37

Fisheries sector in India : Export trade perspectives beyond WTO

Shyam .S. Salim
Senior Scientist
Socio- Economic Evaluation and Technology Transfer Division
Central Marine Fisheries Research Institute, Cochin
Email: shyam.icar@gmail.com

Introduction

The WTO's Doha Agenda For Fisheries

Once again secret deals are being cut in back rooms by corporate-dominated and little known international trade groups that will directly impact the lives of commercial fishermen and our industry for decades to come. In this account we will explain that threat and help guide you through the 'trade-speak' maze as well as tell you what you can do to see that fishermen's concerns are addressed. The outcome of this struggle really matters. What happens in this fight will directly affect your markets, your price and even whether you will still be able to go fishing in the future. In one-way or another, the issue affects us all.

After failing famously in Seattle in November 1999, the World Trade Organization (WTO) finally succeeded in launching a new round of trade talks in November 2001. Two years following the "Battle in Seattle," trade ministers from 140 nations agreed to expand the WTO's scope over fisheries policies worldwide.

As signed in Doha, Qatar, world governments have agreed to begin negotiations in key areas of fisheries policy, making these issues, which have traditionally been decided in local or national arenas, an international trade agenda item. Everything from gear requirements to labeling requirements to fishermen's federal pensions could be impacted. Once again, fishing men and women, and the coastal communities they support, have been shoved out of the rule-making process and currently have no voice at the table (see the November, 1999 FN article "The World Trade Organization (WTO): Flying Under Fishermen's Radar," available on the Internet.

Countless popular movements have roundly criticized the WTO as a threat to democracy and the public interest. By joining the WTO, our government restricts what its own citizens can do to sustain fisheries and fishing communities, as well as set limits on the behavior of large corporations. Thus fisheries policy-making is increasingly moving offshore, to the arena of international trade negotiations between nations. As a result, nearly every national fishery management policy, tool or conservation program that might restrict corporate access to fisheries or seafood markets could, potentially, be classified to be a violation of the rules of global free trade.

Non Agricultural Market Access (NAMA)

A key element of the Doha Round of trade negotiations of the World Trade Organisation (WTO) is liberalisation of trade in industrial products, commonly known as non-agricultural market access (NAMA). NAMA refers to all products not covered by the Agreement on Agriculture. In other words, in practice, it includes manufacturing products, fuels and mining products, fish and fish products, and forestry products. They are sometimes referred to as industrial products or manufactured goods. A tariff binding is a ceiling above which a member country cannot apply a tariff, thus representing the maximum tariff than can be applied by a member. The NAMA negotiators have opted in favour of a formula approach to tariff reductions rather than a linear approach. The Swiss formula, which has been propounded by the developed countries such as the US, the EC countries, Norway, and Japan, proposes to cut tariffs steeply without taking account of the existing tariff profile of a country. The modified Swiss formula, on the other hand, takes into account the tariff profile of the countries while carrying out tariff reductions. This approach is supported by the developing countries, group of eleven developing countries working toward strengthening NAMA. The group has two main objectives of supporting flexibilities for developing countries and balance between NAMA and other areas under negotiation. The Member countries of NAMA-11 are Argentina, Bolivarian Republic of Venezuela, Brazil, Egypt, India, Indonesia, Namibia, Philippines, South Africa and Tunisia. NAMA products have accounted for almost 90 per cent of the world merchandise exports.

Negotiation under NAMA focus on market access for all products (mostly industrial) that are not covered by negotiations on agriculture and aim to reduce, if not possible to completely eliminate tariff or non-tariff barriers (NTBs) that restrict trade in these products. NAMA negotiation also considers products including natural resources such as fisheries, forests, gems and minerals. The ongoing NAMA negotiations are based on the mandate given in Doha Development Agenda (DDA), agreed at the 4th WTO Ministerial Conference, in November 2001. The Doha mandate states that the negotiation needs to address tariff peaks, tariff escalation and NTBs. The Doha text also states that, there is need for comprehensive product coverage under NAMA and less than full reciprocity i.e. developing countries need to reduce tariff to a lower extent than industrialised countries and spread commitment over a longer time period. Further, the modalities to be agreed under NAMA include appropriate capacity building measures to assist least developed countries to participate effectively in negotiations. July Framework also, as adopted on August 2004, identified NAMA as the priority area along with the other issues of WTO and reaffirmed on

what was promised in Doha to reduce the tariffs and NTBs and address tariff peaks and tariff escalation, taking fully into accounts the special needs and interest of developing and least developing countries (LDCs). India wants to gain greater market access in the developed countries, not much through the reduction of their tariffs, which are already low but through the dismantling of NTBs to trade and some GSP [e.g. the proposed EU-GSP on (T&C)]. India will also like to resist sharp reduction in tariffs forced open upon by developed countries. It will reduce tariff autonomously at a pace it judges suitable for the Indian industry. India will accept any tariff reduction formula only on bound rates and will counter any attempt to use applied rates as the base for application of a tariff reduction formula. India wants an equitable tariff reduction formula in the negotiations keeping in view the concerns of the developing countries. India endorses the suggestion put forward by US for using two different coefficients for tariff reductions – one for the developed country and one for the developing countries, but with a lot of fine-tuning, rather than using the Swiss Formula. India is also against the proposal of a mandatory 'zero for zero' reduction on the seven specific products by 2015 as these constitutes the bulk of the India' export basket and are also product reserved for the small-scale sector. A 'zero for zero' regime would spell their doom by granting unmitigated access to large foreign firms in the same market. India also highlights the need to link adoption of tariff reduction formula with concrete time bound progress on eliminating NTBs.

