

# Export Performance of Indian Fisheries Sector: Strengths and Challenges Ahead

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## 1. INTRODUCTION

The Fish and fish products have emerged as the largest group in agricultural exports of India. The export of fish and fish products has jumped from a mere sum of US \$ 10 million in 1960-61 to about US \$ 1300 million in 2000-01. The export basket of fisheries sector has also diversified over time. Four decades ago it began with the export of shrimp only and now fisheries export basket consists of more than 60 items. Due to high importance of export of fisheries sector it is important to analyze its performance and factors affecting the same. There is concern about impact of WTO and trade liberalization measures on export performance and competitiveness and how the fisheries sector will respond to a free market economy and liberal trade regime. Still deeper is the concern as to the free trade regime will affect fisheries sector, particularly small and poverty-ridden fishermen. This paper discusses some of these issues. Specifically, the study examines the (i) temporal changes in the composition of exports and imports of fisheries products, (ii) magnitude of growth in exports of fishery products and determinants of fisheries export, (iii) comparative advantage of fishery products in international market and (iv) recent trade policy reforms in fisheries sector and their potential implications.

## 2. DATA AND METHODOLOGY

The present study uses time-series data pertaining to the period 1981 to 2000 unless, specified otherwise. The data on the value of exports and imports of fish products for India and the world were compiled from different volumes of Foreign Trade Statistics published by the Ministry of Commerce, Government of India and FAO Trade Yearbook, respectively. Data on tariff rates and changes in status of importable and exportable commodities were culled from different volumes of exim policies announced by the Ministry of Commerce, Government of India. The issues of Economic Survey published by Ministry of Finance, Government of India supplemented the main sources of data. All the values of exports and imports have been referred in US dollars to net out the effect of changes in exchange rate. To study the composition of exports and imports of different fishery products, percent shares were worked out on a triennium basis to take into account the problem of wide fluctuations in the value of exports and imports. The Simpson index of diversity was used to measure the diversity of export and import of fishery products and the compound growth rates were computed to examine the trends in fisheries trade. The growth rates were calculated for the period 1987 to 2000. The Export performance ratio (EPR), as suggested by Balassa (1965), has been used to indicate the comparative advantage of the fisheries sector. Since this is revealed by the observed pattern of trade flows, it is called Revealed Comparative Advantage (RCA). The comparative advantage of fisheries sector for India has been measured by the share of fisheries in the India's total exports ( $S_{ij}$ ) relative to the fisheries share in total world exports ( $S_{iw}$ ):

$$RCA \text{ or } EPR = S_{ij} / S_{iw}$$

If RCA is greater than unity, the country has the comparative advantage and not if RCA is less than unity. However, it should always be adjusted to make it symmetric (Keld Laursen, 1998). The index has been made symmetric and was obtained as  $(RCA-1)/(RCA+1)$ . This measure ranges from  $-1$  to  $+1$  and the measure is labeled as 'Revealed Symmetric Comparative Advantage' (RSCA). The study assumes that important variables that determine the demand for fisheries products ( $Q_{xd}$ ) from India are: (i) the Indian export prices (IEPx); (ii) the non-Indian international prices of fisheries products (WPx); (3) amount of international trade in fisheries (ITF); and (iv) the exchange rate, i.e. rupees per dollar (ER). The Indian export prices and international prices for fish products have been represented by their respective unit values. The unit values for Indian export were derived from the data on quantity and values of fisheries exports published in the Monthly Statistics of Foreign Trade. On the other hand, the world prices (non-Indian) have been estimated from the data available in the FAO Trade Yearbook. Total world trade in fisheries is also available from the FAO Trade Yearbook. The analysis was carried out for a time span of 21 years, from 1980-81 to 2000-01, using the Ordinary Least Squares (OLS) method in log-linear form.

## 3. RESULTS AND DISCUSSION

### 3.1 Composition of Exports and Imports of Fisheries Products

The exports and imports of major fisheries products in terms of quantity and value, during the period 1987 to 2000<sup>1</sup>, are presented in Tables 1 and 2, respectively. The fisheries products were grouped under live fish, fish fresh or chilled, fish frozen, fish dried, salted or brine, fish fillets, and crustaceans and molluscs. Crustaceans were further sub-categorised into shrimps and prawns and lobsters, etc. The export of fisheries products has registered a tremendous growth in physical as well as value terms. In physical terms, it has increased from 0.11 million tonnes in TE 1989 to 0.40 million tonnes in TE 2000-01. In value terms, it rose from US \$ 412 million to around US \$ 1300 million during the same period. The export of all groups, except live fish, has registered a remarkable increase. The export of live fish declined during this period and exhibited a fluctuating trend. For instance its exports declined substantially from 184 tonnes in TE 1989 to 21 tonnes in TE 1992 and again increased to 72 tonnes in TE 1995. It again dipped to 28 tonnes in TE 1998 which increased to 50 tonnes in TE 2000-01. However, the unit value realization from export of live fish increased substantially during this period. This may be attributed to the increasing share of ornamental fish in the export basket of live fish which could fetch higher prices.

In the year 1989, the export of shrimps and prawns constituted about 55 per cent in the total quantity of fisheries exports and 77 percent of the export earnings from this sector. Over the years, the share of shrimps and prawns has declined, more in physical terms (from 55 to 34 %) than in value terms (from 76 to 65 %) in TE 2000. It appears that the share of shrimp in quantity has been replaced by frozen and fresh fish because its share increased from a mere 10 per cent in TE 1989 to 37 per cent in 2000. Similarly, its share in value terms increased from 4 percent in TE 1989 to 18 percent in TE 2000. Fish fresh and chilled gained slightly in their percentage share. The share of other categories declined in exports from fisheries sector. This decline was more pronounced in the case of lobsters, which declined from 1.90 per cent in TE 1989 to 0.90 per cent in TE 2000 in quantity terms and from 5 to 3 per cent in monetary terms.

The import of fisheries products in TE 1989 were only 10 tonnes, worth US \$ 0.02 million and remained around that level till 1992. Thereafter, the import of fish products increased substantially and reached a peak in TE 1998 when India imported 7000 tonnes of fisheries products, worth US \$ 10 million. Within fisheries sector live fish and fish frozen were the major items of import with 47 and 49 percent share in quantity of imports in TE 1989. However, in value terms live fish followed by fish fillets and shrimps and prawns were the major items of fisheries import with respective share of 28 and 23 percent. This situation has changed drastically in recent years and the share of fish fresh/chilled has gone up significantly and constituted about 88 per cent in quantitative terms and 85 per cent in value terms in 2000. All marine and inland fish were on the negative list of imports. As a part of trade reforms, however, a number of crustacean products were moved to the SIL and freely importable lists in recent years (Exim Policies, 1997-2002; 2002-07). It seems that these measures have facilitated a higher import of fisheries products but India still imports only a small quantity of these products.

