SUSTAINABILITY IMPACT ASSESSMENT OF PROPOSED WTO NEGOTIATIONS: THE FISHERIES SECTOR

APPENDIX 4

CASE STUDY: INDIA

Prepared for the Natural Resources Institute (NRI) of the University of Greenwich as part of the Study on Sustainability Impact Assessment (SIA) of WTO Negotiations – Fisheries Sector

BY

VENKATESH SALAGRAMA AND THADDEUS KORIYA

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ICM Integrated Coastal Management

64-16-3A Pratap Nagar, KAKINADA 533 004 Andhra Pradesh INDIA
Tele: +91 (0) 884 236 4851 Email: vsalagrama@gmail.com; icm_kkd@satyam.net.in

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ABBREVIATIONS USED IN THE REPORT

AAI	Aquaculture Authority of India
ADM	Anti-dumping Measures
CMFRI	Central Marine Fisheries Research Institute
DAHD	Department of Animal Husbandry and Dairying (GOI)
DOF	Department of Fisheries
EC	European Commission
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GOI	Government of India
GSP	Generalised System of Preferences
HACCP	Hazard Analysis Critical Control Point
HDI	Human Development Index
hp	Horse Power
HPLC	High Performance Liquid Chromatography
HSD	High Speed Diesel
ICM	Integrated Coastal Management
IFPRI	International Food Policy Research Institute
MEA	Multilateral Environment Agreement
MFN	Most Favoured Nations
MPEDA	Marine Products Export Development Authority
MSC	Marine Stewardship Council
MT	Metric Tonne
NAMA	Non-Agricultural Market Access
NGO	Non-governmental organisation
NSS	National Sample Survey

OAL	Overall length
QR	Quantitative Restrictions
Rs	Indian Rupees
SCM	Subsidies and Countervailing Measures
SDT	Special and Differential Treatment
SEAI	Seafood Exporters' Association of India
SIA	Sustainability Impact Assessment
SIFFS	South Indian Federation of Fishermen Societies
SPS	Sanitary and Phyto-sanitary Measures
TBT	Technical Barriers to Trade
TED	Turtle-excluder device
UNDP	United Nations Development Program
USA (also US)	United States of America
WTO	World Trade Organisation

Conversion rates (Source: The Hindu, 30 March 2006; rounded off):	
1 US$	Indian Rupees (Rs.) 44.70
1 UK£	Rs. 77.75
1 €	Rs. 53.80
Indian Denominations:	
1 Lakh	100 000
1 Crore	10 000 000

EXECUTIVE SUMMARY

The fisheries sector in India employs over 11 million people and, for a majority of them, fishing and related trades are the only means of livelihood. As a result, livelihood concerns have been an overriding policy objective and also contributed to the sector's largely informal organisation. Fish consumption in the country is low, which is a reason for the high level of inter-state and international trade and for the low quantity of imports into the country, but there is evidence that this is changing and that domestic urban trade has grown faster than export trade in the last decade. Export trade has grown significantly in the last half century and is the main lifeline for many fishing and post-harvest operations. Exports are dominated by shrimp, which accounts for 70 percent of export earnings. The EU, US and Japan account for a major proportion of the exports in value terms, but new export markets are emerging mainly for non-shrimp species since 1990s. Estimates show that fish production in the country is likely grow from 4.8 million tonnes in 1998 to over 8 million tonnes in 2020, with the increase coming mainly from aquaculture, which might mean that seafood exports would become more important for India in the coming years.

Changes in Indian seafood trade as a result of WTO Negotiations

The trade measures having implications for Indian seafood export sector relate to the Non-Agricultural Market Access (NAMA) measures, which include tariffs as well as non-tariff barriers like Sanitary and Phyto-sanitary measures (SPS Measures) and Technical Barriers to Trade Measures (TBT Measures). Indian shrimp has also been subjected to the USA's anti-dumping levy since 2004. Eco-Labelling has not become an issue yet, but its importance is expected to rise in the coming years as environmental and resource management concerns become more urgent. Subsidies have so far not been affected by the international trade agreements, but show changes all the same as a result of the economic liberalisation process currently underway in the country.

Since the signing of the WTO agreement, India lifted quantitative restrictions on imports and slashed tariffs by nearly half, although they are still considered to be very high and remain a barrier for other developing countries. India's entry into new trade agreements in South Asia (SAPTA) and Southeast Asia (with ASEAN) are expected to bring down the tariff barriers in the near future. On the other hand, India has been a beneficiary of the reduction in tariffs by all three of its major buyers, i.e., Japan, the US and the EU, which also accord India with a preferential tariff treatment under Generalised System of Preferences (GSP), although such benefits may have been eroded by a series of adverse trade measures since 1995.

The flow of imports as a result of lifting of QRs and reduction in tariffs has so far been low, accounting for about 1 percent (by volume as well as by value) of exports, but fears persist about further liberalisation leading to possible increase in competition at sea (as a result of foreign deep sea fleets operating in Indian waters) and on land (as a result of large scale imports from countries like Thailand and China).

Among the different trade measures applied in the Indian context, the SPS Measures (by all three major importing countries, though at different times and for different reasons) have been by far the most significant in terms of their impact upon the seafood export sector and led to a virtual reorganisation of its structure and operations. The gains from this have been in terms of improving local quality standards to international level and, in general, raising awareness about quality and about the need for investments in infrastructure. It may also have

led to a reduction in losses along the supply chain. The negative consequences of the SPS measures have been the high costs of upgradation, leading to marginalisation of small-scale operators, reduced profitability at all levels in the supply chain and loss of livelihoods for poorer players, including women.

The TBT Measures, which came to India as a ban on shrimp exports to the USA for not using appropriate measures to reduce turtle mortality by the trawlers, had less impact upon the sector at the macro-level, i.e., in terms of affecting the trade flows, but had a more serious impact at the micro-level by reducing or curtailing access of small-scale fishers to their traditional fishing grounds. In a positive sense, the shrimp-turtle case can be viewed as a case illustrating how markets can play a role in environmental conservation, but in this particular instance, what emerges more clearly is how trade interests might use environmental concerns to further their agendas and ignore them once their purpose has been served, but not before tensions between environmental concerns and livelihood needs of the poor are aggravated. Obviously, future TBT measures can go either way, but this case highlights (yet again) the close interrelationship between environment, livelihoods, trade and government policies and the need for more integrated approaches to any or all of these issues.

So far, there has been no indication that fisheries subsidies have been affected as a result of WTO trade measures; if anything, the existing definitions of prohibited and actionable subsidies in the SCM Agreement, which are concerned with their trade distorting effects, seem to encourage the country to invest further in 'capacity- and effort-enhancing subsidies' albeit for exploiting deep-sea resources. The few subsidies that do target the fish producers (lean season assistance, HSD oil subsidy) do not really have much significance at the micro level and might be eventually phased out, but they could be reoriented towards supporting more capital-intensive technologies for deep-sea fishing. India has been seeking a special and differential treatment (SDT) for artisanal and small-scale fisheries in the fisheries subsidies negotiations on account of the importance of this sector to the country's development priorities, poverty reduction, and livelihood and food security concerns. The subsidies going into the processing sector (i.e., directly contingent upon exports) seem to be considerable and important for the processing companies, so any changes to these subsidies are likely to hurt the seafood exporters adversely.

While the impact of trade measures on direct subsidies remains marginal, the removal of indirect subsidies on petroleum products as a result of the economic liberalisation in the country has had a significant impact upon the economic viability of the fisheries sector. Such changes are followed by a reduction in welfare subsidies (food, health, shelter etc.), which may have reduced people's (already tiny) access to social security nets.

Anti-dumping tax, which was imposed by the USA on Indian shrimp, has so far meant switching exports from the USA to the EU, so its impact at the macro-level might not have been very serious, but – as in the case of TED ban on Indian shrimp – it has been felt more seriously at the individual company level, as the companies catering mainly to US markets found themselves at the losing end and at the producer level, in the form of reduced prices offered. Also, the impact of such measures, if applied more widely, could be serious in terms of further reducing the margins of trade and increasing risks. Ecolabelling has not yet become a reality in the country but, though voluntary, has given rise to fears that it could reduce the access of poorer stakeholders to international trade and could marginalise them altogether.

SIA of trade measures

As a result of different trade measures, it can be said that the export sector will become more streamlined and competitive in the international markets. On the other hand, erosion of preferences in the importing countries, high costs of compliance, together with possible reduction in fisheries subsidies might increase risk, reduce market shares and erode profit margins as well as competence, particularly as increased costs may not be adequately compensated by the markets. This, together with formalisation of seafood supply chains, will contribute to increased removal of small firms and poorer players from production and trade and reduces the capacity of the sector to provide and sustain livelihoods (which, as indicated, is an important objective in fisheries development). Fears of imported fish glutting the domestic markets might not come true in the near future, but tariff reductions and encouraging FDI might not also contribute to capital formation in the country and might even lead to capital erosion. On a positive note, the trade measures may lead to efforts to diversify markets and products from export to domestic markets, from developed to developing countries, from shrimp to non-shrimp species and this will be facilitated by the reduction in tariffs and the improvement in quality control systems.

The issue of equity is important while discussing the SIA impacts of trade measures. Disciplining fisheries subsidies, improving quality control through SPS measures and environmental conservation through better targeted TBT and Ecolabelling measures would undoubtedly help the health of the sector and improve its economic efficiency in the long run, but in the short term, the measures seem to be taking an undue toll on the poorer participants in the supply chains, curtailing access to markets, taking away livelihoods and reducing real incomes. Vulnerable groups like women are hard hit, particularly in the context of poor and weakening social support mechanisms. The loss of livelihoods and reduced incomes is thus reflected in poor quality of life indicators and further social and economic marginalisation of the poor from the mainstream.

To the extent that some of the trade measures are likely to streamline the fish harvesting systems along more environmentally sustainable lines, the environmental implications of trade measures are likely to be positive. The possible shift from shrimp and specific varieties of finfish to other varieties might also help reduce pressure on over-exploited resources. On the other hand, as the investment needs mount due to high cost of compliance with international trade measures as well as due to reduction of fisheries subsidies (direct and indirect; explicit as well as implicit), there is potential for fishing pressure to increase in the inshore waters, leading to more intensive fishing practices. The lack of adequate mechanisms to implement existing environmental laws will remain a bottleneck in this respect.

This may be largely the outcome of the failure of the State institutions to address the trade related issues in a pro-active manner and to draw the different participants in the seafood export sector into the picture adequately. The State's inability to (i) participate in the standard-setting processes at the global level and press for more realistic standards; (ii) develop a comprehensive understanding about the direction and scope of the trade measures and their potential impacts upon the different stakeholders in the supply chain; (iii) provide a meaningful defence against the imposition of trade measures by importing countries; (iv) develop a comprehensive package to help different participants in the supply chain to deal with trade measures; and (v) address the needs of the poorer stakeholders who have been marginalised as a result of trade measures, will remain issues of concern in the years to come. At the same time, the State's continued focus on technology-centred solutions and shrimp-

centred export priorities not only worsens the situation, but also reduces the opportunities for meaningful alternatives to emerge for tackling the crisis in the sector.

Prevention, Mitigation and Enhancement Measures

There is evidence that the institutional context for addressing the trade issues is changing for the better, but this will require more inputs in terms of institutional capacity building to negotiate more confidently at the international forums and to improve compliance capability as well as to undertake impact mitigation measures. Generation of new knowledge, as well as upgrading the existing knowledge (about resources, existing/emerging trade opportunities/concerns, and about the supply chains and the participants therein) will be an essential pre-requisite for coping confidently with new global trade arrangements.

Considering that the small-scale and artisanal sector contributes sizeably to the seafood trade and that people in the sector could be very badly affected because of the various changes, there is a need to improve their awareness and understanding about the issues in order to provide them with a level playing field and this will require more robust extension services being put in place. Developing and supporting cooperative market initiatives will improve access for poorer players to export markets, reduce risk as well as cost of compliance with international demands. Improving basic infrastructure will be an important pre-requisite, while training and skills enhancement will be essential to help the people in the supply chains to make use of such opportunities. Emphasis on hygiene and quality control at all stages of production and processing chain and insistence upon good management practices will be necessary, while reducing costs of operations as well as fish losses will improve the economic performance of operations. At the same time, exploring options for diversification through value-addition as well as diversification of markets will be necessary to reduce risk and improve market base, while for those who are unable to cope with the changing trade context, sustainable alternative income generation avenues will need to be put in place.

At the international level, there is a need for the Government to make a more informed contribution to the standard setting processes and for making common cause with other developing countries (which might require some trade-offs, such as giving preferential access etc.). Negotiating for equivalence in sanitary and phyto-sanitary standards and regulating procedures with importing countries would imply the existence of equivalent laws within the country, which may not always be the case and there is a need to address such gaps in a practical and equitable manner. At the importing country level, developing a thorough understanding of the existing trade laws and assessing their relevance to the exports from India will reduce future tensions as well as enhance its capacity to deal with the legal issues pertaining to adverse trade measures. Alongside, wherever trade measures are applied for good reason, it is necessary to overcome the impulse to put some *ad hoc* measures in place and to implement a well-structured plan in coordination with the importing country. Where such measures are likely to hurt particular categories of people (for instance, women and other vulnerable categories), it is necessary to impress the importing country to help extend a meaningful package of assistance through bilateral development programmes. Alongside, there is a need for strengthening and expanding the scope of existing welfare subsidies to help address the needs of the poor in the sector.

To address the environmental impacts, it is necessary to develop an overarching policy framework for fisheries development, which harmonises the four basic priorities in the sector (environment, livelihoods, trade and economic growth) and draws upon emerging new

opportunities like public-private partnerships and trans-disciplinary approaches. Diversifying fishing effort from inshore to off-shore, or – better still – reducing the overall fishing capacity (while ensuring that the people who move out have access to alternative livelihoods) would be an important priority in the short term. The existence of traditional community-based management systems should be recognised and, to the extent possible, legitimised, which is likely to lead to a much better management of the resources. The emergence of multi-lateral bodies like the Bay of Bengal Large Marine Ecosystems programme show a way forward, provided the domestic environmental policy and implementation frameworks are strengthened and local participants are given an adequate role in the decision making processes. There is also a need to highlight the trade dimension in the new programmes, both to ensure a practical approach to dealing with the issues as well as to secure sustainable financing for them in the post-project phase. Where trade related measures, such as eco-labelling, have the potential to improve the health of the natural resources in a sustainable and equitable manner, these should be encouraged.

1. Introduction

1.1 Background

With a land area of 3.3 million km², India is the seventh largest country in the world and is referred to as a sub-continent in its own right. The Indian Union is federal in structure and consists of 28 states and seven union territories. Sectors like agriculture and fisheries are State Subjects, and the Union Government's role in these areas, though significant, is not often direct. World Bank (2004a: 1) notes that, since the 1970s, India's economic growth rate has risen significantly (averaging 6 percent in the last decade), poverty has nearly halved (from 55 percent in 1973-74 to 26 percent in 1999-2000), and social indicators have shown signs of improvements, with the Human Development Index – HDI – going up from 0.411 in 1975 to 0.602 in 2003 (UNDP 2005). The country has achieved self-sufficiency in agricultural production and stands tenth among the industrialised countries in the world (GOI, 2005a:1).

While these improvements illustrate significant achievements in a challenging environment, it has to be acknowledged that India's social indicators remain weak by most measures of human development, placing it 127th in the world in HDI terms (UNDP, 2005). The National Human Development Report gives evidence of the government's resolve to tackle poverty in a holistic and integrated manner and the Millennium Development Goals for India include: halving the proportion of people who suffer from hunger; two-thirds reduction in infant mortality rates; universal primary schooling and complete elimination of gender disparities in schooling opportunities by 2015. The broad priorities for national policy as laid down in the Tenth 5-Year Plan (2002-7) focus on poverty reduction and employment generation, universal access to basic services (literacy, water and health), population control, and addressing gender and environmental imbalances (GOI, 2002a: 6). The country faces an immense task to feed its immense population of over one billion, particularly as a large proportion of them live below the poverty line, by whatever criteria one may like to use for drawing it.

Fisheries is considered to be one of the important sectors contributing to economic growth, livelihood support and poverty alleviation in the country. India is currently the third largest fish producer and second largest producer of freshwater fish in the world (GOI, 2005b). Between 1951 and 2004, India's fish production increased eight-fold from 0.75 million MT to 6.4 million MT, with marine catches contributing about 3 million MT (GOI, 2005b). Some 11 million people depend upon the sector. According to the Central Statistical Organization (CSO) (cited by Dehadrai & Yadava, 2004:50), the value of output from fisheries sector at current prices grew from Rs. 2,450 million in 1970-71 to Rs. 222,230 million in 1998-99, its contribution to the national GDP growing from 0.62 percent to 1.38 percent during the period.

Seafood exports are crucial to the fisheries sector as well as to its contribution to livelihoods, poverty alleviation and national income. India's seafood sector has been subject to different trade measures arising out of the changing global trade context since the 1990s, which include Sanitary and Phyto-sanitary measures (SPS), Technical Barriers to Trade (TBT) and Anti-dumping, and the impacts of such measures are considered to have been significant in various ways. While some of the measures have the potential to improve the production and market standards and lead to long term sustainability of the sector by reducing pressure on natural resources, reducing overcapitalisation of the sector and improving the quality

standards of the produce, their implications upon different categories of stakeholders in the export supply chains, particularly in the short term, might have been less benign.

This study attempts to present an overview of the trade measures that have had an impact upon the Indian seafood sector since 1990s and assess their impacts – both immediate and longer term; real and potential – upon it, in terms of livelihoods and incomes, in order to draw a set of recommendations for improving the capacity of the sector to cope with future trade-related changes as well as to take advantage of such changes for a more sustainable and equitable distribution of benefits from trade liberalisation. For practical reasons, the study has focused mainly on marine (capture fisheries) and brackish-water (culture fisheries), but the trade issues related to inland fisheries have not been covered.