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 (following WTO Doha Ministerial Conference in December 2002). International trading regimes are changing, with more open market access but with EU, US and other developed countries taking increasingly stringent measures for 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 WTO sanitary and Phyto sanitary (SPS) measures, HACCP standards, and market-driven labeling schemes may reduce livelihood options through barriers for participation of poor people. Liberalization of economies coupled with increasing demand for value added products and other product diversifications has resulted in structural changes of seafood industry in the last decade. Indian seafood exports declined to $1.89 billion from 2.10 billion dollars during 2007-08. The global financial meltdown seems to have taken its toll on the export of marine products from India with the business recording a 10 per cent slump to $1.9 billion for the year 2007-08. The country may even fall short of its target of $2 billion set for 2009, reports which was hit mainly due to economic recession in Europe and America, which are the major importers of marine products from India. The provisions under the various WTO agreements are expected to have an impact on the different dimensions on the Fisheries sector.

WTO and Indian fisheries

With the implementation of the New Economic Policy in July 1991, and the subsequent focus on terms of trade and gains from trade, seafood was identified as a major source of foreign exchange earner for the country. 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). It also marked the beginning of a distortion free multilateral trade among the economies of the World as the core principle of the WTO is institutionalization of global framework for deregulated competitions. India, being a founder member of the GATT, is a signatory to the commitments made during the negotiations.

The provisions under the various WTO agreements are to have impact on the different dimensions on the Fisheries sector. The main provisions of WTO agreement that are applicable to fisheries are:

1. Trade related intellectual property right (TRIPS) and imposition of patent regime.
2. Trade related investment measures (TRIMS).
3. Reductions of domestic and export subsidies.
4. Tariff reduction and bindings to provide market access.
5. Removal of quantitative restrictions (QR).
6. Application of sanitary and Phyto-sanitary (SPS) measures.
7. Aggregate Measure of Support (AMS).

The implications are discussed below under the following heads

(a) Export performance over the years
(b) Recession and its impact on India seafood trade
(c) Debate on Subsidy
(d) Sanitary and Phytosanitary measures
(e) Exporters profiling and constraint analysis of exporters
(f) Tradeoffs between domestic marketing and international trade
(g) Trade and resources

A. Export performance over the years

There has been commendable increase in the Indian fisheries export in terms of quantity, value and unit value over the years. The results are given below in the following tables.

Table 1: Export growth of marine products – Post and Pre WTO (Commodity)

Year	Pre -WTO (1979-1995)	Post WTO (1996-2012)
Total		
Quantity (tonnes)	3.49*(1.53)	8.27* (2.763)
Value (Rs)	3.33** (1.50)	8.21* (2.58)
Value (US $)	3.31* (1.80)	6.95* (2.12)
Unit Value (Rs)	-0.15 (-0.10)	1.14(0.24)
Frozen Shrimp		
Quantity (tonnes)	0.83 (0.80)	5.36* (2.67)
Value (Rs)	1.95 (0.89)	7.93* (2.36)

Value (US $)	1.92** (1.01)	6.72* (1.99)
Unit Value (Rs)	1.11 (0.68)	2.45* (1.40)
Frozen Lobster		
Quantity (tonnes)	12.88* (2.94)	2.54(0.64)
Value (Rs)	16.05* (2.64)	4.97* * (0.83)
Value (US $)	16.03* (2.98)	3.79(0.65)
Unit Value (Rs)	2.80 (0.83)	2.36* * (0.89)
Frozen Squid		
Quantity (tonnes)	16.26*(2.24)	7.54* * (1.02)
Value (Rs)	16.64* (2.04)	9.37* * (1.02)
Value ($)	6.61* (2.07)	9.14* * (0.92)
Unit Value (Rs)	0.48 (0.15)	2.69* * (0.90)
Frozen Cuttlefish		
Quantity (tones)	16.03* (3.62)	7.62* (1.58)
Value (Rs)	26.64* (2.04)	7.04* * (1.05)
Value (US $)	26.61* (2.07)	4.66(0.68)
Unit Value (Rs)	0.48 (0.06)	-0.53(-0.24)
Fresh and Frozen Fish		
Quantity (tones)	3.49 (0.41)	11.6* (2.29)
Value (Rs)	8.18 *(1.35)	9.56* (1.98)
Value (US $)	8.15* (1.42)	8.34* (1.75)
Unit Value (Rs)	4.52** (1.14)	1.85* (1.66)
Others		
Quantity (tonnes)	-5.45** (-0.90)	13.62* (1.80)
Value (Rs)	-6.23** (-1.03)	27.41* (1.13)
Value (US $)	-6.25** (-1.12)	27.45 (1.08)
Unit Value (Rs)	-0.83 (-0.11)	12.17* (0.77)

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

Table 2: Export growth of marine products – Post and Pre WTO (Market wise)

Year	Pre -WTO (1979-1995)	Post WTO (1996-2012)
Total		
Quantity (tonnes)	3.49*(1.53)	8.27* (2.763)
Value (Rs)	3.33** (1.50)	8.21* (2.58)
Value (US $)	3.31* (1.80)	6.95* (2.12)
Unit Value (Rs)	-0.15 (-0.10)	1.14(0.24)
Japan		
Quantity (tonnes)	-0.06 (-0.06)	3.75* (1.00)
Value (Rs)	0.91* (0.45)	5.03* * (1.02)

