



22nd India International Seafood Show 2020

07-09 FEBRUARY, 2020, LULU BOLGATTY INTERNATIONAL CONVENTION CENTER, KOCHI, KERALA, INDIA



Organised by



MPEDA



SEAI

Souvenir

STRATEGIES FOR AUGMENTING SEAFOOD REVENUE: BEYOND 2020

Shyam S. Salim, Principal Scientist.

ICAR - Central Marine Fisheries Research Institute

Cochin - 682 018

India is , the second largest fish producer in the world with a total production of 13.7 million metric tonnes (2018-19) showing a consistent growth in the total gross value added with one percent GDP contribution and providing meaningful employment to 14 million people across the value chain in harvesting, processing, packaging, and distribution. Fish and fish products have presently emerged as the largest group in agricultural exports from India, with 1.37 million tonnes in terms of quantity and Rs. 45,106.89 crore in value which accounts for around 10% of the total exports and 5.23% to the Ag - GVA of the country.

India exports frozen shrimp, squids and finfish in dried, live and chilled forms to different destinations. With the current demand pattern of major seafood markets and with modern machinery for freezing and processing, several exporting firms have started development and exports of processed value added products. The export market was initially oriented towards single country- single commodity (Japan and shrimp) but over the years the export commodity and geographic destination basket diversified with shrimps, lobsters and cephalopods, opened up opportunities for exports of fin fishes. Groupers, mackerels, tunnies, barracudas, Pomfrets, seer fishes, ribbon fishes and other fresh water fishes found a place in the export market and the fin fish exports now occupy around 40 per cent of the total export volume. Expansion of fishing grounds with advancement in harvest technologies and possible fishing down the web led to capture and marketing of new varieties like puffer fish, yellow fin tuna and some varieties of sharks with good export potential.

EXPORT PERFORMANCE OF INDIAN FISHERY SECTOR

Even though the world economy was hit with the economic recession during 2008 the seafood exports grew consistently in terms of quantity and value. The impact of recession hasn't affected India's seafood trade mainly due to the economic stimulus, strength of banking system and the demand for retailing gone up and lower demand for ready to serve and ready to cook due to the poor purchasing power in developed countries .The demand for food stamps (PDS increased in the developed countries including US and EU amidst massive economic stimulus provided. In the South East Asian countries was countered by more productivities and governmental regulation .The Indian seafood export wasn't affected due to the increased demand for raw fish rather than value added products from the retail outlets, declining international market arrivals by over 10 per cent globally in the buyer countries. The commodity-wise export of marine products indicated that considering the total export the post-recession period (2008-2017) performed better than the pre-recession period (1995-2007). Overall the growth rate of quantity in pre-recession period has increased from 4.98 to 7.84 percent during the post-recession period. It was found that the unit value realization in dollars registered a negative growth rate of -0.66 per cent during the pre-recession period have shown a positive growth rate of 6.58 percent during the post-recession period. Among the different commodities, frozen shrimp registered the highest growth rate in quantity from 3.15 percent in pre-recession to 18.95 percent in the post-recession period.



The important reasons for significant growth in frozen shrimp can be attributed to increased landings, culture of about 70 per cent frozen shrimp, higher price realization and widened markets.

The export performance over the last five years was assessed using a five year moving average method and it revealed that amidst of recession the export performance increased (Figure I and II).

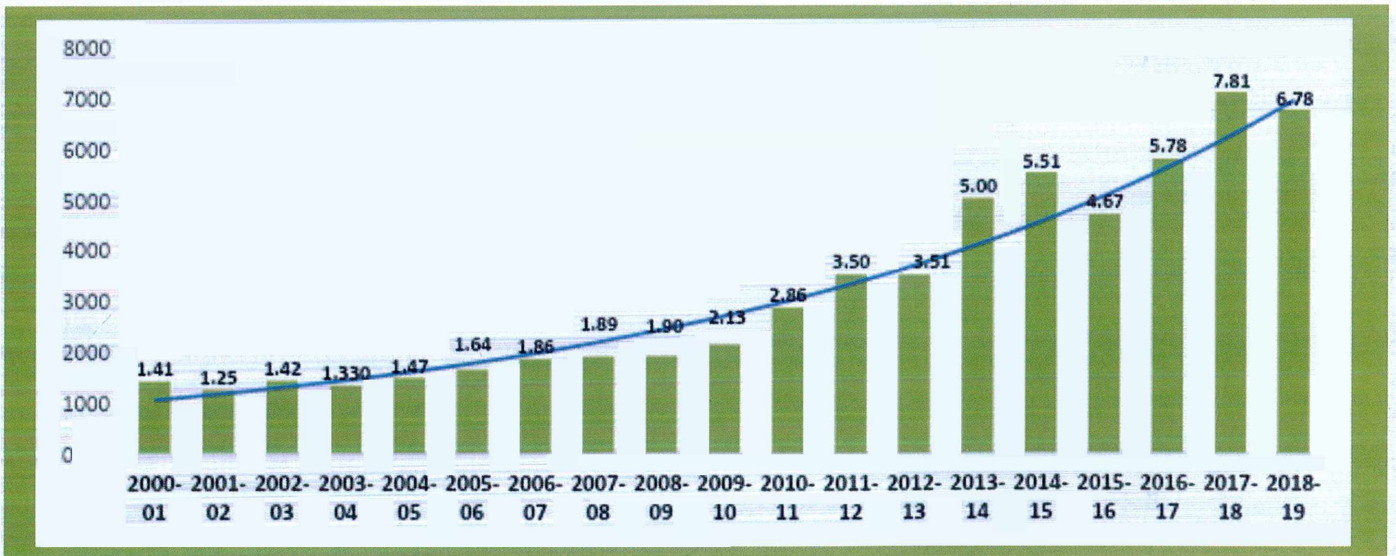


Fig. I. Marine Products Export Performance (Value in US \$)

