

Trends in Marine Products Exports from India: Issues and Challenges

Ancy V P¹,

Assistant Professor,

Department of Economics,

Maharaja's College, Ernakulam, Kerala, India.

Dr.K.V.Raju²

Associate Professor,

Department of Economics,

Sacred Heart College, Thevara, Kochi, Kerala, India

ABSTRACT

Marine products sector has emerged as a vibrant sector for generating foreign exchange and thereby creating millions of productive employment opportunities in our economy. Growing urbanization, globalization, new lifestyles, trade liberalization and the emergence of new markets and rapidly changing social structures had a major impact on the fisheries structure of the country. Compound Annual Growth Rates (CAGR) were estimated to examine the growth trends in marine exports from India and Kerala. Kerala's fish production and export scenario have transformed due to compliance with WTO regime, stringent regulations from the US Food and Drug Administration, EU regulations and due to social and economic issues.

Key words: Fisheries sector, Marine Export Trend, Fish Production, Quality Issues, and Anti-dumping.

1. Introduction

The marine fisheries sector in the country contributes about 81 percent of the total fish production and is one of the major contributors to foreign exchange earnings. It constitutes about 16 percent of the total agriculture products export. Kerala is a coastal state and is bordered on the west by the marine flora and fauna rich Arabian Sea. The coast of Kerala constitutes 7.27 percent of India's total coastline. The economic issues which diversely affects the sustainability of fisheries sectors are decline in production, stagnation in consumption, overcapitalization, uneconomic operation, declining employment and productivity, poverty and barriers of trade (Ramakrishnan Korakandy,2008). This paper traces the four Phases of fisheries scenario which examines the profile, the production, export trends, destination changes, product diversification, technological innovations, recent challenges and various issues explored.

2. Data and Methodology

Data used for this study related to the period from 1960 to 2014 and were collected from the published and unpublished sources of Marine Products Exports Development Authority (Kochi), Exports Inspection Agency (Kochi), Marine Census of CMFRI, Exports Inspection Council, CIFT, Fisheries College, and School of Marine Industrial Fisheries and from various websites of WTO, FAO, Department of Fisheries, Ministry of Commerce, Ministry of Food Processing Industries and from books, Journals, international and national working papers. Compound Annual Growth Rates (CAGR) were estimated to examine the growth trends in marine exports and marine fish production from India and Kerala.

3. Four Phases of Fisheries Scenario

Marine fisheries in India, including Kerala are currently passing through a crisis mainly due to stagnation in production, higher operational cost and low profitability. For an understanding of the real status of the fishing industry in India and Kerala, it is necessary to divide the period from 1960 to 2014 clustered into four phases. This division is based on the foremost issues faced by the fishing industry and can be explained on the basis of the compound annual growth rate of marine product exports and fish production from India and Kerala and is summarized in the Table No.1. Compound annual growth rate is calculated by using the following formula.

$$Y = ab^t$$

$$\text{Log } Y = \text{Log } ab^t$$

$$\text{Log } Y = \text{Log } a + t \text{Log } b$$

$$b = [\text{Antilog of } \text{Log } b - 1]100, \quad t = \text{time period.}$$

$$\text{Compound Annual Growth Rate} = [\text{Antilog of } \text{Log } b - 1]100$$

Y is the Fish Production, Quantity and Value of marine product exports from India and Kerala.

Table No.1 Compound Annual Growth of Marine Export Trend and Fish Production from India and Kerala

PERIOD	CAGR OF FISH PRODUCTION		CAGR OF MARINE EXPORT			
	INDIA	KERALA	INDIA		KERALA	
			QTY Tonnes	Value Rs. (Crores)	QTY Tonnes	Value Rs. (Crores)
I PHASE 1960- 1985	10.9	2.1	9.2	24.6	7.1	18.8
II PHASE 1985-1997	6.3	7.2	16	26.9	6.3	20.5
III PHASE 1997-2004	2.8	1.2	4.7	6.3	-1.5	2.7
IV PHASE 2004-2014	4.7	0.7	8.8	16.7	2.8	15.8
OVER ALL 1960-2014	5.2	2.1	8.4	17.3	5.2	12.9

Source: Computed from data collected from MPEDA, Government of India, Kochi. Economic Review, Government of Kerala, Various Years. CMFRI, Government of India, Kochi.

The first phase covers the period 1960 to 1985 and is termed as slow modernization phase due to high demand for prawns from the international market. The second phase is from 1985 to 1997 and witnessed a rapid expansion period. This period faced the challenges of economic and ecological impact of motorization, exploitation of deep sea region, ban on monsoon trawling and the era of New Economic Policy with liberalization, privatization and globalization which stimulated the marine export trends that lead to changes in the product components and also the destination of the marine product exports.

The third phase is from 1997 to 2004 and is observed as quality revolution period which is also observed as the European Union ban period, implementation of stringent international quality assurance standards and HACCP. Quality concept has undergone tremendous changes in this period. Earlier the quality control was done at the end product stage. Quality control has changed into Quality Assurance which in the case of fish, starts right from the point of catch, ensuring hygienic handling and storage, onboard the fishing vessel. At every stage of handling, transportation, storage, preprocess handling, processing, packaging, storage of finished product to the end market, strictest standards of hygiene are to be ensured. Quality involves so many other aspects like the quality of water used for seafood freezing industry. EU countries insist on continuous monitoring which sternly demanded the establishment of good analytical laboratories, fully equipped with best trained and highly qualified technologist. Thus human resource development has become a major need and has revolutionised the seafood processing export industry.