Value (US $)	0.92* (0.51)	3.90(0.77)
Unit Value (Rs)	0.97 (0.52)	1.25 (0.59)
USA		
Quantity (tonnes)	2.62*** (0.75)	8.19* (3.57)
Value (Rs)	3.36** (0.77)	14.79* (3.49)
Value (US $)	3.38** (0.93)	14.27* (3.59)
Unit Value (Rs)	0.72 (0.51)	14.73* (3.48)
European Union		
Quantity (tonnes)	3.66 *(1.61)	11.68(1.17)
Value (Rs)	1.26* (1.53)	4.64(1.23)
Value (US $)	1.28* (1.62)	4.62* (1.62)
Unit Value	1.11** (1.08)	4.35* (2.06)
South East Asia including China		
Quantity (tonnes)	2.14*	13.86* (2.04)
Value (Rs)	4.23	12.54* (1.38)
Value (US $)	4.38	11.32(1.23)
Unit Value (Rs)	0.48**	1.15(0.31)
Middle East		
Quantity (tonnes)	3.42**	5.19(0.85)
Value (Rs)	2.13	7.84 (0.82)
Value ($)	2.32*	6.69(0.69)
Unit Value (Rs)	1.24**	2.51(0.45)
Others		
Quantity (tonnes)	2.84 (0.45)	18.18* (1.52)
Value (Rs)	6.07** (1.13)	24.39* (1.58)
Value (US $)	6.09** (1.08)	23.05* (1.51)
Unit Value (Rs)	3.14 (0.63)	5.26* (1.55)

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

Inorder to examine quantitatively the effect of export quantity and the export unit value and their variability on the export value over the year's decomposition analysis was performed. For better understanding the variance of the export value was measured in two-time period *viz.,* pre WTO

period (1979-1995) and post WTO period (1996-2012). The export quantity and export unit value of Indian fisheries were detrended for further decomposition analysis.

Decomposition analysis was done for decomposing the sources of growth on average export value and variance of export value of Indian marine products

Table 3: Decomposition analysis of the components of change in average export value of Indian marine products

Sl. No:	Source of Change	Percentage Share
1	Change in Mean Export Unit Value	8.19
2	Change in Mean Export Quantity	79.92
3	Interaction between changes in (1) and (2)	9.79
4	Change in EQ-EUV covariance	2.20

The results indicated that the contribution of change in mean export quantity was the highest among the other components of change i.e. the increase in mean export quantity accounted for 79.92 per cent of the increase in average export value. This was as expected because the export quantity had recorded significant higher growth rates during both the period whereas the export unit value recorded a negative growth rate during the post WTO period. The changes in the covariance between the mean export quantity and mean export unit value accounted 2.20 per cent increase in the mean export value. The changes in the covariances could arise through the changes in the variance of export quantity and export unit value. With regard to interaction effect the export quantity was benefited to a small extent (9.79 per cent) from both mean export quantity and mean export unit value. Among the various components, the contribution of change in mean export quantity of Indian marine products was the dominant source for the change in average export value followed by the interaction between changes in the mean export quantity and mean export unit value.

A. Export performance over the years (recession)

Recession is defined as the significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in production, employment, real income, and other indicators which started in 2007-08 (mostly in developed economies). There exists a lag in recession especially with regard to food demand .The impact has been noticed since first quarter of 2009.

The impact of recession was studied and it was found that recession has not affected India's seafood trade. The major reasons for the same had been India- economic stimulus, strength of banking system, Developed countries - Purchasing power and employment rate decreased by around double digits as the demand for retailing gone up and lower demand

for ready to serve and ready to cook .The demand for food stamps (PDS increased in the developed countries including US and EU amidst massive economic stimulus provided. The China - Stronger Yuan and remain unaffected. 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 .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 channeled through Vietnam was a concern)

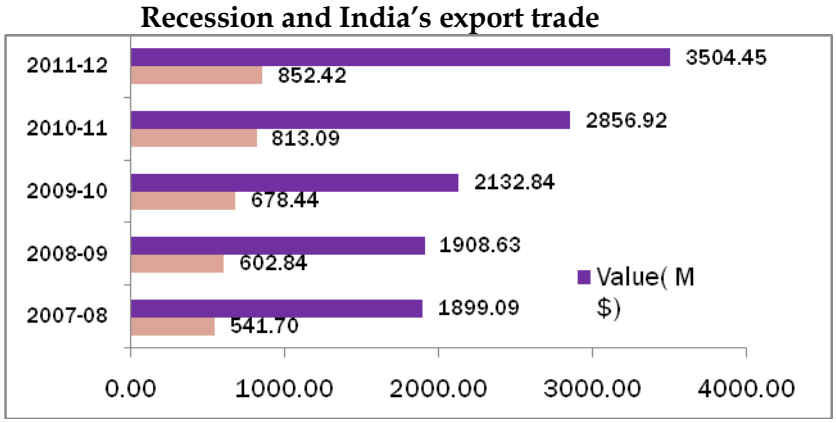

Fig. 1: Recession and India's export trade

B. Export performance

The export performance was based on a matrix referred to as Growth Constancy Retention matrix (GCR) based on the secondary data collected fromsecondary data from 1975-2011>the study covered the Geographic concentration of 35 countries and the commodity concentration- species and different forms .The matrix is represented below in Figure 8. The parameters used in the matrix include:

