue	> 25%	10 - 25%	< 10%
Asset Turnover Ratio	Gross Revenue ÷ Average Total Farm Assets	Depends heavily on type of operation and whether it is owned / leased		
Operating Expense/Revenue Ratio *(mostly owned)*	Operating Expenses (less interest & depreciation) ÷ Gross Revenue	< 65%	65 - 80%	> 80%
Operating Expense / Revenue Ratio *(mostly rented or leased)*	Operating Expenses (less interest & depreciation) ÷ Gross Revenue	< 75%	75 - 85%	> 85%
Depreciation Expense Ratio	Depreciation Expense ÷ Gross Revenue	compare to capital replacement and term debt repayment margin		
Interest Expense Ratio	Interest Expense ÷ Gross Revenue	< 12%	12 - 20%	> 20%
Net Farm Income From Operations Ratio	NFIFO* ÷ Gross Revenue	Look at trends; varies with cyclical nature of agricultural prices & income		
Term Debt and Lease Coverage Ratio	[(NFIFO* + Gross Non Farm Revenue + Depreciation Expense + Interest on Term Debts and Capital Leases) – Income Tax Expense – Family Living Withdrawals)] ÷ Scheduled Annual Principal and Interest Payments on Term Debt and Capital Leases	> 150%	100-150%	< 110%
Debt Payment / Income Ratio**	Scheduled Annual Principal and Interest Payments on Term Debt and Capital Leases ÷ (NFIFO* + Gross Non-Farm Revenue + Depreciation Expense + Interest on Term Debts & Capital Leases)	< 25%	25 - 50%	> 50%

* NFIFO = Net Farm Income From Operations, excluding gains or losses from disposal of farm capital assets.

** Not an official standard or benchmark, but widely used in the financial industry. Developed by Dr. David Kohl, Agricultural Economist, Virginia Tech University. Modified by Greg Blonde, Waupaca County UW-Extension Agricultrue Agent. March, 2009.