1.2 Objectives of study

The Natural Resources Institute (NRI) of the University of Greenwich, UK, is undertaking a study, funded by the European Commission, on the possible impact of the WTO's Doha Development Round on the fisheries sector with the title "Sustainability Impact Assessment (SIA) for Fisheries". The overall objective of the study is to assess the potential economic, social and environmental impacts of trade measures arising from the Doha Development Agenda (DDA) negotiations that have an impact on fisheries production and trade. These trade measures include:

- Market access (i.e. tariff and non-tariff measures) as part of the negotiations on non-agricultural market access (NAMA);
- Subsidies to the fisheries sector in different forms, which are being discussed by the WTO Negotiating Group on Rules; and
- Other trade issues, e.g. eco-labelling and services incidental to the fishery sector (i.e. outcomes of WTO GATS negotiations).

SIA is both a method and a process for assessing the potential or actual impact of trade policy on economic, environmental and social development. It can therefore contribute to the effective mainstreaming of trade into development policy. SIA is a practical policy tool for analysing the contribution that trade makes to sustainable development.

The importance of stakeholder consultation and participation has increasingly been recognised as part of the Sustainability Impact Assessment (SIA) methodology. In particular, the importance of undertaking case studies and involving developing country stakeholders are emphasised. Upon initial screening and scoping, India was selected as one of seven countries to be studied as part of the "Sustainability Impact Assessment (SIA) for Fisheries" study. The case study analyses trade measures arising from the Doha Development Agenda negotiations and their potential impacts on India's fishery industry and trade. In particular, the study focuses on the policy changes relating to tariffs, non-tariff measures, and subsidies.

1.3 Sources of data consulted

On the trade implications of various WTO-related provisions and their relevance to the Indian context, there is a lot of information available on the web and this is constantly being added to, which considerably reduces the amount of time spent on collecting the secondary data. The secondary data on trade issues (tariffs, SPS provisions, subsidies, anti-dumping, TBT measures, ecolabelling), which are relevant to the Indian context and are covered by this

study, are drawn from the web and are cited in the References. The information on fisheries, on the participants in the supply chains and on the impacts of trade liberalisation on the sector, is however less easy to obtain. Quantitative information on exports can be obtained from the publications of MPEDA, but information on the other aspects of the sector (numbers of people involved, etc.) is hard to come by. The annual handbooks on fisheries statistics, the documents of the Planning Department, including the 5-Year Plans, and other Government of India (GOI) publications have been made use of for this purpose and these are noted in the References.

1.4 Consultation process with stakeholders

In the absence of information on the qualitative aspects of trade liberalisation, this study depended on three sources for the necessary information. In the first place, previous work done by Integrated Coastal Management (ICM) on trade and related issues, based upon primary data collection in various parts of the Indian coast (see Salagrama, 2002; Salagrama, 2004a and 2004b), was utilised. Secondly, fresh research was undertaken in selected locations in Andhra Pradesh and Tamil Nadu in order to validate, update and add to the previous findings. Finally, interactions with a number of people in the government (the Department of Fisheries, the MPEDA), research organisations (CMFRI), NGOs (SIFFS), and a host of other organisations – access to all of whom was made possible by the location of the main author in Chennai for the most part of the study period and by his work on post-tsunami rehabilitation of fisheries-related livelihoods – provided a wealth of information.

2. Overview of fish production, trade and consumption

India has a coastline of 8,041 kilometres with an exclusive economic zone (EEZ) stretching over 2.02 million km^2 with a continental shelf area of 0.5 million km^2. Potential of fish production from marine and inland sources has been estimated at 3.9 million tonnes (2.2 million tonnes in the inshore and the rest in the offshore waters) (GOI, 1996) and 4.5 million tonnes, respectively. India also has inland water sources covering over 190,000 km and open water bodies with a water-spread area of over 6.6 million hectares (GOI 2000: 122). Brackish water area available for aquaculture is 1.2 million ha (MPEDA, 2001), of which, according to the Aquaculture Authority of India (AAI, 2002), some 157,000 hectares (1570 sq. km) was under shrimp aquaculture in 2002.

In order to understand the impacts of the changing global trade arrangements on the Indian seafood sector and to assess its capacity to cope with the emerging systems, it is necessary to understand the key features of the sector and the trends affecting them.

2.1 People in the fisheries sector

The fisheries sector provides employment to over 11 million people, who are engaged fully or partially in fishing, processing, trade and in subsidiary activities. According to the FAO (2002: 12), in 1997, there were some 6 million people (an overwhelming majority of whom would be men) involved in actual fishing activities. About 48 per cent of full-time fishermen are on the East Coast of India, 35 per cent are on the West Coast, and the rest are spread over other states and union territories. The exact numbers of secondary workers in fisheries would be difficult to quantify, but it is estimated (CMFRI, 2003: 247) that some half-a-million women work in the pre-and post-harvest operations, constituting some 25 percent of the labour force in the pre-harvest activities and 40 percent of those in internal marketing (Sathiadhas, 1998: 467). Besides, the shrimp aquaculture sector provides employment to some 300,000 people directly and another 700,000 people in ancillary activities (AAI, 2002).

Apart from the large numbers, another point about the population involved in the sector is that a majority of these people would automatically fall into the category of the poor. Factors like caste, gender, age, geographical location play a role in people's access to different assets and confine their choices to a few specific livelihood strategies, irrespective of their sustainability. A concomitant of this dependence is that, although the significance of fisheries as a contributor to economic growth and food security is widely recognised at the policy level, its real importance has traditionally been as a provider of livelihoods. The largely unorganised nature of the sector is thus to be seen not only as a hindrance for further growth and adaptation to the changing contexts, but also as an opportunity for the people to make a living out of it. From the policy perspective, considering that the contribution of fisheries to the overall economy is miniscule, it makes sense to allow the sector to remain as it is rather than to undertake measures that could only upset the systems. An important outcome of the changing international and domestic trade context has been the formalisation and consolidation of the production, processing and trade processes, which could thus have significant implications for a large number of poor who depended upon the sector and whose capacity to adapt to changes is very low indeed.

2.2 Fish Production

There are about 280,000 fishing craft in India in the marine sector (Government of India 2001) and the gross investment in fishing equipment is estimated to be Rs. 80,000 million or

US$ 1,700 million at 2002 prices (Vivekanandan, E. 2002), much of it being in the private sector. Motorisation and mechanisation have been the key strands of modernisation of Indian fisheries and this has contributed to increasing fishing efficiencies manifold. In 1999-2000, there were a total of 181,284 artisanal crafts (constituting 65 percent of the total), 44,578 motorised crafts (16 percent) and 53,684 mechanised crafts (19 percent) in the marine sector (GOI, 2000: 128). A majority of the fishing vessels are below 15 m (or 50-feet) length overall (OAL), hence are classified as small-scale operations. There are about 60 offshore steel trawlers operating at present of 17 to 30 m OAL with 150 to 400 hp (horse power) engine.

The increase in fishing- (and, in case of aquaculture, farming-) efficiencies was achieved with a significant increase in the cost of operations (with fuel itself accounting for 70 percent of the production costs and 30-50 percent of the gross returns). To the extent that the production and markets responded positively to increased investments, the cost of operations was not an issue, but when the returns started to diminish with increased effort, the production costs became a serious problem for the fishers, who could not even return to less capital-intensive fishing operations anymore.

Increased fishing efficiencies were matched by development of basic infrastructure in some locations. There are six major fishing harbours, 40 minor fishing harbours and 151 fish landing centres in the country and 16 more fishing harbours and 37 fish landing centres are in various stages of construction (GOI, 2005b). Besides, fish landings take place in hundreds of locations along the vast coastline, making the landings generally quite disaggregated and not easy to manage.

Fish production in India increased eight-fold from 0.75 million MT to 6.4 million MT between 1951 and 2004 (**Table 1**). Marine fish production increased from 0.5 million MT to nearly 3 million MT during this period. In 2000-1, the marine fish production came from about 44 species groups, of which ten species accounted for half the production (Mathew, 2003). FAO's country profile for India (FAO 2000) notes that Indian oil sardine *(Sardinella longiceps)*, Indian mackerel *(Rastrelliger kanagurta)* and Sciaenidae dominate the catches, while Bombay duck, anchovies, cephalopods, perches and Carangidae are also important.

However, marine production has been slowing down since 1981 and it grew by only 1.9 percent per annum during 1991-2000 (CMFRI, 2003: 3), which is a far cry from its previous performance. Its contribution to overall landings declined from 71 percent to less than 50 percent during this period. From 1989 to 2000, the landings of small pelagic species remained static at 1.2 million tonnes annually and the landings of the demersal fish also showed a levelling off since 1994. Overall, the catches from inshore waters are reported to have reached their full potential and may have begun to be overexploited (GOI, 2001; Vivekanandan, 2002). It must be noted that the increase in overall catches is accompanied by an even faster growth in the numbers of fishing boats, which indicates a net *fall* in per capita availability of fish. This is reflected in the decline in catch per fisher from 3.5 tonnes in 1961-62 to 1.9 tonnes in 1996-97 (Dehadrai & Yadava, 2004:59). India does not yet have a deep-sea fishing fleet and the offshore fisheries resources are considered to be largely under- or un-exploited and there is a growing emphasis on improving the capacity of existing fleet to diversify into offshore waters, mainly for targeting tuna (*The Hindu*, Jan. 18, 2006), but this remains an untested idea so far.

Coastal aquaculture showed promise in the early-1990s as a possible source to increase the production of shrimp for export markets, but a series of setbacks – social, technical, environmental and judicial, together with fluctuating markets – made the activity an uncertain

proposition. Diversification has so far been confined to culturing non-penaeid shrimp like the giant freshwater prawn (*Macrobrachium* spp.), but most culture operations are a long way from being sustainable.

Currently, there are some 399 processing plants having a daily freezing capacity of 7283.36 tons. Besides, there are 471 cold storages in the country, the total estimated capacity of which is 89273.5 tons. The number of fishing vessels which mainly contribute to the export market is calculated as 12660, as shown in **Table 2**. The number of registered exporters in the country grew from 864 to 1549 between 1990 and 2000 (Dehadrai and Yadava, 2004:56). As a result of such changes, fisheries changed from a subsistence-based livelihood activity pursued by a group of largely poor and rural artisans into an urban-based, capital-intensive commercial sector earning sizeable sums of foreign exchange for the country.

All the same, infrastructure remains a major bottleneck in the development of the sector. This is because access to infrastructure is uneven across the coastal areas (and for different market chains) and also the existing infrastructure in many locations can hardly stand up to the international quality requirements. Lack or inadequacy of infrastructure is exacerbated by poor hygiene and maintenance, which stem from resource crunches and lack of user participation in management of infrastructure.

2.2 Fish trade

There are four distinct channels by which fish is marketed in the country. These are: (i) local fresh fish trade; (ii) processed fish trade; (iii) export trade; and (iv) domestic urban trade (Salagrama, 2004a). Fishmeal trade is another important market chain catering to poultry and aquaculture sectors. It is estimated that, in 1997-98, about 780 thousand tonnes of fish out of a total production of 5.3 million tonnes (roughly 15 percent) was used for 'non-human' uses (FAO, 2002:12), which could be for fishmeal purposes. The 'traditional' market chains – involving local and processed fish trades – are informally organised and remain significant because they provide employment to a large number of the poor, mainly women.

The export of seafood from the country increased from 15,732 metric tonnes (MT) in 1961-62 to 461,329 MT in 2004-5 (MPEDA, 2006) (**Table 3**). In terms of value, the exports grew from Rs. 4 crore to Rs. 6,647 crore (US $ 1,478.5 million) during this period, and the unit value realisation increased from Rs. 2/kg to Rs. 144/kg. Although the volume of exports is only 6 percent of total marine production, they still constitute a quarter of the sector's contribution to the GDP (calculated from GOI, 2000:1 & MPEDA 2001:27). In terms of overall exports from the country, seafood stands at tenth place, accounting for 2.7 percent of total export earnings in 2001. Among seafood exporting countries, Indian exports stood 17th in terms of quantity and 12th in terms of value (Mathew, 2003), its share in the world seafood market being 2.4 percent (Kulkarni, 2005:4).

Shrimp is the most important species in the export market chains and its contribution to overall exports went up from a mere 13 MT in 1953 (Kurien, 1985) to 110,275 MT during 1999-2000 (MPEDA, 2001:37). Over time, finfish exports have shown rapid growth in the export basket, accounting for nearly 35 percent of the volume of export trade in fisheries in 2004-5. Although this means that the contribution of shrimp to overall exports declined from about 59% in 1978-79 to a little under 30 percent in 2004-5 in terms of volume, it still accounts for 63.50 percent of the total value of the exports (MPEDA, 2006).

The main importers of Indian seafood are Japan, the European Union (EU), the United States of America (USA), Southeast Asia (including China) and the Middle East, with Japan, USA and EU accounting for a lion's share (75 percent of overall revenues and 89 percent of shrimp revenues). In 2004-5, the EU emerged as the largest market for Indian marine products, with a share of 25.5 percent in terms of volume and 27 percent in terms of value (**Table 4**). The US slid to the second rank, accounting for 11 percent of exports by volume and 23 percent by value, which is a decline of 15 percent in volume terms and 10 percent in value terms. This is reported to be mainly due to the antidumping duty imposed on the import of frozen shrimp from India (MPEDA 2006). The exclusive dependence on specific export markets reduces the Indian exporters to the position of price takers and they are unable to charge higher prices in spite of rising costs of fuel, labour, maintenance and basic necessities (Kulkarni, 2005:5).

China, Thailand, Vietnam, Indonesia, Mexico, Greenland and Ecuador are the major competitors to India in the main shrimp export markets. The relative compound growth rate of shrimp export from India indicates that the country is lagging behind other shrimp exporting countries both in terms of volume and value. Moreover, some of these countries import Indian shrimp for reprocessing and, as Kulkarni (2005:5) notes, the final consumers of Indian fish in the northern markets are not aware of the origin of their fish as 'more than 60 percent of India's export to south-east Asia are re-exported after processing'.

There have been some efforts at diversification of the export basket, but shrimp remains crucial for survival of operations in the mechanised and coastal aquaculture sectors. Modern processing and export activities are shrimp-centred and many artisanal fishing operations also target – and derive a significant proportion of their income from – shrimp. Many ancillary industries and workers depend on shrimp economy and could be adversely affected if the system were to be upset. The risks implicit in the dependence of a whole economy on one species (shrimp) and three international markets (over which the producers had no control at all) became increasingly apparent since 1997, when Indian shrimp began to face rough weather from the main importing countries for a variety of reasons.

India is a net fish exporting country and imports have not been very important to the economy. Though there was a small spurt in imports in the mid-1990s (which accounted for a little under 1 percent of the net exports), this was mainly to address the under-utilisation of processing factories in some states (notably Kerala), and when this did not work out to be viable, the share of imports slid back once again.

2.3 Consumption

FAO (2002:12) estimates a per capita availability of fish in India to be 4.8 kg in 1997-98, which, when estimated for the fish eating population in the country (constituting 56 percent of the total population), works out to about 9 kg (Dehadrai & Yadava, 2004:46). In coastal areas, fish consumption is usually higher – perhaps twice the normal rates; for instance, in the coastal areas of maritime states like Tamil Nadu, fish can provide people with between 50-60% of their overall animal protein intake (http://www.fao.org/newsroom/en/news/2005/88610/index.html). State-wise, the highest annual per capita consumption of fish is in Lakshadweep (38.58 kg), followed by Goa (24.96 kg), Kerala (21.78 kg), Arunachal Pradesh (20.22 kg) and Andaman and Nicobar Islands (14.28 kg) (Mathew, 2003:4). At a disaggregated level, per capita consumption of fish is low in high fish producing states except Kerala and West Bengal and the island territories. Using the National Sample Survey (NSS) data, Mathew (2003:5) notes that there is no clear

correlation between poverty and fish consumption even in poor states with high levels of fish production and suggests that factors like vegetarianism, religious affiliation, availability of other protein sources etc play a role in determining fish consumption from area to area.

Several recent studies (cited by Dastagiri and Mrutyunjaya, 2003:43) indicate that the composition of food demand across commodities is changing because of change in food habits of the people as well as changes related to life styles, urbanisation, household income and food prices. The point emphasised in these studies is that fish consumption has increased substantially in the country and according to IFPRI/WFC projections (IFPRI-WFC, 2003:61), which indicate a growing trend in per capita consumption from 3.1 kg in 1973 to 4.7 kg in 1997, domestic fish consumption is likely to grow further to 5.8 kg by 2020. This is evidenced by the fact that the domestic urban markets for fish grew faster by many times than any other market chain in the country since the 1990s. Chennai, Howrah (Kolkata), Kochi, Mumbai, and Delhi are the major markets in the country for fish and there is evidence that there is a large unmet demand in other urban areas, indicating that the urban market chains have the potential to grow further, possibly taking the place of the export chains in terms of economic importance. Empirical studies discussing the demand for different species and current levels of their consumption are not available.