Growth estimated using compound growth rate HG, MG, LG, MlG

Constancy - using Stability index- HC, MC, LC, MlC

- Retention- brand loyalty of Indian products estimated using weighted average
- HR, MR, LR, MlR

The estimation of the parameters are done using

G- Growth estimated using compound growth rate

r =(Anti Ln of b - 1) X 100

C- Constancy done using Stability index

The instability index = (antilog g – 1) x 100 …….. (g)

Where,
Xt = Value of exports in year t or volume of exports in year t
N = Number of years – 1, m =The arithmetic mean of the difference between the logs of Xt and Xt+1 , etc. ,V log = Logarithmic variance of the series
R- Retention- brand loyalty of Indian products estimated using weighted average)

Growth -Constancy -Retention Matrix

Growth / Constancy	**High**		**medium**		**Low**		**marginal**	
High	**HR**	**MR**						
	LR	**MLR**						
Low								
Medium								
Marginal								

HR,MR,LR and MLR Indcates different levels of retention
Figure 6.2 Growth -Constancy -Retention Matrix
The analysis of the Growth Constancy matrix indicated that there exist stable partners across the export destination with sizeable export quantities

(C) Antidumping

Anti-dumping duty had a major impact on shrimp exports to the US which plummeted from $409 million in 2003 before the duty imposition to $142 million in 2008. The exports to US have considerably increased after the reduction in the antidumping duty from 14.29 to 0.79 during 2008-09 (Figure 27A).Subsequent increase from 0.79 to 2.14 per cent(2010-11) hadn't shown any effect on the shrimp exports to United States for now an increased to 452 million $ during 2010-2011.

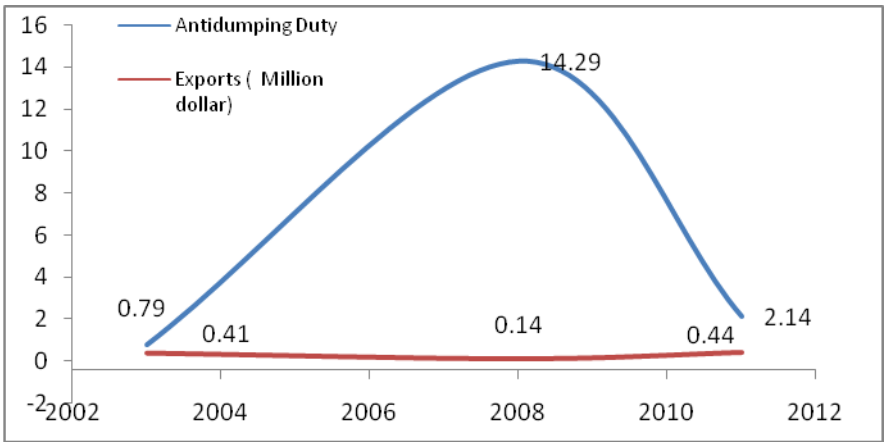

Fig. 2 Antidumping duties and changes in export quantum to US

(D)Sanitary and Phyto sanitary measures

The analysis of the short run and long run gains on the SPS and compliance measures by the exporter's analysis indicated that with the huge cost of investment required for the compliance of EU approval and HACCP implementation the gains weren't significant due to non-capacity utilization of the processing plant and lack of raw materials. The processing plants which have implemented the compliance investment for the EU approval are yet to break even their cost of investment even after 8 -10 years on account of processing capacity utilization to the tune of 22-25 per cent.

Nitro furan metabolites, concentration of heavy metals, occurrence of histamine and bacterial inhibitors were the major reasons for the EU rejections of Indian marine products. Belgium,Spain,Greece and UK were the major countries which rejected the consignments during the period the present antibiotic residues level required by the EU for seafood exporters are extremely rigid and beyond the actual requirement of food safety

(E) Fisheries Subsidies

Fuel subsidies, preferential tax treatments, boat construction subsidies comes under the WTO definition of subsidies set forth in WTO Agreement on subsidies and countervailing measures. According to UNEP the different subsidies to fisheries sector consists of fishing infrastructure (construction of harbours and port-facilities, management services (monitoring and surveillance, management related research, subsidies to securing fishing access, subsidies to decommissioning of vessels, subsidies to capital costs , subsidies to variable costs income supports and price supports. In India the different types of subsides includes, subsides to marine fisheries development (motorization of crafts and reimbursement of excise duty or sales tax exemption on fuel, subsides for kerosene, construction of fishing harbours and other infrastructure, support for domestic marketing ,processing facilities, subsides for promotion of aquaculture , subsidies for different institutions for research and development, and export subsidies. Among the different items,

subsidies to marine fisheries development infrastructure and post-harvest operations and export subsidies are considered as harmful subsides. The adverse effect of subsides depend on the existing management regime and the bio economic conditions of the fishery. Subsidies lower the cost of harvest and raise the effective price of fish. As a management tool, cost-reducing or profit-increasing subsidies may result in increased productive efforts and hence considered as harmful through overexploitation of fish resources and unsustainable harvesting (eg. Export promotion subsidies results in targeted fishing and trade diversions).

