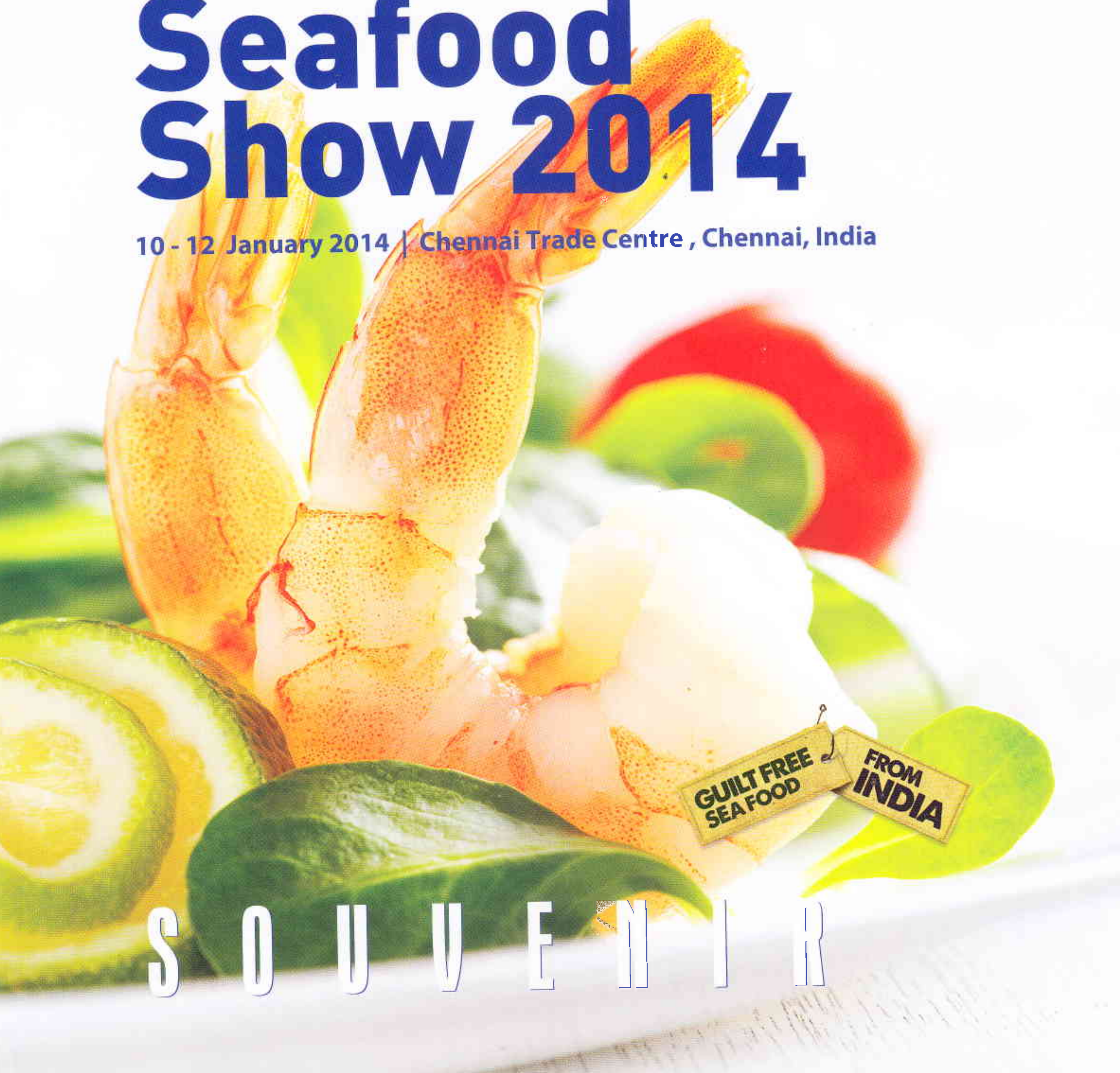
INDIA INTERNATIONAL
SEAFOOD SHOW 2014

19th India International Seafood Show 2014

10 - 12 January 2014 | Chennai Trade Centre , Chennai, India



SOUVENIR

Fisheries trade perspectives in India: Need for improved Domestic marketing and challenges ahead

Fisheries sector in India is undergoing a transformation and contributes to the livelihood for a large section of economically underprivileged population of the country, especially in the coastal areas. Fisheries sector is one of the sunrise sectors and contributes immensely to the food and nutritional security, employment opportunities, national income and export earnings to the country. The sector contributes 0.82 percent of the total GDP and 7.32 percent of the agricultural GDP. In terms of export earnings, the sector contributes around 3.51 billion dollars from 9.28 lakh tons of fish. During the recent years the export market has been encountered with many problems such as disease outbreak, sanitary and phytosanitary measures, eco labelling ,increasing costs of production, rejections of consignments on account of the antibiotic residues, characteristic buyer market and most importantly appreciating Indian currency and the worldwide economic recession .In the meantime the impressive economic growth rate of the Indian economy by over 8 per cent has increased the purchasing power and spending of the Indian population with not of a rural and urban divide. The prices of many of the export species have spiralled up in the domestic market and there exists a wide gap between the domestic supply and demand in the market to ensure the fish availability and affordability to the local consumers. In the context of the global pressures of fish export it becomes important to harness the domestic market for fish. The domestic marketing in fish assumes a lot of problems on account of the geographical separation between the production and consumption centres, unorganized marketing system, inelastic supply in marine sector. The sector suffers from weakness in the most essential component of organized marketing, weak linkages between the different marketing intermediaries and lack of adequate infrastructure. In addition the major problem facing increasing the domestic fish marketing will be to enhance the fish consumption by way of increasing the demand by creating awareness in the country. The present paper highlights the status of fish production, demand –supply gaps, fisheries export and the need for developing fish markets in India.

