



# International Journal of Fisheries and Aquatic Studies

ISSN: 2347-5129

(ICV-Poland) Impact Value: 5.62

(GIF) Impact Factor: 0.352

IJFAS 2015; 3(2): 199-205

© 2015 IJFAS

www.fisheriesjournal.com

Received: 16-08-2015

Accepted: 17-09-2015

## Sam Siril Nicholas S

Ph.D Research Scholar,  
Centre for Advance Study in  
Marine Biology, Faculty of  
Marine Sciences, Parangipettai,  
Tamil Nadu, India.

## Maheswaran M L

Ph.D Research Scholar,  
Centre for Advance Study in  
Marine Biology, Faculty of  
Marine Sciences, Parangipettai,  
Tamil Nadu, India.

## Dr. Gunalan B

Assistant Professor, Centre of  
Advanced Study in Marine  
Biology, Faculty of Marine  
Sciences, Annamalai University,  
Parangipettai - 608 502,  
Tamil Nadu, India.

## Correspondence

### Dr. Gunalan B

Assistant Professor, Centre of  
Advanced Study in Marine  
Biology, Faculty of Marine  
Sciences, Annamalai University,  
Parangipettai - 608502,  
Tamil Nadu, India.

## Indian seafood Industry strength, weakness, opportunities and threat in the global supply chain

Sam Siril Nicholas S, Maheswaran M L, Gunalan B

### Abstract

Indian seafood Industry is a major supplier in the 'Global Seafood trade' in exporting 'wide range of products'. 'International seafood trade' had seen major change in the last decade due to factors like; 'environment reasons', 'diet diversification', 'increased global supply', 'international trade barriers' and Bioterrorism. This paper studies various Strength, Weakness, Opportunity and Threat (SWOT) faced by Indian seafood trade in the changing global market scenario.

**Keywords:** Seafood, International trade, Indian seafood Industry, processing, aquaculture marine landing.

### Introduction

Seafood export in India is over 50 years old. Indian seafood Industry has come a long way; shipping seafood products to more than 100 countries. Today Indian factories have grown to have world class facilities, with better quality control; meeting the stringent international norms. On the other hand, International Seafood trade has been changing over the years; last decade had seen significant changes in the 'supply', 'demand' and 'International trade-norms'; due to the compulsions from the importing countries. International seafood industry is caught between; increased demand for seafood due to 'diet diversification', and 'over supply' of fish production. This increase in supply and demand has created various environmental issues, like decline in world catch and over exploitation; creating long term threat to the world. Since 1990s, three issues dominated Indian export scene: decline in overall catches particularly shrimp; fluctuations in international markets depressing prices and profitability and overcapitalization of the production and marketing activities increasing risk <sup>[1]</sup>. The global seafood market is a complex system of trade and sustainability issue <sup>[2]</sup>. Today there is need for the global seafood industry to balance 'fisheries resources', 'global processing capabilities' and the 'increased global consumption' in a more sustainable way. Indian seafood processing units being a part of the global supply chain need to be a responsible global supplier in providing sustainable seafood while competing with other supplying countries in the global trade competition.

### Material and Methods

For the purpose of the survey, 60 companies from different seafood zones were requested to participate in the survey. The participating companies completed a questionnaire providing view on the opportunities and challenges facing Indian seafood Industry on the global seafood platform. Participation in the survey was excellent with 38 companies of the 60 companies covering all the seafood zones. More importantly the size and scale of the 38 companies participating in the survey was such that they represented all the range of seafood companies in India. The companies participated in the survey are operating in a varied product range exporting various international markets, ensuring that the survey results are of high quality and show a representative picture of the contribution of this exporters. Survey was answered by the Top management of the company who has the access to all the stake holders of the seafood industry in India.

### Primary Data

On the basis of Random Sampling study, structured questionnaire used to get the exporters perspective. Structured questionnaire was made after an informal discussion with all the seafood stake holders to elicit a plan for my structured questionnaire, initial draft of

questionnaire was further cross checked with various stake holders of Indian seafood from Fishermen, Farmers, Consultants, Exporters, Shipping agencies and Importer of seafood products to bring out the final questionnaire. Random sampling – occurs when each sampling unit in a clearly defined population has an equal chance of being included in the sample [3].