### **3.2 Growth Trends in the Export of Fishery Products**

The estimated annual compound growth rates for the export of fisheries products for the period 1987-2000 are given in Table 3. The growth rates registered by fisheries products were significant both in volume and value except for live fish. Exports of frozen fish registered the highest annual growth (28 percent in quantity as well as in value) followed by fish fresh and chilled group (18 percent in quantity and 13 percent in value) and fish dried/salted/brine (18 percent in quantity and 9 percent in value). Shrimps and prawns constitute a major commodity of export in fisheries sector and it grew by 7 and 9 per cent per annum in quantity and value, respectively. Exports of other items such as fish fillets, molluscs etc. grew in the range of 7 to 10 percent annually. Lobsters did not witness significant growth in its exports. Exports of almost all fisheries products accentuated in recent years. Export policies for fisheries sector have been relatively liberal with few licensing restrictions since beginning (WTO, 1998). The trade reforms initiated in the 1990s seems to have further facilitated the export of fish and fish products from India.

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<sup>1</sup> Data format and classification of commodities for collecting data on trade of fishery products were reorganized in 1987.

**Table 1: Composition of Exports of Fisheries Sector**

(Qty in tonnes and Value in ,000 US \$)

Sr No.	Period/Items	1989		1992		1995		1998		2000	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1.	Live Fish	184 (0.17)	324 (0.08)	21 (0.01)	250 (0.04)	72 (0.02)	538 (0.06)	28 (0.01)	473 (0.04)	50 (0.01)	687 (0.05)
2.	Fish Fresh/Chilled	1725 (1.59)	3439 (0.83)	2160 (1.18)	4361 (0.77)	3805 (1.28)	8402 (0.86)	6031 (1.62)	9196 (0.82)	10194 (2.54)	13007 (1.02)
3.	Fish Frozen	11068 (10.22)	16242 (3.94)	52813 (28.74)	54676 (9.61)	113700 (38.17)	24260 (12.76)	178989 (48.03)	203785 (18.27)	147499 (36.80)	235209 (18.49)
4.	Fish Dried Salted/Brine	2830 (2.61)	2678 (0.65)	1775 (0.97)	2194 (0.39)	4462 (1.50)	3444 (0.35)	4871 (1.31)	4697 (0.42)	6146 (1.53)	6744 (0.53)
5.	Fish Fillets	3801 (3.51)	6536 (1.58)	3510 (1.91)	7582 (1.33)	9805 (3.29)	24135 (2.48)	7848 (2.11)	15351 (1.38)	8744 (2.18)	15116 (1.19)
6.	Crustaceans W/N etc.	62633 (57.86)	340253 (82.47)	81099 (44.14)	425421 (74.74)	106899 (35.88)	704280 (72.31)	119365 (32.03)	778345 (69.80)	138058 (34.44)	891297 (70.07)
6(a).	Shrimps and Prawn	59435 (54.91)	316591 (76.74)	77268 (42.05)	402898 (70.78)	101872 (26.40)	669524 (68.74)	113815 (30.54)	751562 (67.40)	127963 (31.92)	831355 (65.36)
6(ai).	Frozen Sh and Prawn	59063 (54.56)	315199 (76.40)	77126 (41.97)	402222 (70.66)	101684 (26.35)	667866 (68.57)	113119 (30.35)	748064 (67.08)	126356 (31.52)	825115 (64.87)
6 (aii)	Not Frozen	372 (0.34)	1392 (0.34)	142 (0.08)	676 (0.12)	188 (0.05)	1659 (0.17)	696 (0.19)	3499 (0.31)	1606 (0.40)	6240 (0.49)
6(b)	Lobsters	2044 (1.89)	20996 (5.09)	1725 (0.94)	18705 (3.29)	1870 (0.48)	16720 (1.72)	1656 (0.44)	16105 (1.44)	3603 (0.90)	36468 (2.87)
6 ©	Other crust.	1154 (1.07)	2667 (0.64)	2106 (1.15)	3817 (0.67)	3156 (0.82)	8896 (0.91)	3499 (0.94)	10677 (0.96)	6493 (1.62)	23474 (1.85)
7.	Molluscs W/N etc.	26004 (24.02)	43104 (10.45)	42374 (23.06)	74723 (13.13)	59170 (19.86)	108967 (11.19)	55544 (14.90)	103263 (9.26)	90164 (22.49)	109904 (8.64)
8.	Total fish products	108245	412576	183752	569208	297913	974025	372676	1115110	400854	1271962
9.	Export diversification index	0.69	0.40	0.69	0.47	0.74	0.50	0.65	0.51	0.71	0.54

Source: Monthly Statistics of Foreign Trade of India; Volume of Exports and Re-exports (various issues), Ministry of Commerce and Economic Survey, Ministry of Finance, Government of India.

**Table 2 : Composition of Imports of Fisheries Sector**

(Qty in tonnes; value in ,000 US \$)

Sr.No	Items	TE 1989		TE 1992		TE 1995		TE 1998		TE 2000	
		Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1.	Live Fish	4.59 (47.27)	6.15 (34.53)	0.72 (7.39)	10.94 (26.75)	17.66 (0.62)	91.16 (1.99)	3.61 (0.05)	3.80 (0.04)	1.01 (0.02)	10.53 (0.14)
2.	Fish Fresh/Chilled	0.05 (0.51)	1.53 (8.59)	0.00 (0.00)	0.00 (0.00)	2811.57 (98.22)	4274.70 (93.37)	6767.51 (96.68)	9848.62 (95.19)	4274.20 (87.87)	6196.73 (84.94)
3.	Fish Frozen	4.82 (49.64)	3.30 (18.53)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	18.06 (0.26)	43.13 (0.42)	138.04 (2.84)	184.30 (2.53)
4.	Fish dried Sltd/brine	0.04 (0.41)	0.92 (5.17)	0.17 (1.75)	4.93 (12.05)	0.01 (0.00)	0.36 (0.01)	0.70 (0.01)	5.66 (0.05)	12.06 (0.25)	14.98 (0.21)
5.	Fish Fillets	0.17 (1.75)	4.99 (28.89)	8.84 (90.46)	17.85 (43.63)	0.00 (0.00)	0.00 (0.00)	0.23 (0.00)	1.80 (0.02)	1.09 (0.02)	6.50 (0.09)
6.	Crustaceans W/N etc.	0.04 (0.41)	0.92 (5.17)	0.00 (0.00)	0.00 (0.00)	12.32 (0.43)	157.66 (3.44)	39.68 (0.57)	182.36 (1.76)	106.66 (2.19)	529.66 (7.26)
6 (a)	Shrimp & Prawn	0.04 (0.41)	0.92 (5.17)	0.00 (0.00)	0.00 (0.00)	12.32 (0.43)	157.66 (3.44)	22.08 (0.32)	119.43 (1.15)	29.51 (0.61)	142.17 (1.95)
6 (ai)	Frozen shrimp&Prn	0.04 (.041)	0.92 (5.17)	0.00 (0.00)	0.00 (0.00)	12.32 (0.43)	157.66 (3.44)	16.08 (0.23)	94.24 (0.91)	28.94 (0.59)	141.31 (1.94)
6 (aii)	Not frozen sh&Prn	0	0	0	0	0	0	5.93 (0.08)	25.19 (0.24)	0.57 (0.01)	0.86 (0.01)
6 (b)	Lobster	0	0	0	0	0	0	17.67 (0.25)	62.93 (0.61)	56.06 (1.15)	304.57 (4.17)
6 (c)	Other crustaceans	0	0	0	0	0	0			21.09 (0.43)	82.93 (1.14)
7.	Molluscs W/N etc.	0.00 (0.00)	0.00 (0.00)	0.04 (0.40)	7.19 (17.57)	21.08 (0.74)	54.51 (1.19)	170.40 (2.43)	261.05 (2.52)	386.97 (7.96)	352.78 (4.84)
8.	Total Fish Products	9.71	17.81	9.77	40.91	2862.64	4578.39	7000.26	10346.4 2	4863.97	7295.49
9.	Import diversificatio n index	0.53	0.75	0.18	0.69	0.04	0.13	0.06	0.09	0.22	0.28