Introduction

Fisheries has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries, and is a source of cheap and nutritious food besides being a foreign exchange earner. The present fish production is 9.3 million tonnes with a contribution of 3.93 million tonnes from marine sector and 5.46 million tonnes from inland sector. The fisheries contribution to GDP is 84000 crores contributing to around 0.82 per cent of the total GDP. The sector contributes around 7.3 per cent of the agriculture GDP. Fisheries sector in India has emerged from a mere subsistence economy to a multi-billion commercial enterprise providing food security, income generation , creating employment opportunities to more than 200 million people of the country. Fisheries sector is the fastest growing food sector in the country and as maintained a sustained growth of around 10 per cent for the last three decades

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The fish production during 2012-13 is estimated at 9.31 million tonnes- 55 per centfrom inland sector and 45 per cent from marine sector. The fisheries sector consistently contributes to around one per cent of the total GDP (84,000 crores) and around eight percent of the agricultural GDP. (2012-13). There has been a gradual shift (as shown in Figure 1) in the production scenario from marine to inland fisheries in recent years. The contribution of the sector over the years from 1991 to 2010 is shown in Figure 1. In the figure it can be seen that marine sector contribution reduced from 58.86 per cent in 1991 to 38.84 per cent in 2011 whereas inland sector contribution increased from 41.14 per cent in 1991 to 61.16 per cent in 2011. (FAO, 2005, 2005-13), CMFRI (2012)

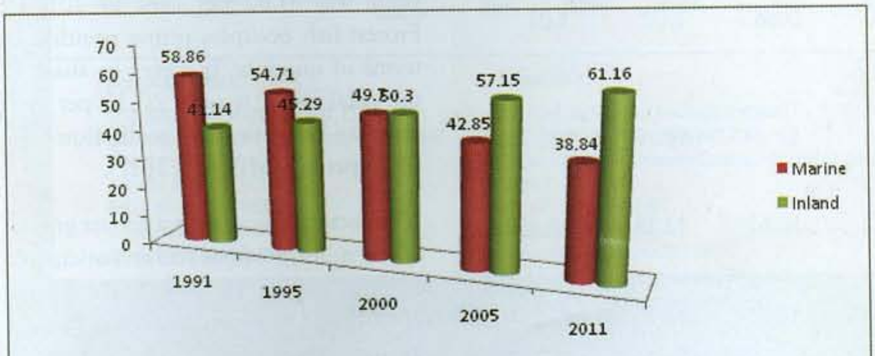

Figure 1: Sectoral contribution over the years

Food security challenges in India

The need for food security arises primarily due to the fluctuations in food plan and non-availability of sufficient food from domestic sources. In October 2011, population nearly tripled to seven billion people and by 2050, expected at 9 billion people. The comprehensive development of agriculture, health, nutrition education, literacy, etc. would alone lead to enduring solution to the problem of food insecurity, poverty alleviations, unemployment and social tension in the region (Vijay and Shyam, 2001). Due to the increasing concerns of global warming and financial crisis, 'food' is becoming costlier every day. In order to feed this population, it is estimated that global food production will need to increase by 70 per cent (The Guardian, 2012). In order to analyse the food fish requirement the demand and supply analysis was done and is given in Table 1.

It can be seen that the available supply from marine resources, inland resources, imports and that excluding exports/ Industrial/Processing purposes for the year 2015 will be 7.44 mt whereas the same forecasted for the years 2020, 2025 and 2030 is found to be 7.93, 8.45 and 9.10 mt respectively. If the population is assumed to be 1.28 billion in the year 2015, with 60 per cent comprising a fish eating population and the per capita consumption be 12 kg, then the demand forecasted on the same year is found to be 9.22 mt (Table 2). Similarly, the population is assumed to be 1.36 billion (with 65 per cent fish eaters and per capita consumption to be 12 kg), 1.45 billion (with 70 per cent fish eaters and per capita consumption to be 12kg) and 1.53 billion (with 70% fish eaters and per capita consumption to be 12kg (as per ICMR Recommendations) for the years 2020, 2025 and 2030 respectively and thereafter the demand forecasted is calculated to be 10.61mt, 12.18mt and 12.85mt respectively through the above mentioned years. The demand-supply deficit for the years 2013, 2015, 2020, 2025 and 2030 is forecasted to be 1.70, 1.78, 2.67, 3.73 and 3.75 respectively.