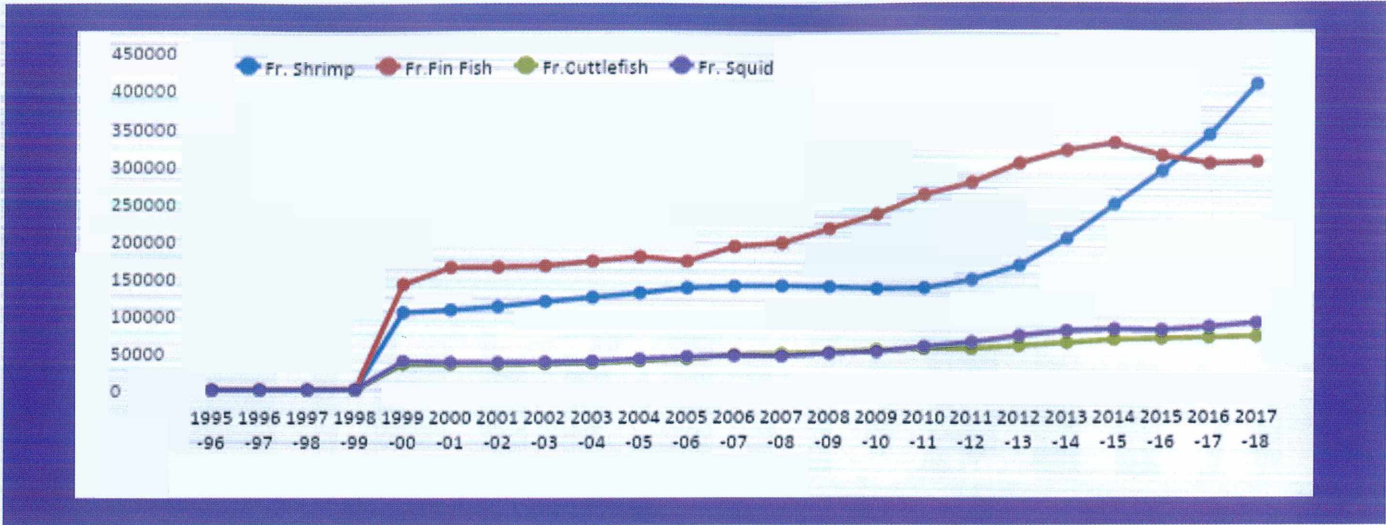


Fig. II Trend analysis of Export of major marine products to total export (Five year moving average)

INDIAN SEAFOOD EXPORT-COMMODITY & GEOGRAPHIC DESTINATION

The commodity basket of Indian fishery export were highly diversified with various marine products viz., live, fresh/chilled, frozen, dried etc. However, majority of the exports are traded in frozen form. Frozen shrimp was the largest exported item, both in terms of quantity and value during the last decade. The extent of diversification in commodity basket of fish export was quantified for both region wise and commodity wise using Simpson index of diversity (SID) and furnished in Figure III and IV.

The trend in the measure of diversity of exports to world and other major export destinations clearly indicated that the commodity basket of India’s fish exports is getting diversified over the years. The results shows that the Simpson index of diversity (SID) of exports to various geographical destinations have increased almost three fold during the post-recession period that the pre-recession period. The exports to largest destinations like Japan (0.69 to 0.93), USA(0.86 to 0.86) ,EU(0.37 to 0.62), China(0.43 to 0.82), Middle East(0.97 to 0.98) and Other(0.87 to 0.95) have increased and are close to one which

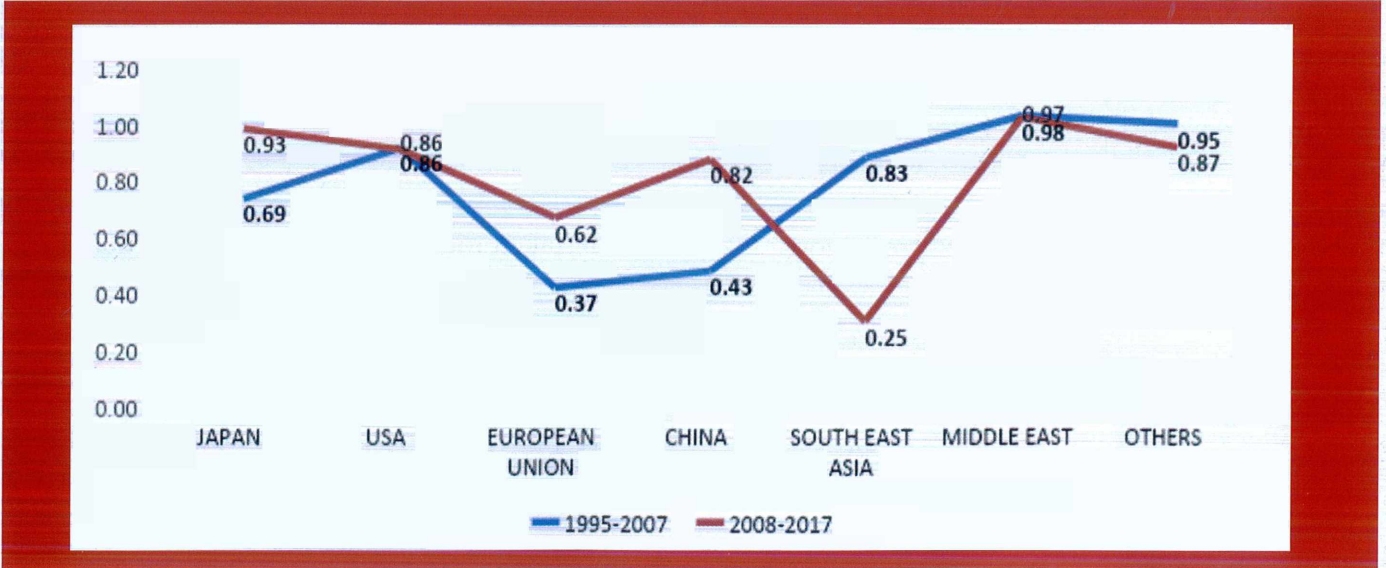


Fig.III Simpson Index of Diversity-Geographical destination wise.