Source: Monthly Statistics of Foreign Trade of India; Volume Exports and Re-exports (various issues), Ministry of Commerce and Economic Survey, Ministry of Finance, Government of India

### 3.3 Extent of Diversification in Export and Import of Fishery Products

The values of export diversification indices showed that the export basket of fisheries products is reasonably diversified. The diversification exports in physical terms was more pronounced and its values varied from 0.65 to 0.74 during 1987 to 2000 (Table 1). In value terms too, the diversification index has showed an increasing trend; it increased from 0.40 in TE 1989 to 0.54 in TE 2000. The diversification indices of fishery imports in quantity terms exhibited a different trend. It had a higher value (0.54) in 1989 (Table 2) but it dropped to mere 0.18 in 1998 and further to 0.04 in 1995. In 2000 this value was 0.22. It is evident from the above analysis that the import of fisheries products is getting concentrated on a few commodities only.

Table 3: Growth Trends in the Export of Fisheries Products (1987-88 to 2000-01)  
(CAGR in percent)

Items/Commodities	Export	
	Qty	Value
Live Fish	-0.23 (-0.03)	8.37 (2.16)
Fish Fresh/Chilled	18.10 (2.10)	12.85 (9.02)
Fish Frozen	28.08 (6.49)	27.58 (9.45)
Fish Dried Salted/Brine	17.77 (1.73)	9.12 (3.70)
Fish Fillets	9.29 (3.21)	9.17 (2.76)
Crustaceans W/N	7.04 (15.19)	9.09 (9.62)
Shrimp & Prawn	6.90 (13.4966)	9.23 (9.3752)
Lobster	2.63 (1.2058)	1.60 (0.6685)
Other Crustaceans	15.05 (8.3054)	21.47 (8.3054)
Molluscs W/n	9.92 (6.10)	8.72 (5.28)

Note: Figures in parentheses indicate t-values. Source: Monthly Statistics of Foreign Trade of India; Volume Exports and Re-exports (various issues), Ministry of Commerce; and Economic Survey, Ministry of Finance, Government of India

### 3.4 India's Share in World Trade of Selected Fisheries Products

India's share in the world exports of selected fisheries product group in different years is presented in Table 4. In the case of fish fresh, chilled and frozen India's share in the world export declined from 0.47 per cent in TE 1983 to 0.16 percent in TE 1989 but started increasing afterwards and reached over one percent in TE 2000. A mixed trend was observed in the case of fish dried, salted and smoked group. India has been having a reasonable presence in the world export market of crustaceans and molluscs of which shrimps & prawn constitute the major commodity. In this group, India's share in world export market has been around 5 per cent in general, which is really commendable. However, India's share in world fisheries export hovered around 2 per cent in value terms and 1.12 to 1.86 percent in quantity terms. India, thus, does not have a substantial presence in the world trade of fishery products. But India's output is large and it is the seventh largest producer, and an opening up of India's large fisheries sector to world trade may have considerable effect on the nature of the world equilibrium in terms of prices, and subsequently outputs.

Table 4. India's Share in World Trade of Selected Fisheries Products

Year	Fish fresh, chilled and frozen		Fish dried salted and smoked		Crustacean and Molluscs		Total Fisheries Exports	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1983	0.37	0.47	1.01	0.33	4.18	5.73	0.77	2.18
1986	0.23	0.31	1.89	0.60	3.67	4.58	0.68	1.89
1989	0.16	0.16	0.55	0.14	3.67	3.21	0.66	1.33
1992	0.65	0.37	0.34	0.10	4.45	3.56	1.08	1.49
1995	2.03	0.71	0.73	0.14	4.93	4.57	1.86	2.11
1998	1.57	0.98	0.66	0.16	4.64	4.59	1.65	2.13
2000	1.31	1.06	0.87	0.23	5.59	5.20	1.12	2.35

Note: Data are for TE average Source: Based on data from Monthly Statistics of Foreign Trade of India; Volume Exports and Re-exports (various issues), Ministry of Commerce and Economic Survey, Ministry of Finance, Government of India and FAO Trade Yearbook (various issues).

### 3.5 Trade Performance of Fisheries Sector

The data on different indicators of fisheries trade are presented in Table 5, which reveals that fisheries have been an important component of agricultural exports. The percentage share of fisheries exports in total agricultural exports varied from 14 to 20 per cent during the period under study. The share of fisheries sector in total merchandise exports of India hovered around 3 to 4 per cent. The ratio of fisheries exports to fisheries GDP has been substantial varying between 17 and 30 per cent. It was satisfying to find that India has been a net exporter of fish and fish products, and the imports of these commodities constituted only a minuscule proportion of fisheries exports both in terms of quantity as well as value as is evident from the last two columns of Table 5. Ratio of value of fisheries imports to fisheries exports was 0.92 percent which dipped down to a negligible level in TE 1992. In nineties especially after the establishment of World Trade Organization (WTO) in 1995 it has started to show improvements and in recent years value of imports of fisheries commodities accounted for 0.58 to 0.94 percent. In physical terms also the ratio of fish imports to fish exports showed the similar trend and now it constitutes 1 to 2 percent of the exports of fish and fish products.

It may be inferred from the above analysis that fisheries sector has been substantially contributing to national kitty in terms of foreign exchange. The apprehensions of import surge of the fish and fish products after opening up of the economy are not still visible.

Table 5. Share of Fisheries Exports in the Agricultural and Total Exports of India along with its share in Fisheries GDP

Year	Percentage share of Fisheries Exports in				
	Agril Exports	Total Exports	Fisheries GDP	Import as % of Export	
				Quantity	Value
1983	14.06	3.80	26.61	0.88	0.92
1986	14.20	3.75	20.34	0.37	0.21
1989	15.02	2.95	17.46	0.01	0.01
1992	16.91	3.13	23.20	Ng	ng

1995	20.26	3.67	30.11	0.61	0.30
1998	16.83	3.29	23.46	1.95	0.94
2000	19.61	3.12	24.76	1.24	0.58

Note: Year refers to TE average; Source: Monthly Statistics of Foreign Trade of India; Volume Exports and Re-exports (various issues), Ministry of Commerce and Economic Survey, Ministry of Finance, Government of India and National Accounts Statistics, Ministry of Statistics and Programme Implementation, GOI.