Supply side

Table 1: Estimated Fish Supply Analysis

Sector*	Years				
	2013	2015	2020	2025	2030
Marine	3.94	4.1	4.3	4.51	4.74
Inland	5.36	5.72	6.07	6.43	6.82
Total supply	9.3	9.82	10.37	10.94	11.56
Imports	0.05	0.10	0.21	0.33	0.58
Exports/ Industrial/ Processing	2.34	2.48	2.64	2.82	3.03
Available Supply	7.01	7.44	7.93	8.45	9.10

• Production in million tonnes

Demand side

Table 2: Estimated Fish Demand Analysis

Years	2013	2015	2020	2025	2030
Population	1.21	1.28	1.36	1.45	1.53
Fish eaters (% of population)	60	60	65	70	70
Fish eaters (billion)	0.73	0.77	0.88	1.02	1.07
Per capita (ICMR recommendation)	12	12	12	12	12
Demand (million tonnes)	8.71	9.22	10.61	12.18	12.85
Demand -Supply gap (million tonnes)	1.70	1.78	2.67	3.73	3.75

• Value in billion rupees

Fish exports over the years:

India plays a major role in the global seafood export among the Asian countries. The marine products exports from India reached 9.28 lakh tonnes worth .51 billion US $ in 2012-13 and registered an impressive double digit growth rate since 2007-08. 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. Among the different items exported, frozen shrimp and frozen fin fish accounted for about 75 per cent of the total volume of sea food exports from India. Even though frozen shrimp contributed only 19.24 per cent of the total volume of seafood exports, its share in the total value was 41.62 per cent in 2010-11. Frozen fish occupies prime position in terms of quantity, however its share in the total value is only 20.38 per cent showing low unit value realization (Rs. 84.16 per kg) (MPEDA, 2011).

The sector is poised for a robust growth of one million tonnes and an anticipated forex earning of 4 billion dollars during 2013-14 .This assumes significance during the period of continued recession among the major buyers. The major buyers including the US, EU and Japan are affected with severe recession related economic indicators like lack of investment, lower purchasing power, acute unemployment etc. Amidst the impressing performances the export sector is grappled with demand and supply side constraints. The export sector is facing constraints on account of timely availability of raw material, low capacity utilization; high cost of production on account of heavy price of raw materials, high cost of compliance for meeting the quality standard of the buyer countries, incidence of alert and rejections and continued trade impediments.

The exports of frozen shrimps and fish have registered a positive growth both in volume and value, while South East Asia, Japan and the US have become key markets for Indian seafood. Significantly, South East Asia became top consumer of Indian marine products with a market share of 25.44 per cent, valued at $ 745.65 million. EU ranks second with a share of 22.41 per cent, followed by the US (18.62 per cent), Japan (13.70 per cent), China (7.35 per cent), Middle East (4.72 per cent) and other countries (7.76 per cent). However, exports of China have shown a drastic decline both in quantity and value terms. In the export basket, frozen shrimp continued to be the major item accounting for 50.75 per cent of the total US dollar earnings. Shrimp exports during the period increased by 21.89 per cent, 39.75 per cent and 36.16 per cent in quantity, rupee value and dollar value.

WTO and Indian fisheries

The founding of the World Trade Organization (WTO) in January 1995 marked the culmination of a series of complex, arduous and long drawn out negotiations under the Eighth Round of General Agreement on Tariffs and Trade (GATT) (Venkatswrlu and Shyam, 2002). It also marked the beginning of a distortion free multilateral trade among the economies of the World. The core principle of the WTO is institutionalization of global framework for deregulated

Table 3. Export growth of Indian marine products (Commodity wise)

Year	Pre -WTO (1977-1994)	Post- WTO (1995-2012)
	Total	
Quantity (tonnes)	7.41**(2.96)	6.23**(5.19)
Value (Mil INR)	8.77**(2.50)	2.98**(2.14)
Value (Mil US$)	7.82**(3.59)	6.99**(4.36)
Unit Value	1.27*(1.03)	-3.06**(-3.37)
	Frozen Shrimp	
Quantity (tonnes)	3.01 **(2.10)	3.75**(3.07)
Value (Mil INR)	7.18 **(2.18)	0.59(1.33)
Value (Mil US$)	6.25**(2.84)	3.90**(2.13)
Unit Value	4.05 **(2.13)	-3.61**(-3.24)
	Frozen Lobster	
Quantity (tonnes)	7.41**(2.60)	4.34**(1.52)
Value (Mil INR)	11.41**(3.37)	0.93 (0.39)
Value (Mil US$)	10.43**(3.06)	4.86**(1.71)
Unit Value	3.72 **(1.55)	-3.27**(-1.79)
	Frozen Squid	
Quantity (tonnes)	25.52**(4.15)	4.57**(2.27)
Value (Mil INR)	28.74**(3.57)	3.80**(2.00)
Value (Mil US$)	27.62**(4.25)	7.83**(3.28)
Unit Value	2.57(0.85)	0.74* (0.72)
	Frozen Cuttlefish	
Quantity (tonnes)	23.02**(6.75)	4.41**(4.03)
Value (Mil INR)	24.15**(5.13)	5.54**(3.45)
Value (Mil US$)	23.07**(5.87)	9.64**(4.11)
Unit Value	0.92(0.36)	1.08*(0.98)
	Fresh and Frozen Fish	
Quantity (tonnes)	14.75**(2.26)	5.57**(2.78)
Value (Mil INR)	18.38**(3.29)	2.18 **(0.38)
Value (Mil US$)	17.35**(3.88)	6.15*(0.97)
Unit Value	3.16**(1.4)	-3.21*(-0.64)
	Others	
Quantity (tonnes)	-0.47 (-0.11)	17.41**(6.33)
Value (Mil INR)	1.36 (0.24)	15.68**(5.73)
Value (Mil US$)	0.47 (0.10)	20.18**(7.39)
Unit Value	1.83(0.58)	-1.48 (-0.58)