**SWOT Analysis**

SWOT analysis often talks of the basics of business. Business owners or project managers apply this structure planning method to know their venture stands. SWOT analysis is the detailed search and listing of factors from situational analysis that might or will impact the business strategy. Strategic marketing is based on the SWOT analysis. The process by which SWOT factors are derived is to carefully review the internal analysis for strength and weaknesses, and the

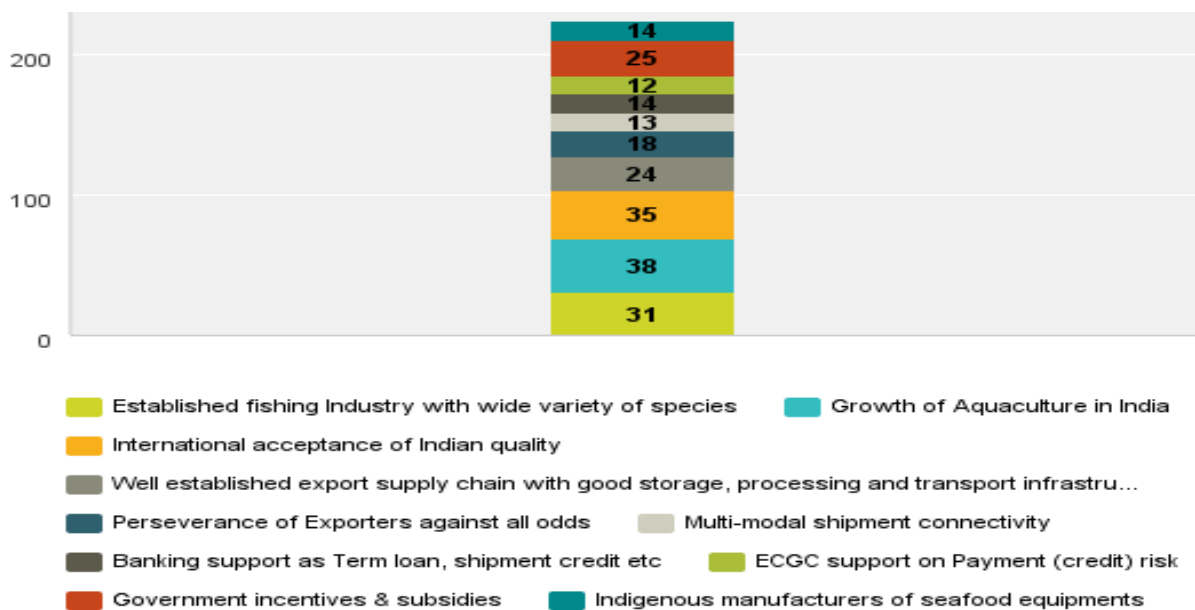
environmental analysis for opportunities and threat and to then record [4]. SWOT analysis is a commonly used planning tool which assesses the firm’s strategic profile in terms of its strength, weakness, opportunities and threats. Focusing on both internal and external environments, it serves to highlight a firm’s distinctive competences, which will enable it to gain competitive advantage [5].

**Results**

The aim of SWOT is to identify the favorable and unfavorable internal and external factors to reach the goal. It is degree to which firm’s internal environment matches with its external environment as strategic fit.

**Strengths in Indian Seafood Industry**

Respondents were asked to rate various strength contributed to the strength of Indian Seafood Industry.