### 3.6 Destinations of Fisheries Export

Major destinations for exports are determined by several factors such as geographical and political proximity, difference in comparative advantage, and degree of trade barriers, among other things. In order to identify the major trading partners in the trade of main fisheries products, the country wise shares (in recent years) in exports of fish and fish products and for selected commodities/ commodity groups are presented in Appendix Table 1. Japan, USA, UAE and China have been the major importers of fisheries from India and their share are around 60 % of the total Indian fisheries export during 1998-2000. Japan has been the largest single importer of Indian fish with a share of 34 to 47 per cent in terms of value and 15 to 25 per cent in terms of quantity in recent years. United Arab Emirates (UAE) has emerged as the largest importer in terms of quantity in 2000-01 with a share of 33 percent. UK, Spain, Thailand, Italy, Singapore, Netherlands and Belgium are some other important export destinations for Indian fisheries sector.

The pattern of commodity/ group wise export destinations for Indian fisheries sector is more revealing. Japan has been the largest importer of live fish with a share of 26-27 per cent in terms of value followed by Singapore (22-24 %). France is the largest importer of live fish in terms of volume (22-39 percent) but seems to be quite unstable. Germany, UK, Nepal, Netherlands, China, Malaysia are other major importers of Indian live fish. Singapore is the biggest market for Indian fresh or chilled fish and accounted for more than 50 per cent in value and 67 per cent in volume. Bangladesh, Malaysia, USA, Kuwait, UAE, Japan, Bahrain, Hongkong are other important export destinations (in descending order) for Indian fresh or chilled fish. UAE accounted for the highest share of frozen fish exported ( 27-37 per cent in value ) from India. China (19 per cent), USA (10 per cent), Japan (9 per cent) and Hongkong (7 per cent) were the other major importers of frozen fish from India in the year 2000-01. India is also exporting frozen fish to Italy, Spain, Greece, Malaysia, UK, Singapore, France, Netherlands and Belgium. In case of fish fillets, Japan, USA, China and UAE received around 70 per cent of Indian export in this group. The highest share of fish fillets (33-35 percent in value) was exported to Japan followed by USA (13-20 per cent), China (9-12 per cent) and UAE (6-9 per cent). Sri Lanka was the biggest single market for Indian dried/salted/brine with USA, Hong Kong, Mauritius, China and Japan as the other important importers of this variety of fish. Shrimps and Prawns constitute the most important commodity of Indian fish export basket and Japan is the largest market which has been importing around 50 per cent of total Indian exports of shrimps and prawns. USA, UK, UAE, Thailand, China, Italy are the other major importers of this commodity. Japan also accounted for more than 3/4<sup>th</sup> of the total Indian export of lobsters (76 per cent) with Hong Kong, UAE, Canada, USA as the other important export destinations for Indian lobsters. In the case of molluscs, Spain is the biggest importer (23-35 per cent) followed by Japan (11-14 per cent); USA (8-11 per cent) and China (9 per cent). Greece, Italy, France, Portugal, UAE are other important trading partners for Indian Molluscs.

Countrywise trade shows that there has been year to year variation in the volume of trade with the India's trading partner. However, the major trading partners by and large remained the same. The top importers of fisheries products from India are given in Table 6.

**Table 6: The Top Importers of Fisheries Products from India during 1998-2000**

Fisheries products	In Volume			In Value		
	1998	1999	2000			
Live Fish	Japan	USA	Singapore	Japan	Japan	Japan
Fish Fresh/Chilled	Singapore	Singapore	Singapore	Singapore	Singapore	Singapore
Fish Frozen	UAE	UAE	UAE	UAE	UAE	UAE
Fish Dried Salted/Brine	Sri Lanka	Sri Lanka	Sri Lanka	Sri Lanka	Sri Lanka	Sri Lanka
Fish Fillets	Japan	Japan	Japan	Japan	Japan	Japan
Shrimp & Prawn	Japan	Japan	Japan	Japan	Japan	Japan

Lobster	Japan	Japan	Japan	Japan	Japan	Japan
Molluscs	Spain	Spain	Spain	Spain	Spain	Spain
<b>Total Fisheries</b>	<b>Japan</b>	<b>UAE</b>	<b>UAE</b>	<b>Japan</b>	<b>Japan</b>	<b>Japan</b>

### 3.7 International Competitiveness

The above discussion clearly highlights the importance of fisheries trade for India. It, therefore, becomes imperative to ascertain the competitiveness of fisheries trade. The value of Revealed Comparative Advantage (RCAs) and Revealed Symmetric Comparative Advantage (RSCAs) for fisheries sector are presented in Table 7. The results indicate that fisheries sector has been quite competitive. A decreasing trend was depicted by RCAs till TE 1989 but it reversed afterwards and has been stable during last five years. However, the product group wise the results showed a mixed trend. India was not having comparative advantage in exporting fresh, chilled and frozen fish till TE 1989 as revealed by less than unity values for RCAs and negative values for RSCAs. However, it became reasonably competitive in subsequent years. Fish dried and smoked group had RCAs values less than unity and negative RSCAs in almost all years indicating a comparative disadvantage to India in exporting these items. It indicates inefficiency in the processing of fish and fish products in India.

India has been quite competitive in exporting shrimps and prawns and RCAs values hovered around 11 to 15 from TE 1983 to TE 2000. Similarly the RSCAs were very close to 1(0.85± 0.01). However, there has been a slight erosion in the export competitiveness of shrimps and prawns in recent years. Similar trends in export competitiveness of fisheries products have been reported by Chand, (2002).

**Table 7: Revealed Comparative Advantage of India in Fisheries sector by product group, 1981-2000**

	RCA				RSCA			
	Fish fresh, chilled frozen	Fish dried, smoked etc.	Shrimps and Prawns	Total fish products	Fish fresh, chilled frozen	Fish dried, smoked etc.	Shrimps and Prawns	Total fish products
1983	0.96	0.67	11.57	4.40	-0.02	-0.20	0.84	0.63
1986	0.64	1.28	11.42	3.84	-0.22	0.12	0.84	0.59
1989	0.24	0.47	11.90	2.54	-0.62	-0.36	0.84	0.43
1992	1.63	0.36	13.65	2.90	0.24	-0.47	0.86	0.49
1995	1.15	0.37	14.92	3.41	0.07	-0.46	0.87	0.55
1998	1.58	0.43	13.13	3.41	0.22	-0.40	0.86	0.55
2000	1.55	0.52	12.16	3.42	0.21	-0.31	0.85	0.55

Note: Data are for TE average; Source: Based on data from Monthly Statistics of Foreign Trade of India; Volume Exports and Re-exports (various issues), Ministry of Commerce and FAO Trade Yearbook (various issues).

