GLOBALISATION, SEAFOOD INDUSTRY AND LIVELIHOODS

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GLOSSARY

EIA	Export Inspection Agency
EIC	Export Inspection Council
EU	European Union
FAO	Food and Agriculture Organization (of the United Nations)
FDA	Food and Drug Administration
GCC	Gulf Cooperation Council
HACCP	Hazard Analysis Critical Control Point
IDP	Inter Departmental Panel
INFOYU	Chinese Fisheries Information Service supported by FAO
IPQC	In-process Quality Control
IQF	Individually Quick Frozen
JETRO	Japanese External Trade Organisation
lakh	10,000
MOU	Memorandum of Understanding
MPEDA	Marine Products Export Development Authority
NMFS	National Marine Fisheries Service
QAMS	Quality Assurance Monitoring System
Rp	Indian Rupee
SAT	Supervisory Audit Team
SSOP	Standard Sanitation Operating Procedures
UAE	United Arab Emirates
US	United States (of America)

1 INTRODUCTION

Fish production, whether for export or for domestic and subsistence consumption, plays a major role in sustaining the livelihoods of many millions of producers, intermediaries, and processors in developing countries. Many of the world's poor live in coastal communities where fishing and associated activities are often a key source of income, consumption and growth. In India alone there are an estimated nearly 6 million people dependent on the fishery sector (Rao and Prakash, 1999). Over the past fifteen years, "globalisation" and the associated liberalisation of markets in many countries has had a major impact on the fisheries sector and created many new challenges. While market liberalisation and the associated new international policy environment has created many opportunities for fishery sector participants, the range of risks and constraints has increased with a resultant impact on livelihoods, in particular the poor.

Following a brief discussion of the meaning of the term "globalisation" an assessment is made of the positive and negative impacts on the fishing sector. This will be followed by specific Indian case studies, which illustrate the complexity and diversity of the issues at stake for a wide range of stakeholders. These sections highlight how globalisation and international seafood legislation in the past two decades have created both opportunities for market participants and constraints to development, particularly for those in the artisanal and small scale processing and trading areas. Overall, the predominant belief is that the process of globalisation is irreversible and that, on balance, liberalisation and free trade have been of benefit to developing countries. Moreover, there is the belief that in order to achieve the economic growth and foreign investment necessary to overcome poverty, developing countries need to become more integrated into the world economy. The challenge is to make the process more sustainable and equitable, and governments and donors have a vital role to play in this process.

There is still relatively little understanding of the new marketing conditions and problems faced by fishery sector participants, and how it has affected their livelihoods and how they have responded to these changes. According to Weisbrot *et al.* (2000), economic growth has slowed down in the least developed countries in the era of globalisation as compared to earlier decades and they suggest that research is needed to develop an understanding of the processes, the impact and the consequences and what has gone wrong. Most literature available focusses on the impact of globalisation from a macro perspective, but little information is available regarding the actual dynamics that have taken or are taking place on a micro level, i.e. firm and household level.

One of the objectives of this research is to identify, and where possible quantify, the impact of international seafood legislation and "globalisation" on sector participants, especially small-scale producers and processors. Based on secondary data available

and consultations with stakeholders[1], possible research questions are identified to develop an understanding of the impact of globalisation on the livelihoods of people dependent on the fishery sector. These research questions will guide the field research and primary data collection in Orissa, Andhra Pradesh and Kerala state, to be undertaken during the first half of 2002. Such an in-depth understanding will allow for an assessment of some possible options and solutions to overcome these constraints within the current international policy environment. The strategies outlined should assist in poverty reduction and empowerment of fishing sector participants, and, thus improve their livelihoods.