**Fig 1:** Graphic representation of to 6 STRENGTH for Indian Seafood Industry

**Table 1:** Top 6 STRENGTH for Indian Seafood Industry

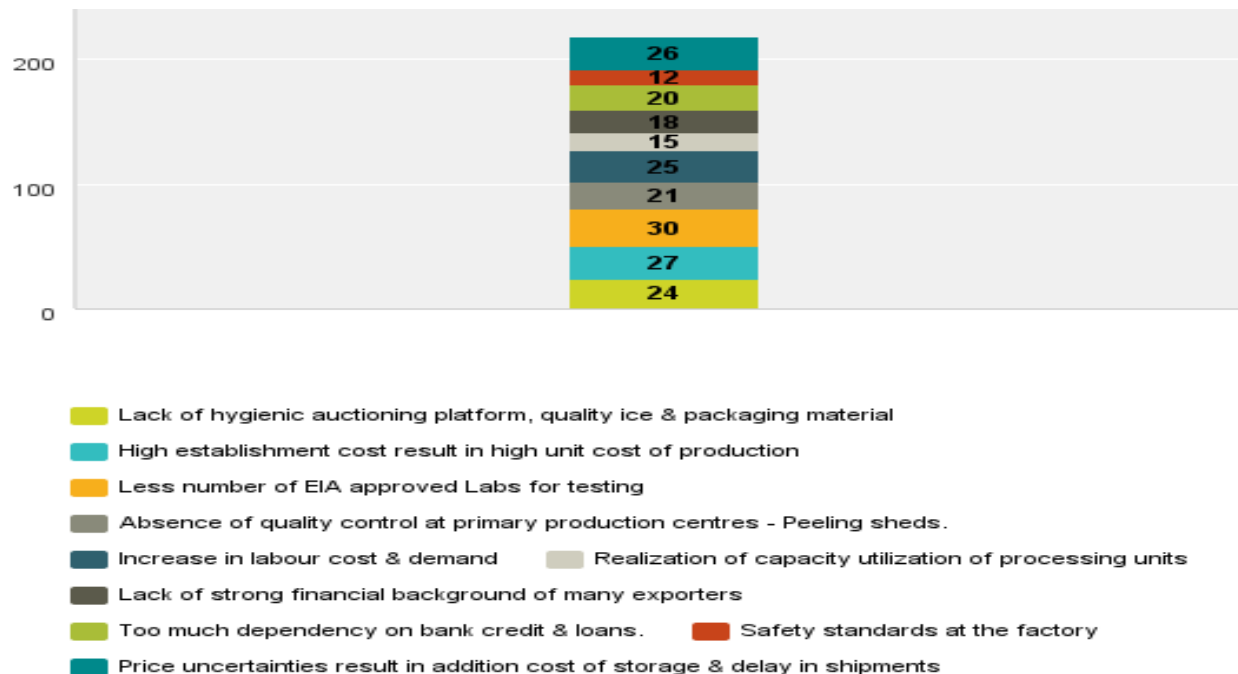
Answer Choices	Responses
Established fishing Industry with wide variety of species	<b>81.58%</b> 31
Growth of Aquaculture in India	<b>100.00%</b> 38
International acceptance of Indian quality	<b>92.11%</b> 35
Well established export supply chain with good storage, processing and transport infrastructure	<b>63.16%</b> 24
Perseverance of Exporters against all odds	<b>47.37%</b> 18
Multi-modal shipment connectivity	<b>34.21%</b> 13
Banking support as Term loan, shipment credit etc	<b>36.84%</b> 14
ECGC support on Payment (credit) risk	<b>31.58%</b> 12
Government incentives & subsidies	<b>65.79%</b> 25
Indigenous manufacturers of seafood equipments	<b>36.84%</b> 14
<b>Total Respondents: 38</b>	

Results according to fig 1, table 1 of the questionnaire, ‘Growth of Aquaculture’ was considered major strength for the Indian seafood Industry, about 92.11 per cent of the respondents believe International acceptance as second major Strength, about 81.58 per cent feel ‘Established fishing industry with wide variety of species’ as second major strenght, ‘Government incentives and subsidies’ are major strength for 65.79 per cent of the respndents, about 63.16 per cent believe

‘well established export supply chain with good storage, processing and transport infrastructure as strength, about 47.37 per cent believe ‘Perseverance of the exporters against all odds’ as 6<sup>th</sup> major strenght for the Indian seafood Industry.