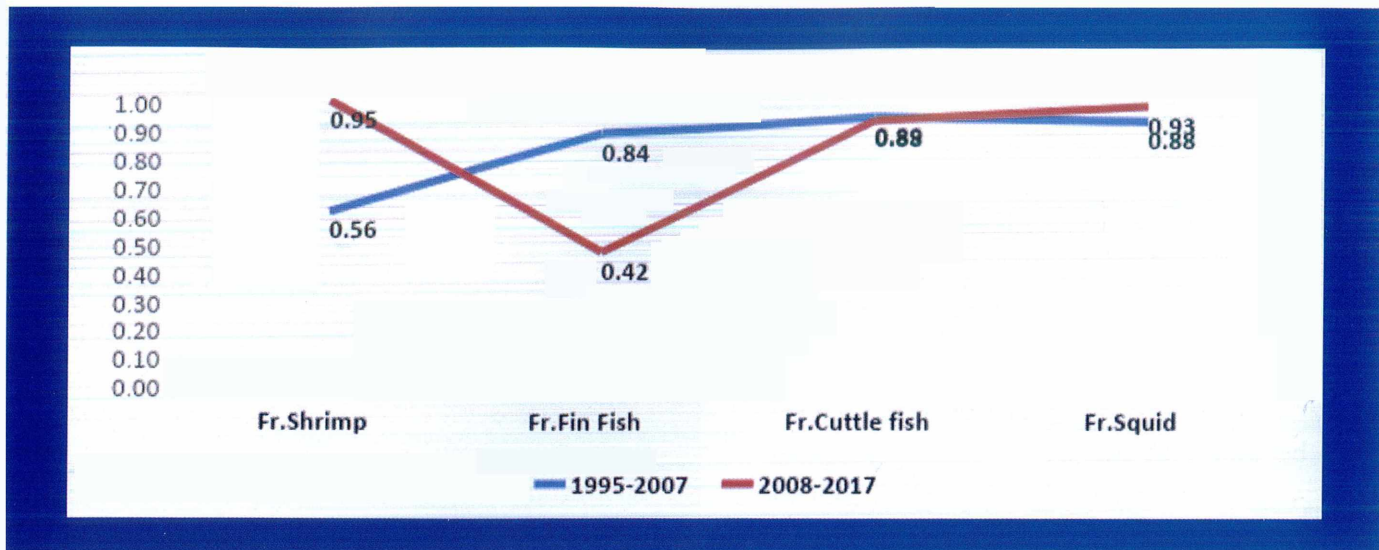


Fig.IV Simpson Index of Diversity-Commodity wise.

indicates the complete diversification of Indian fishery export, whereas export diversification to South East Asia has declined from 0.83 to 0.25. Commodity wise trend of SID indicates that frozen shrimp (0.56 to 0.95) holds the first place in the complete diversification of Indian export during the pre-post-recession periods followed by frozen Squid (0.88 to 0.93) and frozen Cuttle fish (0.88 to 0.89), whereas for frozen fin fish SID have decreased to almost half during the post-recession period. The results suggested that the export of frozen fin fish was associated with high rates of instability indicating greater inter-year fluctuations in the quantity exported during the post-recession period. Considerable increase for the SID was due to the increase in the export of frozen shrimp and frozen squid during the period. Large-scale production of Vannamei shrimp in addition to high productivity of black tiger shrimp and increased landing of squid might be attributed for the increase. The marine industry of India worth billions of dollars has not been much affected by the worldwide recession.

SCENARIO OF SEAFOOD PRODUCTS EXPORT FROM INDIA

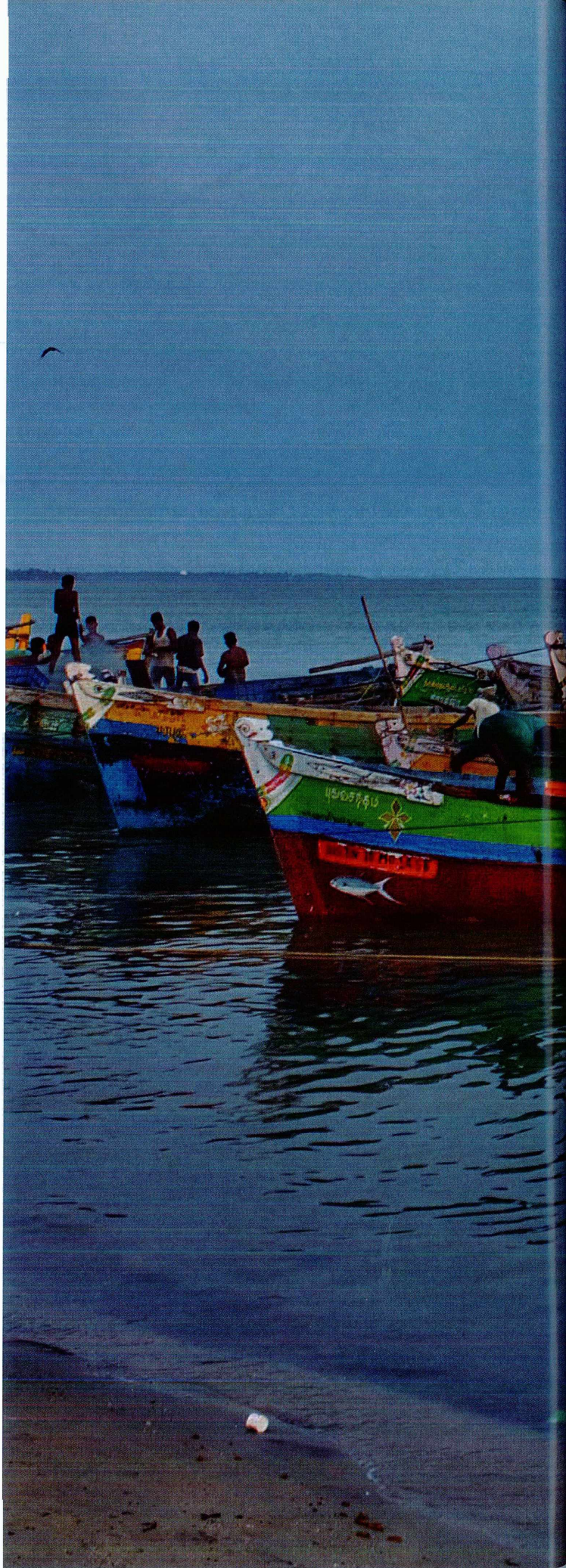
Over the past few years, safety has become very topical subject eliciting a great deal of public concern particularly in the developed countries, where food safety concerns are now dealt at Government level. Indian seafood exports are also crippled by the