Compared to the other phases, the compound annual growth rate of quantity and value of marine product exports from India and Kerala has drastically declined especially in the third phase. Kerala's marine export quantity turned even negative during this phase. The main reason for this has been the state's inability to keep up with Andhra Pradesh in shrimp culture. According to MPEDA statistics, of the Rs.4535 crores worth shrimp that was exported from India during the year 2000-2001, 86 percent came from shrimp culture. The major reason for the

marginal increase in the value share has been the rising export of low frozen fishes such as ribbon fish and mackerels to China and Hong Kong. Another reason for the decline is the problems in the 1990's, which was hit by disease and environmental concerns and the total output from this sector declined 18 percent during the decade. The fourth phase was from 2004 to 2014 which highlights the issues of antidumping duty on Indian shrimp and the effect of global recession on seafood export processing industry. Consequently, the study attempts to converse the various aspect of anti-dumping mechanism, and the challenges faced by the seafood export processing industry.

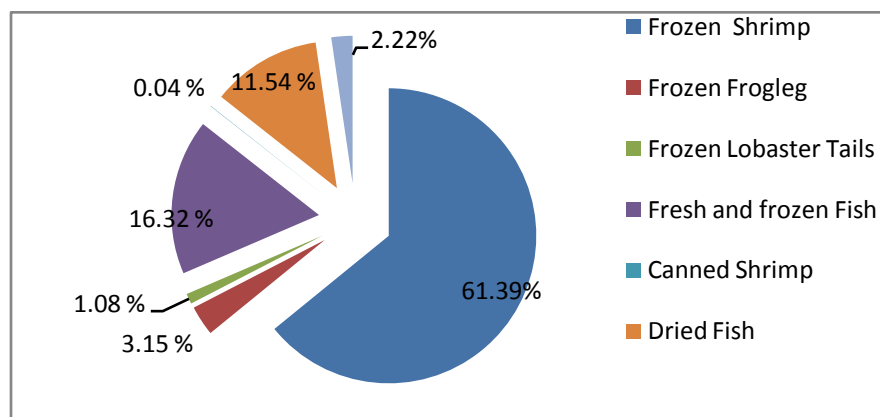
4. 1. The First Phase-Till 1985

In pre-independence India, fisheries sector did not receive much attention from the government. Between 1950 and 1960 India's exports was dominated by traditional items like fish oil, salted and dried fish, dried shrimp, shark fins and fish maws India exported to traditional markets such as Sri Lanka, Burma, Singapore, Malaysia and Hong Kong. The modernisation of Indian seafood industry began after the country's independence in 1947. Fisheries sector has witnessed a steady growth from the first five year Plan onwards with the annual fish production increasing from around 0.53 million tonnes in 1950-1951 to 9.65 million tonnes during 2013-2014. Starting from a purely traditional activity in the fifties, both aquaculture and fisheries have transformed to commercial enterprises opening considerable potential for employment generation and contribution to the food and nutrition security and foreign exchange earnings of the country (Planning Commission, 2001).

USA was the principal buyer for our frozen shrimp but after 1977, Japan emerged as the principal buyer of the product, followed by the West European countries. India's first seafood Export to Japan was in September 1972 and towards the end of 1970s, Japan was the home of the India's biggest market share. There were changes in the demand for differentiated products from various countries. Japan indicated their preference for headless shell on shrimp; the USA demanded peeled shrimp meat and the European Countries preferred the IQF shrimp in frozen or cooked form and a major share of cephalopods. Frozen fish items had greater demand in the South East Asian countries as well as the Middle East (Sarada C et al., 2006).

Kerala is not only the highest producer of marine fish but also biggest consumer too. Fish is treated as the cheapest source of animal protein lavishly available in Kerala. The total quantity of all marine products exported from Kerala increased from 24,000 tonnes in 1970 to 33,000 tonnes in 1982 and in the corresponding period the value of exports increased from Rs. 275 million to Rs. 1380 million (Sebastian Mathew (1986). In the seventies, the export was depending mainly on shrimp but due to the export promotional measures, it became possible to diversify the products in the eighties adding cephalopods (cuttlefish, squid, and octopus) and frozen fish (such as pomfrets, ribbon fish, seer fish, mackerel, reef cod, croakers, snapper etc). While all these items hold good prospects, live fish, chilled, fresh water fish etc. are promising items for the future (Ayyappan and Krishnan, 2005). Figure 1 shows Indian marine products in 1984. During the eighties the canned items slowly disappeared and frozen items gained prominence in India's seafood trade. Amongst the frozen items also, there was changes in the demand for differentiated products from various countries. While Japan showed their preference to headless shell on shrimp, the USA demanded peeled shrimp meat and European countries preferred the IQF shrimp in frozen and cooked form.

Figure 1 Item wise Marine Products from India 1984(Quantity)



Source: Statistics of Marine Products Exports 1988, Marine Product Export Promotion Council, Kochi.