**Weaknesses in Indian Seafood Industry**

Respondents were asked to rate on the various weaknesses that had affected the growth of Indian seafood Industry



**Fig 2:** Graphic representation of top 6 Weaknesses in Indian Seafood Industry

**Table 2:** Top 6 Weaknesses in Indian Seafood Industry

Answer Choices	Responses
Lack of hygienic auctioning platform, quality ice & packaging material	64.86% 24
High establishment cost result in high unit cost of production	72.97% 27
Less number of EIA approved Labs for testing	81.08% 30
Absence of quality control at primary production centres - Peeling sheds.	56.76% 21
Increase in labour cost & demand	67.57% 25
Realization of capacity utilization of processing units	40.54% 15
Lack of strong financial background of many exporters	48.65% 18
Too much dependency on bank credit & loans.	54.05% 20
Safety standards at the factory	32.43% 12
Price uncertainties result in addition cost of storage & delay in shipments	70.27% 26
<b>Total Respondents: 37</b>	

Results as per fig.2 of the questionnaire, it was observed, about 81.08 per cent believe ‘Less number of EIA approved labs for Testing’ as major weakness for Indian industry, followed by ‘high establishment cost result in high unit cost of production’

as 2<sup>nd</sup> major weakness, followed by ‘Price uncertainties result in addition cost of storage & delay in shipment’ at 70 per cent as 3<sup>rd</sup> major weakness, about 67.57 per cent of the respondents believe ‘Increase in labour cost and demand’ as 4<sup>th</sup> major

weakness, followed by ‘lack of hygienic auctioning platform, quality ice & packaging’ as 5<sup>th</sup> major weakness at 64.36 per cent and ‘absence of quality control at primary production centres –peeling shed’ as 6<sup>th</sup> major weakness.

### Opportunities for Indian Seafood Industries

Respondents were asked to rate various opportunities available for Indian seafood Industry