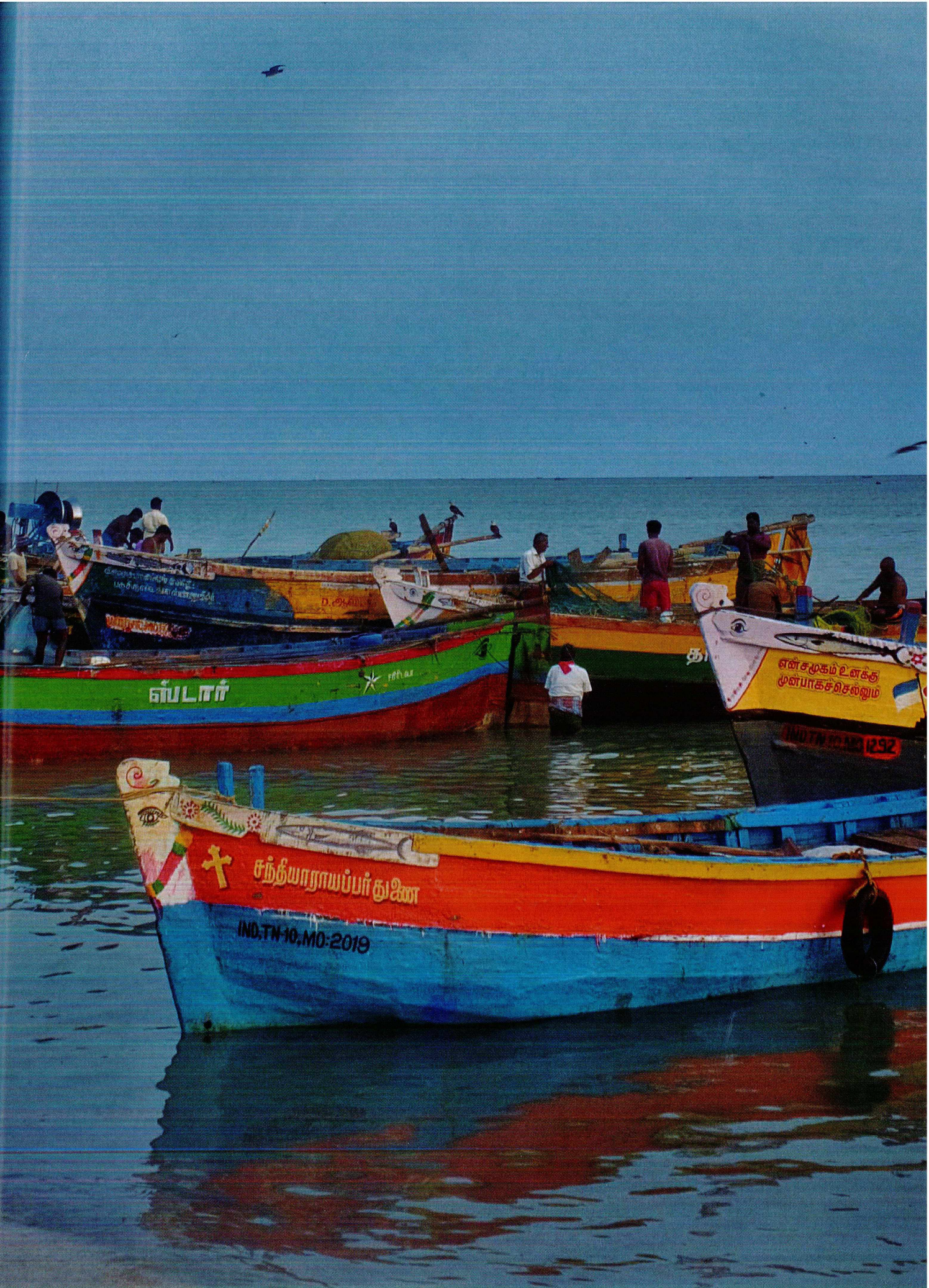
perishability of seafood products, challenges in intercontinental markets due to serious concerns over quality. Marine foods for export typically need to be quickly frozen after initial processing and kept frozen until purchased by the consumer. In addition to these steps, India can take its seafood exports a notch higher, by investing in adding value to its marine produce. The Government of India and facilitating agencies like Marine Products Export Development Authority (MPEDA) have already taken a few steps to address these challenges. New initiatives have been adopted for developing the sector to increase yields and ensure a sustained livelihood for fishermen. There has also been an amplified effort to increase exports to other countries through improvements in infrastructure facilities like cold storage that better address post-harvest management. To cope up with the increasing demand for safe food and to satisfy the needs of health / quality conscious consumers of the global seafood market such as measures has to be undertaken for monitoring of seafood quality in landing and pre-processing centers. The integrated development programme for upgrading seafood quality by providing infrastructural facilities like pre-processing centers and setting up of mini lab towards quality assurance would facilitate more sea food export in an eminent way. Evolving standards for compliance for export of fish and fishery products to various developed countries based on standards /

norms / regulations prescribed by such countries from time to time would enhance the quality and standards of the sea foods exported to various parts of the world.

CHANGING CONSUMER PREFERENCES

The seafood industry of India has gone drastic changes over the years in suiting the eating habits and consumer preferences toward the fish products. India is gearing up to produce and supply value added products in convenience packs by adopting the latest technologies and by tapping the unexploited and under exploited fishery resources. There has been considerable structural change in the seafood processing and export industry for the last few years. Large quantities of fish/shellfish are discarded at sea because it is currently uneconomic to preserve and bring them ashore. It has been estimated that the global amount of discard of by-catches is in the range of 17-39 million tons/year with an average of 27 million tons/year. Factors discouraging the landing of the by-catch are the low market value of the material, the size and species composition, the lack of suitable refrigerated storage space on-board and over-exploitation of most of the available species in the inshore areas. The rapid development of the value addition of fish products over the last four decades made a major contribution to the increased exploitation of these deep sea varieties and the by-catches. It has been found that consumption of fish may be greatly increased by making better use of the existing catch. Due to lack of infrastructural facilities like ice plants, landing facilities etc. the quality of the fish is downgraded particularly in developing countries leading to their use as aquaculture feed. Through improvement in infrastructure facilities, the quality of the landings can be upgraded for direct human consumption. The upgradation of these species may be achieved by use of improved handling and processing techniques on one hand and developing different products on the other preparation of value added product using a species in glut it is sure way of better utilization and distribution of the species when the landing is scanty.





ஸ்டார்

சந்திராநாயப்பர் குடி

IND.TN-10.MO:2019

என்சமுகம் உனக்கு
முன்பாகச்சிசலும்

IND.TN-10.MO:1232

VALUE ADDITION - AUGMENTING SEAFOOD REVENUE:

The fisheries sector is facing numerous problems on account of economic shortcoming, technical constraints, institutional limitation, trade restrictions and marketing lacuna. Value addition to marine products is critical if India is to compete in the international market, as at present mostly only raw material is being exported. The reason for the sustained increase in export is due to the demand for raw fish rather than value added products from the retail outlets as the buyers opted for cheaper fish on account of lower income and increasing unemployment. Severe competition exist between the different competitors like Thailand, China and South East Asian countries for sustaining the market share by product diversification Indian seafood industry, as a supplier of raw materials to the preprocessors. In foreign countries 90 % goes in bulk packs, which is the prime reason for the drastic reduction in the unit value realization. The marine products processing and marketing has become competitive all over the world and exporters are switching over to value addition Japan produces half the quantity of India, but its foreign exchange earnings are much higher than that of India due to development and trade of value added product. Similarly, Thailand earns more foreign exchange than India although its fish production is less compared to India, because it makes value added products from 85% of its fish catch.