Classification of Subsidies

The classification of subsidies under the different head *viz*., Good (Beneficial), ,Bad (Capacity enhancing) and Ugly (Ambiguous)is furnished in Table

Table 4 : Classification of subsidies

Sl.No:	Type of Subsidies	Details
1.	Good (Benficial)	Lead to investment in natural capital assets. They enhance the growth of fish stocks through conservation, and the monitoring of catch rates through control and surveillance measures to achieve maximum long-term sustainable net benefits
2.	Bad (Capacity enhancing)	Programs that lead to disinvestments in natural capital assets such that the fishing capacity develops to a point where resource overexploitation makes it impossible to achieve maximum sustainable long-term benefits.
3.	Ugly (Ambigious)	Programs whose impacts are undetermined, i.e., they may lead to either investment or disinvestment in the fishery resource. These subsidy programs can lead to positive impacts such as resource enhancement programs or to negative impacts such as resource overexploitation.

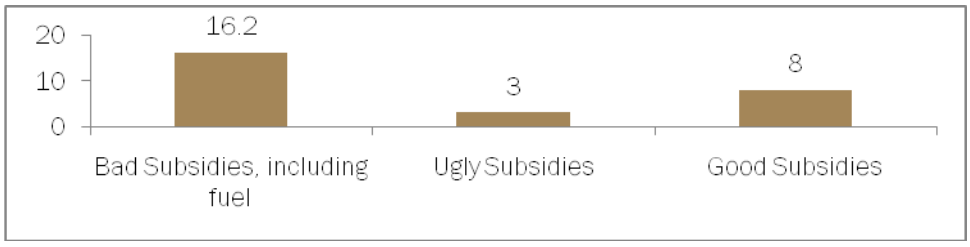

Fig. 2: Fisheries Subsidies in the world (Billn $)

Table 5 : Quantification of subsidies across the world

Type of Subsidies	Total	Share to total value
Bad Subsidies, including fuel	16.20	25.00
Fuel subsidies alone (27 per cent of bad)	6.20	9.57
Ugly Subsidies	3.00	4.63
Good Subsidies	8.00	12.35
Total subsidies	27.20	41.98
Developed (Per county basis – 3 times)	18.50	68
Developing	8.704	32

Table 6 : Categorisation of fisheries subsidies in the world

Countries	Beneficial - Good	Capacity enhancing - Bad	Ambiguous - Ugly	Total
Japan	0.59	3.39	0.65	4.64
EU	1.26	2.59	0.72	4.57
China	1.23	2.19	0.73	4.14
USA	1.16	0.44	0.20	1.80
Russia	0.32	1.04	0.12	1.48
India	0.18	0.85	0.04	1.07
WORLD	8.00	16.2	3.00	27.2

Table 7: Subsidies in select countries - Subsidy per tonne of fish

Sl.NO:	Country	Total	Bad	Fuel subsidy	Landings	Total	Fuel
1 .	Japan	4.64	2.6	56.03	4.21	1102.14	617.58
2 .	EU	4.57	3.4	74.40	5.83	783.88	583.19
3 .	Spain	0.67	0.48	71.32	1.23	547.15	390.24
4 .	France	0.43	0.36	82.57	0.89	489.89	404.49
5 .	China	4.1	3.1	75.61	14.65	279.86	211.60
6 .	US	1.8	1.4	77.78	4.72	381.36	296.61
7 .	Russia	1.48	0.98	66.22	3.45	428.99	284.06
8 .	India	1.07	0.23	21.30	3.10	348.39	74.19

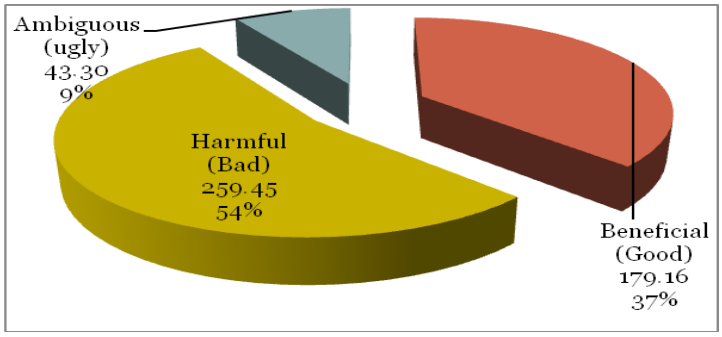

Fig. 3 : Categorisation of fisheries subsidies in the world

Table 8 : Quantification of Indian fisheries subsidies

Beneficial (Good)	Million $
Fisheries management and services	117.84
Fisheries research and Development	60.00
Maintenance of MPAs.	1.32
Sub total	179.16
Harmful (Bad)	
Boat construction,	27.17
Fishery development and support services	29.14
Fishing port construction and renovation	133.38
Marketing support and storage infrastructure	24.44
Tax exemption	0.31
Foreign access agreements.	0.00
Fuel subsidies (Annual consumption of 1000 million litre)	45.00
Sub total	259.45
Ambiguous (Ugly)	
Fisher assistance	4.15
Vessel buyback	0.00
Rural fisheries community development	39.15
Sub total	43.30
Grand total	481.91

Table 9: Fisheries Subsidies during 2010-2011

A.	(Marine Landings -3.12 Million tonnes) Value of landings at landing centre- crores	4893.25 Million $	19573 crores
B.	Value of marine landings at Retail centre-	6443.25 Million $	25773 crores
C.	Total subsidy breakup (Million $)		
(i)	Beneficial (Good)	179.16	(37.18)
(ii)	Harmful (Bad)	259.45	(53.84)
(iii)	Ambiguous (ugly)	43.30	(8.99)
(iv)	Grand total	481.91	
D.	Percentage of subsidies		
	To the Value of landings at landing centre	7.48	
	To the Value of landings at retail centre	9.85	

- Fishery subsidies greatly impact the sustainability of fishery resources. Subsidies that reduce the cost of fisheries operations and those that enhance revenues make fishing enterprises more profitable than they would be otherwise. The global fisheries subsidies are estimated at 30 billion dollars which comprises of good bad and ugly subsidies on account of their role in investment or disinvestment to the natural capital assets. The global subsidies are valued at 35–40 per cent of the value of total fisheries production. Fuel accounts to more than 27.7 per cent. The good subsidies account to 27 per cent of the total subsidy in terms of fisheries management, research and conservation programmes. Developed countries account for more than 68 per cent of subsidies, and developing countries the remaining 32 per cent. However on a per country basis, developed countries provide more than three times as much subsidy as developing countries.