### 3.7 Determinants of Fisheries Exports from India

The four basic determinants of export demand, viz. export prices, international prices, market size, and exchange rate together explain 95 per cent of the total variation in exports of fisheries products from India. The coefficients for all the variables, except non-Indian international prices, were statistically significant (Table 7).

**Table 8: Estimation Results of Export Demand Functions for Fisheries Sector**

Item	Value of the coefficients
Constant	13.3360**
Indian export prices (IEPx)	-1.1333*
The non-Indian international prices of fisheries products (WPx)	-0.1693
Volume of international trade in fisheries (ITF)	0.4274***
Exchange rate (ER)	0.7020*

Note: \*, \*\* and \*\*\* indicate level of significance at 1%, 5% and 10% respectively.



The signs of the coefficients, except for non-Indian world price, are as per the economic logic. The domestic export price has negative effect on the demand for exports of Indian fisheries products. The results indicate that with 1 per cent reduction in Indian export price, export demand for Indian fisheries sector would increase by 1.13 per cent. The world export price does not theoretically have correct sign. However, it is not significant. Therefore, we can conclude that world prices do not play a very significant role in explaining export of fisheries products from India.

The estimate for world fisheries market shows that for one per cent increase in the world fisheries trade, export demand for Indian fisheries would increase by about 0.42 percent. The estimate for exchange rate is positive and significant. A high exchange rate indicates lower purchasing power of domestic currencies in relation to other or standard currencies like US dollar. In other words, devaluation lowers the export price of the commodity for the foreign buyers and pushes up the domestic price of exportable and importable commodities and therefore encourages exports. The estimate for exchange rate indicates that its management has played an important role in the export of fisheries commodities from India.

### 3.9 Trade Policies in Fisheries Sector in India

In the case of agriculture, including fisheries, India had followed protective trade policies in the past. Except for a few traditional commercial commodities, trade was being regulated through quantitative restrictions (QRs), canalization, licenses, quotas and high tariff rates. All marine and inland fish were on the negative list of imports. However in order to make trade policies consistent with the new economic policies and the provisions of World Trade Organization (WTO) a number of fisheries products were moved to the Special Import License (SIL) and freely importable lists in 1997 onwards. In the exim policy announced in 1992, import of most of the fisheries items were either restricted or prohibited (Table 9). But, in the next exim policy (1997-2002), the list of freely importable and importable items under SIL were expanded considerably. In the recently announced exim policy (2002) the import of fisheries commodities was further liberalized and almost all commodities were moved to the list of freely importable commodities, except for five groups of live and Whale Shark (Rhinocodon).

**Table 9 : Status of Import policy of fishery products**

Period	Total no. of fishery commodities	SIL	Free	Restricted/Prohibited
1992-97	121	-	7	114
1997-2002	121	62	21	38
2002-07	127	-	122	5

Source: Exim Policy, Ministry of Commerce, GOI (various issues).

The tariff structure in the fisheries sector has also undergone a sea change. The tariff rate applicable for import of fish products was 60 per cent till 1993-94. To meet the obligations of WTO after its establishment in 1995, the tariff rate for import of fish products was reduced to 24 per cent in 1998-99 and further to 21 per cent in 1999-00. In April 2000, India removed QRs on 715 items, which included commodity groups like fish and fish products, meat and other agricultural products. Further, QRs on agricultural and allied sector trade were completely removed for the last 714 items w.e.f. April 2001. More than 120 items of fish and fish products have been affected by these regulations. After complete dismantling of QRs, tariff rates were perceived as the only instrument for restricting imports. In 2000-01, the tariff on imports of fish and fish products was raised to 44 per cent and, after observing for a year, it was again moderated to the level of 35 percent. Although it is too early to predict the exact impact of removal of QRs on fisheries sector trade, higher tariff rates accompanied with competitiveness of Indian fish and fish products would be able to protect the surge of imports of fish and fish products.

**Table 10: Custom Tariff Rate on Import of Fish Products**

Year	Tariff Rate (%)
1988-89	60.00
1993-94	60.00
1998-99	24.20
1999-00	21.16

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2000-01	44.04
2002-03	35.20

Source: Exim Policy, Ministry of Commerce, GOI (various issues).

Export policies for the fish and fish products were liberal with few licensing restrictions. Exports restricted through licensing include silver pomfrets of weight less than 300 gms and beche-de-mer of sizes below 3 inches. Export of sea shells (excluding polished sea shells) and handicrafts made out of five specific species are prohibited. Further, the export of fish and fish products is governed by the section six of the Export (Quality Control and Inspection) Act of 1963. The Marine Products Export Development Agency (MPEDA) is responsible for the promotion and regulation of exports of fish and fish products. The Export Inspection Agency, another authority was established in 1969 to ensure quality control of products for the export market. Standard specifications for each type of fish and fish products have been laid down and tests for bacteria, virus, heavy metal contaminations, etc are carried out in co-operation with MPEDA and the Indian Institute of Packaging. Some export promotional schemes are also operational. In the recently announced export-import policy (2002-07) there are provisions of central assistance to states for the development of critical infrastructure for export.

Some financial incentive schemes are sponsored by MPEDA also. It provides support for export promotion and market development, strengthening of market intelligence and information channels, development of infrastructure and human resource capacity, modernization of processing facilities and research and development in fisheries sector.

### 3.10 Implications of WTO Provisions on Trade in Fisheries Sector

Fisheries products are not included in the Agreement on Agriculture (AOA). Therefore, a number of the provisions and rules relating to agricultural products are not applicable to fisheries products (FAO, 1996). The multilateral agreement on trade in goods [MTA] relevant to the fisheries are:

1. Marrakesh Protocol to the General Agreement on Tariffs and Trade[GATT] 1994
2. Agreements on Non-Tariff Barriers
3. Agreements on Sanitary and Phytosanitary Measures (SPS)
4. Agreements on Technical Barriers to Trade (TBT)
5. Agreement on Implementation of Article VIth of the General Agreement on Tariffs and Trade (GATT) 1994, (Anti-dumping)
6. Agreement on Import Licensing Procedures
7. Agreements on Subsidies and Countervailing Measures
8. Agreements on Safeguards

With widening globalization and declining in tariff rates, opportunities for export growth in developing countries like India have increased (John, 2000). As trade barriers are being scrapped, technical and regulatory barriers are becoming more important. The most relevant WTO agreements for fisheries trade are those pertaining to application of Sanitary and Phyto-sanitary Measures and Technical Barriers to Trade.