Figures in parenthesis indicate the standard errors of the estimates
** one per cent level of significance
* five per cent level of significance

Table 4. Export growth of Indian marine products (Geographic destination wise)

Year	Pre -WTO (1977-1994)	Post- WTO (1995-2012)
	Total	
Quantity (tonnes)	7.41**(2.96)	6.23**(5.19)
Value (Mil INR)	8.77**(2.50)	2.98**(2.14)
Value (Mil US$)	7.82**(3.59)	6.99**(4.36)
Unit Value	1.27*(1.03)	-3.06**(-3.37)
	Japan	
Quantity (tonnes)	1.59**(1.45)	0.94(0.63)
Value (Mil INR)	5.97**(2.08)	6.80**(2.70)
Value (Mil US $)	5.04**(2.33)	3.18*(1.12)
Unit value	4.31**(1.75)	7.67**(5.15)
	USA	
Quantity (tonnes)	3.35*(1.00)	4.10**(1.48)
Value (Mil INR)	6.57**(1.37)	4.60*(1.07)
Value (Mil US$)	5.64**(1.79)	8.66**(2.19)
Unit Value	3.12**(1.88)	0.48 (0.27)
	European Union	
Quantity (tonnes)	17.65**(3.61)	7.80**(3.57)
Value (Mil INR)	18.48**(3.17)	6.99**(3.39)
Value (Mil US$)	17.45**(4.08)	11.14**(5.06)
Unit Value	0.70(0.40)	-0.75*(-1.11)
	South East Asia	
Quantity (tonnes)	17.55**(3.44)	1.75 (0.24)
Value (Mil INR)	24.21**(2.90)	2.09 (0.36)
Value (Mil US$)	23.92**(3.07)	6.05*(0.96)
Unit Value (Mil INR)	6.88**(1.89)	0.33 (0.30)
	Middle East	
Quantity (tonnes)	3.83*(1.21)	8.08**(3.80)
Value (Mil INR)	8.20**(2.63)	9.60**(4.42)
Value (Mil US$)	7.25**(2.48)	13.86**(6.44)
Unit Value	4.21*(1.06)	1.41*(1.02)
	China	
Quantity (tonnes)	NA	26.55**(1.90)
Value (Mil INR)	NA	30.81**(2.45)
Value (Mil US$)	NA	24.81**(1.85)
Unit Value	NA	3.36**(1.66)
	Others	
Quantity (tonnes)	-2.67 (-0.46)	23.60**(5.06)
Value (Mil INR)	6.35*(0.87)	17.69**(5.83)
Value (Mil US$)	21.55**(1.62)	22.60**(4.54)
Unit Value	2.26**(1.42)	3.47**(2.30)

NA – Not Available

Figures in parenthesis indicate thestandard errors of the estimates

** one per cent level of significance

* five per cent level of significance

competitions. India, being a founder member of the GATT, is a signatory to the commitments made during the negotiations. The provisions under the various agreements do have an impact on fisheries sector.The establishment of WTO has made it obligatory for India to honour all its commitments to safeguard the intellectual property rights of the owners. Within the WTO, fish is treated as an industrial product within a potentially free global market to be addressed within the NAMA negotiations, having been excluded from agriculture negotiations.

The analysis of the fish export growth post WTO is depicted in Table 3 and 4

The average growth rate of major marine products exported from India to the different geographic destinations during the pre WTO (1977-1994) and post WTO (1995-2012) period, both quantity-wise and value-wise is furnished in Table 4.

The overall analysis specified that there was an increase in exports during the post WTO period than in the pre WTO period. The top most buyer was found to be South East Asia with 137892 tonnes in terms of quantity followed by European union (109549 tonnes), China (100483 tonnes), Japan (64630 tonnes), US (46216 tonnes) and Middle East (22161 tonnes) respectively. The unit value also increased significantly radically during post WTO period with the highest growth shown by the US with an increase from 54 Rs/kg (pre WTO) to 281 Rs/kg (post WTO) followed by Japan (264 Rs/kg) and EU (163 Rs/kg). The analysis indicated a notable decline in the growth rate in terms of quantity, value and unit value during the post WTO period (Table 3). Middle East countries indicated the highest growth rate of 8.08 per cent in terms of quantity. EU (7.80 per cent) and the US (4.10 per cent) was found to be in the second and third positions respectively. But in unit value terms, Japan showed the highest growth rate (7.67 per cent). EU registered the least growth rate showing a negative growth rate of -0.75 per cent.