- In the context of India the amount of subsidies provided is much less with less than 8 per cent of the total value even though challenged internationally .The marine fisheries sector in India is a subsistence fishing and much different from the factory / commercial fishing of developed countries. In addition the fuel subsidy provided contributes to less than 5 per cent of the total value of landings. But on the other side the welfare measures, saving cum relief, housing and other transfer payment adds to

the subsidy component in the Indian context. Further it is important that the good subsidies don't feature in Indian fisheries subsidy regime.

The different items of subsidy in the Indian fisheries sector (Centrally sponsored schemes) are as follows:

Table 10 : Subsidies in the fisheries sector in India (2010-11)

Items	Amount (Rs. lakhs)
1.Marine fisheries development	
a)Motorization of traditional crafts Central share (50 per cent): State share (50 per cent)	498
b)Rebate on HSD (central share-80 per cent state share 20 per cent)	936
2.Establishment of fishing habours and other infrastructure	5282
3.Welfare measures	746
4.Institutes	4376
5.NFDB	8675
6.Aquaculture	2000
Total	22513

The various fishery development measures like motorization of crafts and rebate on HSD oil and fishing harbor development are included under the subsidy class of WTO as they directly promote fishing operations. The assistance for fishing harbor development is considered as an indirect subsidy in the WTO definition.

Table 11: Export subsidies (2010-11)

Export subsidies	Amount (Rs.lakhs)
Sea freight assistance scheme-for import of raw materials for preparation of value added products	
Tuna long lining	100.00
Development of potential farming area	679.00
Organic aquaculture	14.19
Digital data base on aqua farms	37.00
Ornamental fish breeding	209.00
Subsidy for promotion of aqua culture	414.00

Acquisition of processing machinery	1200.00
Technology for up gradation of marine products	105.00
Basic facilities for chilled fish/tuna	148.00
Effluent treatment plant	18.00
Promotion of aquaculture societies	177.00
Labs for quality certification	21.33
Landing centres/ fishing harbours-ice making machines and chill rooms	300.00
PCR lab	40.68
Total	3463.20

NFDB also promotes fisheries through development of fishing harbours, assistance to fish markets and deep sea fishing. The total assistance for marine fisheries development was Rs.998 lakhs in 2010-11. The support to institutes like fishery survey of India, Central institute of fisheries nautical engineering, NIFPHATT, Central coastal engineering institute, integrated fisheries projects etc. are considered as favorable subsides as they promote sustainable fishing practices. Export subsidies are provided through various export promotion schemes of MPEDA. The total export subsidies amounted to Rs. 34.63 crores in 2010-11.The expenditure on subsidies for marine fisheries development, infrastructure and post- harvest operations declined from 60.85 crores in 2005-06 to 41.49 crores in 2007-08 and then increased to 62.8 crores in 2010-11. The total amount of subsidies to fisheries sector is 259 crores only which is less than one per cent of the fisheries GDP in India.

Figure 34. Growth in subsidies in marine fisheries development, infrastructure and post-harvest operations

Table 12 : Subsidies in Indian marine fisheries sector

Sl.No:	Parameters	2010	2011
1.	Marine fish landings in India (Qty)	3.32	3.40
2.	Value of marine landings at landing centre- crores	22,648	24,372
3.	Value of marine landings at retail level- crores	36,964	38,152
4.	Total subsidy	1927	1754
5.	Percentage of subsidies	8.51	7.19
6.	Subsidy per tonne of fish (Rs)	5806	5150

The implications on the study of subsidies indicated the following

- The amount of subsidies provided is much less with less than 8 per cent of the total value even though challenged internationally.
- The marine fisheries sector in India is subsistence fishing and much different from the factory / commercial fishing of developed countries.
- In addition the fuel subsidy provided contributes to less than 5 per cent of the total value of landings.
- But on the other side the welfare measures, saving cum relief, housing and other transfer payment adds to the subsidy component in the Indian context.

F. Trade and Resources

The relationship between the landings, export, CPUE were estimated and depicted graphically in the following figures. During 1985-2010, the marine products export has been increasing proportionate to the marine fish landings. The share of export has steeply increased from 2001 onwards compared to the previous period.