2.4 Baseline fisheries trade projections

The IFPRI/WorldFish Centre study estimates that fish production in India, estimated at 4.8 million MT in 1997, would reach 8 million MT by 2020, at an average annual growth rate of 2.3 percent (3.7 percent for aquaculture and a more modest 1 percent for capture fisheries) (IFPRI/WorldFish, 2003:57). A similar study by Dastagiri and Mrutyunjaya (2003:43-58) concluded that, by 2020, with an expected growth rate of 4.4 percent per annum, substantial surpluses are expected in fish to the tune of 4.5 million tonnes and the surplus would need to be either exported or to be domestically consumed by people in non-fish eating states. There are doubts about the validity of such projections in the context of an overall declining trend in fish production in capture and culture sectors since the 1990s. All the same, even if a lower growth rate were to be assumed, this indicates that trade (both domestic and international) is going to acquire increasing significance over the coming years. The low per capita consumption of fish would also indicate that international trade would become even more important in the coming years and, consequently, all trade related developments in the global context would have direct relevance to the Indian seafood producers and exporters in the coming years. The fact that many of these changes are already having an impact upon the sector shows that there is a need for urgency in understanding the trade issues in more detail and simultaneously begin to take adequate and meaningful measures to address them.

3. Changes in trade measures as a result of WTO negotiations

Since 1990, there have been some significant changes in the terms of trade concerning Indian seafood. While some of the changes – sanitary and phyto-sanitary measures (SPS), technical barriers to trade (TBT) and antidumping measures (ADM) – are directly related to the WTO–related NAMA measures, the others (for instance, those related to subsidies) could have their origins elsewhere, taking place as they do in the background of a rapidly liberalising macro-economic context.

3.1 Non-Agricultural Market Access (NAMA)

3.1.1 Tariff measures

Historically, India has followed protective trade policies in fisheries through which trade was being regulated through quantitative restrictions (QRs), canalisation, licences, 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 the WTO, a number of fisheries products were moved to the Special Import Licence (SIL) and freely importable lists from 1997 onwards. In the Exim policy for 2002, almost all commodities were moved to the list of freely importable commodities, except for five groups (Anjani Kumar et al 2002:16). With complete dismantling of the QRs, tariff rates were perceived as the only instrument for restricting imports, so the tariff rate applicable for the import of fish products – which was reduced from 60 percent in 1993-94 to 21 percent in 1999-2000 – was raised to 44 percent in 2000-01, finally stabilising at 35 percent by the next year (**Table 5**). This means that Indian tariffs are still among the highest in the world, especially for goods that are also produced domestically (FAO 2002: 12) and are higher than most of its neighbours, including China and Bangladesh (Anjani Kumar, 2004:4268). More importantly, the import tariffs in India compare unfavourably to those prevailing in the main importing countries of Indian seafood (Anjani Kumar, 2004) and this could potentially have negative long-term fallout on a net fish exporting country like India.

On the other hand, India has been a beneficiary of the reduction in tariffs by the major seafood importing countries. The EU, Japan and the US extend preferential tariff treatment under Generalised System of Preferences (GSP) to Indian products including seafood, and the average tariff rates for the most favoured nations (MFN) are 4.1 per cent in Japan, 10.7 per cent in the EU, and 0.9 per cent in the US after the WTO agreement (Anjani Kumar, 2004: 4268). The higher tariff rate in the EU may have been offset by the US' antidumping tax, making the EU the largest importer of seafood from India in 2004-5. India has also benefited from the gradual relaxation of trade barriers by other developing nations as their increasing prominence in the export statistics since 1990s would show (Table 4).

India is a member of the South Asian Preferential Trade Agreement (SAPTA), which includes Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka (FAO, 2002:12). Besides, India has also been working on an Indo-ASEAN Free Trade Agreement, which will come into effect from 1st January 2007, and envisages bringing down of tax for nearly 4,500 items from an average of eight to zero percent (*Economic Times*, 25th February, 2006). Marine products come under the items being examined for inclusion in the FTA with Thailand, which proposes to phase out tariffs for 82 items by September 2006 (Business Line, 26 January 2005). In fact, in aiming to reduce tariff barriers substantially, the Indo-ASEAN FTA is more like an extension of Indian *Exim* policy of 2002, which liberalised import barriers for fish species.

As a result of liberalised deep-sea fishing policy, which came into effect from November 2002, it is suggested that the Indian producers might face a potential threat from distant water fleets from other countries, but it is difficult to say who these countries might be and how this might impact the local production and producers. The government's contention is that, considering the inability of the existing domestic fleet to fish in the offshore waters, a vast resource remains untapped, which is an economic waste. Moreover, the argument went, if India fails to make use of its EEZ productively, this may spur landlocked countries like Nepal and Bhutan in the region to lay claim to those waters and lease them to distant foreign nations anyway (GOI, 2001:578). As per the new guidelines, Letters of Permission (LOP) were issued for 48 numbers of 'resource-specific' vessels to 15 Indian companies until March 2004 (GOI 2005b: 45).

3.1.2 Non-tariff measures

As trade barriers are being scrapped, technical and regulatory barriers are becoming more important and India has been regularly confronted with non-tariff barriers imposed by importing countries since 1997. Out of the eight multilateral agreements relevant to trade in goods, the ones that have affected Indian exports the most are the Agreements on Sanitary and Phyto-sanitary Measures (SPS), the Agreements on Technical Barriers to Trade (TBT) and the Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade (Anti- dumping).

A. Sanitary and Phyto-sanitary Measures (SPS Measures)

Many food exports from India have been affected adversely by selective application of sanitary and phyto-sanitary measures in the last few years (see Mehta et al 2002), but the most outstanding of these measures in Indian context has been those concerning the export of shrimp. The first of these in the post-WTO period was the December 1995 U.S. seafood regulation, which mandated every processor and importer to comply with HACCP from December 1997 to be able to export to the US (Kulkarni, 2005:13). India's marine exports were subjected to automatic detention during 1996-97 as part of quality testing, which delayed marketing, increased storage costs and also led to refusal of consignment. According to some estimates, the value of Indian fisheries products detained in 1996-97 was US$ 14 million, or 15 percent of the total exports to the US during the year (Jha, undated: 14).

This was followed by a ban on Indian fisheries products by the European Commission in August 1997 on the grounds of: deficiencies with regard to infrastructure and hygiene in fishery establishments; inadequate guarantee of the efficiency of the controls by the competent authorities; potentially high risk for public health with regard to the production and processing of fisheries products and, above all, contamination by micro-organisms which may constitute a hazard to human health (Saqib, 2001). The ban was lifted after four months, but not without considerable losses to the importers and only after the GOI (and the seafood exporters associations) undertook to improve the quality standards in line with the EU Regulations.

In 2002, the EU implemented the so-called "zero tolerance" policy regarding antibiotics residue. Using the high performance liquid chromatography (HPLC) method, the EU laboratories are equipped to detect traces of prohibited carcinogenic antibiotics like chloramphenicol up to 0.3 ppb and nitrofuran up to 1 ppb levels. Some of the EU regulations, for instance, for detecting mercury, are close to being non-detectable (Kulkarni, 2005:16). According to the Seafood Exporters Association of India (SEAI), since February 2002, there

have been several cases of rejection of Indian shrimp imports into the EU market on account of detecting traces of nitrofuran and chloramphenicol as well as other bacterial inhibitors like amino-glycosides and macrolides. As a result of such stringent standards (which are clearly very difficult to meet by a developing country like India), in 2004, India still remained in List 1 of Annex 1 of the EC Decision 97/276/EC, amended by 99/136/EC, whereby all organizations exporting seafood to the EU require export-worthy certification of their processing facilities by an EU-nominated inspection agency.

Around the same time, Japan – the last of the three major seafood importing nations from India – also imposed strict standards on shrimps imported from India in 2002, and made it mandatory for consignments to be accompanied by a certificate stating that the material was free of antibiotics, especially nitrofurans *(Seafood International, May 2005)*. Japan also refused consignments of shrimp produced in aquaculture on the east coast of India on account of their muddy smell.

B. Technical Barriers to Trade (TBT Agreement): the shrimp-turtle dispute

One TBT measure that has had serious implications for the Indian seafood sector relates to the shrimp-turtle dispute between the USA and India. In 1996, the United States (US) banned shrimp imports from India on the ground that shrimp harvested with technology that may adversely affect certain sea turtles may not be imported into the US, unless the harvesting nation was certified to have a regulatory or conservation programme comparable to that of the US (Sridhar, undated:9). Since the US Endangered Species Act of 1973 required US shrimp trawlers to use turtle excluder devices (TEDs), India was compelled to mandate that TEDs be fitted on to their shrimp trawlers as well. Along with a few other countries affected by the US decision, India approached the WTO challenging the US decision. The dispute settlement panel of the WTO ruled, *inter alia*, that the US action amounted to a violation of the GATT principle of general elimination of quantitative restrictions. However, under an appeal by the US, the appellate body reversed the panel's decision, concluding that the US measures serve an environmental objective, thus legitimising 'the imposition of unilateral trade prohibition and process-related conditions and extra-jurisdictional requirements to protect environment, certainly for trans-boundary environmental concerns, and may subsequently pave the way for such requirements to be part and parcel of international trade' (Srivastava and Ahuja, 2002). In the absence of other sea turtle conservation programmes as effective as its own TED programme, the US continued to insist on TEDs for other shrimp exporting countries into the U.S., and most countries covered by the US ban, including India, developed their own TED programmes by 2000 and received approval from the US Department of State (Mathew, undated).

Following the US sanctions on account of turtle conservation and the decision of the WTO appellate body upholding the ban, India took some decisive steps to develop a comprehensive programme to protect turtles. An Expert Scientific Panel (ESP) set up for the purpose suggested a range of measures for conservation of turtles, which the GOI implemented by revising existing legal frameworks and making necessary institutional arrangements.

3.2 Subsidies

There is no evidence as yet of the WTO trade negotiations affecting the fisheries subsidies in a direct manner. It is true that direct subsidies have traditionally played a key role in the modernisation of Indian fisheries but their importance has declined over time. **Table 7** provides an indicative summary of different kinds of subsidies going into the fisheries sector.

Currently, many of the direct subsidies in fisheries go to the processing sector to keep up with the changing international context. In fact, as Kulkarni (2005:11) points out, of the 40 schemes for subsidy and promotion undertaken by the MPEDA, only one is targeted at fishermen. On the other hand, exporters receive assistance for promoting exports, hygiene and sanitation, research and development, and acquisition of machinery.

All the same, Indian subsidies in fisheries, particularly those that are contingent upon exports, appear to be miniscule and are not likely to be affected in the context of a stricter disciplining of fisheries subsidies. During the Ninth Five Year Plan, MPEDA has provided less than Rs 100 crores (US $ 23.35 million) as subsidies, which is quite negligibly low coming just 0.37 percent of the total marine products export (MPEDA, 2002). Even if the total spending by the various Central and state governments on fisheries compared against the total annual value of production, the total spending in the fisheries sector works out to only 2% of the revenue from the sector. A recent study on subsidies in fisheries by CMA (Dutta & Nilakantan, 2005:27) places India in the category of under-subsidisers. Among the eight developing countries for which data were available, the study ranks India fifth on subsidy per ton of fish production, third on subsidy per fisherman, and second on subsidy per dollar of fisheries GDP. Compared to its western counterparts, the subsidy at all these levels is much less in India. While considering the total subsidy flowing into fishery sector, India stood behind Japan, USA, Canada and Russia even though it has a fishery population much higher than any of these countries.

The lack of any change in the quantum of subsidies in fisheries at the macro-economic level is also due perhaps to the fact that the total outlay of fisheries in the national plans works out to a quarter of one percent and imposing fiscal discipline on such a miniscule sector does not help the economy significantly. Subsidies in fisheries are also miniscule when compared to other sectors like agriculture, prompting people to demand for more subsidies for fisheries, not less. Also, even if there was a cut in the direct subsidies in the fisheries sector, the impact on many stakeholders might not be significant. At the same time, India has been arguing for a special and differential treatment for small-scale artisanal fisheries, taking into account the importance of this sector to developing countries such as itself (India's Submission to WTO Negotiating Group on Rules, 6 March 2006, TN/RL/W/203).

Many indirect subsidies – i.e., those related to fuel and electricity, infrastructure investments, taxes/revenues foregone – have played a more important and critical support role in the fisheries sector (as perhaps they did in other sectors too), but this remains largely overlooked. Partly, this is because some of them – infrastructure investments and taxes/revenues foregone – are not considered as subsidies, while others – for e.g., subsidies related to petroleum products and electricity – occurred at a macro-economic level and covered every aspect of life, so much so that their particular importance to specific sectors was not often clear. Yet another category of subsidies that do not receive adequate attention are the social subsidies – e.g., for health, education, shelter, drinking water etc – that have been crucial in many ways for the wellbeing of the sector. In a rapidly liberalising macro-economic context in India, subsidies are increasingly frowned upon at the policy level and there are proposals to cut the existing subsidies across different sectors. Some radical changes have indeed been witnessed in this area, which took the form of removal/reduction of subsidies (most significantly in case of those relating to petroleum products and electricity), scrapping tax exemptions, charging user fees and privatisation of public services, and there is a perception that these changes – though momentous – are no more than the tip of the iceberg (Salagrama, 2004b).

3.3 Other Trade Measures

3.3.1 Anti-Dumping Measures (ADM)

Based on a complaint by the US-based Ad Hoc Shrimp Trade Action Committee in December 2003 that the US shrimp industry was being materially injured by shrimp being sold below fair value, the US Department of Commerce imposed anti-dumping duties on frozen or canned warm-water shrimp from Brazil, China, Ecuador, India, Thailand, and Vietnam in January 2005 (Bridges, 11 November 2005). In addition to the 10 percent antidumping duty and regular tariffs on shrimp, exporters to the US also have to give the US government a deposit or "bond" of 10 percent of the value of the year's export which the US government would hold for three years. Since ADM is targeted at individual companies, there is no single levy structure: Hindustan Lever, for instance, was levied 27.49 per cent duty, which was much higher than the weighted average of 14.20 percent paid by most other exporting companies (Business Line, 31 July 2004). The ADMs were also country-specific, with certain countries (for e.g., Vietnam, China) being made to pay a higher duty, while others (for e.g., Thailand) paid less.

While there was much heartache about the US shrimp anti-dumping tax, the fact remains that India itself has been aggressively using ADMs on a variety of imports (although not directly related to seafood) (Baruah, 2005:6-7). In fact, in terms of using ADMs, India is considered to be in league with the 'traditional' users of these measures like the EU and the US. More than half of these measures are targeted at developing countries.

3.3.2 Eco-labelling and Certification

Eco-labelling has yet to become an established trade measures, but generates considerable interest for its potential impacts upon trade, environment and livelihoods. On the other hand, the price premium for sustainably managed Indian seafood remains untested, since India does not yet have a single seafood eco-label (Kulkarni, 2005:9).

4. Initial outcomes of changes in trade measures

4.1 Non-Agricultural Market Access (NAMA)

4.1.1 Implications of changes in tariffs

With the lifting of QRs and reduction in the tariffs, it was feared, large-scale imports would swamp the Indian markets and, in the short term, this would lead to a crash in the market prices and in the long term, the marginalisation of Indian fish producers (Anjani Kumar et al 2003: 11). Adding fuel to these fears, imports showed a quick increase following the relaxation of the import tariff regime, growing from negligible quantities in 1992 to about 1 percent of exports by 1998. These consisted primarily of fishmeal, besides fresh and frozen hilsa from Bangladesh (FAO: 2002: 13-14). However, the quantum of imports has remained very low and confined to specific areas and the anticipated surge in imports of fish and fish products has not materialised so far (Anjani Kumar, 2004: 4266). In recent years the proportion of imports to exports has been 0.58 to 0.94 per cent in terms of value and 1 to 2 percent in terms of quantity. It is easy to see the hike in tariffs that followed the lifting of QRs as a reason for this, but as in the case of Indian exports, the reasons could also be elsewhere: sagging global production, low domestic demand and economic non-viability of imports for processing. The Free Trade Agreements that India has entered into with its Southeast Asian neighbours like Thailand are considered to make import of seafood more economically viable, but the impacts of such changes remain to be seen.

On the other hand, the preferential tariff treatment under the GSP extended by the EU, Japan and the US may have enhanced export performance and profitability of Indian seafood, although this may have to be assessed in the larger context of supply and demand fluctuations that characterised Indian seafood trade in the last decade. Among the three major importers of Indian seafood, the EU tariffs have long been considered by Indian exporters as a barrier for entry (Mathew 2003: 13), but this is offset by a higher unit value realisation and, in recent times, the imposition of antidumping tax by the US. All the same, it has been suggested, tariffs might not be as significant as other determinants of export demand such as export prices, international prices, market size, and exchange rate, which accounted for 95 per cent of the total variation in exports of fisheries products from India (Anjani Kumar, 2004: 4267).

4.1.2 Implications of non-tariff measures

A. Sanitary and Phyto-sanitary Measures (SPS Measures)

In 1998-99, i.e., in the wake of the EU sanctions on Indian seafood, the seafood sector is reported to have lost 21.48 percent in export quantity and 14.58 percent in dollar value. The sector responded to this and the successive SPS measures by investing (with some support from the Government) in upgrading the processing infrastructure. With the enforcement of Hazard Analysis Critical Control Point (HACCP), India has specified limits for various antibiotics, pesticide and heavy metal residues in seafood products. International Organization of Standardization (ISO) 9000 is recognized under the Exim Policy of the GOI and certification against ISO 9000 has emerged as a major industry in India.

Adapting the HACCP standards comes with a rather big price tag. Following the norms substantially increases the cost of production, because most of the capital goods need to be imported from the developed countries. Although it appears that some of the earlier estimates for upgrading to HACCP were exaggerated (Kulkarni, 2005:16-17), the minimum cost of an

EU certified plant is still high at about Rs. 80 million. The net worth of companies who are certified to export to the EU ranges between Rs. 800 million and Rs. 3,000 million (Kulkarni, 2005:9). According to the Seafood Exporters' Association of India (SEAI), the Indian processing sector spent US $25 million in order to upgrade their facilities to the required standards. The overall compliance cost for meeting the EU norms, as estimated by the exporters (and confirmed by MPEDA), is between 15 and 40 per cent of the FOB value. The high cost of upgrading is the reason why, of a total of more than 400 processing establishments in India, only 169 were approved for exporting to the EU by 2005 (**Table 6**).