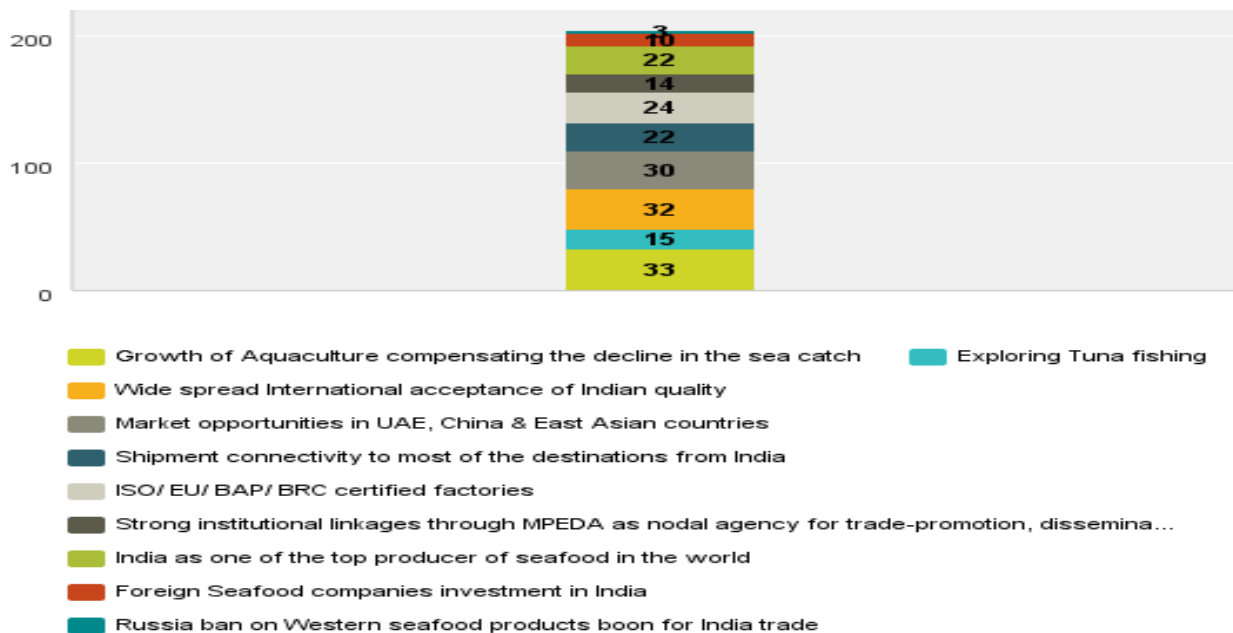


Fig 3: Graphic representation top 6 Opportunities for Indian Seafood Industry

Table 3: Top 6 Opportunities for Indian seafood Industry

Answer Choices	Responses
Growth of Aquaculture compensating the decline in the sea catch	89.19% 33
Exploring Tuna fishing	40.54% 15
Wide spread International acceptance of Indian quality	86.49% 32
Market opportunities in UAE, China & East Asian countries	81.08% 30
Shipment connectivity to most of the destinations from India	59.46% 22
ISO/ EU/ BAP/ BRC certified factories	64.86% 24
Strong institutional linkages through MPEDA as nodal agency for trade-promotion, dissemination of trade information.	37.84% 14
India as one of the top producer of seafood in the world	59.46% 22
Foreign Seafood companies investment in India	27.03% 10
Russia ban on Western seafood products boon for India trade	8.11% 3
<b>Total Respondents: 37</b>	

Result as per fig 3, table 3, of the questionnaire, it was observed, ‘Growth of aquaculture compensating the decline in the sea catch’ as first major opportunity at 89.19% followed by ‘Wide spread international acceptance of Indian quality’ was believed to be the major opportunity for Indian seafood Industry by 86.49 per cent of the respondents, about 81 per cent believe ‘new market opportunities in UAE, China & East Asian countries’ as 3<sup>rd</sup> major opportunity, about 64.86 per cent believed ‘ISO/EU/ BAP/BRC certified factories as 4<sup>th</sup> major

opportunity, about 59.46 per cent believed ‘India as one of the top producer of seafood in the world’ as 5<sup>th</sup> major opportunity and ‘shipment connectivity to most of the destinations from India’ as 6<sup>th</sup> major opportunity for Indian seafood trade.

### Threat for Indian Seafood Industry

Respondents were asked to rate various threats affecting the Indian seafood Industry