The economic reforms of 1991, the subsequent WTO agreements and the proliferating Regional Trading Agreements (RTAs) have brought challenges as well as opportunities for the Indian fisheries sector. Liberalization of economies coupled with increasing demand for value added products and other product diversifications have resulted in the structural changes of seafood industry in the last decade. Indian seafood exports increased from 2.81 billion US $ in 2010-11 to 3.54 billion US $ during 2012-13. Seafood is high on the global trade agenda and has become particularly relevant in the light of the entry of fisheries into the WTO process in the Non-Agricultural Market Access (NAMA). The varied impacts of trade liberalization policies including the WTO agreements on fisheries trade are manifested on domestic trade and marketing, subsidies, protectionism including tariff and non-tariff barriers like Quantitative Restrictions, Sanitary and Phyto Sanitary (SPS) measures, environment, dumping, negative list and legal rights. Even though the international trading regimes are changing, with more open markets and increased access, the EU, US and other developed countries are taking increasingly stringent measures on seafood safety. Changes in market access are likely to have significant implications for poor producers and costs of implementation of international fisheries agreements such as SPS measures, HACCP standards and market-driven labelling schemes form barriers for participation of poor fisherfolk and thereby reduce their livelihood options. The global attention and the ongoing debates of fisheries subsidies focus mainly upon the twin issues of trade distortion and environment and largely bypass other dimensions like fair play, subsistence livelihood and quality of life. The provisions under the various WTO agreements are expected to have impact different dimensions of fisheries sector.

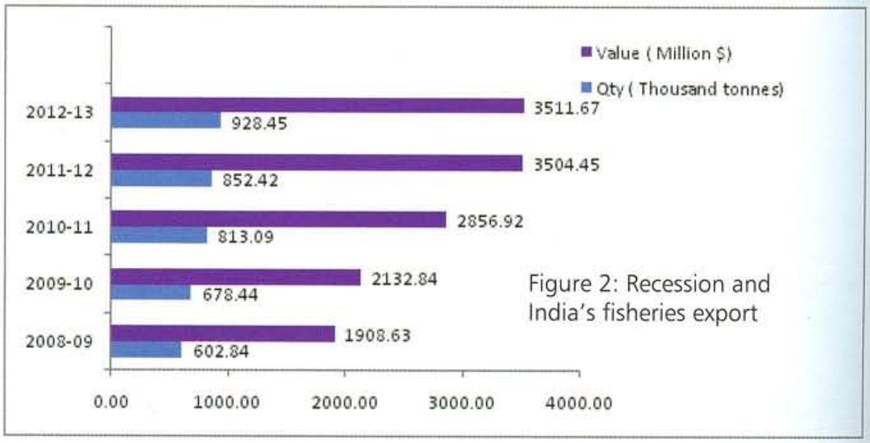

Figure 2: Recession and India's fisheries export

Recession and its impact on India seafood trade

A recession is a decline in a country's Gross Domestic Product (GDP) growth for two or more consecutive quarters of a year. A recession is also preceded by several quarters of slowing down (What's a recession, 2008). Economic Recession is "a significant decline in the economic activity spread across the country, lasting more than a few months, normally visible in real GDP growth, real personal income, employment, industrial production, and wholesale-retail sales (Shyam.S.Salim, R,Narayanakumar, 2012).

The impact of recession was studied and it was found that recession has not affected India's seafood trade. The reasons can be attributed to many like the economic stimulus, strength of banking system in providing adequate support and tapping in newer markets for exports. The major buyers including the US, EU and Japan are affected with severe recession related economic indicators like lack of investment, lower purchasing power, acute unemployment etc. The gravity of recession in developed countries can be understood by the reduction in the purchasing power and employment rate decreased by around double digits .The demand for retailing gone up with lower demand for ready to serve (RTS) and ready to cook (RTC) .The demand for food stamps (PDS as in India) increased in the developed countries including US and EU amidst massive economic stimulus provided. The Indian seafood export wasn't affected due to the increased demand for raw fish rather than value added products from the retail outlets and declining international market arrivals by over ten per cent globally in the

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buyer countries. It was found that the quantity and value are on the high and the emergence of newer markets in Latin American, African (3.5 and 4.2 per cent Quantity and Value). However there are concerns of unit value declining over the period - case of concern and growing concern of depreciating rupee compared to dollar increased the earnings and the reduction in the import to China (but channelled through Vietnam was a concern).

It can be inferred that the export of fisheries products is on the rise, throughout the period of recession which commenced from 2007. Exports have increased from 541.7 million dollars in 2007-08 to 928.45 million dollars in 2012-13. It can also be inferred that the quantity of fisheries products exported in the year 2012-13 was 3511.67 tonnes whereas the same was 1899.09 tonnes during 2007-08 (Figure 2).

The most important lesson that we must learn from the crisis is that we must be self-reliant. Though World Trade Organization (WTO) propagates free trade, we must adopt protectionist measures in certain sectors of the economy so that recession in any part of the globe does not affect our country. In the event of the economic slowdown coupled with the increase in the purchasing power of the consumers it is important to note that some of the high value fishes like the shrimp, seer fish and pomfrets fetch a premium price in the domestic market too. Low demand from the US and the EU - the two economies hit hard by the global crisis has decelerated the country's export growth sharply in September 2008. Export markets are subject to risk in terms of detention and loss or damage in transit or variation in foreign exchange values. The setbacks experienced now and then in the export front which is imminent under the WTO regime can be supported only if a buffer is created by a well-developed internal marketing system.