On the other hand, the larger processors may have found few difficulties in upgrading to HACCP standards (Kulkarni, 2005: 16-17), which is to be expected as the larger processors are likely to be the net beneficiaries of the SPS measures in so far as the measures allow them control over a larger market share. The government's package of assistance also helped some of companies to improve the quality standards and it has been reported that the quality of seafood processing in the country is much better than that prevailing in many developed countries. For many smaller processing plants, already suffering from chronic problems (for e.g., underutilisation of capacity and high cost of operations), the need for further investment was like a final nail in the coffin. The dwindling profits and unviable operation of many exporting units has resulted in a situation where banks are unwilling to give loans. Procuring finance through other means is costly, which again drains the viability of those units. As a result, many small processing factories and exporters have been forced to close down, with the consequent loss of livelihood opportunities, national income and substantial capital investments. This may continue further as the systems are still far from perfect and as international seafood legislation continues to become more stringent and widespread. Even for those who did manage to upgrade, the extra investment drained their working capital and they could not buy shrimp for processing in spite of having world-class infrastructure.

Apart from the cost of adaptation, many exporters have reservations about EU process requirements, which often do not result in any risk reduction but impose additional costs and are often unrealistic in a developing country context. There is a widespread perception that the standards which the exporting units are asked to follow are those that even European plants do not follow, leading to charges of double standards. The Export Inspection Council of India (EIC) acknowledges that the EU process requirements impose more-than-necessary conditions often not listed in formal documents (Kulkarni, 2005: 15).

Another frequent complaint about the standards is that, with upgraded infrastructure, there is no proportionate increase in the unit value realisation of seafood. In fact, the average realization cost that had stood at Rs.149.16 per kg during 1999-2000 came down to Rs.144.08 per kg in 2005, showing 3.53 percent decline (MPEDA, 2000 and 2006), despite the huge increase in investment and cost of production. The beachside prices of shrimp fell steeply and the actual procurement prices in March 2006 were about 25 percent less than those in 1996 (personal communication, Kakinada Mech Boat Owners' Association). Since the markets do not bear the additional cost of upgrading to higher standards, the processing companies shift their burden to the producers, who are forced to take reduced returns.

The impact of the measures on ancillary units like the shrimp peeling sheds has been even more damaging, forcing them to close down as a direct result of the provisions or because of the excessive cost of upgrading. The shift of shrimp processing from peeling sheds to processing plants for maintaining a highly sanitized factory environment also made the peeling units and their infrastructure unviable through reduced level of operations, making

the investment dead. Apart from the economic losses accompanying the closure of shrimp-peeling sheds, the loss of livelihoods for a number of women peelers has been a bigger concern, particularly as many of these women are the main bread-earners in their families. Lack of alternatives continues to make their conditions more difficult.

With the growing stringency of quality tests in the importing countries, there is also a constant fear that every consignment will be at risk because there are simply too many parameters to follow and also because the expertise and equipment necessary to implement some of the measures is simply not available (or affordable) in the country. Non-harmonious importing conditions among the importing countries are another cause of concern, which was particularly glaring in the case of countries within the EU (Kulkarni, 2005:18). Such fears and uncertainties often translate into measures that aim at maximising returns in the short term at the expense of long term sustainability of the sector.

The response to successive SPS measures has so far been confined to the processing and export companies, while a large majority of people in the supply chains continue to function as they have always done, although they do pay a considerable price for it. The increased cost of compliance with the SPS measures has forced the exporters to transfer their burden to the producers, which is reflected in lower prices being offered to them. In the context of coastal fishing having almost reached a saturation point, investing in onboard facilities for enhancing hygiene and quality beyond a certain point has become non-profitable for the fishers, unless accompanied by a commensurate increase in price, which is not happening, so the fishers are reluctant to adapt to new measures.

B. Technical Barriers to Trade (TBT Agreement): the Shrimp-Turtle Dispute

Mathew (Undated) and Srivastava and Ahuja (2002) examine the extent to which shrimp exports from India were affected during 1996-97, i.e., the year following the imposition of the US ban on Indian shrimp for not complying with its turtle conservation provisions, by comparing them with the previous year (1995-96) and conclude that the US ban did not affect shrimp exports from India in general, and even to the US market in particular. In fact, in 1996, the year in which the US imposed the ban, exports of shrimps from India showed a modest increase in quantity terms. Two reasons are suggested to explain the absence of any significant effect of the US embargo. Firstly, since the US imposed a ban only on captured shrimps and not on cultured shrimp, there may have been some kind of switch from captured shrimps to cultured shrimps destined for the US market. There is a strongly pronounced trend in the Indian shrimp exports which has come to be increasingly dominated by cultured shrimp. In 2001, for instance, the cultured shrimp accounted for more than 60 percent of the overall exports (Mathew, 2003). The second reason could be the redirection of exports away from the US and towards Japan since the ban was imposed only by the US and not by other major importing destinations. Again, this is a familiar trend: whenever Indian seafood sector received a shock from one of the major importers, its first response has been to take the product elsewhere (Salagrama, 2002). Srivastava and Ahuja suggest that the ban had a limited impact because the US accounted for only 15 percent of all shrimp exports from the country. Although even this share was not adversely affected due to the ban, TBT measures could certainly have serious consequences if imposed by all major importing countries.

At the same time, the eastern coastal state of Orissa bore the brunt of several turtle conservation measures and provides an interesting case study in which issues of trade, environmental concerns and livelihood needs got entwined in a tangled web of contending interests. Here, the efforts to conserve turtles took two routes. On the one hand, the MPEDA

started commercial production of Turtle Excluder Devices (TEDs) for distribution to the fishers free of cost. But the fishing boat operators were reluctant to use the TEDs, which would increase fuel consumption and hence, the cost of operations. A 1994 study done by the Ministry of Commerce, Government of India for United Nations Conference on Trade and Development (cited by Mathew, undated) estimated a loss of U.S. $23 million if TEDs were to be made mandatory in Indian shrimp trawlers. Moreover, the fishers complained, the TEDs not only prevented capture of turtles, but also kept off bigger fishes and led to other catch losses, which could be up to 30 percent of the catches (Rakhal Mishra, *pers.comm*.). As a consequence, the use of TEDs remained rather low in commercial fishing operations.

As Mathew (2003) notes: 'Instead of attempting to make TEDs mandatory, India declared Gahirmatha, the largest known olive ridley turtle rookery in the world, as a Marine (Wildlife) Sanctuary in 1997, under the Wildlife Protection Act of India, 1972. Fishing activities were also banned in the sanctuary. The Fisheries Department of Orissa, the State where Gahirmatha is located, followed with a Notification in the same year prohibiting all fishing within the seaward radius of 20 km from Gahirmatha area round the year to protect olive ridleys. With the same intent, another Notification was issued prohibiting all fishing to a seaward distance of 20 km from the high tide line around Devi and Rushikulya river mouth, two other nesting sites in Orissa. Both powered and unpowered fishing vessels are kept out. Not only bottom trawls but all fishing activities, including artisanal fishing that involved only manual retrieval of nets have been banned from the closed areas, although US turtle protection measures required the exporting country only to have a TED programme.'

The impact of the ban has been felt by the fishers in the dozens of villages abutting the banned areas and has led to serious livelihood problems (Sridhar, 2005). Mathew (undated) notes that, on the whole, between 40,000 to 50,000 fishworkers and fishing vessel operators were affected in Orissa as a result of sea turtle conservation programmes. The closure of fishing areas is believed to deprive the fishing sector of 2,000 tonnes of shrimp, about 50 per cent of the total marine shrimp production of Orissa, and the potential loss to the fishing sector as a result of sea turtle conservation programmes was put at Rs. 1,000 million (about U.S.$22 million at 2001 prices). Mathew concludes that, in a state with 48 per cent people below the poverty line (annual income of U.S.$300), and with marine fishers having an annual per capita income of less than U.S.$200, the potential loss of livelihood opportunity as a result of losing access to turtle conservation measures was quite significant.

4.2 Subsidies

A study by Salagrama (2004) provides an overview of changes in subsidies and their impacts upon the fisheries sector in India. While some of the direct subsidies into the sector – for instance, those going to the export and processing sectors, have remained largely intact, the study also identifies some important areas where there have been changes to the existing subsidy regimes (both explicit and implicit), which have implications for the sector at large. Some of these include:

Removal or reduction of subsidies: This included reducing subsidies on petroleum products (for e.g., HSD oil and Kerosene used for running fishing boats) and on electricity (with implications on the cost of chilling and processing activities). The cost of HSD increased from Rs. 11.43 per litre in 1998 to Rs. 32.83 in April 2005 in Mumbai, an increase of nearly 300 percent (http://petroleum.nic.in/petstat.pdf). Records of a diesel outlet at the Kakinada fishing harbour show that HSD was being sold at Rs. 3.77 per litre in 1989, which has gone

up to Rs. 33.33 in February 2006 – an increase of nine times in fifteen years (AFCCS, internal records). As a result, the cost of fishing operations increased manifold and its impact is best illustrated in Southern Indian state of Tamil Nadu, where a majority of boats provided under various post-tsunami rehabilitation programmes remained on shore for months because of the high cost of operations (Salagrama, 2006). The Government does provide an exemption on sales tax for HSD oil used by mechanised boats, but it barely keeps pace with the cost of operations and is not really a very meaningful way to use scarce resources.

Fishers sharing part or whole of the cost of public investments: These include the fishers sharing the cost of infrastructure such as landing jetties, drying platforms or access roads, as well as paying a more realistic user fees for utilising common facilities like fishing harbours. The increasing prevalence of 'Build-Operate-Transfer' arrangements for setting up public infrastructure like ports and roads also ensures that the users pay for the assets over a longer time period.

Reduction or removal of tax preferences: This is reflected in the current taxation policy of the country which converts duty entitlement passbook (DEPB) income on export turnover above Rs. 10 crore ($ 2.2 million) into taxable income. This has landed the seafood exporters in considerable amount of trouble (*Economic Times*, 18 February 2006) and led to arguments that this kind of internal taxation will put additional burden on the ailing sector. It is estimated that with the implementation of the new tax policy, around Rs 500 crores will be removed from the seafood sector annually (SEAI Kerala Chapter, 2006).

Reduction in subsidised lending and credit provision arrangements: While hard information is difficult to obtain, there is evidence at the village level that the quantum of institutional credit going into the fisheries sector at subsidised rates has come down drastically over the last decade (S Nageswararao, pers.com). This is partly to do with poor performance of earlier credit portfolios, but there has undeniably been a reorganisation of priorities in the banking sector that focuses on maximising the performance of its lending programmes.

Reduction in provision of public services: Under the Structural Adjustment Programmes, the size of government departments has been shrinking and there has been no recruitment into many state departments in over a decade, with the result that the services (extension, coordination, needs assessment, support, monitoring, census collection etc.) provided by these agencies have necessarily become weaker. As the implementation of SAPs gains momentum, it is possible that the allocations for research, which is perhaps the easier area to target, are being slashed, resulting in closure of field research centres as well as reduced funding for research and basic infrastructure. This is particularly serious in the context of a growing realisation and need for more research on different issues for a more meaningful response to adapt to the rapidly changing global contexts.

4.3 Antidumping

In 2004-5, the USA slid to the 2nd position among the importers of seafood from India and, according to the MPEDA (MPEDA, 2006), the decline was mainly due to the antidumping duty imposed by the US government on import of frozen shrimp from India. Export of frozen shrimp to USA declined by 15.02 percent in quantity, 9.81 percent in rupee value and 7.93 percent in US$ terms during the year. This was followed by the EU emerging as the largest market for Indian marine products, increasing its share to 25.52 percent from 23.37 percent in quantity; to 27.37 percent from 24.15 percent in rupee value and to 27.42 percent from 24.04 percent in US$ realisation. Overall, it has registered an export growth of 22.29

percent in quantity, 23.68 percent in rupee value and 26.71 percent in US$ realization. It has been reported since that the share of EU in overall seafood exports in quantity terms from India has crossed thirty percent (*The Hindu*, Visakhapatnam Edition: 24 March 2006). As a result of the readjustment of the markets from the US to the EU, the impacts of the antidumping tax are not visible. The loss of US markets may have kept the shrimp prices more or less stagnant, even showing a marginal decline in terms of unit value realisation (MPEDA, 2006), but this might also be a global trend. On the other hand, there is some optimism that the antidumping tax might actually have helped India in so far as its main competitors are also penalised by it, often by a much larger percentage (*Business Line*, 31 July 2004), but the benefits if any remain to be quantified.

5. Sustainability Impact Assessment (SIA) of longer-term effects

The impacts of any trade measures will have to be assessed in the larger context of conditions prevailing in the fisheries sector and by taking into consideration the larger processes and factors that direct or influence the process of change as well as the capacity of the people to cope with it. These larger processes include, apart from issues directly related to fish production, trade and consumption, also more systemic factors such as poverty, illiteracy and marginalisation. The impact of a trade measure may, to a large measure, exacerbate an ongoing condition or trigger a change that quickly gets transferred beyond the specific context in which it occurs, and this integral relationship between trade and the larger context in which they occur cannot be underestimated. This becomes important in determining the nature and scope of responses that follow a trade measure, which rarely go beyond the immediate context and end up ignoring other costs and benefits associated with a measure. This is also important to understand because, many of the SIA implications of trade liberalisation can have contradictory effects either simultaneously or in an 'either-or' manner, and also seem to have different implications for different stakeholders within the same supply chain. This would certainly make drawing conclusions in black-and-white a difficult exercise, but for that very reason also helps to keep a balance in approaching the issues.

Another conclusion that can be drawn from the above is that while it is possible to understand some direct impacts of a trade measure, it is not always easy or even possible to understand their deeper ramifications, particularly in the social and economic areas. At the same time, ascribing too much power – either positive or negative – to the ability of a particular trade measure to bring about change can also be misleading. All the same, whether some of these concerns would come true or not, they have a powerful hold on peoples' imagination (often with justification) and hence merit careful attention.

5.1 Longer term SIA implications of WTO trade negotiations

5.1.1 Implications of further reduction in Tariffs

A decrease in the EU tariffs (under the new EU GSP scheme, which provides special exemptions for tsunami-affected countries) is considered to help the sector to reduce the escalating export costs and to ensure profitability, while at the same time consolidating the EU's position as the main importer of Indian seafood. In the context of the prediction that with 1 per cent reduction in Indian export price, export demand for Indian fisheries sector would increase by 1.13 per cent (Anjani Kumar, 2004:4267), it can be said that a 5 percent reduction in price (as benefits availed through tariff reduction), export to EU market shall increase by nearly 6 percent. On the other hand, if the preferential access to the EU markets for India under the Generalised System of Preferences (GSP) were to be eroded or downsized, the comparative advantage that the EU has over the other importing countries is likely to be lost. For India, this might mean reaching more markets at the cost of diminished profit margins.

Any such changes will only strengthen the perception that the dependence of Indian exporters on a few specific importing nations is a risky proposition and that there is a need to break this dependence. Already, Japan has been slipping as a major trade partner for India, while China, the Middle East and Southeast Asian countries are emerging as the new export destinations for Indian seafood of the non-shrimp variety. It is felt that new opportunities for export might emerge as developing countries liberalise their import regulations further (for instance, China is considered to be a big market destination, but its bound tariff rate of 18 percent is

considered to be a trade barrier (Mathew, 2004:13)) and that it will help diversify the products away from shrimp. Similarly, the opportunity to cater to new markets, together with higher aquaculture production, might reduce the idle capacity of the processing plants (thus nullifying the demand for allowing imports into the country). However, this might prove to be rather difficult in the short term because of the way the supply chains are currently organised and function. Also, studies indicate that the value of Revealed Comparative Advantages (RCAs) and Revealed Symmetric Comparative Advantages (RSCAs) for fish other than shrimp and prawns are not competitive (Anjani Kumar, 2004). Moreover, if past experience is any indication, reduced tariffs might mean that the exporters will have to contend more frequently with other trade-related measures like SPS, TBT and ADM, whose usage appears to become more prolific with the relaxation of import regimes.

While there is little evidence of the reduced QRs and tariffs in the import context having an impact on Indian markets yet, this has little to do with the resilience and strength of the domestic fisheries sector. The insignificantly low volume of fish imports (one percent of the fish exports) was the result of high tariff rates, but with the prospect of further reduction in tariffs, there is a likelihood that this trend might change. Unlike the developed countries, which have recourse to SPS and TBT measures, India does not even have production specification standards or quality requirements for imports (Mehta and George, 2003: 3), so it will be very difficult to stem the imports, *if* they begin to flood the markets – and one must proceed on the assumption that they will. This is proved by the fact that, already, large-scale imports have begun to have a serious impact on the domestic producers in other sectors (notably in agriculture, but also in toys and electronics) and, in conjunction with changes brought about by other liberalisation measures, contributed to a significant loss of livelihoods for the poor and marginal players (Chowdry, 2001; *Frontline*, March 24, 2006: 43-45).

The arrival of imports will be facilitated by the fact that, in a market where quality is increasingly becoming the norm for ensuring demand, the basic conditions prevailing in fisheries remain much as they were before the import regime had been relaxed, indicating that the producers have genuine reasons to fear the possibility of imports from their (more organised) neighbours swamping the local markets, while not being able to take advantage of the opportunities that the relaxed global trade regimes present in terms of reaching new markets themselves. Considering that targeting the domestic urban markets is one of the few options available to Indian producers to improve the viability of activities in the coming years, facing competition from imported fish in this market segment becomes a real threat.