### 3.11 Application of Sanitary and Phyto-sanitary Measures (SPS Agreement)

The Agreement on Sanitary and Phyto-sanitary Measures enables the member countries to protect their human, animal and plant life/health. A principal objective of the SPS Agreement is adoption and enforcement of SPS measures in order to minimize their negative effects on trade. In order to avoid the use of SPS measures for protection of domestic industries, the agreement emphasized the application of these measures on the basis of scientific justification or on risk assessment (John, 2000). All signatories are encouraged to adopt internationally recognized standards but are at liberty to impose stricter standards. International standards are developed by several organizations, which include the Codex Alimentarius Commission, the International Office of Epizootics (IOE), and international and regional organizations operating within the framework of the International Plant Protection Convention (IPPC). It also states that each member should ensure that at least one enquiry point exists to answer all reasonable questions from interested members as well as for the provision of relevant documents. The agreement is based on the pillars of harmonization, equivalence, transparency, scientific judgment and risk assessment. On the face of it, SPS measures provide WTO member countries an opportunity to safeguard their interest in crucial areas of health and hygiene. However, there is a growing apprehension especially in the developing countries like India that application of SPS measures are being used as non-tariff barriers.

They are being increasingly promulgated with the deliberate purpose of shielding domestic producers from international competition. Sometimes nations introduce such restrictions not to prevent health hazards on the basis of scientific evidence but in response to public activism from interested parties (FAO). The distortions in application of SPS measures along with other non-tariff barriers are becoming rampant. The WTO Dispute Settlement Body has entertained more than 25 such disputes that referenced the SPS and TBT agreements. The EU import ban on fisheries products from several countries on the pretext of outbreak of cholera, Australia's ban on the import of salmon, EU import ban on shrimp from Bangladesh are some of the examples of distortion in the application of SPS measures. These have led to substantial losses to the exporting countries (World Bank, 2000; Rehman, 2001). India too is confronted with non-tariff barriers imposed by developed countries like the USA and the EU, which is impeding the growth of fisheries export. Some of the non-tariff barriers like environmental and health factors, ban on Indian processed shrimp on grounds of poor sanitary conditions, pre-clearance inspections etc. are some more such examples. Nearly 15 per cent of total fisheries exports in 1996-97 was lost because of automatic detention by USA (Jha, 2002). Further, the USA, Japan and the EU have very demanding SPS standards. Of a total of more than 400 establishments in India, only about processing units have been approved for exports to the EU. In this context, the introduction of quality assurance systems based on Hazard Analysis Critical Control Point (HACCP) for exports of major markets have gained importance. The investments needed to bring a fish processing plant up to the standards of HACCP plan are substantial, and many companies feel that the implementation of new regulations on fishery products is *de facto* a non-tariff measure against value added products originating from the developing countries.

### 3.12 Agreement on Technical Barriers to Trade

Technical Barriers to Trade (TBT) was negotiated in the Tokyo Round of Multilateral Trade Negotiations (1974-79) and is premised on an acknowledgement of WTO members to develop technical requirements. The Agreement divides technical requirements into two categories: technical regulations and standards. Though both technical regulations and standards are product technical requirements, compliance with technical regulations is mandatory while compliance with standards is voluntary. Technical regulations and standards are extensively used in fisheries trade and often constitute distortions or obstacles to trade. For instance, a labeling dispute over canned sardine exists between Canada and the EU. The US testing procedures for imported seafood sometimes take longer time than the shelf-life of the product itself. Some other recent developments include eco-labelling of fishery products and the obligation that such labels must not violate the TBT agreement (Ruckes, 1998).

The export market of fisheries sector is, by its very nature, quite fragile and susceptible to many hurdles on real or imaginary, which can lead to substantial economic losses. The extent of exact implications would be known after examining the compliance costs of HACCP programmes, and trade impacts i.e. analysing net economic benefits and competitiveness of the products.

## 4. Conclusion

The study has revealed that export of fish and fish products has performed well. The liberalization policies too seem to have further augmented the exports of fisheries products from India. To give a further boost to it, the various sanitary and phytosanitary measures should be taken up vigorously to ensure the international hygienic standards of our fisheries products. Within fish and fish products, India is highly competitive in shrimps and prawns. It should try to exploit this strength. The impressive growth performance of India exports of fisheries may be limited by the stringent international regulations being pursued by the importing countries under the guise of food safety and environment protection. To make fisheries products internationally competitive in quality aspect, domestic processing efficiency has to be streamlined on HACCP principles.

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## Appendices

**Table 1: Country wise share in exports of fisheries products from India (in percentages) during the period 1998-2000**

Country	1998		1999		2000	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Total Fisheries Products</b>						
Japan	24.55	47.31	20.13	38.62	14.85	34.01
U S A	10.52	14.38	10.08	14.30	9.47	15.94
U A E	19.61	8.24	24.04	7.54	32.87	9.84
China	15.14	5.43	11.09	5.03	10.48	4.77
U K	2.14	3.16	0.01	4.88	2.23	4.08
Spain	4.35	3.15	2.47	3.63	3.91	2.50
<b>Live Fish</b>						
Japan	20.50	27.38	17.32	26.69	18.92	26.16
Singapore	6.18	24.54	20.98	26.04	22.05	18.13
U S A	12.53	13.09	22.23	18.22	15.73	16.82
France	39.13	10.83	5.74	6.17	22.39	14.03
Germany	4.68	7.72	2.81	4.80	3.54	7.18
U K	4.44	5.09	5.62	4.55	1.73	3.71
<b>Fish fresh/chilled</b>						
Singapore	15.95	30.59	54.61	39.08	67.38	52.13
Bangladesh	44.04	29.36	12.90	26.38	6.14	12.08
Malaysia	12.97	7.35	15.59	11.89	9.20	8.99
U S A	4.94	5.37	1.22	2.81	2.69	3.86
Kuwait	1.90	3.66	2.30	2.54	1.95	3.71
U A E	3.97	3.58	1.83	1.93	1.43	3.22
<b>Fish frozen</b>						
UAE	42.68	37.21	41.71	27.50	38.49	26.98
China	29.41	22.68	22.93	26.02	18.35	18.71
U S A	5.02	7.76	3.37	6.93	13.23	9.83
Japan	3.87	7.36	3.55	5.60	5.34	9.04
Hong Kong	2.33	3.02	6.77	4.92	3.33	7.13
Italy	1.59	2.52	4.10	3.49	2.59	3.27
<b>Fish fillets and other fish meat</b>						
Japan	31.38	34.22	24.91	27.93	31.50	33.73
U S A	10.49	12.57	17.90	20.39	16.71	16.42
China	12.08	10.71	8.77	9.85	12.10	9.20
UAE	9.56	8.33	6.28	7.39	8.71	6.10
Italy	5.22	5.62	5.51	5.17	3.89	4.17
Spain	3.47	4.56	3.04	2.92	3.73	4.02

**Table 1(contd.): Country wise share in exports of fisheries products from India (in percentages) during the period 1998-2000**