Fishing industry is subjected to various kinds of externalities and is influenced by technological as well as socio-economic development of Kerala economy. A 36-fold increase in the value of the output was noticed between 1964 and 1984 (Rajaseenan, 1987). But this was mainly due to the very high unit price realisation of the export species of prawn. Labour productivity in the mechanised sector is nine fold to that of the non-mechanized. The Research and Development effort for fishing harbours in the State was started in the sixties. The effort was to develop a number of minor and major fishing harbours in the state with central assistance. The programme was delayed till the beginning of the fourth five year plan in 1969 due to technical and other constraints. Motorisation resulted in the introduction of outboard crafts and led to new technological leap in traditional fishery in the mid 1980s. Due to the adverse effects of modernization on the traditional sector, the traditional fishermen realized the need for a new technology in the traditional sector as a survival strategy and this resulted in the introduction of outboard motors which become the major production unit in Kerala fishery with its average contribution being 38.4 percent, more than the mechanised or other traditional sector. During this period a quantum jumps in the output was due to modernization of traditional fishing units.

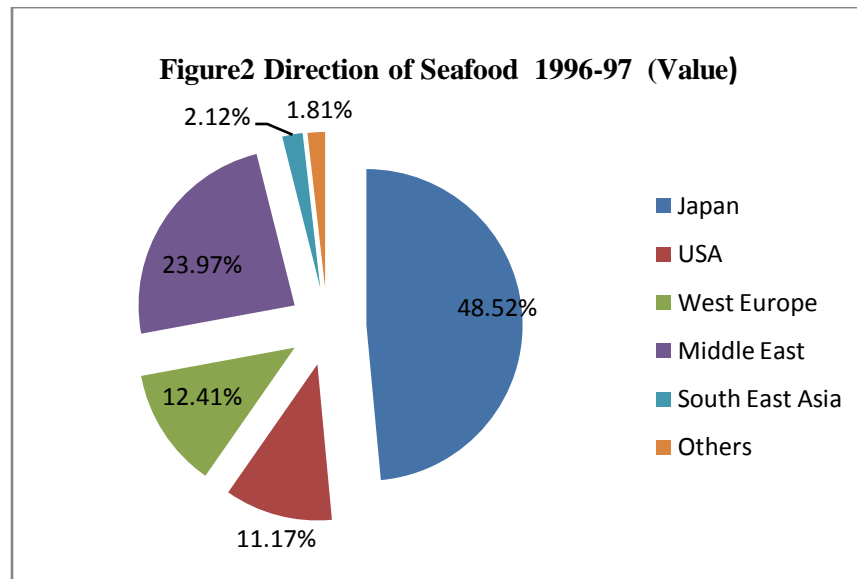
4.2 The Second Phase: Rapid Expansion Period from 1985 to 1997

The year 1985-86 has seen to boost economic growth, reinforce anti-poverty programmes, revitalize industry and provide a rapid expansion path to fisheries trade. The Indian Seafood export has shown an increasing trend during the II Phase. Socio-cultural, techno-economic and ecological parameters that affected a specific case of technology diffusion in marine fisheries (John Kurien, 1994). During this phase Kerala's fishermen played a development role and successful dissemination of the new technology. Fish production levels have increased from 2.8 million tonnes of fish and shell-fish in 1985-86 to 5.3 million tonnes in 1996-1997. During 1985-86 and 1996-1997, the marine and inland fish production levels have increased with an average annual growth rate of 2.68 percent and 8.06 percent per annum respectively. The share of inland fishery sector, which was 29 percent in 1950-51, has gone up to about 50 percent in 1999-2000. More than 20 percent of the marine products exported from India are from Kerala and the forex earnings by the state during 1994-95 were Rs. 816.64 crores.

The growth in marine fisheries during the 1980s and 1990s has been slow as compared to the previous two decades (Planning Commission, 2001). During the last decade of 1990s the

marine fish production has reached a plateau in Kerala. All over the world, increase in aquaculture production has been possible through diversification of aquaculture at different levels. However, diversification of Indian aquaculture is still at initial stages, inspite of the fact that India, producing 2.03 million tonnes in 1998 and is second to China (producing 69 percent of the world total). The year 1995 turned out to be an important milestone in the history of India's seafood industry with shrimp production through aquaculture reached 100,000 Metric Tonnes. In the same year yet another milestone was crossed when marine product export crossed one billion US Dollars.

The direction of trade has also undergone changes since 1985. With increased world demand for frozen prawn the export of marine product from Kerala showed greater market concentration. Figure 2 shows destination of seafood in 1997. The increase in the price and foreign demand for prawn prompted the entry of large number of capitalist merchants into the industry. Dried fish was replaced by frozen prawn which was again replaced by IQF prawns and other value added shrimp products later.