Domestic fish marketing

The seafood export trade performed well in the past decades amidst stringent trade liberalization measures and economic recession which affected many Indian buyer countries. In India storage, processing and transport, grading and quality control facilities are mostly oriented towards the export market even though more than 80 per cent of the fish production is channelled in the domestic markets. Seafood trade influences the domestic markets significantly by way of affecting the supply -demand situation of many high valued fishes, competition for small scale traders and rise in prices in the domestic markets

On the brighter side there exists a huge domestic demand evident from the high domestic prices and consumers preferences towards fish and fish related products. The export markets are buyer driven with buyers being the 'price makers'. In the context of numerous trade limiting impediments and stringent quality control, the continued spurt in domestic demand would definitely increase the options available with the exporters to harness on added revenue with minimal transaction cost.

Marine fisheries sector has undergone vast structural changes during the last few years. The shift from the traditional to motorised and mechanised fishing is a major one. Export of processed fish and development in the internal marketing system transferred several backward regions along the coast into commercial centres (Sathiadhas, 2012). Exports augment the economy with an increase in international trade, acceleration in output and provides an engine for growth. Free trade agreement (FTA) with huge economies provides ample scope for the integration of trade (Shyam and Geetha, 2011), (Sandu Joseph and Shyam, 2012).

Most of the fishes harvested (about 90 per cent) is consumed in the domestic market and around 10 per cent of the fish is exported overseas fetching around 3.54 billion US$ during 2012-13 (MPEDA, 2012). Perishability and geographical separation between the production and consumption centres have been limiting factors in the restricted fish consumption within the local markets.

The total fish eating population is estimated at 56 per cent of the population, which has not seen an upward trend for a substantial period. The per capita fish annual fish consumption is around 6kg, which is lesser than the ICMR recommendation. Over the years the fish consumption revolves amongst the existing fish consumers rather than adding new consumers into the fish consuming population.

The domestic market for fish in India is governed not only by the purchasing power of the consumers but also by their tastes and preferences. About 30-35 percent of the population in India is vegetarian. Indian domestic market for fish is inelastic both in terms of income and price. The cross price elasticity of fish in India is also inelastic on account of the large size of the country and its population, fish commands practically only a niche market in India. According to ESN Nutrition country profile for India, FAO has reported that fish and seafood provide 2 percent of the dietary energy supply while cereals supply 62 percent. The per capita consumption of fish is estimated to be 5 kg per year for the whole population and it is 8 kg for the non-vegetarian population of the country as against the world average of 16 kg. It may be noted that the cited study puts the rate of growth of fish consumption in India and the South East Asia as having doubled over a period of 1973-1997(Krishnan, 1997)(Delgado,2003)

While the people of the states of Kerala, Bengal and Goa are passionate about their fish, the fish eating population in other states appears sporadic in terms of fish consumption. The regional tastes and preferences of fish eating population of the country and the frequency of fish consumption also exert substantial influence on the market. The exportability of a fish and the quantity landed bear a direct relationship to its price in the local market (Krishnan, 1997, 2002).

With a rapidly expanding consumer

base, India has surpassed the United States of America to become the second most favoured destination for foreign direct investment (FDI) after China (Morgan Stanley, 2006).The changed economic scenario provides ample scope for added employment opportunities and increased income. Thus the growth of the economy and increasing purchasing power of the Indian consumers develops a growing demand for fish consumption in India. The fish prices across India are on the rise as the domestic market is growing at a rate of 30 per cent. The demand, which was largely metro-centric a few years ago, has spread to tier-II and tier-III cities. This sudden spurt in demand is pushing up prices. Consumption of fish in India is increasing significantly due to lifestyle changes and higher cost of meat. In addition, the perception of fish as a healthy food with high levels of digestible protein, PUFA and cholesterol- lowering capability is also a major factor for its increased consumption. "The phenomenon is gradually spreading beyond hypermarkets and supermarkets. (The Economic Times, 2011)

Shyam (2012,2013) analysed the paradox of Indian export trade and found that export price of some of the fin fishes are lower than their domestic price in India and concluded the existence of sizeable willingness to pay for high value fishes.

The price comparison of the high value species like shrimps, cephalopods, pomfrets and seer fish indicated that the domestic prices were on an average 20-25 per cent more than the export prices (Shyam et.al, 2010).This is mainly because of the fact that the high value fishes doesn't cater to the domestic market on account of low and inconsistent demand. The exporters in order to reap in the export economies of scale tend to export more quantity at a lower price margin. The revenue gains are contributed mostly by quantity effect rather than the price effect. The paradox of selling more quantity at a lower export price coupled with alerts and rejections necessitates the need for harnessing the domestic markets so that the fish food available across the Indian masses. While the exports earn us valuable earnings, the diversification of fish and fishery products from local communities may lead to food insecurity. Thus there exists a question of availability and affordability of high value fishes in domestic market.

Fish consumption pattern across urban consumers in Cochin, Chennai, Mumbai cities of India was studied across 540 consumer households from Chennai, Mumbai and Cochin. Cochin, Chennai, Mumbai are metropolitan cities in India inhabiting significant middle and high income population whose purchasing power is considerably higher on comparison with other cities. Inorder to analyse the status of the high value fish consumption the primary data on the pattern of expenditure, fish consumption, buying behaviour, constraints in high value fish consumption, willingness to pay for high value fishes etc. were collected.