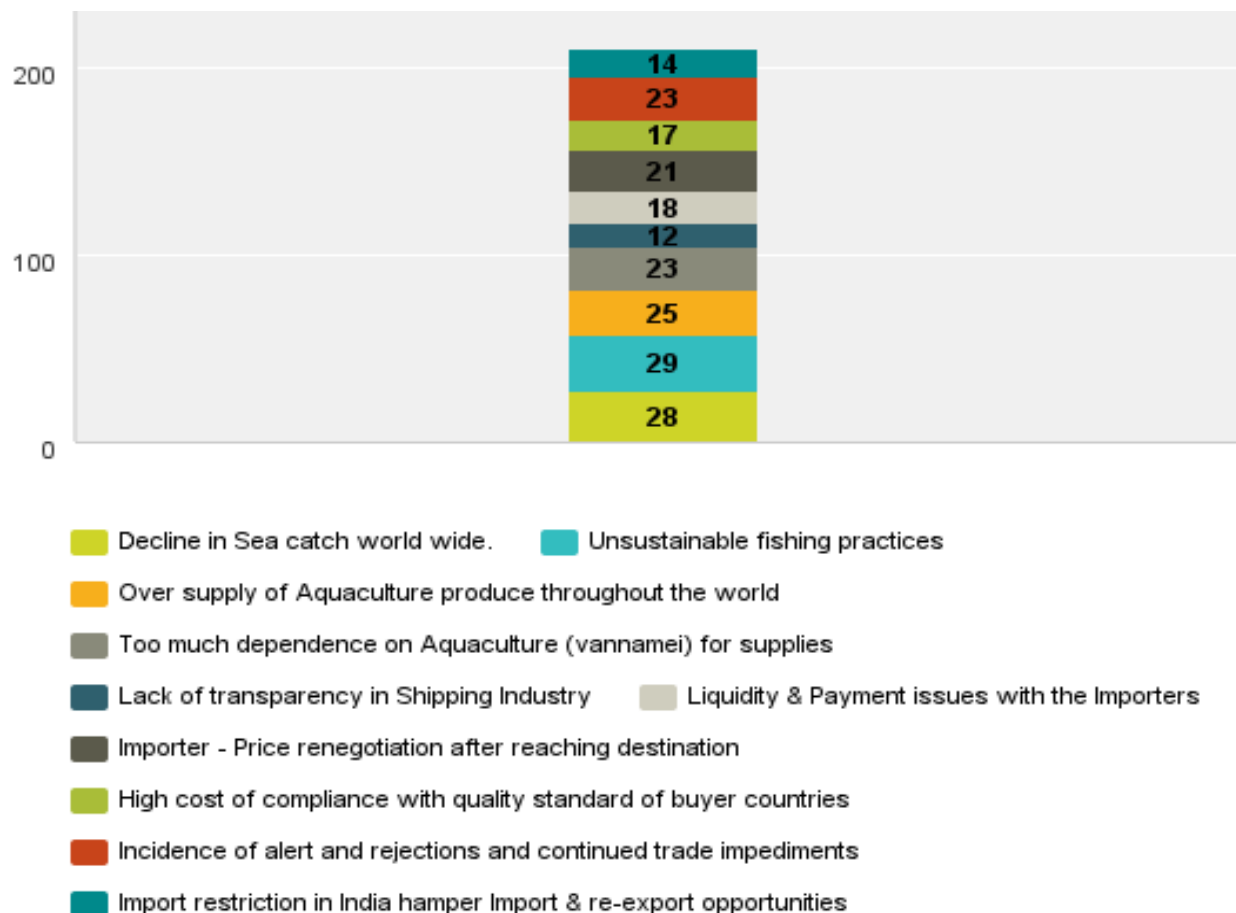


Fig 4: Graphical representation of Top 6 Threat for Indian Seafood Industry

Table 4: Top 6 Threats for Indian seafood Industry

Answer Choices	Responses
Decline in Sea catch world wide.	73.68% 28
Unsustainable fishing practices	76.32% 29
Over supply of Aquaculture produce throughout the world	65.79% 25
Too much dependence on Aquaculture (vannamei) for supplies	60.53% 23
Lack of transparency in Shipping Industry	31.58% 12
Liquidity & Payment issues with the Importers	47.37% 18
Importer - Price renegotiation after reaching destination	55.26% 21
High cost of compliance with quality standard of buyer countries	44.74% 17
Incidence of alert and rejections and continued trade impediments	60.53% 23
Import restriction in India hamper Import & re-export opportunities	36.84% 14
<b>Total Respondents: 38</b>	

Results as per fig 4, table 4 of the questionnaire it was observed about 76.32 per cent believed 'Unsustainable fishing practices' as major threat to fishing industry, followed by 'decline in sea catch worldwide' as 2<sup>nd</sup> major threat at 73.68 per cent, followed by 'oversupply of aquaculture produce throughout the world' as the 3<sup>rd</sup> major threat at 65.79 per cent followed by 'too much dependence on aquaculture for supplies' as 4<sup>th</sup> major threat followed by 'incidence of alert and rejections and continued trade impediments' as 5<sup>th</sup> major threat at 60.53 per cent followed by 'Importers price renegotiation after reaching destination' as 6<sup>th</sup> major threat to global seafood industry

## Discussion

### Strength of Indian Seafood in SWOT Analysis

India is second major producer of aquaculture in the world producing 7 per cent of the world output [6]. Aquaculture sector of the country witnessed boom with increased production of *P. monodon* and *L. vannamei* [12]. Indian quality has been broadly accepted in the International market. During the financial year 2014 – 15, exports of marine products reached an all time high of USD 5511.12 million [9]. MPEDA ensures exporters facilities are able to comply with international standards [2]. India has wide varieties of species landing in both west and East coast. West coast contributed 67 per cent and East coast at 33 per cent of total marine fish landing. Marine fisheries landings increased from 3.73 lakh tonnes in 1947-48 to 3.32 million tonnes in 2010 [12]. Subsidies and other assistance played a crucial catalytic role in the development of the export sector [1]. Indian Government through MPEDA has provided various subsidies in the form of financial assistance for 'setting cold stores', purchase refrigerated trucks', 'seafood units up gradation', 'purchase antibiotic testing kit', 'insurance coverage for worker' etc [10]. Exporters receive assistance for promoting exports, hygiene and sanitation, research and development, and acquisition of machinery [2]. India has increased the quality of storages, road and transportation and availability of public cold stores, shipment connectivity and the Shipping Port infrastructure facilities which are mostly oriented toward the export market [12]. Even though export supply chain is well developed with good storage processing and transport infrastructure when compared to the domestic marketing system it is nowhere comparable with that of developed countries [12].