<b>Fish dried salted/brine</b>						
Country	1998		1999		2000	
	Quantity	Value	Quantity	Value	Quantity	Value
Sri Lanka	71.88	55.41	68.96	50.60	55.21	38.23
U S A	4.56	9.36	4.29	9.52	11.33	17.82
Hong Kong	2.16	6.20	2.52	6.89	2.86	12.30
Mauritius	4.12	6.06	2.26	5.68	15.25	5.11
China	3.61	4.21	4.00	5.64	2.92	4.91
Japan	2.25	2.80	2.96	3.78	1.07	3.11
<b>Shrimps and prawns</b>						
Japan	53.15	60.52	48.90	55.29	36.95	47.52
U S A	16.98	16.58	19.22	18.89	22.72	22.11
U K	4.39	3.80	5.41	4.83	6.80	6.06
U A E	4.89	3.65	3.76	3.21	7.08	3.61
Thailand	2.45	2.53	3.43	2.30	4.07	2.77
China	3.26	2.15	3.22	2.08	2.19	2.42
<b>Molluscs</b>						
Spain	21.67	23.24	30.06	35.30	23.52	25.71
Japan	8.82	13.87	16.87	11.35	11.64	12.41
U S A	10.41	10.67	7.59	9.43	5.93	9.97
China	14.40	9.02	12.47	8.42	9.47	9.09
Greece	6.79	7.08	10.70	5.74	11.02	8.37
Italy	6.65	6.49	12.26	5.44	7.22	6.47
<b>Lobster</b>						
Japan	35.64	37.84	48.97	52.69	74.26	75.82
Hong Kong	10.53	16.93	8.25	12.89	4.14	6.40
U A E	14.36	9.68	11.37	11.80	7.01	6.01
Canada	6.32	6.33	5.04	5.44	2.47	2.01
U S A	5.68	5.45	4.77	2.82	1.99	1.84
Italy	4.88	2.84	2.12	2.37	1.70	1.19

**Table 2: Country wise share of total fish exported from India (in percentage)**

Country	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
Japan	24.55	47.31	20.13	38.62	14.85	34.01
U S A	10.52	14.38	10.08	14.30	9.47	15.94
U Arab Emts	19.61	8.24	24.04	7.54	32.87	9.84
China	15.14	5.43	11.09	5.03	10.48	4.77
U K	2.14	3.16	0.01	4.88	2.23	4.08
Spain	4.35	3.15	2.47	3.63	3.91	2.50
Thailand	1.68	2.33	3.46	2.25	2.55	1.97
Italy	2.48	1.98	1.72	1.85	0.94	1.80
Singapore	1.52	1.33	2.58	1.84	1.13	1.16
Netherlands	1.50	1.16	1.35	1.76	0.72	1.14
Belgium	1.09	1.09	1.57	1.41	0.96	1.06
Hong Kong	1.34	1.04	0.78	1.07	0.65	0.94
Greece	1.51	0.95	0.76	1.05	1.50	0.85
Canada	0.64	0.75	3.60	0.91	0.30	0.74
Australia	0.42	0.75	1.38	0.90	0.35	0.73
France	0.90	0.62	0.51	0.86	1.53	0.72
German F Rep	0.30	0.49	1.21	0.68	2.33	0.69
Portugal	0.68	0.40	1.09	0.62	0.27	0.66
Malaysia	1.64	0.35	2.14	0.61	0.23	0.66

**Table 3: Country wise share of live fish exported from India (in percentage)**

Country	1998		1999		2000-01	
	Qty	Value	Qty	Value	Qty	Value
Japan	20.50	27.38	17.32	26.69	18.92	26.16
Singapore	6.18	24.54	20.98	26.04	22.05	18.13
U S A	12.53	13.09	22.23	18.22	15.73	16.82
France	39.13	10.83	5.74	6.17	22.39	14.03
Germany	4.68	7.72	2.81	4.80	3.54	7.18
U K	4.44	5.09	5.62	4.55	1.73	3.71
Nepal	4.19	2.55	3.31	3.69	3.00	3.06
Netherland	1.50	1.96	4.08	2.49	1.52	2.32
China	2.03	2.40	3.14	1.81	3.70	2.73
Malaysia	0.84	0.64	2.12	1.08	1.62	2.08
Sweden	0.50	0.47	7.65	0.75	1.01	0.95
Switzerland	0.42	0.46	0.91	0.69	1.16	0.86
Israel	0.41	0.44	0.45	0.46	0.59	0.35
Spain	0.41	0.42	0.11	0.44	0.53	0.32

**Table 4: Country wise share of fish fresh/chilled exported from India (in percentage)**

	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
Singapore	15.95	30.59	54.61	39.08	67.38	52.13
Bangladesh	44.04	29.36	12.90	26.38	6.14	12.08
Malaysia	12.97	7.35	15.59	11.89	9.20	8.99
U S A	4.94	5.37	1.22	2.81	2.69	3.86
Kuwait	1.90	3.66	2.30	2.54	1.95	3.71
U Arab Emts	3.97	3.58	1.83	1.93	1.43	3.22
Japan	1.54	3.08	0.92	1.72	1.17	2.40
Baharain	3.60	2.69	1.75	1.55	1.01	1.90
Hong Kong	1.05	2.53	0.51	1.15	1.33	1.83
Spain	1.19	1.86	0.60	1.03	2.22	1.50
Portugal	1.09	1.82	0.68	1.02	0.83	1.34
Thailand	0.82	1.19	0.28	0.88	0.55	1.33
China	1.41	0.85	0.34	0.85	0.60	1.00
Sri Lanka	1.39	0.82	0.78	0.79	0.55	0.90
Mauritius	0.26	0.56	0.25	0.76	0.43	0.75
	96.12	95.30	94.56	94.38	97.50	96.93

**Table 5: Country wise share of fish frozen exported from India (in percentage)**

	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
UAE	42.68	37.21	41.71	27.50	38.49	26.98
China	29.41	22.68	22.93	26.02	18.35	18.71
U S A	5.02	7.76	3.37	6.93	13.23	9.83
Japan	3.87	7.36	3.55	5.60	5.34	9.04
Hong Kong	2.33	3.02	6.77	4.92	3.33	7.13
Italy	1.59	2.52	4.10	3.49	2.59	3.27
Spain	1.33	2.24	1.66	3.02	3.72	3.10
Greece	1.30	2.16	2.55	2.95	1.55	2.57
Malaysia	3.55	2.12	1.44	2.48	0.99	2.42
U K	0.79	2.00	0.69	1.96	1.35	2.16
Singapore	1.37	1.78	1.12	1.89	1.04	1.85
France	0.72	1.31	0.89	1.40	0.55	1.45
Netherland	0.46	0.89	1.37	1.26	1.47	1.18
Belgium	0.38	0.78	0.87	1.24	0.78	1.17
	94.81	93.83	93.01	90.67	92.78	90.86