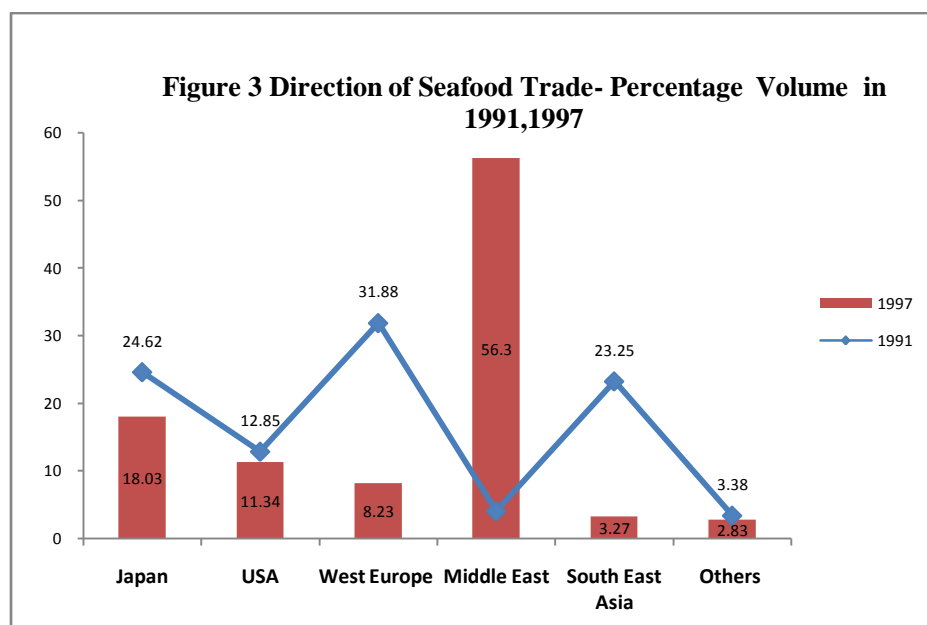


Source: MPEDA, Government of India, Kochi.

Fishery resources can be utilised for the production of value added marine products for export and domestic market front now. Cuttlefish, squid products, live items are emerging as important item of exports. During this Phase marine products were exported to other countries also. Western Europe and South East Asian countries emerged as new importers of marine products from Kerala.

The destination in percentage volume between 1991- 1997 depicts in the Figure 3 expose initial trend divergence in the GPL global market. During the mid 1980's trade relations enhanced and also helped to find new markets for Indian marine products. Kerala's fish production and export trend weakened steadily due to compliance with WTO regime, stringent regulations from the US Food and Drug Administration, EU regulations, social and economic issues. During this phase pre-shipment inspection was applied and teams of inspectors from the US visited Kerala to ensure sanitary conditions in prawn and fish processing factories. During the 1990s economic liberalization gave the fishing industry a major investment boost. There

were 225 deep sea vessels operating in the Indian EEZ. Modernisation and technological advancement of seafood industry paved the way for higher exports. 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 and increasing risk. In marine sector, inshore waters have been almost exploited to the Maximum Sustainable Yield (MSY) levels and the contribution from the deep sea has been insignificant.



Source: MPEDA, Government of India, Kochi.

Indian Seafood export processing Industry was facing threats when a few consignments were rejected by the EU for detecting the presence of Salmonella. The final blow came after a European veterinary team visited processing plants in India and declared them to be non-compliant with EUs quality standards. Hence in 1996 a ban was imposed on export of marine products from India to Europe.

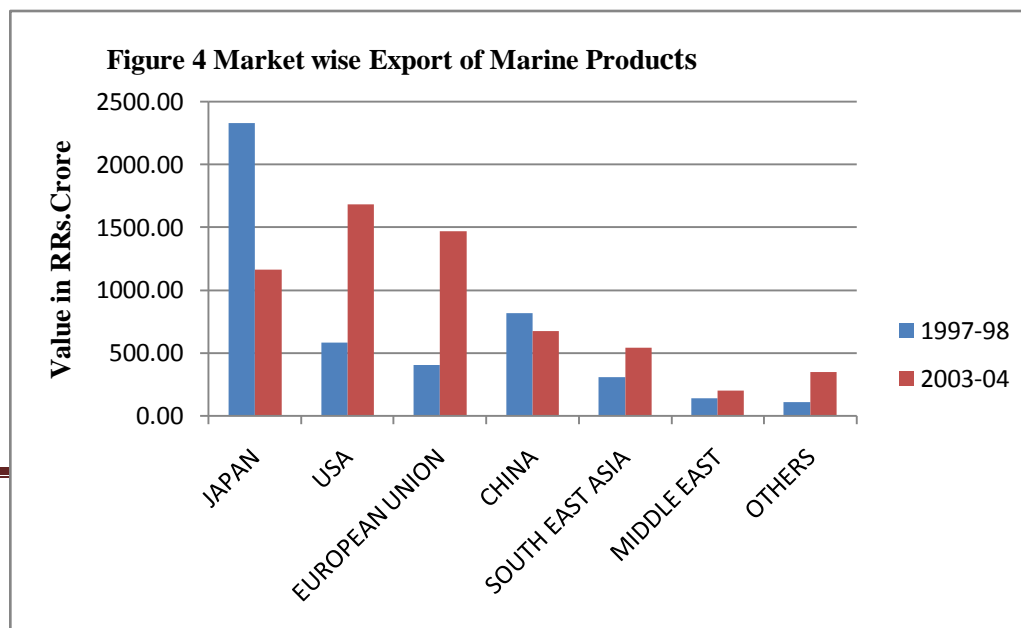
Capital investment in the sector has more than doubled after 1988-89. In the mechanized sector, additional investment was used for increasing the number of boats, whereas in the artisanal sector it was mainly used for the purchase of higher horsepower engines and larger crafts. The Government of Kerala imposed a trawl ban from 1988 onwards along the entire coastline of the state for a period of 45 days with effect from 15th of June in order to conserve the fishery wealth and thereby protect the interest of the persons engaged in fishing particularly those engaged in fishing using traditional fishing crafts as well as to regulate fishing on a scientific basis. In order to avoid over-capitalisation and ensure a cautious growth of the infrastructure and investments, a rationalised approach will be essential in determining the number and size of fishing vessels, their resource specific gear as well as technology to be made available either indigenously or through foreign collaborations. The development of deep sea fishery industry is of concern to the entire marine fishery sector because it would have considerable impact on the management of near-shore fisheries, shore-based infrastructure utilisation and post-harvest activities, both for domestic marketing and export. The Deep Sea

Fishing policy announced in 1991 permitted large industrial houses and multilateral companies to take up deep sea fishing and to enter into joint ventures. Increasing international competition, emergence of new suppliers, declining marine catch due to overfishing, insufficient development of aquaculture and inadequate exploitation of deep sea fishing resources are responsible for the decrease in the growth rates of marine products exports from Kerala.