It was for this reason that the reported moves by the Union Ministry of Commerce to allow duty-free import of fish under the advance licensing scheme for re-exporting value added fish products has triggered alarm bells among the fishing communities. Under this arrangement, Indian seafood exporters were supposed to source marine products in either raw or semi-processed condition from Africa and South Asia where there is no infrastructure for advanced processing (*Economic Times*, 2 February 2006). The proposed Free Trade Agreement (FTA) with Thailand for import of fish for reprocessing and exports led to protests by the fishermen in Kerala, who complained that the imports would affect their livelihoods adversely. The Seafood Exporters Association of India (SEAI) argues that fish imports from Thailand would address the issue of shortage of raw materials in the country. According to SEAI, the peak fish landing season in India lasts only four months and during the rest of the period, processing units are left idle. In any case, most plants are reported to be working at less than 20 percent of their installed capacity and the SEAI considers imports to be a means to increase their productivity. The fishers, on the other hand, fear that imports would depress

domestic fish prices. A collapse in prices may adversely affect the entire chain of fish production and small scale trade, although this may help the large scale importers and consumers. In other words, it is the small-scale fishermen and small fish vendors (a majority of whom are women), whose livelihoods could be potentially affected following a further reduction in tariffs. The slashing of prices for fish produced in the country will result in a reduction in income for the fishermen and may lead to non-viability of both fishing operations on the one hand and fish farming for home consumption on the other hand. For the secondary stakeholders, this may mean large-scale unemployment and marginalisation, as has already been happening in many other primary sector occupations in the country.

On the other hand, the South Asian Free Trade Agreement (SAFTA) – which is expected to be launched by 1st July – is considered to offer considerable opportunities for Indian exports, so much so that it has given rise to fears among countries like Pakistan about Indian exports swamping their domestic industry and made progress on the Agreement rather slow, giving rise to doubts about its being implemented by the target date (*The Hindu*, 1 April 2006). It is suggested that, rather than increase the trade flows, the Agreement is more likely to legitimise the existing, largely informal, trade, thus increasing the net returns to the exporters and to the country, while making the products available to the consumers at a cheaper price.

It has also to be noted that customs tariffs account for some 30 percent of net government tax revenue (WTO, 2002), and thus the reduction in tariffs could have a significant impact upon the revenues of the government and affect its investment potential.

In the case of the new guidelines issued by the GOI for permitting deep sea fishing by Indian Flag Vessels in the Indian Exclusive Zone, Mathew (*The Hindu*, 6 January 2003) notes that the policy makes it possible for excess fishing capacity in other countries to end up in the Indian EEZ, and may contribute to the GOI as well as the local fishing sector losing revenues from the deep sea resources, while no extra employment would be created for Indian producers. While no countries were specifically named as possible suppliers of boats for re-flagging, fishworkers organisations like NFF fear that excess fishing fleets from 'developed countries' would be redeployed in Indian waters (*Business Line*, 9 December 2005). On the other hand, Mathew notes, it is possible for the indigenous fleet, given some technical and financial support, to exploit these resources on its own, which would contribute to capital formation within the country. Although the deep sea fishing policy appears to have been amended slightly (see GOI, 2005c), some of the substantive arguments against it seem to be still valid, fuelling doubts and fears among fishworkers.

Summary of longer term SIA implications of tariffs

In **economic terms**, for a net exporter of fish like India, the impact of more relaxed tariffs is likely to be positive in terms of consolidating its market share and diversifying to other markets. Preference erosion could reduce overall profitability of the export sector in the short term, contributing to increased risk, reduced income and loss of employment opportunities, but might prove to be a positive change in the long term as it makes the supply chains more competitive and diversified, hence less risk-prone. Consumers of fish, importers and retailers of imported fish and the processors (who intend to use their idle capacity for reprocessing the imported fish for re-export) would benefit from reduced tariffs, but this will again be at the cost of livelihoods and incomes for different categories of stakeholders in the sector, whose capacity to hold on to their market share in the face of competition from the imported goods is very limited. As the returns from sale of the imported fish largely accrue to the exporting countries, there is really little contribution to capital formation in the country – if anything,

increased imports (and new players like deep-sea fleets) might actually lead to capital erosion due to idle capacity and poor returns on investment.

In **social terms**, the producers might be affected both due to preference erosion as well as due to competition at sea and at the market place by new players and products, but on the other hand the increased access to new markets and demand for species other than fish might offset this. For the secondary stakeholders (particularly women, *dalit*s and other vulnerable people), the overall impact of lifting of tariffs is likely to be more negative than positive as this can hurt their current livelihoods, while not really offering an affordable means to take advantage of the new opportunities this may present. In terms of quality of life, the increased impoverishment of some categories of people might weaken their conditions of life, while the increased availability of fish at affordable prices might enhance consumers' access to cheap protein and improve nutritional security.

In **environmental terms**, the shift to non-shrimp exports to cater to the new market demands will contribute – albeit in a small way – to diversification of fishing effort and culture operations, reducing the pressure on specific species, while enhancing the utilisation of a diverse mix of species in a more balanced manner. More plausibly (and troublingly), however, the reduction in tariffs in the existing markets might intensify the focus on shrimp and further aggravate the detrimental effects on the environment, with consequent loss of biodiversity, livelihood security and so on.

In **process terms**, increased access to fish through imports might reduce the investments in the production and post-harvest sectors. On the other hand, measures to protect the interests of the domestic producers and consumers by developing and implementing domestic food laws might *actually* hurt the domestic producers and local traders, whose capacity to stand up to the requirements might not be adequate, constrained further by inability of the domestic markets to pay a higher price.

5.1.2 Implications of more stringent SPS measures

In the export-processing sector, the marginalisation of smaller players would lead to a reorganisation of the processing industries which would come to be owned and controlled by fewer players. That this is already happening is visible from the fact that in Kerala, where the export sector is more developed than in any other state, a mere 8 processing companies (out of a total of approximately 80) handle nearly 70 percent of the total seafood being processed and exported from the state (SIFFS, 2002: 52). In Andhra Pradesh, some four processing companies are said to account for more than 70 percent of the exports from the state. In many other states (for instance, in Orissa), although the number of processing companies might be high, most processing is actually done by a much smaller number of companies. Thus, there is truth in the suggestion that, for the larger processing companies, the SPS measures are more an opportunity to enhance their control over production and trade, particularly as they are better equipped to handle the changing international demands more efficiently. This is also achieved by a process of consolidation: Kulkarni (2005:8) notes that eight of the 68 processing units in Kerala have decided to merge into a single, large public-limited company in order to compete more effectively in the international markets.

This consolidation of the processing in fewer hands – coupled with more sophisticated (and hence less labour-intensive) technology – would mean more closely-knit supply chain arrangements. Already, many large processing companies have their own fleet of vessels and there is a likelihood that the capture and culture systems will come to be more closely

integrated with processing and export systems. Considering that it is the informal nature of the fisheries operations that allow entry for some of the poorest people to make a living out of the sector, it is possible that the change to more formal systems would mean a loss of opportunities for many poor.

According to MPEDA, about two-thirds of the shrimp-peeling units will ultimately upgrade themselves to the EC norms while the rest will perish, resulting in high levels of unemployment, which in turn is a powerful motor contributing to social tensions. The centralisation of peeling and other operations by the processing plants may result in migration or mobility of women peelers, with attendant consequences on their domestic life. The centralisation will also adversely affect small-scale shrimp procurers, while favouring big traders and commission agents, because the processing companies, unlike peeling units, cannot afford to source their supply in small quantities from a large number of people.

As the SPS measures become more frequent and stringent by the year, every category of stakeholders in the sector would be forced to undertake systemic changes to their behavioural patterns, whether they could afford them or not. The GOI as well as the seafood sector have already begun taking measures to improve the quality standards at various levels in the production chains and this would include the producers. Adoption of new standards might not have been a serious issue two decades ago, when the potential to increase production from the capture and culture sources seemed endless and the supply chain was not over-capitalised to an extent where the incomes barely covered costs (as happens today), but now the implications of such changes are likely to be more serious and potentially catastrophic for a number of players in the sector. The crisis in the sector can be illustrated by the fact that a majority of shrimp farms (accounting for over 70 percent of the total farms) have remained idle for over five years now, while the last new mechanised boat to enter into the fleet at a major trawler base like Nagapattinam in Tamil Nadu was reported to have arrived in mid-1990s (Salagrama, 2006). No more than a third of the mechanised boats at any fishing harbour are active at any given time. SPS provisions might be only one of a multitude of reasons for this state of affairs, but they certainly are among the more important.

Besides investment needs, some of the HACCP requirements – for instance, the need for onboard preservation facilities on a log catamaran, the need to use potable water for cleaning purposes etc – are so difficult to meet (being beyond the control of a fisherman or even a fishing village) that stricter implementation of HACCP plans could result in such small producers being excluded from the export market without alternative. This will be catastrophic because, in livelihood terms, many capture and culture operations are very much shrimp-oriented and will become unviable without the revenues from shrimp exports.

The more affluent and enterprising of the producers would find the resources to upgrade to the required standards. This might mean increased risks and, perhaps, indebtedness, but it is said that about 10-15 percent of the fishers (particularly in the mechanised sector) would be able (or forced) to make the change, which is likely to pay dividends in the long term. The assistance for this might also come from the surviving (large-scale) processing industries themselves (which need captive suppliers) or from the government. The small and marginal fishers and farmers would not be in a position to keep up with the high standards needed to comply with the requirements, which will reduce their competence in the existing export markets and eventually force them out. Many of the fishers would take to fishing for non-export species, targeting the domestic urban markets (and, perhaps, markets in other developing countries as well) more intensively. This may not be an option in the short-to-

medium term for mechanised boats and the aquaculture sector, but a majority of motorised boats would be making the transition, as is already happening in many areas in the country. This may eventually lead to shrimp being replaced as *prima donna* of Indian fisheries by the entry of a number of other finfish varieties and the markets shifting from developed countries to developing countries and from export to domestic trade. Even if it were not to replace the shrimp trade entirely, it will at least help to stabilise a badly shaken sector. In at least 20 percent of the cases (particularly in mechanised and aquaculture sectors), the fishers would simply have to stop operations and move out. This is a continuation of the existing trend in coastal fisheries and has its roots in a host of other factors besides the SPS measures.

In the **long term**, the legislation affecting the export sector will begin to have an impact upon domestic trade standards as well. The Comprehensive Marine Fishing Policy of the Government of India (2004: 3.1) envisages that, 'Existing domestic standards for fishery products and by-products would be harmonised with the International Standards so as to ensure quality of fish and fishery products for domestic consumption at par with global standards'. Also, as Mathew (2003:16) suggests, 'In the absence of voluntary good management practices in the seafood processing and export sector, and lack of national standards for food safety in India, the standards originating from import markets are bound to dictate terms to the national seafood export sector. The best bet would be to develop effective and enforceable national food safety standards and to establish their equivalence with those prevailing in import markets.' When this materialises, many small-scale producers will be required to undertake major changes to their operations and the generally gloomy situation that characterises their current activities may not allow such adaptations. Thus, the immediate impact of a more rigorous food law in the country might be adverse for many people in the supply chains.

Summary of longer term SIA implications of SPS measures

In **economic terms**, as in the case of tariffs, the small-scale producers and processors are at a higher risk from the SPS measures than the large-scale processor-exporters, and the latter might actually be the beneficiaries of such measures in the long term. The closure of smaller processing units and consolidation of processing activities in the hands of a few bigger players will mean a loss of livelihoods and excessive idle capacity in the sector. The monopolisation of production and trade activities would reduce the producers' bargaining capacity and share in the markets, but there might also be new investments in fishing and processing infrastructure, which allows the sector to better stand up to international standards, to be adaptive to changing requirements and hence more sustainable as an economic activity. Closure of ancillary units and insistence upon impossible quality standards would reduce employment opportunities for the poor. Unless the systems are upgraded radically (which is not possible), a majority of the producers will find themselves out of international trade arena and concentrating upon the domestic markets instead, which might be a good thing in the long term. The overall impacts would be in terms of reduced real incomes, increased unemployment and reduced size of fishing and processing infrastructure.

In **social terms**, the role of women – which has been crucial in shrimp export operations – will undergo many changes: while some women lose jobs, others will find the need to travel long distances for work, which will have implications on their domestic life. Competition will reduce their bargaining capacity and increase work burden, while depressing wages. This will have implications on their health and domestic life. Reduced incomes and lack of alternatives will be reflected in poorer investments on the quality of life related expenditure. The impacts

on men, much indebted and freshly deprived of their access to international shrimp trade, would not be much better. A stricter implementation of SPS provisions would mean an overall depression in the lives and economy of the coastal fishing communities in at least some states.

In **environmental terms**, shrimp would undeniably remain the most important export earner for the seafood sector, but it might not be so important anymore for the producers, who will (and already are) shifting to non-shrimp species, which might reduce the burden on shrimp. The focus on large finfish like seer and sharks also takes the fishers away from the overexploited coastal waters. However, depending on how the international shrimp trade shapes up, a revival of interest in shrimp cannot be ruled out: if the traditional fishers avoid getting involved, the processing companies will find someone else to do it anyway.

In **process terms**, the failure of the Government of India to take a more meaningful stance in the WTO standard setting processes and to ensure that the prevailing conditions in developing countries are properly reflected in the drafting of the standards has been criticised by many as an important reason for the shocks that the country has faced in terms of SPS provisions. Moreover, there is also a feeling that the government bends over backwards to accommodate every demand of the importing countries, without reflecting upon the practicability as well as the need for the provisions being demanded. This sets precedents that reduce the bargaining power of the seafood sector in its dealing with the clients. The idea of having a domestic food law, though considered to be a good thing in itself, troubles many people all the same because of the fear that the GOI might take a very techno-centred view about determining the standards, disregarding that there would also be many social and economic costs involved in the implementation of such a law.

5.1.3 Implications of changes in fisheries subsidies

In the short term, the focus of fisheries subsidies being on processing and export sectors, any changes to the subsidy regimes will intensify the impact of the SPS measures. Many processing industries, particularly the small-scale ones, feel that it would be very difficult – if not impossible – for them to upgrade to the HACCP or EU standards if not for the assistance coming from the MPEDA. Paradoxically, any interventions by the State to tackle the SPS issues might become actionable because, in the tangled skein of WTO trade provisions, active State intervention on behalf of the sector (particularly the export-related sectors) will be treated as 'export subsidy'! On the other hand, from the macro-economic point of view, it can be argued that the subsidy loss may not be a big blow to Indian seafood sector, provided the same is implemented across all nations, including the developed ones. This will increase the competitive advantage of Indian seafood in the international markets.

The general consensus is that even the complete withdrawal of fisheries subsidies is unlikely to affect the conditions in the supply chains one way or the other. On the other hand, within the framework of the SCM agreement, only export subsidies are treated as prohibited or actionable and the latter are deemed to exist in the case of total *ad valorem* subsidization of a product exceeding 5 per cent (WTO Agreement on Subsidies and Countervailing Measures, Part III: Article 6). And, as Mathew (2003) notes, "Even if we treat the entire annual budget of Marine Products Export Development Authority as a prohibited subsidy, which may not be the case if we do a careful analysis of all their schemes, it amounts to less than half percent of the annual seafood export value." The MPEDA (2002) takes this as an invitation to actually *increase* the government's support programmes to the sector, particularly for developing the mechanised and deep sea fishing sector to encourage harvesting of Oceanic tuna and deep sea

shrimp and lobster resources. A new subsidy scheme announced by MPEDA (*The Hindu*, January 18, 2006) aims to support the conversion of mechanised vessels (up to 20 metres in length) and deep sea fishing vessels (more than 20 metres) into tuna long liners, thereby equipping them to effectively catch oceanic tuna resources from the EEZ. The amount of subsidy for converting the boats into tuna long-liners is up to 50 percent of the capital cost (up to a maximum of Rs. 7.5 lakhs in case of mechanised boats and Rs. 15 lakhs in case of deep sea fishing boats). Thus, by focusing on the trade-distorting effects of subsidies alone, the current WTO definitions of fisheries subsidies might actually encourage more investment into 'capacity- and effort-enhancing subsidies'.

At the same time, the arguments against subsidies that focus upon their adverse implications on the environment also seem to overlook, or largely bypass, other dimensions like equity, livelihood security and the quality of life of fishers, particularly in a developing country context. This omission could potentially lead to a situation where a subsidy which does not explicitly distort trade or negatively affect the environment, but has serious consequences on the livelihoods of some poor stakeholders would pass muster as being legitimate, while the general air of suspicion that hangs over the issue in current development thinking could lead to phasing out some positive subsidies, for e.g., those contributing to the general welfare of the poor, which, in case of India, is already happening. It is also in this context that the submission by India to the WTO Negotiating Group on Rules (TN/RL/W/203, dated 6 March 2006) arguing for special and differential rules for small-scale and artisanal fisheries, taking into account their contribution to development priorities, poverty reduction, and livelihood and food security concerns becomes important. While recognising the difficulties in arriving at a simple definition for the artisanal/small-scale fisheries, and also recognising the need for better fisheries management efforts, India seeks special treatment for the artisanal/small-scale sector, provided there exist transparent and adequate justifications while designing subsidies for small scale, artisanal fish workers.

The impacts of the changes in indirect subsidies are significantly more wide-ranging and also more difficult to handle. It is said that every increase of 5 percent in the price of diesel has contributed to a corresponding decrease in active fishing fleet. In some cases, a threshold has already been reached and any further increase in fuel prices would automatically make fishing a non-viable proposition. Reduction in other indirect subsidies – access to cheaper credit, institutional support, tax benefits, free access to resources and infrastructure – might potentially hurt the people in the sector, but given that their contribution to the wellbeing of different stakeholders in the sector has not been properly quantified, it is difficult to assess how serious the impacts would be. Another important change that could have implications on the viability of operations is the increased application of the 'user pays' principle for setting up of infrastructure and, in the long term, for access to fishing grounds. Such measures will automatically enhance access to the assets for certain users at the expense of others.