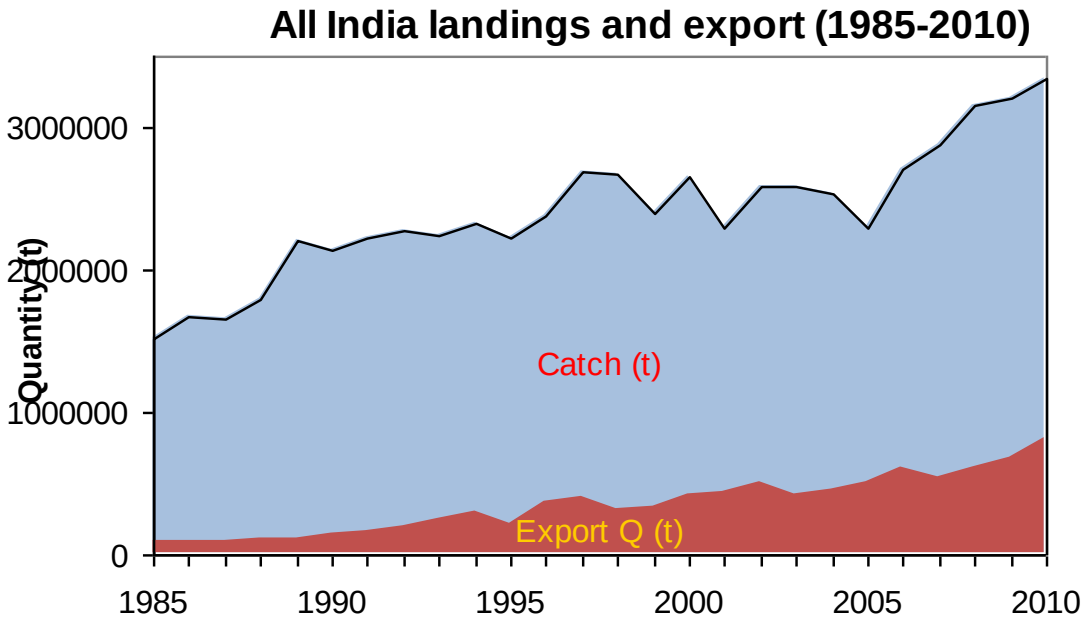

Fig. 4: All India landings and export (1985-2010)

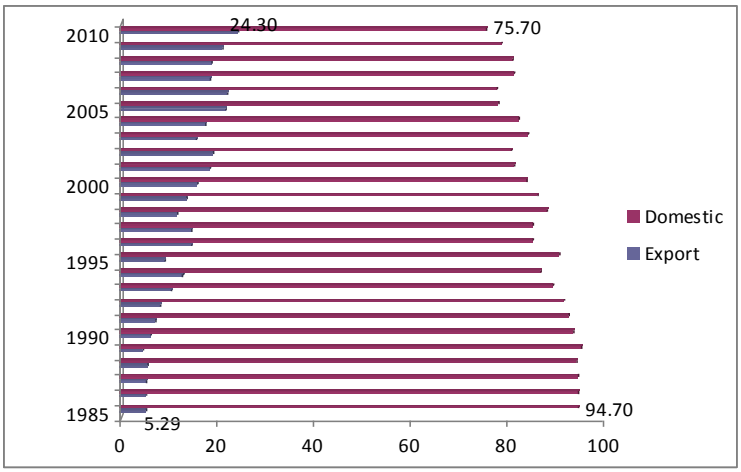

Fig. 5 : Share of landings to Domestic and Export market (1985 – 2010)

There is positive relationship between quantity exported with that of total CPUE of the vessels. Whenever a landing increases, the CPUE also increases logarithmically.

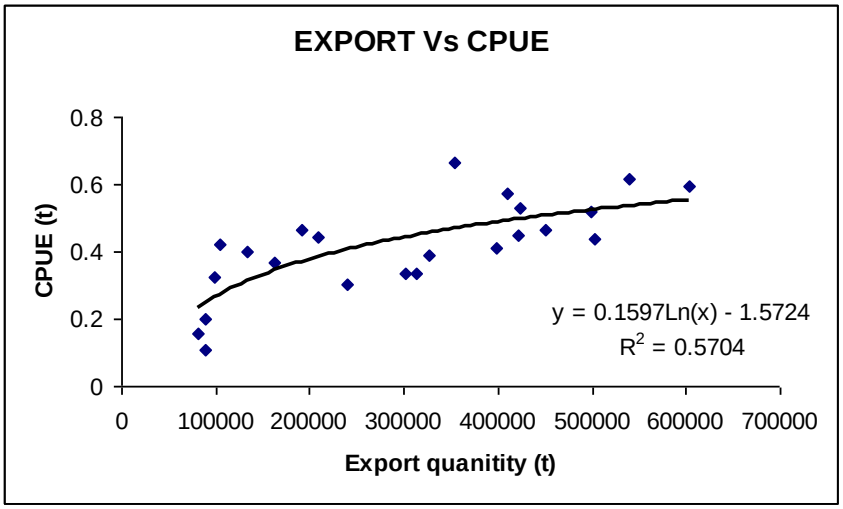

Fig. 6 : Exports vs CPUE

There is a steep increase in CPUE of mechanized vessels of India with the increase in export quantity (Fig.). However, the CPH of mechanized vessels showed a decreasing trend with increase in quantity exported (Fig.). This can be attributed to the induction of more number of multiday mechanized vessels to target the key resources of high demand in export market, which in turn reduced the CPH of vessels.