### Weakness of Indian Seafood Industry in SWOT Analysis

EIA has made mandatory testing for Pre shipment testing of aquaculture shrimp for chemical residue which often delays the shipment affecting the profitability of the exporters. Nobody can predict how much time it will take to get the report from EIA lab, which already understaffed [12]. The establishment cost of a processing plant increased considerably over the years due to stringent quality standards set by International trade [1]. The high purchase prices of the exportable species and other operating expenses like labour cost, water and electricity charges caused the cost of production to [12]. Indian exporters are unable to charge higher prices in spite of rising costs of fuel, labour, maintenance and basic necessities [11]. Wastage and the cost of compliance will be substantially reduced with adequate training of fishermen and a minimum infrastructure at the beginning of the chain [2]. International fluctuation in seafood markets has catastrophic consequence on everybody down the line [1]. Major buyers like US, EU and Japan are affected with severe recession related

economic recession, export sector grappled with continued trade impediments [12]. Price uncertainties in importing countries lead to additional cost of storage and material getting delayed in shipment and increased demurrage [12]. Liberalization of market economy provided employment including skilled, semi skilled and unskilled jobs as a result labour is becoming more expensive and often not available, rising wage cost reflects improvement in income opportunities, rigorous analysis is still awaited. Fishing harbor is a point of convergence of fish, people, and fishing technology, proper functioning of a fishing harbor are crucial [12]. The first stage of hygiene starts at providing clean ice to fishermen. Many port ice-factories are very unhygienic [2]. Preprocessing activities generally involved beheading and peeling. Peeling shed industry is an important source of employment in Kerala [1]. Absence of quality control at primary production centres often results in poor quality of the products [12]. Due to the seafood legislation brought about by the EU and the USFDA in later 1990s number of peeling shed declined from 924 to 576 between 1990 and 2000 [1].

### Opportunities for Indian Seafood SWOT Analysis

The overfishing in India has led to the depletion of fishery resources which in turn affect environment finding alternative with aquaculture [12]. India expects huge increase in the marine exports due to increased production of *L. vannamei* shrimp and diversification of aquaculture to *Tilapia* and Mangrove crab in 2016 [9]. Indian seafood has significant presence in the world seafood in commodity trade [1]. Increased commodity diversification has been one of the major strength achieved over the years [12]. Barely five percent of India's seafood exports are in processed form, most exports are in the form of frozen seafood [2]. We need to provide consistent quality at a competitive price [13]. Countries like Middle East, China and South East Asian countries has created opportunity for commodity diversification of seafood. Share of Middle East countries increased from 4 per cent to 49 per cent during 1990-2000 [12]. The supermarket sector has risen to have an important and often dominant share of food retailing, commonly 70 per cent in developed countries [14]. HACCP has helped the Indian seafood industry in becoming more organized and process-oriented [2]. The international trade scenario is changing fast and the importers are insisting on stringent quality standards [12]. India produces about 6 per cent of the global aquaculture supply [15]. Fish production in India has increased more than tenfold since its independence in 1947 [16]. Introduction of *L. vannamei* in the culture has improved performance of the seafood export industry [12]. MPEDA envisages export target for marine products exports at USD 6.6 for 2015-16. Indian Seafood growth has been supplemented by the growth of shipment connectivity. India can ship to most of the destinations in the world. In the year 2014-15, marine products were exported through 30 different ports. Exports has grown from vizag, Kochi, JNP, Calcutta, Tuticorin, Krishnapatnam and Mangalore compared to the previous years [9].

### Threat for Seafood Industry by SWOT Analysis

Overexploitation and targeted fishing led to declining catch trends [1]. Illegal, unreported and unregulated (IUU) fishing remains a major threat to marine ecosystem [17]. Decline in global catches is mainly due to the environmental issues, like ecological imbalance [17] there is a concern that the current stable global catches may not be sustained [12]. The top ten