Yet other kind of subsidies which have relevance for the poorer fishers are the so-called 'social subsidies', which include investments going into basic quality of life areas like health, education, shelter, freshwater and other common facilities. While any discussion about fisheries subsidies generally ignores the role of indirect ones like fuel subsidies, so also it ignores that fisheries subsidies (at least as they are allocated in the GOI and state budgets in the country) include some social subsidies. Thus there is a possibility that, while those subsidies that might be contributing to trade and environmental distortions are being ignored, those which have a more social significance might be targeted, being considered part of fisheries subsidies. The liberalisation of the Indian economy has certainly reduced the flow of

subsidies into the social sector and the implications are already being felt at the level of coastal communities in many areas, and this is likely to intensify further in the coming months. This will be a serious deprivation as new needs (like diversifying out of fisheries) and new threats (like the rapid spread of AIDS) emerge in the coastal areas, which require sufficient state support as a backstopping mechanism.

Summary of longer term SIA implications of Subsidies

In **economic terms**, the withdrawal of subsidies would affect the processing and exporting industries and reduce the capacity of the smaller processing companies to upgrade to the HACCP standards. In another sense, this might be a good thing in so far as it takes the attention away from shrimp and towards other species. The reduction in other direct subsidies is unlikely to affect the sector adversely and, going by the current status of the debate on fisheries subsidies, might actually encourage the government to increase its spending on fisheries subsidies, mainly in the form of new boats and technologies. Given that the sector has already been facing problems of over-capacity, the new introductions would only add to the problems. There might be some employment generation, but it will be too small to merit attention. The further reduction of indirect subsidies for petroleum products and electricity could have serious implications for the viability of both production and trade of seafood and could lead to large-scale unemployment, falling incomes and overall capital erosion (in the form of non-performing assets). Increased application of 'user pays' principles would also reduce access to poorer stakeholders to natural and physical resources, which is necessary for their livelihoods.

In **social terms**, any changes in the welfare subsidies would have serious implications upon the life and livelihoods of the fishers. As some of the trade related changes – the SPS measures, for instance – have the potential to marginalise sections of the supply chain participants, the role of such subsidies becomes even more important as social security nets, and if anything, there is a need to strengthen them further. However, with the evidence showing a move towards the opposite direction, it is possible that the removal of these subsidies would prove to be very expensive for a vast number of poor people in the fisheries sector.

In **environmental term**s, the reduction in some direct subsidies - as in the case of exemption of sales tax on HSD oil – will reduce the trawling activity in the near-shore waters and improve the health of the natural resources. The reduction in oil subsidies – both direct and indirect – to the motorised sector also would have positive consequences for environmental health as they are often equally guilty as the trawlers of indulging in destructive fishing and, more importantly, in over-fishing. Weakening of capital intensive systems is likely to help diversify from shrimp and other commercial species, which is likely to improve the ecosystem balance. At the same time, the proposal to introduce new vessels and technologies for improving the stagnating catch situation is likely to aggravate the problems.

In **process terms**, the GOI's taking advantage of a loophole in the subsidy debate to promote subsidies for investments into harvesting sector remains a cause for concern, from the economic, social and environmental perspectives. At the same time, as a result of the economic liberalisation taking place in the country, the removal of important subsidies – for e.g., those for enhancing access to cheaper credit to the poor and for ensuring their social security etc – is likely to continue and become even more stringent, with serious consequences for the poor.

5.1.4 Implications of TBT measures

Considering that the TED was not even a meaningful way to conserve turtles, it is easy to see the TED measure as no more than a non-tariff barrier to trade, although it does not seem to have been very effective in this instance. However, while there was no decline in Indian exports of shrimp to the US market as a result of effective compliance with the US turtle conservation programmes, it is quite likely, as Mathew (2003) notes, that in future, multilateral environmental agreements (MEAs) would play a major role in the seafood exports of India if MEA obligations are to be met to maintain market access. Also, the case study indicates how measures such as TED might have minimal impact at macro level, but their impacts at the micro-level can be quite serious.

The TED ban clearly shows an emerging relationship between trade issues and environmental concerns. The way the whole issue was resolved would clearly indicate that the environmental concerns were only an excuse for putting up a non-trade barrier and were abandoned as soon as the point had been made. The emergence of strong environmental lobbies in the trade sector and *vice versa* in recent times (see ICSF, 1998) would indicate a consolidation of this nexus. Rather disturbingly, the trade-environment relationship appears to have aggravated the tensions between environmental conservation and livelihood needs of the local communities, with potentially negative consequence for both. As the Orissa shrimp-turtle case has shown, the effects of the TED ban on its principle target, the mechanised trawl fleet, were not severe (at least to begin with), while the impact on the seafood trade from India remained marginal at best. However, when translated into a mechanism for setting up turtle sanctuaries in the coastal areas, the ban affected mainly the artisanal fishing communities and took away their livelihoods, even though they (and their operations) were not even targeted by the ban. This may not be a typical example, but considering that it has been the poorer or weaker players who seem to pay a bigger price in the case of most other trade measures covered by this study (tariffs, SPS measures, subsidies, anti-dumping, eco-labelling), this could well be!

Summary of longer term SIA implications of TBT Measures

In **economic terms**, looking specifically at the TED case, there were only losses all round, but little to be gained at the end of it, at least for India. However, there is a potential for MEAs and other TBT measures to become more important in future and the consequences might be reflected in terms of loss of livelihoods, reduced incomes and more capital erosion.

In **social terms**, the impacts are likely to be increased poverty and the attendant costs on quality of life and social expenditure. In the context of the TED case, issues of social equity and loss of livelihoods for the poor figure prominently. Lack of attention to addressing the short-term and long-term needs of the people affected by the ban led to serious deprivation in some areas, and this will remain the biggest challenge in future too.

In **terms of environment**, which is the underlying concern for the TED case, the trade measure was inadequate to address the issue meaningfully and was whittled down anyway before any significant change could occur. Drawing upon the TED experience, it can be said that the environmental/natural resource concerns in the TBT measures are no more than a way to put up a non-trade barrier, whose focus was on a different target than environmental conservation. The new alliance between trade and environment will aggravate the tension between environmental conservation and livelihood needs of the fishers, with potentially negative consequences for both. On the other hand, it cannot be denied that when TBT

measures do get implemented with real concerns for environment, they could certainly have a big impact. This will also necessitate giving due importance to the livelihood concerns of the affected communities, but if this was not done, the environmental objectives would be unlikely to be achieved anyway.

In terms of **process**, the inability of India to develop a coherent response to the dictates of an importing country or to develop a meaningful response to address the issue ended up in a botched response and in killing the wrong victim (or, going by historical experience, may be not). Continued lack of social security measures – even in areas where people are going to be deprived of their home and hearth as well as their livelihoods – will remain a major problem. Unfortunately, there is no evidence to show that the government's response in future is going to be any better and the impacts of the responses are likely to be no better either.

5.1.5 Implications of increased ADMs

The anti-dumping levy (together with the need to furnish a customs bond) shall shrink the margins of profitability of the exporting firms and, as in the case of SPS provisions, might lead to the smaller units losing out to the larger companies (with better access to working capital). The US is scheduled to begin a review of the antidumping levy for individual companies in 2006, but this provision is expected to help only the big players as the smaller ones do not have the capacity to file review petitions for reduction of duty. On the other hand, the fact that the antidumping measures are targeted at the individual companies (and also vary from company to company) has and will continue to affect adversely the trading capability of even the bigger exporting companies. It is suggested that the antidumping measures will continue to drive Indian seafood away from the US and towards the EU, a process that will gain momentum in the coming years, as a result of which the total exports to the US will continue to stagnate or decline. While there is thus no immediate threat to Indian seafood exports, there is a fear that this means a further shrinkage in the numbers of India's trading partners, which will further reduce its bargaining power and increase risks. Further, it will also play a detrimental role in giving opportunity to the countries not covered by the antidumping tax to capture the US market, which is after all the second largest buyer of Indian exports. The future of the companies, who export exclusively to the US market, will also be under threat as they have to continue the business with lesser profits than those companies exporting to other countries. This would also lead to the exporters transferring additional costs to primary producers, which may result in dwindling real income of the fishers and shrimp farmers, leading to the attendant deprivations.

Summary of longer term SIA implications of ADMs

In **economic terms**, the impacts of antidumping measures will be similar to those from TBT measures: reduced profit margins and possible closure of smaller units; shrinkage of markets and reduced bargaining power for Indian exporters; loss of market space to competitors not covered by the ban and the inevitable transfer of costs of compliance to producers, reducing their market share as well as real incomes.

In **social terms**, loss of livelihoods and erosion of margins will be reflected in increasing poverty levels among the lower level supply chain participants, which will lead to other kind of poverty-related deprivation in terms of reduced quality of life, weakened capacity to cope with, and/or recover from, future changes.

In **environmental terms**, to the extent that the antidumping tax shifts the markets away from the traditional shrimp demanding countries to those with more eclectic demands, there might be a reduction in the pressure on shrimp (which is felt in different ways upon an ecosystem) and a more balanced, and less harmful, harvesting of fisheries. Reduced profitability of shrimp, as a result of profit erosion, might also push producers away from shrimp to catching/culturing less valuable, but more stable, varieties at least in the short term. More plausibly, however, the producers might attempt to cover their losses by over-fishing, which would aggravate the conditions.

In **process terms**, the Government's dependence on the sector as a foreign exchange earner will continue to determine its response to future trade measures, which takes the form of bending over backwards to cater to every demand put forth by the importing nation. In case of US anti-dumping tax, instead of developing a reasoned defence against the move, the GOI may actually have legitimised it by requesting for exemption on the grounds of tsunami devastation – the request was turned down and the ban remained, only more legitimate than before. The GOI's response could also have been a reflection of its own history of using anti-dumping tax extensively against other developing countries. Such inconsistencies at the national level concerning global trade could have serious repercussions in future and harm the country's capacity to plead for a better deal in the global terms of trade.

5.1.6 Implications of Eco-labelling and Certification

Despite its voluntary status, eco-labelling can change consumer behaviour, which will then lead to dwindling demands for non-certified products, leading to an impact upon exports from the country. This is the reason why, although proposals for eco-labelling through initiatives like the Marine Stewardship Council (MSC) have not made inroads into the Indian fisheries sector so far, they do generate considerable debate (see, for instance, the ICSF, 1998). The arguments against initiatives such as MSC raise doubts about the belief in markets as mechanisms for addressing environmental issues, about the role/motives of multinational corporations in promoting such initiatives and about the equity implications of such moves in a developing country context (Kurien, 2000). The fact that eco-labelling is focused on corporate entities rather than on individual fishing units raises fears about the potential benefits from the certification going against the interests of the small-scale fishers, whose capacity to organise and obtain the certification is limited. Mathew (2003) discusses some of the implications of ecolabelling for a developing country context, which include fear of losing access to market if eco-labelled fish and fish products gain greater preference in import markets; the affordability of costs associated with adjusting fisheries to comply with ecolabelling standards, and about costs of certification and chain of custody and whether or not the market, if they go for certification, can adequately compensate their higher costs. There are also apprehensions that fishers in the small-scale artisanal sector would lose their autonomy if they have to comply with standards that are developed and applied by external agencies to their fish exports without taking into account the specific aspects of their fisheries. There are doubts about the practicability of ecolabelling in multi-species, multi-gear fisheries since the unit of certification is the fishery in its entirety. An ecolabelling scheme requires co-operation between all gear groups targeting the same fishery to benefit from certification. There is uncertainty if such cooperation can be expected at all from the sector.

Kulkarni (2005: 12-13) raises similar concerns about implementing an MCS-kind of labelling procedure, without undertaking drastic changes to the structure and organisation of the

fisheries sector as a whole. Ultimately, the fact that a price premium was not guaranteed for the eco-labelled product would doom the initiative even before it began!

Summary of longer term SIA implications of Eco-labelling

In **economic terms**, the implications of a 'voluntary' adoption of ecolabelling would be: increased cost of compliance, without the markets necessarily compensating for the expense, particularly as everyone will have started selling eco-labelled products. Inability or failure to obtain certification due to high costs of compliance, lack of capacity or the difficulties in implementation (for instance, in a multi-species, multi-stakeholder context that prevails in India) might mean loss of market access for certain categories of people. Implementation of such standards might also mean reduced access to fishing grounds as a result of the costs involved or due to the implementation of 'voluntary' restrictions.

In **social terms**, marginalisation of people from the supply chain would lead to increased levels of poverty and aggravate the attendant deprivations (poor quality of life, inability to cope with future shocks etc.). The equity implications of the certification process which, though 'voluntary' would involve certain costs that the poorer people might not be able to pay, would be another issue of concern.

In **environmental terms**, the benefits from a well implemented ecolabelling and certification process would be very positive. It would enhance the health of the natural resources and assist in a more balanced and sustainable extraction of fisheries wealth.

In **process terms**, the fact that the government would go for technological prescriptions for managing ecosystem health and seldom takes the actual stakeholders into its confidence would raise problems about the possible consequences of such measures upon the poorer producers and also upon the real health of the natural environment itself. Lack of institutional capacity to deal with implementation of standards and monitoring their performance would also mean that the measures would go the same way as the other environmental legislation in the country.

5.2 Summary of Longer-term SIA Implications of Trade Liberalisation

The overall implications of trade liberalisation upon Indian seafood sector can be summarised as follows:

a. Economic implications of compliance

Improved and steady market performance: Better compliance with international standards and reduction of tariffs in importing countries enhance sustainable market access. This will be achieved by (or alongside) a consolidation of control over supply chains in the hands of fewer, large-scale, operators leading to monopolies in production, processing and trade.

Increased costs and reduced market competitiveness: Preference erosion and compliance with SPS, TBT and antidumping measures would increase costs, reduce market shares and erode profit margins as well as competitiveness. The costs of compliance with SPS, TBT and eco-labelling measures may not be adequately compensated by the markets.

Marginalisation of smaller firms/poorer players from international markets: This happens due to loss of market competence in terms of complying with the standards and due to reductions in import tariffs and subsidies. Inability to stand up to HACCP or eco-labelling requirements marginalises the producers from international markets, while costs of

compliance of SPS, TBT and antidumping measures, transferred by the processors and exporters to the producers, will reduce profitability. Cost of compliance with domestic standards, if applied, will reduce the competitiveness of local petty traders, leading to a loss of significant number of livelihoods for the poor. Increased application of 'user pays' principles as well as usage of bans/restrictions/closed areas as a means for implementing TBT provisions and eco-labelling standards reduces access of users to their traditional resources and leaves them without any sustainable alternatives.

Diversification of markets and products: Strong possibility of diversification of market emphasis from shrimp to other species, from developed to developing countries and from international to domestic markets, due to reduction in tariffs as well as due to the risk associated with potential use of measures such as SPS and TBT by the importing countries.

Removal of fuel subsidies reducing viability of fishing operations: Further reduction or removal of fuel subsidies would lead to large-scale non-viability of production activities, with impacts further along the supply chain. On the other hand, the opportunity for increasing fisheries subsidies might encourage fresh capital investments and aggravate problems of over-capitalisation in the sector.

Threats from possible imports of fish due to tariff reductions: Imports of fish and their competitive advantage in the market (market presence, quality and affordability) might lead to price upsets in domestic markets, affecting real incomes for local producers and traders, but would benefit importers, (urban) retailers of imported fish and processing industries (which reprocess and export the fish), as well as consumers.

Capital formation and erosion: Tariff reductions and encouraging foreign investments (for e.g., in deep sea fleet) contribute little to capital formation within the country, but more to capital erosion due to increasing idle capacity. Capital erosion also as a result of fishing equipment and infrastructure remaining idle as a result of SPS, TBT, and antidumping measures, aggravated by reduction/removal of subsidies.

The overall outcome of many of these changes will be *loss of livelihoods, reduction in real incomes* and *decrease in capital formation*. There will undoubtedly be gainers also from the process, but the magnitude of gains might be less when compared to that of losses in terms of livelihoods and real incomes, particularly for the poor.

b. Social implications

Erosion of opportunities for women: Loss of employment opportunities for women due to SPS provisions, leading to marginalisation from supply chains and loss of income. Women need to move long distances in search of work might lead to domestic upsets, while competition for work would lead to longer working hours and depressed wages in processing factories.

Increasing levels of poverty: Increased indebtedness among men as the over-capitalised and export-driven fishing enterprises strain to come to grips with the trade measures, which adds further to the risks and expedites the marginalisation of people from the supply chain. Reduction in tariffs and import encouraging policies (for deep-sea fishing) would also increase competition at sea and at the market place and add to the numbers of the poor.

Nutritional security: Access to increased quantities of imported fish might enhance access to cheap protein and hence nutritional security; on the other hand, increased access to more

lucrative international markets might mean more fish going out of the country and reducing the availability of fish locally, particularly for the poorer consumers.

Weakening social security nets: Removal/reduction of social subsidies will continue to weaken the social security nets available to the poor as well as the people being marginalised from the export supply chain (as a result of other trade measures). This will lead to longer periods of deprivation as a result of reduction in social subsidies, leading to food insecurity and other poverty-induced problems.

Equity: Equity implications of many trade measures will become more pronounced, as the poor (and the vulnerable categories) frequently bear the brunt of measures like 'user pays' principles, reduced subsidies, TBT (TED) measures, eco-labelling as well as the costs of compliance with such measures, while standing very little chance of being able to compete from a level-playing field in the international markets. Alongside increasing the levels of poverty, several trade measures could increase the rich-poor divide significantly and exacerbate social tensions.