2 POTENTIAL IMPACTS OF GLOBALISATION ON THE FISHERY SECTOR IN INDIA

2.1 Globalisation

The concept of 'globalisation' is nothing new as such as it is described as *"the process of integration in product markets and financial markets"*, while UNCTAD's Secretary General defined it as *"a process whereby producers and investors increasingly behave as if the world economy consisted of a single market and production area with regional or national subsectors, rather than a set of national economies linked by trade and investment flows."* (Collier, 1997). It can be argued that the move towards a global economy, where national boundaries no longer matter, has been underway for several centuries and reached its peak prior to World War 1. However, the current revolution taking place in communications technology, combined with the increasingly important role of the multinational corporation, make the speed, the scale and impact of globalisation much greater than previously (Ellis and Seeley, 2001). Whole areas of activity are becoming increasingly globalised e.g., production, trade in goods and services, finance, labour markets, information and communication, social and cultural aspects. However, globalisation is not neutral and has multiple consequences. For example, it may bring environmental opportunities such as improved access to markets, information sharing, cleaner technologies, but also environmental threats such as increased pressure on natural resources, unsustainable production, waste, pollution, for example shrimp farming to generate foreign exchange (IIED, 2000). Globalisation may offer opportunities to poor people to enhance the viability of their livelihoods, but may also require a high degree of flexibility and adaptability. Thus, those not able to adapt may loose out and may be negatively affected by globalisation processes. One emerging picture is that those already included in the globalisation process, their access and control over natural, financial, physical, human and social assets seem to be enhanced whereas the excluded are increasingly marginalised, vulnerable and more likely to be negatively affected by intensifying environmental degradation (IIED, 2000). At the beginning of the 21st century, there are probably millions of small-scale fish sector participants in developing countries, either producing for the global or the domestic market, who are all affected by globalisation in one way or another.

[1] 'Globalisation and seafood trade legislation – the impact on poverty in India', Inception workshop, 21-22 June 2001, Visakhapatnam, Andhra Pradesh, India

These above developments have been facilitated by the outcomes of the Uruguay Round. This was the most ambitious trade pact ever and involved 19 new agreements, the most notable of which established the World Trade Organization in 1995. Alongside the establishment of a dispute settlement mechanism, many different aspects of international trade are covered including agriculture, services, intellectual property rights, sanitary and phyto-sanitary standards, import licensing, investment, government procurement, technical barriers, pre-shipment inspection, rules of origin, subsidies and countervailing measures, textiles and increasingly environmental and GMO issues. The most contentious issue under the Uruguay Round (and almost certainly in the new Millennium Round) was the Agreement on Agriculture (AoA), which was eventually signed despite considerable opposition. The extent to which fisheries will be included in the AoA is still uncertain but the AoA has made markets more transparent through "tariffication" of barriers and through the reduction of producer and export subsidies. Nevertheless, in spite of market liberalisation, agriculture (but to a lesser extent, fisheries) continues to be the most protected area of the world economy with most countries supporting the sector through various policies including the subsidising of production and exports as well as restrictions on imports and on production of certain products.

The UK Government's view as propounded by the Secretary of State, Clare Short, (1999) is that globalisation is irreversible and to achieve the economic growth and foreign investment necessary to overcome poverty, developing countries need to be integrated into world markets. Protectionism does not benefit the poor. It is argued that, on balance, liberalisation and free trade have been of benefit to developing countries by enabling them to increase their exports and provide access to industrialised country markets. National governments and international donors have a vital role to play in achieving these aims both in terms of negotiating international agreements that provide the framework for globalisation as well as adopting a range of policies and strategies that can achieve these goals and make the process more equitable and sustainable.

Alongside the changes in the global economy there has been a sea change in how fish products are produced, marketed and financed in poor countries. In many poor countries, over the past two decades, a series of reforms have been implemented which have had a profound impact on the fishing sector and its various stakeholders whether they are small primary fish producers, processors, traders, institutions or governments. Often these reforms have been crisis driven and adopted through pressure from international donor agencies; moreover, there have been frequent policy reversals. The liberalisation process has taken a variety of forms but the result has been a greater reliance on the functioning of markets to direct the allocation of resources. State-controlled production and marketing bodies have been replaced by more liberalised production and marketing environments. Public sector activities in terms of production, marketing and input provision have been reduced considerably. Efforts to fix pan-territorial prices have ended while input supplies are now provided by the private sector. Trade has been liberalised leading to the removal or reduction of both tariff and non-tariff barriers and to changes in the structure of trade. Imports of both inputs and competing foodstuffs have been liberalised leading to greater competition for domestic producers alongside lower food costs for consumers.

India has been no exception to this process. Since Independence, the Indian government has sought to increase fish production to generate income through increased export of seafood and to secure an important and relatively cheap source of animal protein for domestic consumption. Over the years, the promotion of seafood exports became increasingly important, increasingly neglecting previous policy objectives in relation to food security (Salagrama, 2001). Increased growth of the fishery industry was achieved through the promotion of modern fishing technologies by investments in and provision of subsidies for motorised and new fishery vessels, improved fishing gear, and development of infrastructure such as landing sites, harbours and marketing facilities. During the early 1990s, as the growth of fish production declined with reduced fish catches per effort per capita, it was increasingly realised that there was a need to manage the fisheries resources in a more sustainable way, and the emphasis shifted from production to management and post harvest issues (Salagrama, 2001). Developments in the Indian fishery sector are discussed in the case studies in section 3.