**Table 6: Country wise share of fish fillets & other fish meat exported from India (in percentage)**

	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
Japan	31.38	34.22	24.91	27.93	31.50	33.73
U S A	10.49	12.57	17.90	20.39	16.71	16.42
China	12.08	10.71	8.77	9.85	12.10	9.20
UAE	9.56	8.33	6.28	7.39	8.71	6.10
Italy	5.22	5.62	5.51	5.17	3.89	4.17
Spain	3.47	4.56	3.04	2.92	3.73	4.02
Singapore	5.16	3.57	2.32	2.62	3.79	3.85
Turkey	2.64	2.23	1.53	2.17	1.73	2.59
Portugal	1.51	2.10	2.71	2.12	2.27	2.23
Thailand	1.46	1.89	2.25	1.89	1.99	2.22
France	1.44	1.58	0.73	1.37	1.83	1.75
Hong Kong	1.08	1.40	1.98	1.35	1.63	1.30
Mauritius	1.97	1.36	1.02	0.91	1.30	0.99
Germany	0.89	1.30	0.81	0.82	1.29	0.73
	88.35	91.45	79.76	86.88	92.47	89.31

**Table 7: Country wise share of fish dried salted/in brine exported from India (in percentage)**

Country	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
Sri Lanka	71.88	55.41	68.96	50.60	55.21	38.23
U S A	4.56	9.36	4.29	9.52	11.33	17.82
Hong Kong	2.16	6.20	2.52	6.89	2.86	12.30
Mauritius	4.12	6.06	2.26	5.68	15.25	5.11
China	3.61	4.21	4.00	5.64	2.92	4.91
Japan	2.25	2.80	2.96	3.78	1.07	3.11
Singapore	0.66	2.19	3.68	3.61	2.45	3.09
German F Rep	1.31	1.78	0.67	2.42	2.09	3.00
Israel	0.91	1.58	1.85	2.34	0.84	2.10
Australia	0.77	1.34	0.99	1.98	0.35	1.94
UAE	1.13	1.29	0.83	1.72	1.04	1.28
Malaysia	0.81	1.28	3.98	1.43	0.60	1.24
Saudi Arabia	0.69	0.87	0.46	0.85	0.22	1.16
Italy	0.20	0.75	0.62	0.84	0.25	0.73
	95.05	95.12	98.08	97.32	96.47	96.00

**Table 8: Country wise share of molluscs exported from India (in percentage)**

Country	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
Spain	21.67	23.24	0.06	35.30	23.52	25.71
Japan	8.82	13.87	16.87	11.35	11.64	12.41
U S A	10.41	10.67	7.59	9.43	5.93	9.97
China	14.40	9.02	12.47	8.42	9.47	9.09
Greece	6.79	7.08	10.70	5.74	11.02	8.37
Italy	6.65	6.49	12.26	5.44	7.22	6.47
France	3.96	4.46	4.80	3.71	5.74	5.69
Portugal	4.27	3.90	6.40	3.55	3.30	3.38
UAE	3.50	3.24	3.30	2.54	2.62	2.48
Netherland	3.27	3.03	3.59	2.06	3.74	2.35
Thailand	3.14	2.83	3.56	1.99	2.36	2.10
Belgium	2.35	2.55	1.97	1.96	1.66	1.75
Canada	2.47	2.43	2.71	1.56	3.32	1.62
U K	0.80	0.99	1.79	1.12	1.24	1.56

Hong Kong	0.62	0.71	2.33	0.93	1.02	1.53
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**Table 9: Country wise share of lobster exported from India (in percentage)**

	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
Japan	35.64	37.84	48.97	52.69	74.26	75.82
Hong Kong	10.53	16.93	8.25	12.89	4.14	6.40
U Arab Emts	14.36	9.68	11.37	11.80	7.01	6.01
Canada	6.32	6.33	5.04	5.44	2.47	2.01
U S A	5.68	5.45	4.77	2.82	1.99	1.84
Italy	4.88	2.84	2.12	2.37	1.70	1.19
U K	1.99	2.46	3.05	2.13	1.16	1.10
Korea Rp	2.16	1.96	1.39	1.57	1.53	0.90
China	1.30	1.45	1.69	1.40	0.95	0.86
Malaysia	1.42	1.19	1.36	1.20	0.45	0.67
Bangladesh	0.32	1.09	4.26	1.06	0.76	0.59
Thailand	0.98	1.03	0.93	1.01	0.56	0.57
Denmark	1.80	0.86	0.85	0.84	0.42	0.45
Mauritius	1.01	0.75	0.34	0.43	0.45	0.38
Israel	0.94	0.71	1.79	0.37	0.55	0.37

**Table 10: Country wise share of shrimp and prawn exported from India (in percentage)**

Country	1998		1999		2000	
	Qty	Value	Qty	Value	Qty	Value
Japan	53.15	60.52	48.90	55.29	36.95	47.52
U S A	16.98	16.58	19.22	18.89	22.72	22.11
U K	4.39	3.80	5.41	4.83	6.80	6.06
U Arab Emts	4.89	3.65	3.76	3.21	7.08	3.61
Thailand	2.45	2.53	3.43	2.30	4.07	2.77
China	3.26	2.15	3.22	2.08	2.19	2.42
Italy	1.81	1.22	1.94	1.85	2.06	1.69
Netherland	2.15	1.03	1.56	1.42	2.65	1.46
Australia	1.02	1.01	1.48	1.35	1.15	1.24
Spain	1.40	0.86	1.14	1.20	2.10	1.24
German F Rep	0.64	0.64	1.32	0.90	1.31	1.16
Canada	0.64	0.61	0.76	0.76	1.05	1.11
Singapore	0.29	0.45	0.57	0.68	1.00	1.09
France	0.67	0.43	0.96	0.64	0.86	1.07
Malaysia	0.40	0.41	0.83	0.62	1.15	0.87

**Table 11. India's Imports of live fish by countries (%), 1999-00**

Country	Qty	Value
Singapore	17.54	14.67
Sri lanka	8.77	18.26
Netherland	5.26	25.14
Thailand	68.42	41.93

**Table 12. India's Imports of fish fresh, chilled and frozen by countries (%), 1999-00**

Country	Qty	Value
Australia	0.01	0.11
Hong Kong	0.00	0.01
Netherland	0.02	0.18
Singapore	0.00	0.02
Bangladesh	95.15	94.91
Mayanmar	4.82	4.78

**Table 13. India's Imports of fish fillets by countries (%), 1999-00**

Country	Qty	Value
Singapore	20.79	21.38
Maldives	7.02	23.86
New Zealand	1.97	4.63
USA	70.22	50.13

**Table 14. India's Imports of fish dried, salted and brine by countries (%), 1999-00**

Country	Qty	Value
Netherland	5.60	8.62
Norway	4.61	7.60
Singapore	31.58	31.46
German F Rep	11.20	10.32
Saudi Arab	10.87	9.04
Spain	4.28	11.45
Thailand	31.87	21.51

**Table 15. India's Imports of molluscs brine by countries (%), 1999-00**

Country	Qty	Value
Thailand	1.35	0.49
Indonesia	76.41	72.94
Bahrain	21.65	24.29
Singapore	0.42	1.53
Philippines	0.17	0.75