most productive species accounted for 24 per cent of world marine capture in 2011, most of their stocks are fully fished and some are overfished <sup>[17]</sup>. Today aquaculture has become absolute necessity in order to meet the global demand for seafood, <sup>[18]</sup> Recent studies forecast that aquaculture from developing countries will continue to increase its share in global fish production and trade <sup>[19]</sup>. Aquaculture is currently filling the gap but expected growth rate in seafood demand may outpace supply <sup>[2]</sup>. Global aquaculture reached all-time high of 90.4 million tonnes in 2012. Aquaculture development of recent decades has been primarily driven by market forces <sup>[17]</sup>. Aquaculture share in total production reached 54 per cent in 2012, with Europe at 18 per cent and other continents at less than 15 per cent. <sup>[17]</sup>. Many food exports have been affected adversely by selective application of sanitary and phytosanitary measures <sup>[1]</sup>. Difficulties faced by the exporters are the different standards and regimes being imposed by importing countries on producing countries <sup>[20]</sup>. In 2004, US Department of Commerce imposed anti-dumping duties on Indian shrimps <sup>[2]</sup>. IN 2002 EU implemented the so-called “zero tolerance” policy regarding antibiotic in shrimp products imports and heavy metal residues in fish <sup>[2]</sup>. ‘Post shipment issues’ for the Indian exporters are increasing in recent years, due to the unsecured payment options by the importers. Exporters accept this payment due to long standing relation with the importers and ‘fear of losing the customer’. In Shipments by ‘Non-Letter of Credit bills’ like; have option to make the payment before cargo reaching the destination, and if buyer decline to make the payment the exporter need to take back the cargo. Price discounts are a threat to the global trust.

#### Acknowledgements

Authors are thankful to Prof. K. Kathiresan, Dean and Director, CAS in Marine Biology, Faculty of Marine Sciences, and Parangipettai for providing facilities.

#### Reference

1. Salagrama Venkatesh. Policy Research: Implications of Liberalization of fish trade for Developing countries. Project PR 26109, Integrated Coastal Management, 2004.
2. Kulkarni P. The Marine Seafood Export Supply Chain in India: Current State and Influence of Import Requirements. International Institute for Sustainable Development (IISD), 2005.
3. Charles Teddlie, Fen Yu. Mixed Methods Sampling: A Typology with Examples Journal of Mixed Methods Research 2007; 1:77.
4. Reich ZA. Marketing Management for the hospitality Industry, 1st Edition, Wiley and sons Canada, 1997; 7:28-37.
5. Morrison J. The international business environment, 1st Edition, New York; Pal grave. 2002; 1:8-12.
6. Ababouch L, Karunasagar I. Global fisheries and aquaculture: Opportunities and Challenges, 10<sup>th</sup> World Seafood congress, Canada. Department of Fisheries and Aquaculture, FAO, Rome, 2013.
7. Government of India. Marine fish landings (various years) Department of animal husbandry, Dairying and Fisheries, Ministry of Agriculture, Delhi, 2010.
8. World Bank Report. India Marine Fisheries: Issues, Opportunities and Transitions for Sustainable Development – Report No. 54259-IN, 2010.
9. MPEDA. Press release MPEDA Stats, 2014-2015.
10. MPEDA. Fisheries Profile of India, 2013.

11. MPEDA. Export Promotion schemes for fisheries, 2007.
12. Shyam SS, Narayanaumar R. Manual on World Trade Agreements and Indian Fisheries Paradigms: A Policy Outlook. 2012, 329-345.
13. Rajeev M. Fisheries Trade in India: Understanding Potentials and Barriers, Norsk Utenrikspolitisk Institutt – Working paper, 2008, 741.
14. FAO. Experiences and lessons from the cleaner fishing harbour initiative in India, 2011.
15. OECD. Working Party in Agricultural Policies and Markets. Private standards and the shaping of the agro food system. AG/CA/APM, 2004; 24:40.
16. FAO. Siar V. S. FAO Fisheries and Aquaculture Circular No 1068, 2012.
17. FAO. The State of World Fisheries and Aquaculture – opportunities and Challenges, 2014.
18. FAO. The state of World Fisheries and aquaculture. Rome FAO, 2004, 153.
19. Delgado. Fish to 2020 supply and demand in changing global markets, International food policy research Institute (IFPRI), Washington and World Fish Center, Penang, Malaysia, 2003, 226-228.
20. Huss. Assessment and management of seafood safety and quality. FAO Fisheries technical paper 444. FAO Rome, Italy, 2004, 230.