The following two sections review some of the positive and negative impacts that globalisation and international seafood legislation can have on fishing sector participants in developing countries, with a particular focus on India. Not only are the issues complex but also the range of experiences between countries, regions, individuals and fish types is diverse. For example, major opportunities have been created to increase incomes through export-led growth and the benefits of expanded international trade, as well as improved access to information, new ideas, technologies and institutional designs. However, there has often been a downside in terms of increased risks and greater economic and social instability at both the micro and macro levels, which may result in increased vulnerability of some stakeholders. These can have a profound impact on the livelihoods of small artisanal fishermen and processors, a large proportion of whom are already very poor.

2.2 Positive Impacts

Expanded market opportunities

Globalisation and liberalisation offers participants in the fishing sector expanded market opportunities but also requires a more commercial approach in pursuing market opportunities. Market liberalisation of the sector predominantly favours producers who have competitive advantages (i.e. natural resources, skills, and capital) that allow them to compete in both international and domestic markets. Alongside efficiency and redistribution effects, the change in price signals has led to longer-term changes to physical and human capital formation. This is often difficult to quantify at the present time since the full impact and consequences of the changes occur over the longer term (and are influenced by a range of additional factors). Some of the more readily observable consequences of market reforms include a direct impact on production, trade and finance, particularly in export-orientated sectors. Frequently there is greater participation by private sector organisations, greater producer responsiveness to market needs - partly the result of improved market efficiencies and an increased producer's share of the fob price. How producer prices for seafood have changed in India as a result of market reforms and globalisation we do not at present know, but there are many examples of export-orientated producers throughout developing world (e.g. coffee, cocoa and cotton) that have substantially increased

their share of the fob export price, although on occasions the fob export price has fallen as a result of increased output.

Increased capital flows
A positive impact of globalisation has been the increase in international capital and technology flows. Moreover, these flows which are often associated with direct foreign investments are no longer restricted to North-South flows but are increasingly taking place within and between countries in the developing world. However, these can be something of a two-edged sword, particularly for smaller producers, processors and traders, since not only can they lead to growing concentration but also increased volatility and uncertainty. Hence there is the need for adequate regulation and appropriate investment and technology codes to protect both small-scale players and investors in the sectors and countries concerned.

Improved transport and communication infrastructure
Improvements in international transport (sea, air and road links) bring small-scale producers closer to the global market. Obviously, transport costs will invariably face fluctuating fuel prices, but the trend in recent decades has been that freight capacities have increased continuously alongside technological improvements. This enables exporters to bring larger quantities of better quality produce in a shorter time-span onto retailers' shelves in industrialised countries. Those involved in the trade in fish and other commodities are embracing the global revolution in information technology. E-mail, internet and mobile phones are increasingly replacing the less reliable and slower means of communication such as mail, fax, and printed trade literature. Although resource-poor fish producers and processors may not be able to directly benefit from new information technology, they are bound to benefit from the improved flow of knowledge. More efficient trading practices are being adopted while research and extension services have better access to internationally held knowledge, information and databases.

2.3 Negative Impacts

Increased market risk and price volatility
While globalisation and liberalisation may have increased market opportunities and small producers may receive a larger share of the export price, they have also resulted in greater market risk and increased price uncertainty and volatility. Small producers and various intermediaries are much more vulnerable to market risks. The balance between increased market opportunities and greater market risk will be situation specific and impossible to predict. The degree to which liberalisation/globalisation has affected price volatility is still being debated. Increased price uncertainty and volatility has created difficulties as regards production and processing decisions, as well as the ability to purchase inputs and to obtain credit. Price risk is only one of several risks faced by producers and other market participants. There are production risks, arising from seasonality of supplies, ecological stability (i.e. current decline in fish stocks worldwide) and diseases (i.e. shrimp aquaculture); the lack of liquidity with which to buy fishing equipment and poor post harvest management. On the marketing side, there are risks with regard to price, quality and quantity caused by price volatility, demand variations, and stringent Sanitary and Phytosanitary Standards requirements imposed by major buyers particularly the EU, USA and Japan. Markets are becoming more resilient to price volatility in part because of the

faster response to production and demand shocks. Nevertheless, volatility does create difficulties for producers and processors as regards production and processing decisions, the ability to purchase inputs and to obtain credit. It requires a high degree of flexibility and adaptability, thus those not able to adapt may loose out and be adversely affected. However, many small producers and processors are unaware of the wider nature of globalisation and liberalisation processes that are underway. Their perceptions are limited to the more immediate impact in terms of greater price uncertainty and volatility, and changes in demand and quality requirements. The impact of these changes depends on the extent to which small producers are capable of reacting to the new challenges they face.