4.3 The Third Phase: Ban Period and Quality Renovation: 1997 to 2004

India's foreign trade profile has changed drastically after liberalisation of Indian economy. Liberalization of import trade accelerates the growth of Indian imports. During 1990-91 the trade deficit amounted to Rs -10635 Crore. It was Rs.- 65741 crore on in the year 2003-2004, around 518.15 percent increase due to lower industrial and agricultural growth rates. At the third phase percent growth rate of trade deficit was around 173.06 percent. The third phase embarks upon the structural changes of seafood export processing industry that took place in India especially in Kerala. Fish production in the country has been showing an increasing trend and has reached a record level of 5.65 million tonnes in 1999-2000. The estimated fish catch in the year 2000-01 was about 5.95 million tonnes and the production is likely to reach a level of 6.26 million tonnes by the end of the Ninth Five Year plan. Gujarat has emerged as the leading producer of marine fish during 1999-2000, followed by Kerala, Maharashtra and Tamil Nadu (Planning commission, 2001).

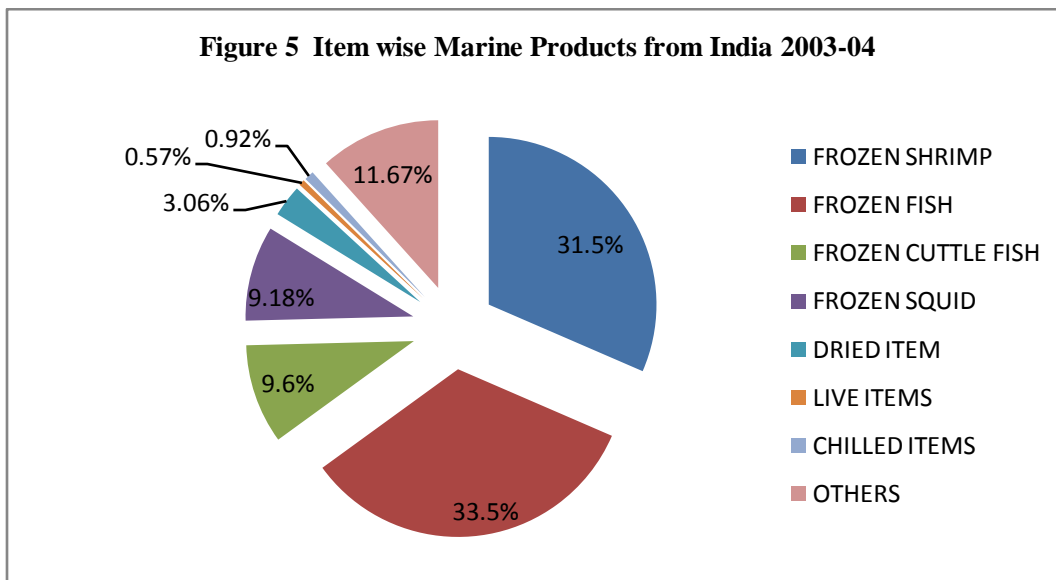
Foreign trade provides an outlet to globalisation, which is being undertaken by most of the countries of the world today. India too has embarked on the policy of export-led growth strategy as the process of economic liberalisation initiated in the country since July 1991. For a long time USA was the principal buyer for our frozen shrimp but after 1977, Japan emerged as the principal buyer of the product, followed by the West European countries. Japan retained its position till 2001-02 as the single largest buyer for our marine products accounting for about 31percent in the total export value. During the year 2002-03 and 2003-04 USA emerged as the single largest market for our marine products. Figure 4 shows the market wise destination changes of seafood importing countries during the III Phase.



Source: MPEDA, Government of India, Kochi.

Nearly 55 categories of marine products are exported to countries in Southeast Asia, Europe and the US. The total quantity of export increased from 97,000 tonnes in 1987-88 to 3.85 lakh tonnes during 1997-98. In terms of value, it increased from Rs 530 crore to Rs 4,697.5 crore. Japan continued to be the largest market in terms of value with a share of 49.5 percent. Exports to China have grown by 500 percent between 1994-95 and 1997-98. The three-month ban on Indian seafood exports during 1997-98 by the European Union was one of the reasons for the significant growth in export to China. The export of marine products suffered a lot of problems like ban by EU on the plea that the products were infected with salmonella and cholera during August 1997. Later on the ban was lifted. During this period, USA has banned the marine products export from India to promote and facilitate the local fishermen of their country. However, India has maintained a steady marginal growth on the export of marine products to different countries. More than six million people earn their livelihood from the fishery industry. If all the available fishery resources are exploited in a suitable manner, a few more million employment opportunities can be created.

The period from 2001 onwards has been witnessing a shift in the marine fisheries scenario. During 2003 nearly 123,923 tonnes of frozen shrimps worth Rs. 3,936 crores were exported which formed 65.5 percent of total seafood export from the country. Figure 5 depicts item wise marine products export from India during 2003-04.