The overall outcome of many of the changes is an increasing trend of loss of livelihoods and erosion of real incomes at all levels in the supply chain, but particularly affecting the lower, i.e., the weaker, categories of people, pushing them further into poverty and deprivation, while the loss of social security nets will affect their capacity to cope with future changes as well as to recover from the current ones.

c. Environmental implications

Emphasis on shrimp: As a result of various trade measures, the producers might decide to break out of the 'shrimp-trap' and diversify fishing and culture operations to target a number of other commercial fish species, reducing pressure on inshore waters. Increased opportunities for export to new developing country markets might also support the shift away from shrimp, although shrimp will continue to remain a major export earner for the country. On the other hand, lowered tariffs, continued State support for export of shrimp and reduced margins due to trade measures (like SPS, TBT, antidumping and eco-labelling) might increase demand for shrimp and lead to more intensive exploitation and culture practices with implications on natural resource health, environmental quality and biodiversity.

Reduced fishing pressure in inshore waters: Removal of direct and indirect subsidies for fishing fleets would reduce fishing pressure on the inshore waters and improve the health of the natural systems, while the GOI's emphasis on promoting new harvesting technologies will continue to remain a cause for concern.

Improved ecosystem management: Measures such as eco-labelling, if implemented well, could improve ecosystem health, conserve biodiversity and contribute sustainably to the economic wellbeing of the sector.

Trade-environment nexus: Although environmental concerns will continue to drive future TBT measures, they are unlikely to be addressed well in the short term. With increased trade-environment linkages, the tension between environmental conservation and livelihood needs will become more intense, with negative consequences for both.

d. Process implications

Lack of coherent approaches to deal with the different trade measures, which reduces the responses to ad hoc measures that prove to be costly, wasteful and ineffective, while also contributing to the marginalisation of the poor by reducing their livelihood opportunities.

Inconsistent approaches: Inconsistencies in approach to different trade measures (applying high tariffs to imports while seeking to benefit from reduced tariffs in other countries; resenting anti-dumping measures on Indian shrimp, while using the same extensively on other developing countries), though perhaps justifiable in the short term in the context of a developing country plagued by chronic unemployment and poverty problems, might prove to be a hurdle in arguing for a better deal for the country in future.

State's withdrawal from support services: Possibility of the State withdrawing from providing public services – infrastructure, subsidies etc – due to economic liberalisation, the outcome of debates on fisheries subsidies as well as consideration of imports taking the place of local production as a result of relaxed tariff regime. The process of economic liberalisation in the country weakens institutional capacity to deal with change, besides reducing options to address the needs of the poor in fishing communities. This will drastically reduce the capacity of individuals/groups of individuals to cope with the challenges posed by international seafood legislations.

State's efforts at erecting non-tariff barriers affecting local producers: Stricter domestic food law to reduce the flow of imports and to improve domestic food standards to the international level, would potentially adversely affect the large numbers of poorer producers and traders in the country as they find it difficult to cope with the requirements.

Price of inability to offer a developing country perspective in standard setting: Sectoral approaches, lack of trans-disciplinary skills to deal with complex trade issues and excessive dependence upon foreign exchange revenues contribute to the failure to contribute to the international standard-setting processes reduces the capacity of the seafood sector to cope with global trade changes and forces them to struggle to come to grips with exotic and frequently unaffordable standards, which force them to being price-takers in the long term.

Paying the price of too much compliance: The dependence on export revenues also means bending over backwards to accommodate the demands of the importing nations (HACCP standards, TED-related programmes, antidumping), which increases costs for the sector while the importing countries will continue to build upon precedents to further tighten the controls.

Technology oriented approaches: Continued focus on technology- and growth-driven development encourages further investments into enhancing fishing capacity. Focus on technological solutions rather than on more integrated and participatory approaches as management measures would frequently result in missing the objectives altogether.

Poor/weakening institutional capacity to monitor the implementation of various trade related measures would remain a major bottleneck for achieving some of the more sustainable and positive objectives (ecosystem health) and for reducing vulnerability to future trade shocks.

The following table summarises the longer-term SIA implications of trade liberalisation for the Indian fisheries.

Table: Summary of Longer-term SIA Implications of Trade Liberalisation

Sustainability dimension	Core indicators	Second tier indicators
Economic	• Real income • Employment • Fixed capital formation	• Improved and steady market performance, with trickle down effects upon incomes, livelihood generation and national economy • Increased cost of compliance reducing market competence, reducing profit margins • Marginalisation of smaller firms/poorer players from international markets, with consequent loss of livelihoods and incomes as well as idle capacity. • Diversification of markets and products, reducing risk and increasing sustainability of operations, but with lower profit margins • Non-viability of fishing operations as a result of increased costs of compliance, erosion of subsidies, reducing incomes and employment and increasing idle capacity. • Increased threat from imported fish upon domestic producers and petty traders, reducing incomes and loss of livelihoods • Reduced capital formation and increased capital erosion due to trade measures such as tariff reduction and foreign investments.
Social	• Poverty • Health and education • Equity	• Erosion of opportunities for women and consequent hardships • Increasing levels of indebtedness and poverty among fishermen • Nutritional security might be enhanced due to imports, but this is offset by a corresponding increase in exports. • Weakening social security nets to support the poor and the neo-poor, reducing their capacity to cope with, and recover from, changes • Equity implications of trade measures, which aggravate rich-poor divide and effectively marginalise the poor from international trade.
Environmental	• Natural resource stocks	• Emphasis on shrimp might come down in at least some fisheries and contribute to more balanced and sustainable exploitation of resources.

	• Environmental quality • Biodiversity	• On the other hand, for those trapped in the shrimp trade, more intensive exploitation of shrimp will remain the only option to survive and this will have adverse implications on the ecosystem health in coastal waters. • Reduced fishing pressure in inshore waters with reduction in fishing fleets due to high costs and cuts in subsidies might lead to revival of natural fish stocks. • Reduced subsidies and the consequent need for higher investments, on the other hand, might add to intensive fishing in the coastal waters. • Improved ecosystem management as a result of TBT and ecolabelling measures. • Strengthening nexus between trade and environment, which might aggravate the conflicts between environment and livelihood concerns.
Process	• Consistency • Institutional capacity	• Lack of coherent approaches to deal with trade measures lead to ad hoc measures which are costly, inefficient and counter-productive. • Inconsistencies in approaches to different trade measures, though justifiable in a developing country context, would be a future hurdle in trade negotiations. • State's withdrawal from its obligation towards providing public support services, reducing the capacity of individual fishers to cope with changes on their own. • State's efforts at erecting non-tariff barriers like domestic food laws might actually hurt the local producers and traders more than the importing countries. • The price to be paid for the inability to offer a developing country perspective in standard setting processes will become apparent in due course as the domestic seafood sector struggles to come to grips with exotic and unaffordable systems. • The price to be paid for too much compliance will also become clearer during the coming years as the importing countries build upon precedents to further tighten the controls on imports. • Technology oriented approaches encourage further investment in fishing, thereby considerably reducing the economic viability of

		the sector, while also determining the course of action in management programmes, resulting in poor outcomes. • Poor/weakening institutional capacity to implement trade related measures and monitor their performance, and to help the poor to cope with such measures more confidently.

6. Prevention, Mitigation and Enhancement (P, M & E) measures

The spectrum of trade issues have been discussed in the foregoing sections has given rise to a number of issues which span across several disciplines, categories of people and geographical entities, making it very difficult to come up with a set of measures to address these issues meaningfully without going overboard. Different trade measures require different kinds of responses at different levels – the local seafood sector, national government, international bodies like the WTO, importing nations and so forth – and bringing them all under one umbrella can also end up with a huge wish list. The following is only a brief attempt at suggesting some measures, and in no chronological order. However, for reasons that will become apparent from the narrative, the measures to address the process impacts have been discussed first, followed by the other measures.

A. P, M & E measures to address process impacts

- **Institutional capacity building** to develop a better understanding about the international/bilateral trade arrangements and to improve the institutional responses to the evolving trade scenarios in terms of bargaining power, compliance capability and impact mitigation.

- **Resource assessment studies** to determine the potential availability of marine (inshore and offshore) and brackish-water resources and their current levels of exploitation in order to develop a comprehensive marine fisheries policy for the country which addresses both the trade-related and management-related needs in a comprehensive and holistic manner.

- **Studies on trade issues of current/future relevance** for the country in order to (i) develop cohesive responses to deal with the adverse impacts under different scenarios and to maximise the benefits as well as (ii) to participate in the international decision-making bodies and ensure that the particular needs of developing countries are properly addressed and incorporated into the trade agreements.

- **Better understanding of the supply chains**, focusing on the various stakeholders involved in production, processing, trade and ancillary activities to understand the implications of changes in trade liberalisation on their livelihoods (i) to ensure that the changes do not adversely affect the livelihoods of the poor and (ii) (where the changes are inevitable and *do* affect the poor) to develop appropriate measures adequately and sustainably compensate them.

- **Improving and refining the extension services** for effective dissemination of information on the international trade requirements to enhance the primary stakeholders' capacity to cope with the changes and to enable them to participate actively in defining the scope and direction of trade arrangements at the international and national levels.

- **Development and implementation of domestic food laws,** taking into account the health considerations of the local consumers as well as the ability of the producers and traders to stand up to them. Provision for support to the domestic producers and traders for a stipulated time period to help them upgrade their skills and capacity to the required standards.

- **Development of strategic framework for dealing with trade impacts** aimed at capacity building and awareness raising on quality and other trade related issues, besides setting up mechanisms for monitoring critical parameters, such as microbial and heavy-metal monitoring system to reduce the chances of rejection of Indian seafood by importing countries on grounds of contamination by bacteria, seawater, heavy metals etc.

- **Exploiting new opportunities**: The responses to tsunami 2004 also opened opportunities for better public-private partnerships, which worked brilliantly in case of states like Tamil Nadu to reduce pressure on the limited government resources, improve the service delivery mechanisms, open opportunities for the stakeholders to play a role in decision-making and enhance transparency and accountability in the development processes, and this could be built upon for improving the conditions in the sector.

- **Public-Private Partnerships**: Better private sector/NGO participation also improves the institutional capacity to deal with trans-disciplinary issues, forge stronger linkages between the priorities and needs at the macro (international), meso (national) and micro (sector) levels, better coordination between concerns related to trade, environment and livelihood as well as contribute to better flow of information and services.

- **Reduction in capacity enhancing subsidies**: Efforts to reduce and eliminate all capacity and effort-enhancing subsidies, irrespective of their professed objective, on the principle that all such interventions can lead to problems on economic, social and environmental fronts. On the other hand, the State's responsibility in providing social support to the poor will need to be reiterated and measures initiated to improve its delivery systems in line with the emerging needs in the sector.

- **More pro-poor orientation in policymaking and implementation** in order to ensure that the poor would not suffer, while a majority of State support goes to support the richer sections. While support for processors and traders is necessary to cope with the trade measures, there needs to be a clear provision to ensure that the interests of the poor would similarly be upheld.

B. P, M & E measures to address economic impacts

i. At the national level

a. Improving current systems to international grade

- **Level playing fields**: Once an understanding about the trade issues and the national/stakeholder-specific priorities has been developed, long term measures – infrastructure, capacity building, management, institutional frameworks for technical support and monitoring – should begin to be put in place. Such measures would go a long way to provide a level playing field for domestic producers and the processors with the competitors from abroad, as well as help them to cope with the demands of changing trade conditions and take advantage of the new opportunities. In the long term, this would require raising their awareness about the international quality standards to the required degree and enhancing their access to necessary infrastructure and other physical inputs. Until this is achieved, the existing tariffs on imports – considered high enough to prevent a surge in imports – would need to be maintained. While allowing imports for reprocessing, it is necessary to ensure that the imports do get re-exported and do not enter the domestic markets.

- **Integrated programmes for improving infrastructure facilities** in order to address the requirements of the 'farm-to-fork' principle, with strategies that are specific to each category of stakeholders. The opportunities opened up by the Indian Ocean tsunami of 2004 in terms of access to sizeable development funds in the sector could be utilised for the purpose as well as for bringing about other, much-needed, changes in the sector to make it more sustainable (in terms of trade as well as NR management) in the long term.

- **Training and capacity enhancement**: The availability of trainers at the research, academic and training institutes should be sufficient to undertake training programmes, and there is a need to develop a uniform country-wide training framework (while making it flexible enough to be modified to local contexts) and implementing at the field level for different stakeholders. The fishers who undergo the training should receive a certificate, which can then become a symbol of their 'trade-worthiness' and smoothen their access to global/domestic markets. Attempts to develop core groups of village-level technical support teams, composed of educated youngsters in the villages, will add considerably to the sustainability of the initiatives and enhance the chances of success.

- **Hygiene and quality control at sea**: The importance of hygiene and quality control right from the moment of capture of fish is an important, but affordable, gap to fill. Improving hygiene standards and preservation facilities onboard will reduce most problems related to contamination further down the supply chain and this can be addressed by providing basic training to fishers as well as by developing suitable mechanisms for onboard storage of fish (in insulated fish boxes, which can be made to suit the specific conditions and requirements of each category of boats. Onboard iceboxes should be provided at subsidised prices to the fishermen – this is already happening to some extent, but needs to be more extensive and widespread. Alongside, efforts to improve availability of ice at the landing centres need to be undertaken: since there is much demand for ice, there is no need for subsidies, but the capital infrastructure and operational costs of running ice plants would need to be subsidised, at least until economies of scale are established.

- **Implementing good management practices (GMP)** at all stages from harvest till the fish reached the processing factory (and beyond) will be necessary, but it has to be inculcated as part of the work culture, rather than being imposed from outside. While clean water is a major problem in most coastal areas, some provision must be made for providing water for washing purposes at key landing centres, harbours and ports. Rapid transport systems are another intervention that reduces time lags and consequent risks. Efforts at promoting usage of ice and GMP have been made and failed many times in the past, mainly because of the indifference of the fishers (mainly due to the extra effort or investments involved and also due to lack of market response to better quality product), this time around, there is evidence that such measures would receive a much better response: the fishers are aware that without such measures, things are likely to get worse on the trade front.

- **Reduction in costs of production** to make the products more competitive in domestic and international markets. While part of the high costs associated with exports is considered to be due to compliance with trade measures like SPS, a major proportion of the costs also stem from factors like over-capitalisation, long supply chains involving many intermediaries, process inefficiencies and poor monitoring. The costs in the production sector tend to be exorbitantly high in both capture and culture fisheries and this affects the profitability of operations. Addressing the issues of over-capitalisation and

reducing unit costs of production, transport and processing would go a long way in making Indian seafood much more competitive in the markets. Reducing costs of operation through low-cost technical and non-technical interventions and through reduced post-harvest fish losses would add to the incomes of the fishers. Efforts to enhance institutional credit at affordable rates for the poorer producers and traders would also contribute to sustainability of their livelihoods.

- Exploring and implementing suitable **mechanisms to enhance the stake of poorer stakeholders in the markets** through exploring opportunities like cooperative marketing and 'equity-labelling' (in the lines of 'eco-labelling').

b. Exploring options for diversification

- **Value addition** is one area for improving export performance of the seafood sector. There is said to be good potential for India to increase its share in international fish trade by exporting value added and diversified fish products – both for export and internal markets – using shrimp, lobster, squid, cuttlefish, bivalves and farmed fish. The unutilized capacity of the processing industry can be made use for making diversified value added products, which will be an opportunity for providing more employment and to improve profitability of the processing sector. Options also exist for ready-to-cook and ready-to-eat products to be made for catering to the large expatriate Indian communities everywhere.

- Explore **options for diversification of trade**, in terms of shifting focus from shrimp to non-shrimp species, from developed to developing country markets (where quality requirements are less stringent) and from international to domestic markets; this may take the form of extending support in terms of market research and development, along with providing incentives to the fishers and the exporters opting for diversification.

- **Sustainable alternative income generation (AIG) programmes** to be developed and taken up for the people who have been marginalised from their occupations as a result of trade measures such as the SPS and TBT. It has to be recognised that although AIG is a favourite catchphrase with many development agencies in the country, there do not really exist many success stories (or even options) to support the contention that those who cannot eat rice can choose to eat bread. Much work needs to be done to determine how and under what circumstances people make choices related to a change in livelihoods, the factors that encourage and constrain them in making decisions and implementing them, and so forth before exploring what kind of options do really exist for the fishers.

ii. At the international level

- Strive for a **developing country perspective on trade measures** under different scenarios and strive for a better understanding and appreciation for the local conditions in the standard setting processes globally and also in the trade provisions of the major importing countries both to ensure continued GSP/MFN status as well as to counteract adverse trade measures.

- Make **common cause with other developing countries** and forge new alliances in order to make the specific needs of the developing countries to be heard and acted upon to the required degree at the international trade forums, but this would also necessitate making

compromises vis-à-vis implementation of some trade measures against other developing countries.

- Negotiate for **greater harmonisation of standards** across the world in order to ensure that (i) frequent changes in the standards are avoided and (ii) developing countries can plan better for setting up equipment and infrastructure to meet the standards. Instead of 'one-size-fits-all' approaches, there is need to develop different standards for different situations to make the process more equitable. It is important that the standards for domestic markets (when developed) should be consistent with the international standards in order to reduce duplication of standards and consequent confusion.

- Negotiate for **better technical and legal information, advice and support** for developing countries in order to overcome adverse trade barriers.

iii. At importing country level

- **Taking the fight to the other camp**: Develop defence against adverse trade measures by drawing upon the laws of the importing country, by pointing out loopholes and by highlighting precedents set by the same country in other areas or other contexts. Having a set of studies undertaken on the implications of different trade measures according to the national and food laws of the major importing countries and to assess the magnitude of the potential losses under different scenarios for each measure for each country would be a worthwhile investment in the long term and might even act as a deterrent against imposition of arbitrary trade measures.