Value addition is defined as any initiative along the supply chain that increases the usability, culinary attribute or economic viability of a food item. Processing of fish into a wide variety of value-added products is now common with the increase in demand for food products that are ready-to-eat or require little preparation before serving. Actually these indicates a measure of factors added to the total worth of a product at each stage of the production. Value addition ties in with consumer convenience and for being the thrust area of increasing seafood's exports from India, it is necessary to equip the seafood processors to create state-of-art technology in handling, preprocessing, processing, packaging, warehousing and transportation.

The Harmonized Commodity Description and Coding System of tariff nomenclature, an internationally standardized system of names and numbers to classify these traded products was done for improvising the quality as well as the standards of the sea food products. These codes help exporters and importers all over world to know product classification code named differently in each country like Schedule B, ITC, HS, HTS and Tariff Code etc. (Source : trademap.org)

The four major reasons for value addition are higher profit, improved processing utilization, keeping pace with consumers' and to provide variety of products. There are numerous varieties of fish and they differ widely from one another depending on the shapes, size, flavours, texture etc. Though fleshes of all types of fish are nutritionally more or less similar, their market prices vary hugely. The low-cost fish in whole have poor/no preference among the consumers as food due to some of the factors like small/unconventional size, ugly shape, too much spiny body and unfriendly flavour/taste etc. Therefore these low-cost fish are often used for animal feed or by-product production. Even in some cases, these fish are thrown back into the sea. Some species are used industrially for fish meal manufacture, a need for their conservation and utilization for human consumption has been recognized in order to prevent post-harvest fishery losses. However, with the application of available technologies, these fish can be directly used for human consumption through value addition. The dual advantages of this value addition helps for better utilization of low-value fish species and providing protein-rich convenience foods. However, the key to the success of this approach depends largely on the market strategies utilized. during the post-recession period. Considerable increase for the SID was due to the increase in the export of frozen shrimp and frozen squid during the period. Large-scale production of Vannamei shrimp in addition to high productivity of black tiger shrimp and increased landing of squid might be attributed for the increase .The marine industry of India worth billions of dollars has not been much affected by the worldwide recession.

PRESENT STATUS - VALUE ADDITION

The international trade scenario is changing fast and the importers are insisting on stringent quality standards and novel value added and ready to eat/serve products. Introduction of diversified seafood products in the export sector has improved product acceptance and better unit value realization for our sea food products. The seafood processing and marketing has become competitive all over the world and exporters are switching to value addition to increase profit. The market for value-added fish and shrimp is growing in the greater space. Rise in purchasing power of the people, fast life-style, growing of nuclear families, more house-wives opting for job etc. are the main factors responsible for increase in demand for these products in India. A variety of value added products such as fish balls, soup powder, fish cutlet, fish finger, fish flakes, fillet and fillet blocks, fish steaks, ready to serve fish curry, minced meat, surimi and extruded products, fish sauce and fish salad, Individual Quick Freeze (IQF) and Accelerated Freeze Dried (AFD) products and coated seafood products are now exported from our country. There is need for new innovative products catering to the demands of the domestic as well as overseas consumers to boost our seafood trade and enhance earnings. Value added products (VAP) are a great source of increasing income for the fish processing units. In India, about 80 per cent of the catch is now utilized as fresh or chilled, 6 per cent as dried or cured, 4.7 per cent for fish meal preparation and 5.3 per cent for freezing and export.

The following figures V ,VI,VII and VIII below represents the share of value added products to total fish export over the years (in percent), status of product wise export from India code Harmonic Code -16, status of Importing markets for product code 03(fish and crustaceans, molluscs and other invertebrates) exported by India, and status of Importing markets for product code 16 (preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates) exported

by India value in US\$, Source: ITC trade map). The product codes 03 refers to (fish, crustaceans, molluscs and other aquatic vertebrates) and 16 refers (preparations of meat of fish, crustaceans, molluscs or other aquatic vertebrates



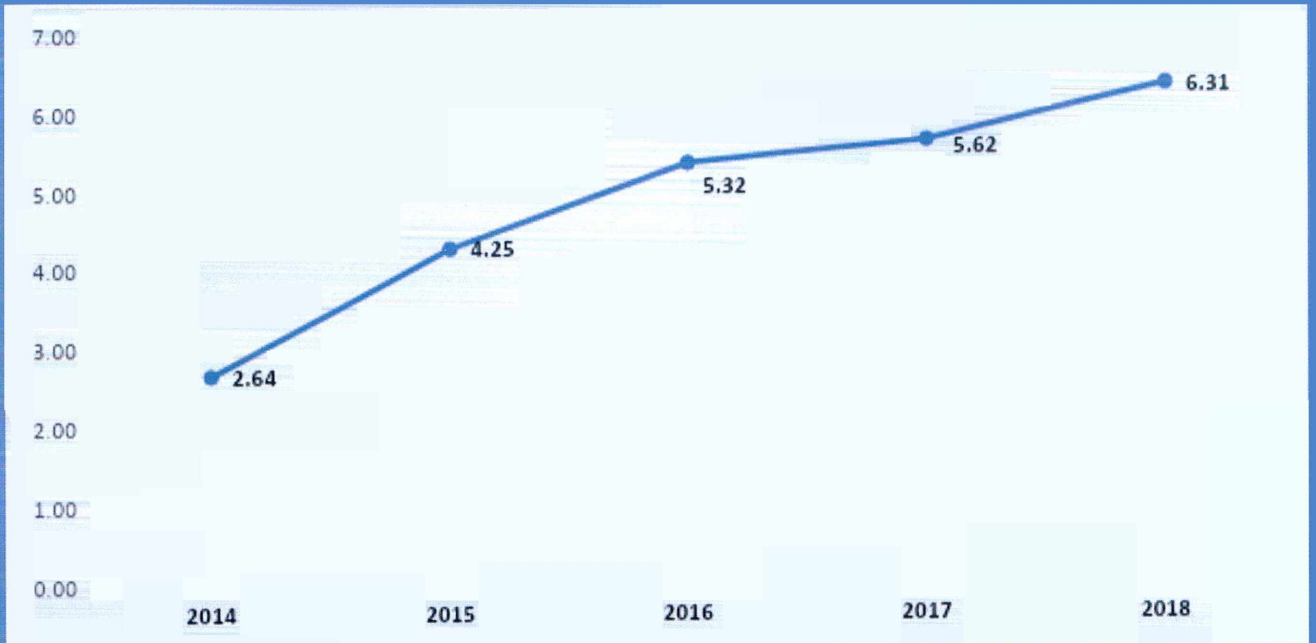


Fig V: Share of value added products to total fish export over the years (in percent)