Source: MPEDA, Government of India, Kochi.

In the third Phase, Stringent Quality Standards followed by EU, USA, Japan and the implementation of HACCP in seafood processing plants become mandatory. HACCP is a tool that properly used will help build confidence in the consumer's perception of seafood and the seafood industry. The 1990s have witnessed important international agreements and accords relating to the intentions of the international community to achieve sustainable fisheries and to

which India has been a party. Reducing losses through proper handling and improved processing can increase fish production and also add value to the catch. Sanitary and phytosanitary measures are expected to play a major role in both domestic marketing and exports. From the 1990s, technological changes were accelerated with the Globalisation policies. Rapid technological advancement in fishing methods have resulted in higher usage of modern fishing equipment such as motor boats which are said to pollute and destroy natural aquatic environments. Fish is not part of the agricultural negotiations of the World Trade Organization (WTO) and continues to be treated as an industrial product in negotiations.

The Fourth Phase: US Anti-Dumping Duty on Indian Shrimp 2004 to 2014

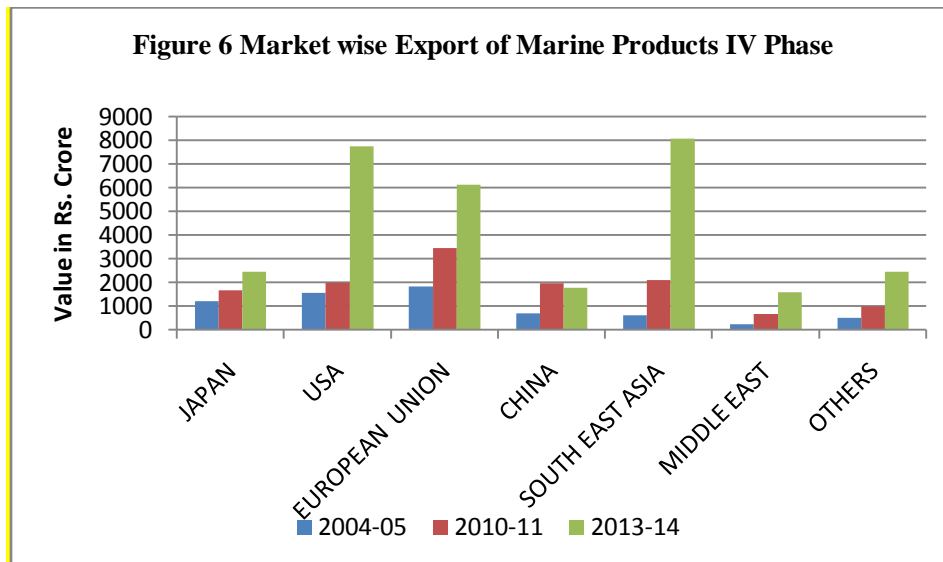
Tsunami of December 2004 has dealt a severe blow to the coastal marine fishery sector causing huge loss of lives, fishing crafts and gears in the state especially in Thiruvananthapuram, Kollam, Allappuzha and Ernakulam districts. The outbreak of the global financial crisis in 2008-09 led to the world trade in recession. India has been quite successful in diversifying its export markets from developed countries like the US and Europe to Asia and Africa, which has helped to a great extent in weathering the global crisis of 2008 and the recent global slowdown. Fish production in India increased from a level of 0.75 million tonnes in 1950-51 to 9.58 million tonnes in 2013-14 comprising 3.44 million tonnes from the marine and 6.14 million tonnes from inland resources. The fishery sector also accounts for 0.83 percent of total GDP and 4.75 percent of the Agriculture Sector's GDP at current prices for the year 2012-13.

According to OECD-FAO (2013) projections, world fish production trend will achieve 181 million tonnes by 2022. The main source of growth is from aquaculture production because production in capture fisheries are stagnant since mid-1980s, at about 85-95 million tonnes per annum due to depletion of fishery resources. Recently, about 200 commercially valuable species are exploited from the marine fisheries resources from India. The marine production was estimated at 3.73 lakh tonnes in the year 1948 but declined to 2.27 million tonnes in the year 2005. Fish base has listed 2384 finfish species from Indian continent that includes 1704 marine, 762 freshwater, 202 endemic and 258 commercially exploited species (www.fishbase.org). The marine fisheries sector in the country contributes about 81 percent of the total fish production and is one of the major contributors to foreign exchange earnings through seafood export. It constitutes about 16 percent of the total agriculture products export. Fisheries sector contributed Rs. 34,758 crores to the GDP during 2005-06 which was 1.2 percent of the national GDP and 5.3 percent of the Agricultural GDP. However the share of fisheries sector in the State Domestic product was estimated to be 1.44 percent in 2005-06. There has been a gradual shift in the production scenario from marine to inland fisheries in recent years (Economic Survey, 2007 and ICAR, 2006). The Gross State Domestic Product of the State has increased by about 97 percent during the period from 2005-06 to 2010-11 and the share of fisheries sector in the State Domestic Product has declined from 1.81 to 1.29 percent in the same period. The share of Primary Sector in GSDP has also declined from 18.05 to 14.07 percent in 2010-11. During 2010-11, India's total fish production was 6.82 million tonnes of which 3.07 million tonnes were from marine sector and 3.75 million tonnes was from inland sector. The fisheries sector has contributed 1.1 percent of the National GDP and 4.7 percent of the GDP from agriculture sector.