The fish food consumption pattern indicated that there exists considerable demand for fish and fish products in the different parts of the country. The study indicated that the average household fish demand was found to be 9.34 kg distributed across low value (6.49 kg) and high value fishes (2.85kg). The average amount spent for fish and fish products was found to be Rs.982.81. The different problems associated with the fish consumption was analysed using Garrete ranking technique indicated that the non-availability of preferable fishes, lack of fresh fish, wide fluctuations in price, high price, nearness to the source of purchase and consumption restricted to social functions.

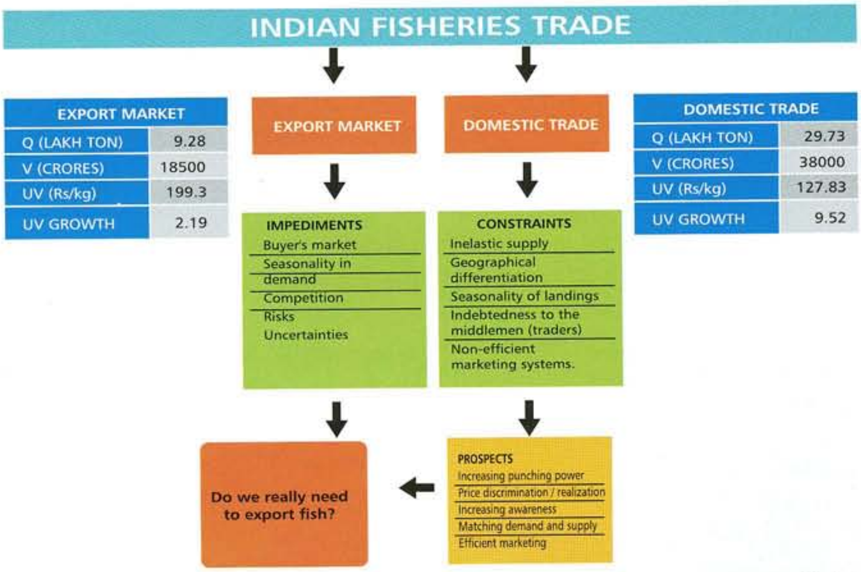

Fig 3 : Do we really need to export fish ?

Table 5. Valuation of fish landings in India

Parameters	2010	2011	2012	2013*
Valuation at landing Centre Price (000 crores)	22.75	24.37	24.89	33.49
Valuation at Retail Centre Price (000 crores)	36.89	38.15	38.56	46.84
Unit value at Landing Centre	68.48	67.08	74.17	85.23
Unit value at Retail Centres	111.06	104.72	111.92	119.21
Fishermen Share of Consumers Rupee	61.66	63.88	64.55	71.50

It is important to note that only 15.03 per cent of the consumers were aware about the export prices of high value fishes. It was found that 35.28 per cent of the consumers were willing to frequently eat high value fishes if available and 70.79 per cent felt the unavailability of high value fishes for consumption. Around 50 per cent of the consumers opined that they were willing to pay for fish if available. The willingness to pay function indicated that there exists a demand for high value fish consumption even with higher prices. The non-availability of fish in the domestic fish market will lead to a situation wherein the domestic consumers are devoid of fish in the market at affordable prices. The domestic fish food security is questioned considering the fact that the export prices are lower than the domestic prices coupled with umpteen trade restricting means and measures by the buyer countries. Thus it is important to ensure that the availability and affordability of high value fishes whose consumption could be augmented by creating awareness campaigns in the country. In addition, governmental regulations are required for enabling a sizeable quantum to be marketed locally.

Valuation of fish landings

The valuation of fish landings at the landing centre and the retail centre was computed and is provided in Table 5. The table indicates that the valuation at the landing centre and the retail centre increased steadily over the years. In addition the unit values also increased steadily in the landing and retail centres. It was good to note that the fishermen share of the consumer rupee (an indicator to marketing efficiency) also improved considerably indicating the price change gains has percolated to the primary stakeholders. (CMFRI .2013)

Considering the growing prices of fish over the years improved economy, purchasing power and varied taste and preferences, and the willingness to pay for the exportable fish species in the different domestic markets coupled with the different constraints in exports the discussion boils down to that Do we really need to export fish?as indicated in Figure. 3.

Challenges / Issues ahead in domestic marketing

In the event of targeting domestic market rather than the export market the following challenges/ issues are to be addressed for ensuring an efficient fish marketing system

- Estimation of the demand and its determinants for fish –across states, species wise
- Supply projections considering the constraints of quality seeds and feed
- Effect of export on the domestic prices on account of Indian economic growth
- Lack of supply or lack of demand: what is limiting fish consumption in India?
- Why & how markets are better organized for some commodities of fish and in some geographical areas?
- Does the co-operative model of production & marketing still offer any hope in fisheries sector?
- Can a commodity specific strategy will work miracles for fish production and markets?
- What are the measures required to increase the awareness of fish consumption
- How to assess the domestic demand for marine and inland fish?
- What will be the impact on domestic fish market due to increasing supply through aquaculture?
- What are the changes in the consumption pattern of fish and fishery products?
- What is the scope for domestic marketing of export oriented shrimps, lobsters, crabs and other finfishes?
- What institutional arrangement can be made for improving domestic fish marketing?
- How the improved domestic fish marketing is going to benefit fishermen and fish farmers?
- What should be the mechanism for data base creation on demand, supply and price of marine and inland fish for domestic market?
- Markets for discards, bycatch, juveniles- market channels, players and spatial distribution?
- Are cartels operating in the purchase of fish at the production centre preventing entry of new players?
- Consumers concerns on the purchase of fish from the landing centre?
- Is there a scope for developing one stop fishers markets closer to the landing centre?
- Why does fish moves to different state when there is a demand within the state?
- Marketing channels prevalent in the landing centre –inter-state?
- What are the measures initiated for the proper handling of fish?
- Is there a scope for initiating a minimum support price for fish - concerns?