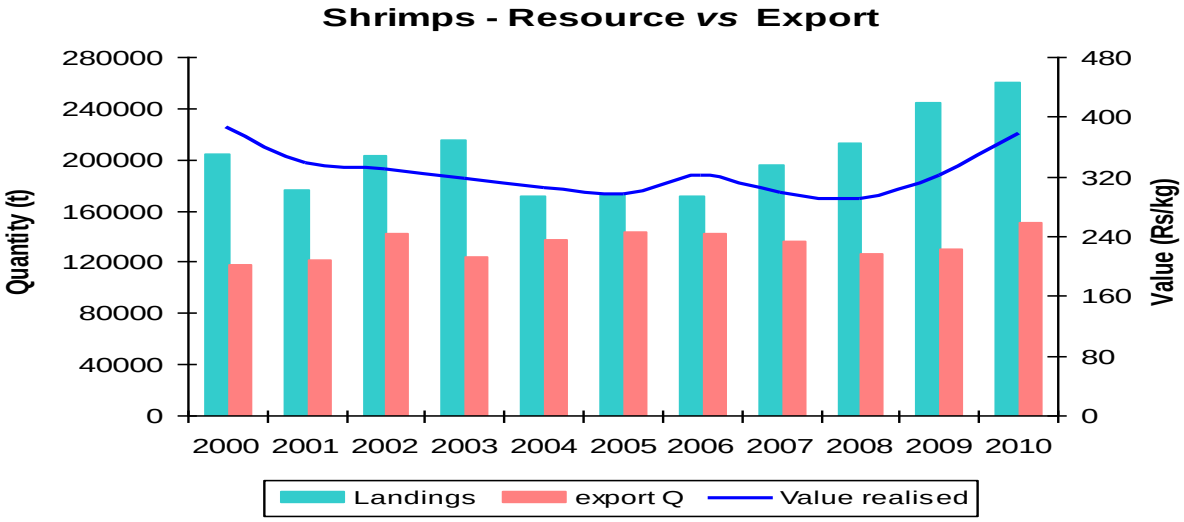

Fig. 7: Shrimps- Resource vs Export 1985-2010

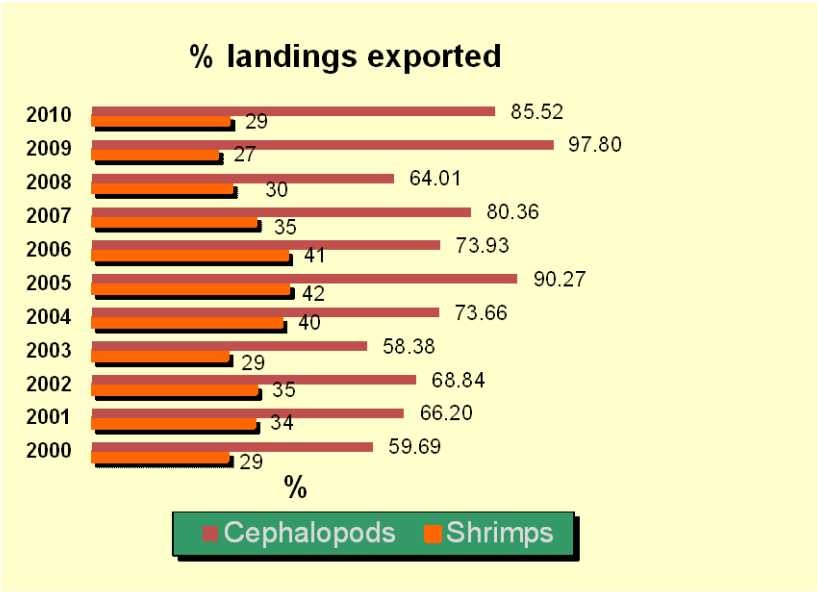

Fig. 8 : Percentage of landings exported 1985-2010

The value realized for shrimps during the last decade decreased with increase in landings. In the case of cephalopods, there is a marginal increase in the value with the increase in landings. This has resulted in the increase of per cent share of landings of cephalopods during the last five years.

Conclusions

Indian fisheries cannot escape from the stark reality of fierce competition emerging in the global scenario. Indian seafood industry, by and large, still remains as a supplier of raw materials to the preprocessors in foreign countries and 90 per cent goes in bulk packs, which is the prime reason for the drastic reduction in the unit value realization. Restrictions and levies imposed by both the exporting and importing nations acts as fiscal controls and hamper exports. The policy constraints often take the form of non- tariff barriers and generally relate to quality specification of the traded goods and also packing materials. India has taken a position that arbitrary as well as restrictive sanitary and phyto-sanitary measures continue to represent a major obstacle to international trade of agricultural products. Developing-country exports are usually affected because the Sanitary and Phyto Sanitary (SPS) measures are often developed in a non-transparent manner and developing countries invariably do not get adequate opportunity to respond to the proposed measures. A number of international standards are thus being developed without the participation of developing countries. As a result, standards are often being adopted without taking into account the problems and constraints that developing countries face. The export to the European Union still poses serious threats due to the quality aspects raised by the importers and the characteristics of a buyer market. Recently there had been reports of rejections of consignments from the European Union due to the detection of antibiotic microbial and bacterial residues to the tune of 500-600 crores annually. The overall production from export-oriented aquaculture during last year was estimated to be 1.33 lakh tonnes, which was a fall by 41,000 tonnes in quantity and Rs 941 crore in value compared to the previous year. Shrimp production showed a decrease by 26 per cent and scampi production by nine per cent over the previous year. Disease outbreaks and natural calamities were reportedly the prime reasons for the shortfall in aquaculture production. In addition to all these the recent economic slowdown and recession for the last three quarters is for sure take a toll in the balance of payment in the country. Depreciating rupee notwithstanding, global economic turmoil has started taking a toll on the country's robust export growth story.

****