Increased competitiveness

Competitiveness has invariably increased for producers selling to both international and domestic markets. Small-scale producers that lack comparative advantages are coming under increasing pressure in export markets, from other regions that are better endowed with production factors. Policy changes and the reduction of international transport costs are contributing to this. At this stage, there is little information on the extent to which Indian fish producers are facing growing competitive pressures from local producers within India or from other producers both in Asia and elsewhere. Current Sanitary and Phytosanitary Standards, as imposed by the EU, USA, Japan, the main importers of shrimps, have a significant impact on the competitiveness of producers as to who is able to invest in hygienic processing procedures to comply with these requirements (see Section 3.2 for more detail).

Concentration and Polarisation

In line with increased competitiveness, there is a shift from small scale production to larger scale operations. For compliance with current SPS standards, companies need to invest considerable sums to upgrade fishing equipment, processing and marketing facilities to be able to ensure current and future export markets. Consequently, the scale of fishing has become more capital intensive, e.g. large trawlers suitable for deep sea fishing, specialised fishing gear and preservation facilities on board. Local small scale processing plants in rural areas have closed down, and processing for export markets (i.e. peeling and deheading of shrimps) is increasingly done in large scale, centralised processing plants. Polarisation has intensified both within communities (as some producers are more successful than others) and within regions and countries. Globalisation is likely to accentuate this polarisation between those included in the process and those excluded.

Stringent quality requirements

In addition to export quality control, an increasing proportion of the costs associated with maintaining quality (e.g., drying, grading, sorting, packaging) have had to be borne by the export trade. The development of the export market seems to have produced a two-tier quality assurance system. The demands of importing countries have required massive efforts to implement quality and food safety systems that meet these needs. The domestic markets are generally less stringent and investments in quality systems for these markets have been reduced or have stagnated. The identification of strategies and options to improve and maintain higher quality products to ensure marketability and the best available prices is an important issue resulting from liberalisation.

Access to finance as a production constraint

Access to finance has become more important as high levels of investment are required to be able to respond to international market demands including quality control. In developing economies fish producers and processors, especially those operating on a small scale face a perennial problem in gaining access to credit, due to the nature of their requirements, seasonality of the activity, high risks involved, and their lack of meaningful collateral acceptable to financial institutions. The lack of alternative employment and income opportunities for many small producers and processors further intensifies these problems. Fishers usually need a large loan before the start of the main fishing season to enable investments in fishing equipment etc and consumption credit to cover operation costs (crew salaries, maintenance, ice, fuel etc.). Similarly for post production, credit is needed to ease cash flow constraints, assist in the timing of sales and generally accelerate development. As mentioned earlier, the introduction and implementation of quality control systems to meet SPS standards require large investments. Banks and other credit lending institutions are often unwilling to provide loans to the small scale fishing industry because of lack of collateral, high transaction costs, the relatively large amounts involved, high perceived risk and the highly seasonal nature of the fishing industry. It is not clear whether the provision of affordable credit to producers and processors is an issue of major importance to the maintenance of livelihoods, income generation, and the future development of the fisheries sector in India. There have been studies to quantify the comparative profitability of mechanised and non-mechanised fishing units. Findings suggest that artisanal fishing units were relatively more efficient due to lower investment requirements (Sathiadas, 1997, and Salagrama, 2001).

With greater price uncertainty, there is an increased reluctance to advance loans. With increased competition in the marketing chain and greater default risk, not only has the level of pre-finance to traders and producers often declined but also foreign companies handle an increasing proportion of the market. The latter tend to have better access to finance as well as better market contacts and risk management techniques. This can make it difficult for local enterprises to compete.