In the year 2004-05 European Union collectively became the largest buyer from India. During 2004 to 2006 European Union was the chief importer of seafood from India. India is exporting raw material to China, Thailand and Vietnam for value addition and re-exports to

Japan, the EU and the US. Thus the scope for value-addition in marine exports sector should be further explored. The European Union continued to be the largest market with a share of 26 percent in dollar realisation. However, there was a marginal decline of 1 percent in the quantity exported to these countries. The U.S. regained the second place with a share of 16 percent, followed by South East Asia, also with a share of 16 percent, China with a share of 15 percent, Japan 14 percent, West Asia 5 percent and other countries 8 percent. The exports to the U.S. registered a growth of 104 percent in dollar realisation and 47 percent in terms of quantity. The exports to Japan also registered a positive growth of 11 percent in quantity and 36 percent in dollar terms. The exports of all items to Japan, except those frozen, showed an increasing trend. The South-east Asian countries had registered a positive growth of 44 percent in quantity and 38 percent in dollar terms. The exports to China showed only an increase of 5 percent in quantity and 9 percent in dollar terms.

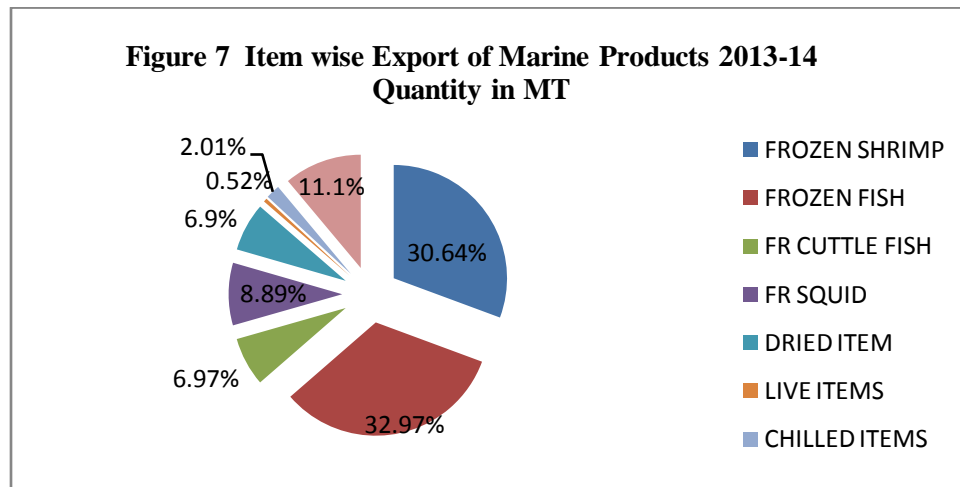
The details of major markets for Indian marine products are given in the figure 6 and depict the destination changes due to global recession and international trade barriers in the seafood industry in India. South East Asia continued to be the largest buyer of Indian marine products with a share of 26.38 percent in terms of US \$ value realization. USA is the second largest market with a share of 25.68 percent followed by European Union, 20.24 percent, Japan 8.21 percent, other countries 8.20 percent, China 5.85 percent and Middle East 5.45 percent.



Source: MPEDA, Government of India, Kochi.

The exports to South East Asian Countries have shown a positive growth, an increase of 11.47 percent, 84.67 percent and 62.72 percent in terms of Quantity, Rupee value and US dollar terms respectively. Exports to US had registered a tremendous growth of 19.94 percent in quantity and 72.06 percent in US\$ realization and is mainly attributed to the export of Frozen Shrimp which showed a growth of about 34.81 percent in volume and 92.4 percent in US\$ terms. Exports of Vannamei shrimp showed a tremendous growth to US market and the increase is 59.63 percent in quantity and 135.71 percent in US \$ realization.

The details of major items of exports are given in the figure 7 and showed the percentage share quantitatively. Frozen shrimp continued to be the major export value item accounting for a share of 64.12 percent of the total US \$ earnings. There was an all time high growth in unit value realization of frozen shrimp at 35.05 percent. The overall export of shrimp during 2013-14 was to the tune of 3, 01,435 Metric Tonnes worth US \$ 3210.94 million. USA is the largest market (95,927 Metric Tonnes) for frozen shrimps exports in quantity terms followed by European Union (73,487 Metric Tonnes), South East Asia (52,533 Metric Tonnes) and Japan (28,719 Metric Tonnes). The contribution of cultured shrimp to the total shrimp export is 73.31 percent in terms of US \$. The export of cultured shrimp has shown tremendous growth of 36.71 percent in quantity and 92.29 percent in dollar terms. The export of Vannamei shrimp has shown tremendous growth to 1, 75,071 Metric Tonnes from 91,171 Metric Tonnes and US \$ 1,994.27 million from 731.01 million when compared to 2012-13. Out of the total export, 44.59 percent of total Vannamei shrimp was exported to USA followed by 17.07 percent to EU, 16.54 percent to South East Asian countries and 4.01 percent to Japan in terms US \$. Export of Black Tiger shrimp reduced from US \$521.33 million to 435.79 million and 61,177 Metric Tonnes to 34,133 Metric Tonnes in Quantity terms when compared to last year.



Source: MPEDA, Government of India, Kochi.