- When a trade measure does get to be applied for genuine reasons, it would be necessary – after assessing the implications of the measures upon the seafood sector, livelihoods and local/national economy – to develop **well-structured implementation plans** which are realistic and practical and to present the same for the consideration of the importing country. It is unlikely that, except where the trade measure is entirely arbitrary (in which case, there is always the recourse to the WTO), the importing country would heed to a well-argued case and accept it.

- Wherever the trade measure is evidently hurting the interests of the poorer and weaker sections of the sector, and the markets are not really compensating for the excess investment, the importing country (mostly a developed country) may be impressed to support **packages of assistance to the affected groups through bilateral development assistance**. Here too, having a concrete understanding about the people affected, their needs and the quantum of assistance required to help them would be an important pre-requisite for presenting the case to the importing countries.

- During the period of transformation as a result of a trade measure, which is likely to result in a slump or a total cessation of exports of a particular product to the market, measures should be put in place to **protect the market share** and that the gaps are not filled by another country or countries not affected by the trade measure. This might require diversifying the products exported, undertaking value-addition and other measures to keep the brand name alive.

C. P, M & E measures to address social impacts

- Special efforts to address the **needs of women** (and other vulnerable categories of people – for e.g., *dalit*s in some areas) losing out as a result of trade liberalisation are a priority. Ensuring that they get legitimate recognition as employees of processing factories and receive adequate support from the Labour Laws (which might also need to be amended to specifically address the conditions of women working in fisheries sector) in terms of minimum wages, health support and insurance etc is important. For a majority of women who lost their livelihoods, alternative income generation might be an option, but – as indicated – this may not be easy to achieve.

- There is a need for ensuring that the poor are not victimised as a result of adverse trade measures. Where the impacts of a trade measures are unavoidable, it is necessary to undertake adequate **measures to reduce the impact of the deprivation** and to provide necessary support for the poor to finding sustainable alternatives.

- There is a need to emphasise the need for continuing and **strengthening the existing social subsidies** to help the poor in the sector. The targeting of such subsidies should go beyond mere income criteria (which are largely dubious anyway) and concentrate upon more holistic indicators of poverty, so as to address the needs of different stakeholders more meaningfully. The possibility of many more people losing livelihoods as a result of future changes in the terms of trade would necessitate focusing the subsidies upon these 'potential poor' as well.

D. P, M & E measures to address environmental impacts

- There is a need to reduce pressure on the inshore waters and **effective, area-specific, participatory, fisheries management programmes** are essential prerequisite for accessing international markets on a sustainable basis, but they will succeed only when (i) access to resources is not limited based on one's ability to pay a user fee (in monetary terms); and (ii) the primary stakeholders are given a role in defining and implementing it. Improving fisheries management systems in the country is likely to reduce uncertainties and falling rates of per capita availability of fish catches.

- The fact of prior existence of **community-based fisheries management systems** should be recognised, their functioning and effectiveness studied and the positive features of the traditional systems should be incorporated into the new management programmes.

- More immediately, there is a need to undertake measures to **shift emphasis of fishing from shrimp to other species** both to enhance the sustainability of fisheries-based livelihoods as well as to improve the health of the ecosystems.

- Focusing on **redeploying the surplus inshore fishing fleet in the offshore waters and deep seas** by providing adequate short term support, which is preferable to encouraging the entry of foreign vessels under charter policies. It enhances livelihood opportunities, increases incomes, reduce problems of over-capacity and add to national income. However, the proposals to develop new 'resource-specific' boats in this context must be viewed as potentially harmful and, as a matter of precautionary principle, abandoned.

- The emergence of **new regional programmes** like the Bay of Bengal Large Marine Ecosystems (BOBLME) programme have the potential to address environmental

concerns – in terms of protecting biodiversity, addressing pollution, besides managing fish and fisheries resources – in a **multi-lateral context**, which is necessary because of the trans-boundary nature of many of these issues and the GOI has to take a pro-active role in making such initiatives work meaningfully. Such initiatives would necessitate harmonising the domestic policies and implementation processes across a region, which implies the existence of well-defined policy frameworks in place within the country itself. In other words, there is a need to assess the gaps in domestic policies and addressing them before making the move towards trans-national cooperation. Secondly, it remains a challenge to generate the political will to set up management systems that start from grassroots level and extend upwards into the trans-national arena, particularly in a context where bottom-up approaches have yet to become a reality in the country. The programmes will also need to broad-base their approaches (from exclusive focus on environmental issues) to include trade and livelihood needs as well, in order to come up with practical solutions to achieve their objectives as well as to ensure their long term viability. The purpose in highlighting these issues is that while the new initiatives are certainly a way forward, they need more work before they can deliver the goods and it is necessary to start as early as possible.

- Notwithstanding the objections raised against ideas like **eco-labelling**, which largely accept the need for such a system and differ mainly at the strategy level, it is necessary to develop the concept along more equitable lines and in such a way that the poor do not pay a disproportionately large price for it. The concept of eco-labelling, if applied equitably, can potentially be one way to improve the health of the natural resources.

7. Conclusions

The foregoing chapters clearly reveal that trade-related measures have become increasingly more common in the recent past and their impacts upon different categories of people have ranged between relatively insignificant to quite serious ones, with the balance increasingly tilting towards the latter. The impact of the measures has been in terms of loss of livelihoods, real incomes and the contribution of the sector to the GDP. Marginalisation of the poorer people from the supply chains has been another serious outcome of SPS and other measures, while possible future efforts at rationalising fisheries subsidies – in so far as they are considered in terms of their trade-distorting aspects alone – might reduce people's access to social security nets.

Thus, one clear outcome of many trade measures appears to be the increasing marginalisation of the poorer/weaker stakeholders from the trade arena, often irreversibly. Many of the trade measures appear to be implemented with a belief that the market is a level playing field and that everyone should and can follow the same set of rules, ignoring the huge disparities that exist between different countries, different people in the same country and within the same supply chain.

Clearly, some of the trade measures can and do have significant positive outcomes. The HACCP standardisation or the TBT and ecolabelling measures – if implemented well – could help make the sector more sustainable on the production front as well as the trade front. But there is evidence to show that this is happening at the expense of the poor both literally (as the producers end up paying the cost of compliance) and figuratively (as they lose out in a race is the goal post is so high as to make it meaningless for them to even attempt to compete).

The issue becomes even more serious when it is considered that, for many people, there are really no feasible alternatives. Thanks to the processes of Modernisation in the country, international seafood trade has come to play a very influential role in determining the socio-economic conditions of the fishing communities, which may have seen an unprecedented burst of affluence as a result of the shrimp boom, but find themselves facing even more unprecedented trouble now. As Chapter 2 has shown, the decreasing availability of fish and over-capitalisation of fishing effort have made fishing a very uncertain proposition and, together with a loss of markets, this state of affairs is worsening rapidly.

In many senses, this can be argued to be largely the outcome of the failure of the State institutions to address the issues in a pro-active manner. As the foregoing chapters have shown, the Government's efforts to address the various trade measures have largely been in the form of responses to a change *after it has occurred*, and covered – as in the case of the HACCP standards – only certain segments of the supply chain, ignoring the rest. The ad hoc nature of such measures has only yielded partial and, as in the case of TEDs, counter-productive results. The extent to which a large majority of the people in the seafood sector are prepared to deal with future trade measures is reflected by the fact that a majority of people in the sector have only a vague understanding about the international dimension of the trade-related upheavals, in spite of living with them for over a decade now. The failure of the State institutions is reflected in their inability (i) to participate in the standard-setting processes at the global level and press for more realistic standards; (ii) to develop a comprehensive understanding about the direction and scope of the trade measures upon the different stakeholders in the supply chain and take adequate measures to address them; (iii) to provide a meaningful defence against the imposition of trade measures by the importing countries and actually setting precedents that the sector will continue to regret for quite some time to come; (iv) to develop a comprehensive package to help the different participants in the supply chain to deal with the trade measures; and (v) to address the needs of the poorer stakeholders who have been marginalised as a result of trade measures in a sustainable manner. Its continued focus on technology-centred solutions and shrimp-centred export priorities not only worsen the situation, but also reduce the opportunities for meaningful alternatives to emerge for tackling the crisis in the sector.

There is however evidence that this state of affairs is changing, albeit at its own pace and owing mainly to the processes of change becoming far too intense to be ignored any further. New approaches to coastal resource management are being discussed (although this happens alongside formulation of proposals for new 'resource-specific' vessels) and might actually come to be implemented in the near future, although such initiatives might take a long time to stabilise and start yielding results. On the other hand, the changing context in international trade (which has implications on the domestic trade) does not yet seem to receive as much attention due, perhaps, to the fact that it is a discipline that requires a new orientation that does not yet exist in the country. Thus, although much work is being done in the country on trade (papers on different trade issues are posted on the web almost daily!), the focus on the fisheries component has as yet remained marginal (except in the case of the SPS provisions). There is evidence that this is changing for the better and that fisheries is increasingly being integrated into the larger picture, but there is still some way to go on this. In the light of living with trade measures for a decade now, now is as good a time as any to take stock of the experience over the last decade, draw lessons – both positive and negative – about the country's performance and, based upon the experiences and in participation with the real participants in the supply chains (not ignoring the poorer participants and their interests), developing a comprehensive and integrated approach to address the issues confronting the

sector and to take real advantage of the new opportunities that emerge from the trade liberalisation process in a more sustainable and equitable manner.

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9. Tables

Table 1: Fish Production in India (in Lakhs MT) (Source: http://dahd.nic.in)

Year	Marine	Inland	Total
1991-92	24.47	17.10	41.57
1992-93	25.76	17.89	43.65
1993-94	26.49	19.95	46.44
1994-95	26.92	20.97	47.89
1995-96	27.07	22.42	49.49
1996-97	29.67	23.81	53.48
1997-98	29.50	24.38	53.88
1998-99	26.96	26.02	52.98
1999-00	28.52	28.23	56.75
2000-01	28.11	28.45	56.56
2001-02	28.30	31.26	59.56
2002-03	29.90	32.10	62.00
2003-04	29.41	34.58	63.99

Table 2: Built-up capacity in Indian Seafood Industry (MPEDA, 2006)

Name of the State	*No of Exporters*	*No. of Process Plants*	*Freezing Capacity (Ton.p/d)*	*No. of Cold Storages*	*Storage Capacity*	*No. of Fishing Vessels*
Kerala	287	124	1585.77	169	23086.50	2963
Tamil Nadu	286	48	524.55	67	5900.00	1562
Karnataka	43	14	186.40	26	3540.00	3226
Andhra Pradesh	95	52	779.50	53	7200.00	717
Goa	9	7	104.00	9	1275.00	420
Gujarat	64	55	2216.03	57	22925.00	426
Orissa	30	21	220.00	20	2460.00	414
Maharashtra	268	41	1327.11	39	19372.00	2932
West Bengal	99	37	340.00	30	3500.00	0
Delhi (UT)	92	--	0.00	1	15.00	0
TOTAL	**1273**	**399**	**7283.36**	**471**	**89273.5**	**12660**

Table 3: Exports from India (MPEDA, 2006)

Year		Export	Variation	(%)	U.V.
2000-01	Q	440473	+97443	+28.41	
	V	6443.89	+1327.22	+19.12	146.29
	$	1416.32	+227.31	+19.12	3.22
2001-02	Q	424470	-16003	-3.63	
	V	5957.05	-486.84	-7.56	140.36
	$	1253.35	-16297	-11.51	2.95
2002-03	Q	467297	+42827	+10.09	
	V	6881.31	+924.26	+15.52	147.26
	$	1424.90	+171.55	+13.69	3.05
2003-04	Q	412017	-55280	-11.83	
	V	6091.95	-789.36	-11.47	147.86
	$	1330.76	-94.14	-6.61	3.23
2004-05	Q	461329	49312	11.97	
	V	6646.69	554.74	9.11	144.08
	$	1478.48	147.71	11.10	3.20

Table 4: Country-wise export of marine products, 2003-4 and 2004-5

COUNTRY	% share		2004-05	2003-04	VARIATION	%
JAPAN	12.54	Q	57832	50020	7812	15.62
	18.09	V	1202.45	1163.69	38.76	3.33
	18.06	$	266.96	253.86	13.10	5.16
USA	10.85	Q	50045	53153	-3108	-5.85
	23.41	V	1556.09	1682.06	-125.97	-7.49
	23.37	$	345.52	365.84	-20.32	-5.55
European Union	25.52	Q	117742	96284	21458	22.29
	27.37	V	1819.28	1470.99	348.29	23.68
	27.42	$	405.40	319.95	85.45	26.71
CHINA	27.06	Q	124826	123738	1087	0.88
	10.43	V	693.25	676.46	16.79	2.48

	10.42	$	154.10	151.60	2.50	1.65
South East Asia	13.84	Q	63842	50670	13171	25.99
	9.46	V	628.83	545.77	83.06	15.22
	9.45	$	139.77	119.13	20.65	17.33
Middle East	3.60	Q	16624	14711	1913	13.00
	3.68	V	244.42	201.52	42.90	21.29
	3.70	$	54.70	43.92	10.78	24.55
OTHERS	6.59	Q	30418	23441	6977	29.76
	7.56	V	502.37	351.46	150.91	42.94
	7.58	$	112.03	76.76	35.57	46.52
TOTAL	100.00	Q	461329	412017	49312	11.97
	100.00	V	6646.69	6091.95	554.74	9.11
	100.00	$	1478.48	1330.76	147.71	11.10

Q:Quantity in M T, V: Value in Rs. Crore, $: US Dollar Million

Table 5: Custom Tariff Rate on Import of Fish Products (Source: Exim Policy, Ministry of Commerce, GOI, various issues)

Year	Tariff Rate (percent)
1988-89	60.00
1993-94	60.00
1998-99	24.20
1999-2000	21.16
2000-1	44.04
2002-3	35.20

Table 6: EU Approved Plants in India until 2005 (MPEDA, 2006)

Maritime State	PP	PPa	CS	Total
Gujarat	0	17	1	18
Maharashtra	0	17	0	17
Karnataka	6	1	0	7
Kerala	42	13	15	70

Tamil Nadu	0	18	0	18
Andhra Pradesh	0	27	0	27
Orissa	0	6	0	6
West Bengal	0	5	1	6
Total	**48**	**104**	**17**	**167**

PP -Processing Plant; PPa Processing Plant engaged in processing fully or partially farm raised materials; CS Exclusive Cold Storage facility for F&FP

Table 7:An indicative summary of subsidies in Indian Fisheries (from Salagrama, 2004b)

1. Direct assistance to fishers and fishworkers	
a. Direct transfer	▪ lean season assistance ▪ disaster relief payments ▪ subsidy component provided in cash (HSD oil)
b. Revenues foregone	▪ Leasing of tanks on subsidised rates for extensive aquaculture
2. Lending support programmes	
	▪ special component plans for lending to fishers (NABARD; trawler development funds) ▪ loan guarantees: for e.g., the World Bank-funded 'shrimp and fish culture project' – central government standing guarantee (for the state governments) to World Bank; the state governments' loan guarantee for various programmes given by NCDC ▪ subsidised loans from commercial and cooperative banks as well as from weaker section development bodies like BC Development Corporation and SC Development Corporation; ▪ margin money support, over and above subsidised loans ▪ interest subsidies on loans for acquisition of deep sea fishing vessels (GOI, 1996:217) ▪ loan restructuring (deep sea sector; hatcheries) ▪ loan waivers (in late-1980s) ▪ interest subsidies for modernisation of processing plants to achieve conformity with international requirements ▪ exemption from collateral security for mechanised and deep-sea trawlers, deep-sea sector
3. Tax preferences programmes	
	▪ HSD fuel tax exemption for mechanised boats ▪ tax exemption on kerosene for motorised boats (in Kerala) ▪ income tax exemption and sales tax exemption (for sales) for cooperative societies ▪ sales tax exempted for fish and dried fish ▪ seafood exporters exempted from income tax (until recently) ▪ reduced cess on seafood exports
4. Capital and infrastructure development programmes	
	▪ subsidies or grants for buying or modernising boats, engines, fishing gear and other fishing equipment (iceboxes, GPS, communication systems, fish finders) in artisanal and mechanised sectors; ▪ subsidies for land, capital costs and working capital assistance in aquaculture for small-scale and large-scale operatives; ▪ equity participation (GOI 1996:217); ▪ setting up, management and upgradation of ancillary industries – ice plants, freezing plants, hatcheries; ▪ exploratory fishing and gear/aquaculture development (GOI 1996:217); ▪ state investments in fisheries enterprises – the Fisheries Development Corporations ▪ grants for safety equipment; disaster preparedness and mitigation infrastructure and equipment ▪ infrastructure – ports, fishing harbours and jetties, fuel stations, access roads to fishing villages, markets
5. Marketing support programmes	

	▪ Export marketing promotion programmes ▪ Generic product promotion (MFPI)
6. Fisheries management and conservation programmes	
No/inadequate management	▪ open access ▪ lack of licensing and registration ▪ no obligation to report catches and earnings ▪ non-enforcement of existing legislations ▪ Poor pollution control
Management without user charges	▪ programmes for development of artificial reefs and fish aggregating devices ▪ environment and biodiversity conservation programmes – concerning mangroves, turtles, sharks and shells, shrimp seed ▪ fisheries management programmes – seasonal bans, mesh-size regulations ▪ aquaculture regulation programmes – such as the Aquaculture Authority of India ▪ sea ranching
7. Social services	
	▪ food subsidies from PDS ▪ subsidised public healthcare ▪ subsidised education ▪ subsidised housing, drinking water, sanitation and other basic needs