- Estimate level of fish consumption and has it got anything to do with fish availability in an around?
- Demand pattern and its determinants of demand?
- Structural changes in the consumption pattern of fish and fishery products?

References

CMFRI 2012, Annual Report 2011-12. Central Marine Fisheries Research Institute,Cochin 186p

CMFRI 2013. Annual Report 2012-13. Central Marine Fisheries Research Institute, Cochin, 200p

Delgado Christopher L., Nicholas Wada, Mark W. Rosegrant, Siet Meijer and Mahfuzuddin Ahmed (2003), Outlook to Fish for 2020: Supply and Demand in Changing Global Markets, International Food Policy Research Institute, Washington D.C., USA and World Fish Center, Penang, Malaysia, October.

FAO. 2005-2013. World inventory of fisheries.Reducing post-harvest losses.Issues Fact Sheets.Text by LahsenAbabouch. In: FAO Fisheries and Aquaculture Department [online]. Rome. Updated 27 May 2005.[Cited 23 April 2013].Available online at http://www.fao.org/fishery/topic/12369/en.[Accessed on 23April.2013.]

FAO. 2005. Characteristics, structure and resources of the sector: Sector performance- Contribution to the economy. Available online at http://www.fao.org/fishery/countrysector/naso_india/en .

FAO.2007. India- Inland fisheries resources.Available online at http://www.fao.org/docrep/W7560E/W7560E03.htm . [Accessed on 16 March 2013.]

G. Venkateshwarlu, Shyam S. Salim and S. Ayyappan. 2002. Fisheries Economics Research and Education in India: An Overview. Retrieved from http://eprints.cmfri.org.in/7388/1/396 Proceedings on fisheries economics research and education in India : An overview

http://en.wikipedia.org/wiki/Recession_2008

http://www.mpeda.com/inner_home.asp?pg=overview

ICSF. 2010. Fisheries and Fishing Communities in India.

Joseph, Sandu and Shyam.S.Salim.2012. Indian Seafood Trade: Implications, issues and policy imperatives.Seafood Export Journal, 42 (11).36-42.

Krishnan, M. and Pratap S. Birthal.2002. WTO and seafood exports: performance, policy and potential, Indian Journal of Agricultural Marketing, Annual Conference Volume, p.103-112

M.Krishnan.1997.A Corporate Strategy for "Fish for All" In India.Available online at ftp://ftp.fao.org/upload/Agrippa/640_en.doc.

Morgan Stanley. 2006. India and China: New tigers of Asia (Part II).Available online at www.pwc.com/en_GX/gx/retail-consumer/pdf/india.pdf .

MPEDA (2011) Statistics for Marine products published by MPEDA ,Government of India, Ministry of Commerce and Industry

NFDB. 2007. Available online at http://nfdb.ap.nic.in/html/aboutus.htm .

Sathiadhas R. and Narayanakumar, R and Aswathy, N (2012) Marine Fish Marketing in India. CMFRI Kochi, Ernakulam. ISBN 978-81-901219-8-9

Shyam, S Salim (2012) Consumers' willingness to pay more for Shrimps in Suburban Mumbai. Agricultural Economics Research Review, 25 (2). pp. 347-350.

Shyam, S Salim (2013) Demand and Supply Paradigms for Fish Food Security in India. Seafood Export Journal, 43 (5). pp. 34-40.

Shyam.S.Salim and Geetha, R. 2011. Stakeholders perception of Indo-ASEAN Free Trade Agreement on Indian Fisheries Sector. Journal of Indian Fisheries Association (38):1-9.

Shyam.S.Salim and R.Narayanakumar (2012),(Ed)'World trade Agreement and Indian Fisheries paradigms : A Policy outlook" Manual published by Central Marine Fisheries Research Institute,Cochin,.457 pp.

Shyam.S.Salim,Sathiadhas,R.,Sathianandan,T.V.,Geetha,R.,Aswathy, N.,Vipinkumar, V. P., 2010.Marine fisheries resources: exploitation, management and regulations in India. Seafood Export Journal, 40 (2) :25-34.

The Guardian .2012. Guardian Sustainable Business article, Why the food security debate needs to focus on solutions not issues, Published by Guardian on 9 Oct 2012, Available online at http://www.guardian.co.uk/sustainable-business/move-food-security-debate-to-solutions

The Economic Times. 2011. Domestic fish prices jump on soaring demand in tier-II and tier-III cities.

Vijay V. and Shyam, S Salim .2001. Food security in India: aquaculture an option. Fisheries economics research and education in India: An Overview . pp. 111-120.