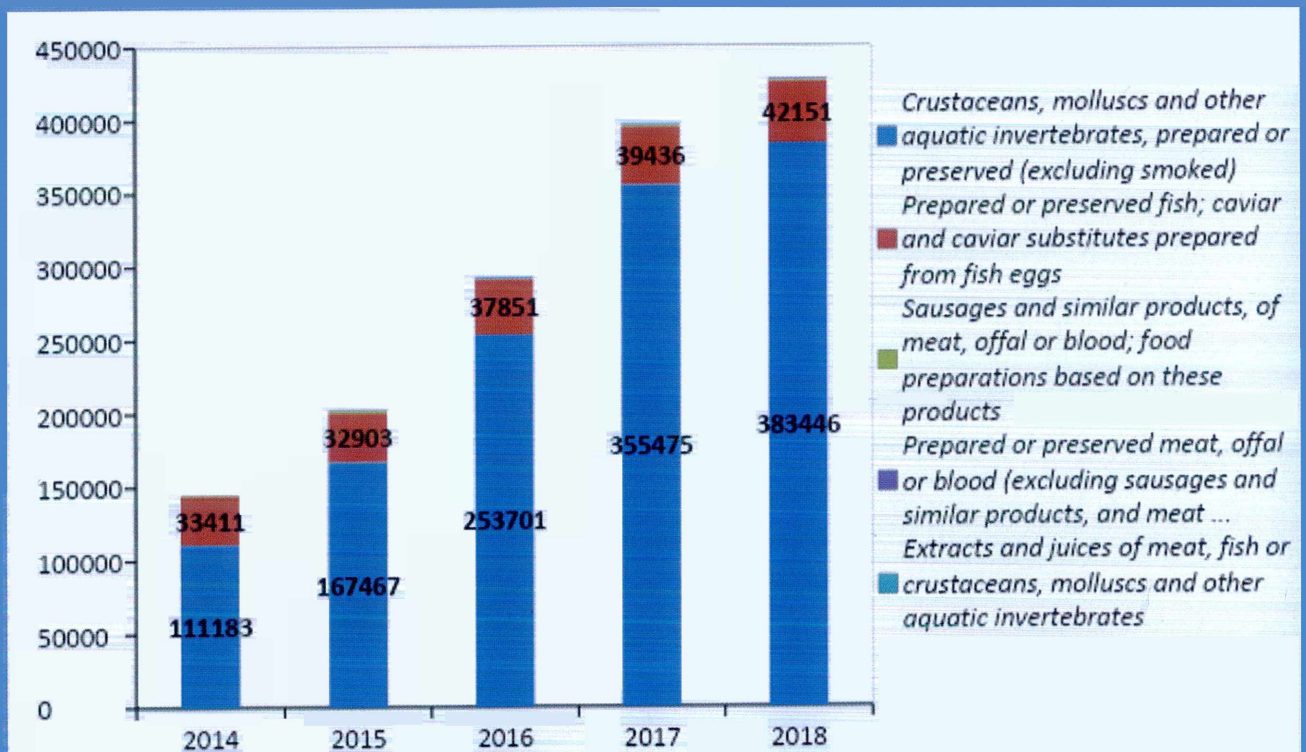


Fig VI: Status of product wise export from India code Harmonic Code -16 (000 US\$)

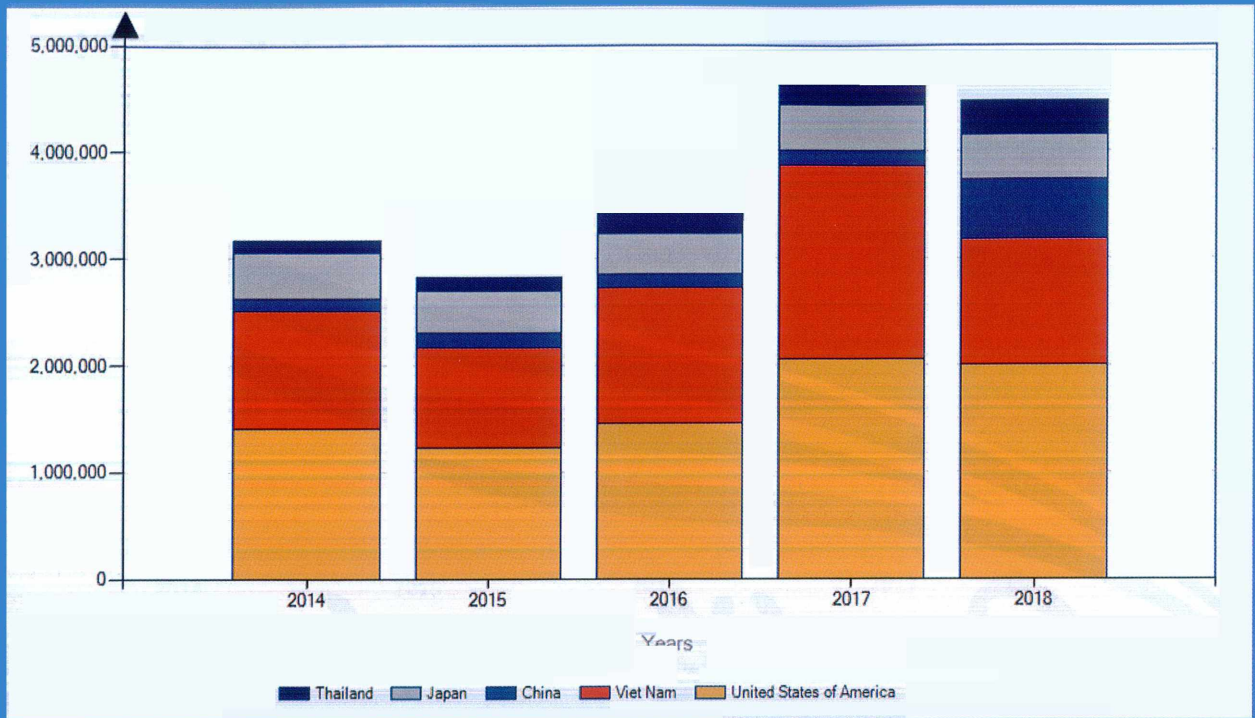


Fig VII : Status of Importing markets for product code 03(fish and crustaceans, molluscs and other invertebrates) exported by India, (000 US\$)Source: ITC trade map