Fish, has retained its position as the principal export item in quantity terms and the second largest export item in value terms, accounting for a share of about 32.97 percent in quantity and 14.15 percent in US \$ earnings. Unit value realization of fish also increased by 21.65 percent. Export of Frozen Squid has shown a growth of 15.98 percent, 25.68 percent and 10.78 percent in terms of Quantity, Rupee Value in and US \$ terms. However it has shown a decrease in unit value realization of 4.48 percent. Frozen Cuttlefish recorded a growth of 8.34 percent in quantity. Dried items have shown a positive growth and the increase is 21.72 percent in terms of rupee value and in dollar terms by 9.86 percent. Live items exports have shown a growth of 16.17 percent, 42.43 percent and 26.81 percent in quantity, rupee value and US \$ realization respectively when compared to the previous year.

The US anti-dumping duty on frozen shrimp imports from India was imposed from August 4, 2004. The average duty imposed on Indian companies was 10.17 percent and in the first Administrative Review (AR) this was cut to 7.22 percent. It was further reduced to 1.69 percent in the second AR and to 0.79 percent in the third. In the fifth AR, this was raised to 1.69

percent and it has been further enhanced to 2.51 percent. Between July, 2008 and May, 2009 the value of world trade declined by 37 percent, of which 16 percent was due to the fall in prices, a result of the financial and economic crisis. The WTO estimates projected that global trade is likely to decline by 9 percent in volume terms and the IMF estimates projected a decline of over 11 percent for 2009. Though India has not been affected to the same extent as other economies of the world during this phase, yet the declining trend in the growth rate of our exports and imports, have started in the second and third quarter of the year 2008-09 respectively. Even as export growth has surpassed the pre-crisis level in 2010-2011, the adverse impact of the global recession seems to be showing only now, with exports falling drastically in 2012-2013.

The major barriers in the seafood export market in the fourth phase have been in the form of sanitary and phyto-sanitary measures imposed by the developed countries and the anti-dumping duty of frozen shrimp imposed by US. This adversely affected the prospects of Kerala Seafood Export processing industry. The strict enforcement of quality standards by the US and the EU led to hasty implementation of Codex Standards and HACCP regulations which generate additional cost of both fixed and variable costs which ranged between 10 to 20 percent of the total cost (MPEDA, 2003). US Anti-Dumping duty imposition on Indian Frozen Shrimp (U S anti-dumping petition against six countries- Brazil, China, Ecuador, India, Thailand and Vietnam). Shrimp exports to USA dropped by 23 percent in Dollar earnings during 2006-07. After the Anti-dumping duties came into effect, the number of Indian exporters to the United States declined in a significant way from 280 in 2005 to just 68 in 2009. At present 192 exporters do shrimp export business with USA. U.S. antidumping law is a tangled and confusing subject because U.S. law and procedures have changed substantially over time. Due to this Indian Frozen Shrimp exporters foresee a market diversification and product differentiation challenges in order to attain better exporter earnings. Value addition has been considered as the main thrust area for seafood export processing units from Kerala. These units will be encouraged for value added production by expanding their capacity and diversifying their activities through foreign collaboration, investments, tie ups in marketing of value added products and importing raw materials for further processing and re-export in the form of value added products.

Conclusion

Kerala's fish production and export trend transformed due to compliance with WTO regime, stringent regulations from the US Food and Drug Administration, EU regulations, social and economic issues. Fisheries scenario has been categorized into four Phases. This study examined the profile, the production, export trends, destination changes, product diversification, technological innovations, recent challenges and issues of the fisheries sector. Human resource development has become a major need and has revolutionised the seafood processing export industry. Diversification of production by introducing new commercial species, adoption of new technologies and introduction of processing units for value added products could add new dimensions to the sector.

References

1. Ayyappan S and M Krishnan (2005): "Offbeat attempts needed", *the Hindu Survey of Agriculture* 2005, pp.134-136.
2. D Rajasenan(1987): " Fishing Industry in Kerala Problems and Potentials" Thesis, Cochin University Science and Technology, CUSAT, Kochi. Economic Survey, 2007 and ICAR, 2006
3. Economic Review (2014): 'State Planning Board', Government of Kerala (Various Issues)

4. Economic Survey(2007): Government of India, (Various Issues)
5. ICAR (2006): “Handbook of Fisheries and Aquaculture” Indian Council of Agricultural Research, New Delhi
6. John Kurien (1994): “Technology Diffusion in Marine Fisheries: The Concrete Socio Economic and Ecological Interrelations” Thesis, Tata Institute of Social Sciences, Bombay.
7. MPEDA (2003): “Anti-Dumping” Article”, *Statistics of Marine Products*, Kochi.
8. Planning Commission (2001): “Report of the Working Group of Fisheries for the Tenth Five Year Plan Government of India” TFYP WORKING GROUP Sr. No. 16/2001.<http://planningcommission.nic.in/aboutus/committee/wrkgrp/fishery.pdf> accessed on January 13th,2013.
9. Ramakrishnan Korakandy(2008): “Fisheries Development in India- the Political Economy of Unsustainable Development” *Kalpaz Publication*, Delhi, pp184.
10. Sarada C, T Ravisankar, M Krishnan and C Anandanarayanan(2006): “ Indian Seafood Exports: Issues of Instability, Commodity Concentration and Geographical Spread” *Indian Journal of Agricultural Economics*, Volume 61,No.2.April-June.
11. Sebastian Mathew (1986): “Growth and Changing Structure of the Prawn export industry in Kerala 1953-83” Thesis, Centre for Development Studies, Thiruvananthapuram.