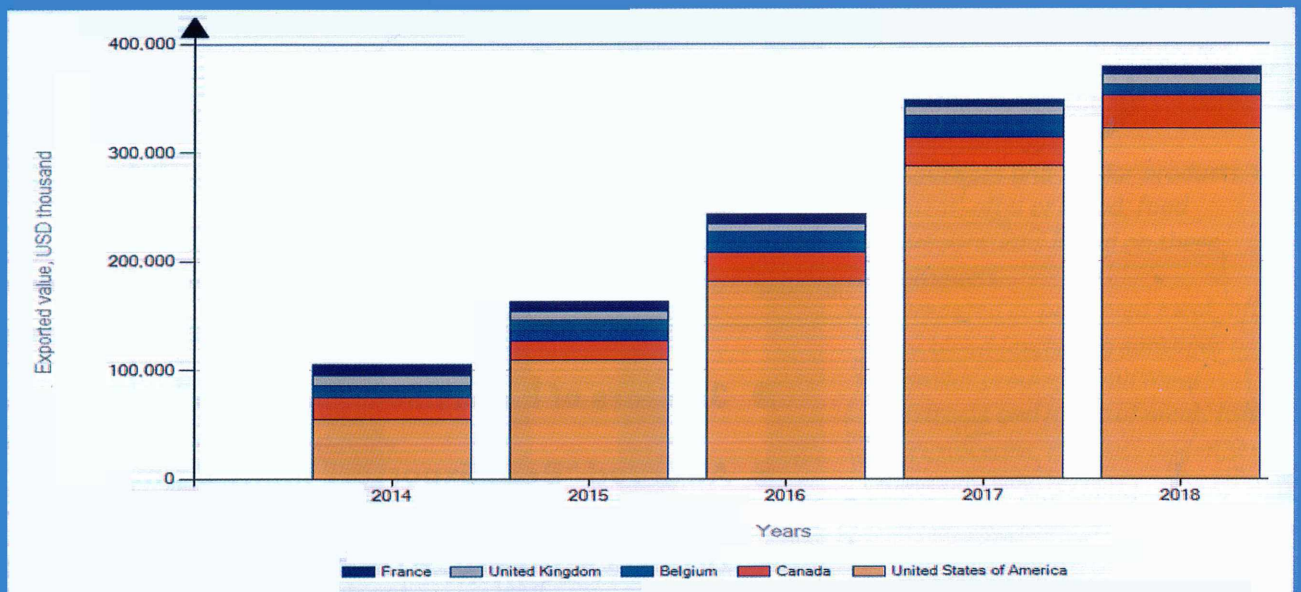


Fig VIII: Status of Importing markets for product code 16 (preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates) exported by India value in US\$, Source: ITC trade map

The results indicate that the value added products have strengthened the Indian fisheries export by contributing a major share in the fish export over the years from 2014-18. The share of value added products has consistently increased from 2.64 percent to 6.31 percent of the total fish exports from India. The export of raw materials from India has considerably increased and crustaceans, molluscs and other aquatic invertebrates, prepared or preserved (excluding smoked) (code 1605) and prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs (code 1604) tops the major value added products exported from India. Furthermore, analyses of the products across the years indicated that the US remains the major source importing market of Indian export. The results point out the need for strengthening the value addition processes and the identification of more innovative technologies to improve the value addition of sausages, prepared or preserved meat, extract of juices of meat, fish, molluscs, crustaceans and other aquatic invertebrates for enhancing the revenue generated through value addition.

VALUE ADDITIONS - MEASURES FOR FUTURE

The demand of the high value added product is expected to increase in the future not only because of the increasing population but due to increasing awareness of fish and fishery products as healthy food items. To achieve our vision and increase value addition, we should assist the supporting industries in the country, like additive manufacturers, batter and bread manufacturers, flavour and marinade manufacturers and machinery manufacturers and packing material manufacturers as our exporters are facing tight competition from foreign countries as these additives and machineries are not available in the country at a competitive rate. As the prices of additives and machineries in the international market are decided by China and other European countries and due to the inefficiency of our country in enabling these machineries and additives for a competitive price, our value added products would not develop to their next extent. Unless the country is equipped for manufacturing of these additives and machineries,

the price of our value added product will be decided by foreign countries and we cannot compete in the international market and achieve our targets in the coming days. Proper assistance and coordination with these supporting industries through research & development measures and financial assistance will strengthen our exports, domestic marketing system and price fluctuations in international markets, enhancing our product performance. Amidst these, considering the numerous factors such as convenience, value added, price, and availability might outweigh concerns and influence consumers to purchase value added products.

Expansion of supermarkets and hypermarkets from major cities into smaller cities will help to have more growth potential and benefit consumer trends toward convenience and evolving modern and urban lifestyles. Ecolabelling of value added products such as new cut, ready-to-eat product, gourmet quality product and formed seafood products with multiple formats, shapes, dimensions and flavor profiles such as seafood medallions, among others, formed an innovative measure in improving our seafood industry. With simple processing methods and attractive packaging, these products could gain popularity in the domestic market. These products should be marketed at a lower cost to compete with or replace similar higher cost conventional products. Traditional brick-and-mortar stores are increasingly adapting to e-commerce, sales of value added seafood online through e-malls and online retailers will also have high market potential.

There is a large potential for value added crab products both for domestic and export markets. The products identified for value added production are cut crab (half-cut and quarter-cut-crab), stuffed crab, crab balls, stuffed claws, picked meat and crab mince meat products. These products have good potential when marketed in retail packs. Marinated shrimp (great tasting shrimp marinated in a variety of sauces), Breaded sole fingers (sole fillets cut long ways into strips and breaded) Fish sticks (minced fish meat with spices in a batter) are yet another value added

products that can be introduced in our country. Large quantity of molluscs such as squid, cuttlefish and octopus and bivalves such as cockles, mussels and clams can be exported with improved packaging such as fillets (pine-cut, shell-cut and double-skinned), squid rings and cuttlefish strips, which have a potential when marketed in retail packs. The most popular snack foods Fish and shrimp crackers can be produced from low value fish species or small shrimp. Japanese threadfin bream, bigeye tuna can be used. The main ingredients are fish mince, tapioca flour, salt and spices. There are good opportunities to produce fish and shrimp crackers with improved technologies.

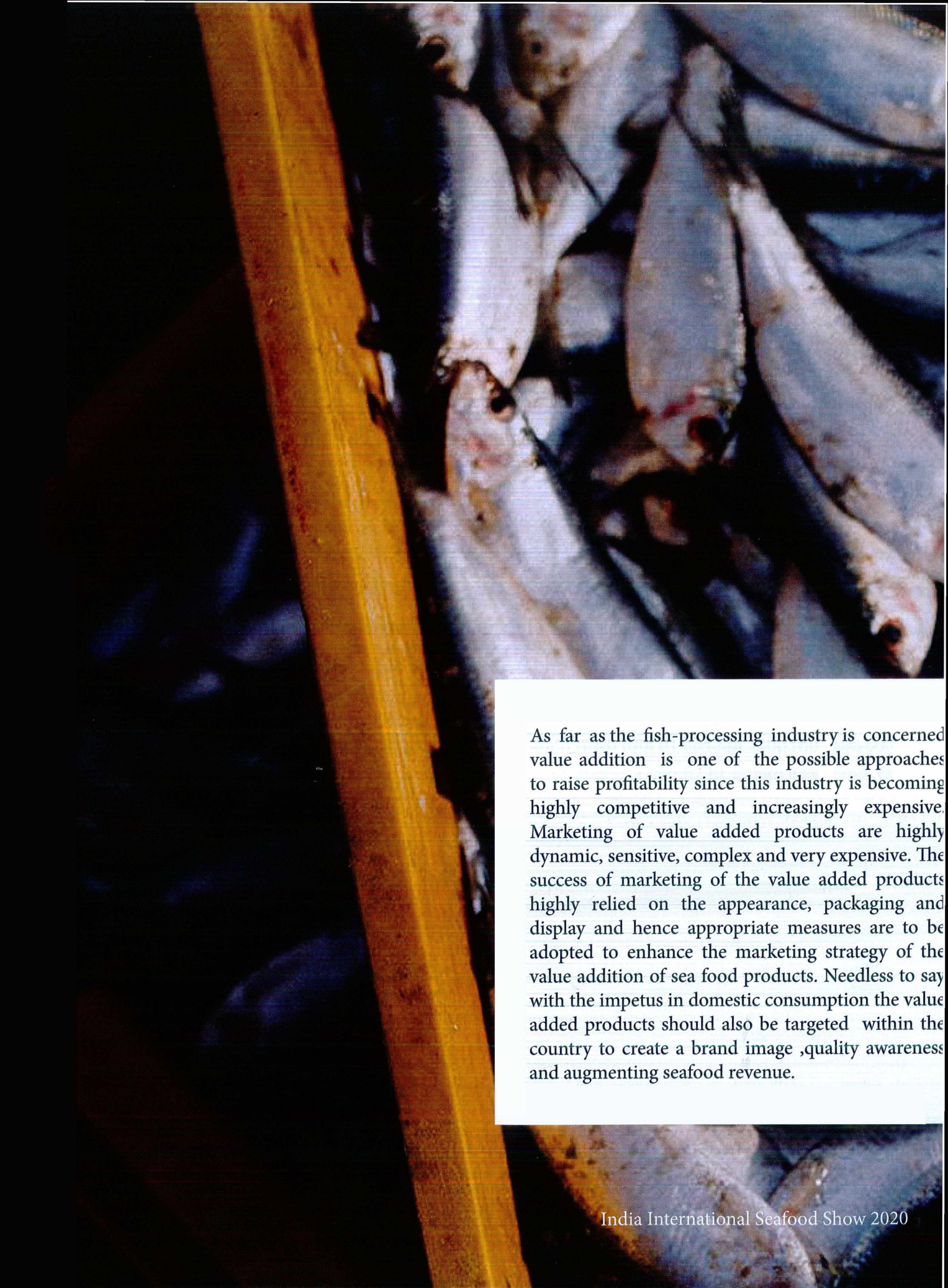
By increase in demand for the value added products there would emerge a positive effect on food safety and quality. At these points the fishery industries generate huge amount of fish processing wastes and by products that contain highly valuable bioactive compounds. Therefore a great demand for a raw material from the fish processing plants is expected. There will be greater utilization of discarded fish species for the optimum utilization of value added products for human consumption. These initiates the concept of green fishing. Climate change across the globe also provide an additional incentive to the traditional fishers who venture on green fishing. The carbon emission studies by life cycle assessment indicated that the traditional sector comparable lessor carbon to the tune of 0.09 per ton of catch. On the global standards the carbon emission in Indian fish catch is lower. Vessels will then have to travel farther or to deeper waters and spend more to catch the same amount of fish as they have in the past. In order to better the situation in terms of social upliftment of the traditional fishers as well as bringing environmental tranquillity, the concept of green fishing needs to be popularised, and supported with incentive based policies. Pricing the marine fish caught based on the method of fishing, and selling them with a green tag, which suggests the emission they have contributed, can be a precursor for a large movement in the fisheries sector. Once this idea gains popularity, it can be scaled up at a global level and

can work on the basis of Kyoto Protocol, where Annex I parties can pay in terms of CER (Certified Emission Reduction) to Annex II parties. This will lead to traditional fishers benefitting, as well as will reduce emissions in the fisheries sector at large and achieving a fishery induced blue carbon economy.

CONCLUSION

Seafood products are among the most important internationally traded food commodities. Sea food consumers usually demands for the products not only of high quality and safe to eat but also that it derives from fisheries that are sustainable. For retailers to provide such guarantees, they must receive, together with the seafood, certificates guaranteeing the wholesomeness of the product and the correct product labeling for identifying the species. Government should be able to implement zero-waste concept, optimum utilization of fish by products from the fishery industry and promoting value added of healthy food. The measures should be undertaken to enhance the value addition to takes place in our own country rather than in the importing country as it is to benefit job creation and higher economic activity. However, many countries, especially developing countries like India export mainly raw products and only limited quantities of processed products. The former are in turn processed in industrialized countries. By this the exporting countries are not extracting full benefits from their aquatic resources.

Consequently, more and more development experts and institutions are advocating the transfer of value addition technologies, know-how and investment capital to these developing countries. Value addition processes generate further employment and foreign exchange earnings. Rise in purchasing power of the people, fast life-style, growing of nuclear families, alternative livelihood options etc. are the main factors responsible for increase in demand for these products in India. Introduction of diversified seafood products in the export front has improved product acceptance and better unit value realization for our sea food products.



As far as the fish-processing industry is concerned value addition is one of the possible approaches to raise profitability since this industry is becoming highly competitive and increasingly expensive. Marketing of value added products are highly dynamic, sensitive, complex and very expensive. The success of marketing of the value added products highly relied on the appearance, packaging and display and hence appropriate measures are to be adopted to enhance the marketing strategy of the value addition of sea food products. Needless to say with the impetus in domestic consumption the value added products should also be targeted within the country to create a brand image ,quality awareness and augmenting seafood revenue.