Availability of physical and institutional infrastructure

In many countries Structural Adjustment Programmes of the World Bank/IMF have often led to deterioration in physical and institutional infrastructure as governments have reduced expenditure in an effort to balance budgets. Market reforms have led to a considerable emphasis on creating an enabling environment for private sector development – particularly in the export sector. In some cases the provision of some facilities (e.g. landing stages and cheap finance/grants to companies to improve their facilities) has assisted the fishing sector. However, continued poor physical infrastructure (e.g. rural roads, port, airport and telecommunication links, and cold store facilities) have increased production and marketing costs. This has been a serious impediment to seafood exports not only by reducing the availability of inputs and services but also by making it more difficult to market produce, including the satisfying of import requirements.

2.4 Globalisation, an equal balance?

"…it is important to stress that few developing countries are likely to see major short-run benefits from international trade liberalisation. The economic principles on which these global trends in policy are based depend on long-term processes of specialisation, development in areas of comparative advantage, and capacity building. In the short run there may be some success stories – but sustainable growth in export and domestic sectors is only likely to come from a well-rounded long-term process of economic and social capacity-building." (Coote et al 2000 p.72)

Globalisation and liberalisation are not sufficient conditions in themselves to improve the well being of small-scale participants in the fisheries sector. The balance between greater market risk and expanded market opportunities will be situation specific. Success is dependent on a number of other factors being in place or being developed e.g. possession of requisite human, financial, social, economic, political and physical assets; a supporting public policy and infrastructure; political stability and legal frameworks; lack of non-tariff barriers etc. Individual livelihood assets will be effected in different ways at different speeds. For example, in the short term, changes in access to and control over economic and physical assets are likely to be more profound compared to the effects on human and social assets (Ellis and Seeley, 2001). However, those who are not able to adapt and respond to global changes may become increasingly vulnerable and may become more and more dependent on formal and informal safety nets. If the poor are to participate and benefit from global changes and increased market opportunities, supporting and facilitating institutional contexts, good governance and access to information are crucial (Ellis and Seeley, 2001, IIED, 2000). In addition, fishers and others involved in the marketing of fish for export need to develop a reputation for good quality and build up supply volumes; but a balance needs to be struck between specialisation and diversification in order to generate sufficient marketable surplus production without creating undue risk.

3 CASE STUDIES

3.1 Background of the Indian fishing industry

Prior to the 1950's, the Indian fishing industry was predominantly an artisanal industry, subsistence-based, oriented to the domestic market and characterised by traditional, non-mechanised fishing fleet, mainly restricted to fishing along the shore. From Independence onwards, the government perceived the fishery sector as one of the key areas that could support India's overall economic growth. Rapidly increasing international market prices for shrimps triggered a predominantly export centred strategy in which production growth through technology development (mechanisation of fish fleet, improved fishing gear), subsidies and improved infrastructure (ports, landing sites etc) was the key guiding principle. Consequently, the artisanal fishing sector was initially neglected in favour of the industrial fishing sector through subsidised trawlers and infrastructural support. From the late eighties/early nineties small scale and artisanal fishers, who could afford to change, also adopted mechanised boats and improved fishing gear through provision of subsidies and other services and the need to move to 'new' fishing ground further offshore as competition increased. It also attracted outsiders to the fishing industry, predominantly as investors (Johnson, 2001, and Salagrama, 2001).

During the eighties, aquaculture was heavily promoted by the government and multilateral donors to satisfy domestic urban demand for fish and international demand for shrimps etc. As a consequence, India's fish production rose almost seven fold, from 0.75 million tonnes in 1950-51 to nearly 5 million tonnes in 1995-96. Marine production increased over five fold, from 0.5 million to 2.7 million metric tonnes, while inland production saw an even higher, twenty-one fold, increase from 0.2 million to 2.24 million metric tonnes (GOI, 1996:3 in Salagrama, 2001).

Final consumer markets became located at greater distance from the fishing communities, supported by improved infrastructure, availability of ice, improved communications etc. A greater proportion of fish was exported. Also, there has been a shift in domestic and international demand from dried and canned fish to frozen fish, which called for stricter food and safety regulations over the years (see section 3.2 for more details) (Sathiadas et al., 1997). This had a significant impact on the availability, fish species and quality of fish available for local markets, Local communities and poor people have become increasingly dependent on previously low value or even by-catch fish, which in some cases is no longer affordable to the poor. Also fish species that previously enjoyed a reliable domestic demand have almost disappeared from the domestic markets as it is all exported to international markets due to higher export prices. One such an example is ribbon fish to China (see box 1). The decline in demand for processed fish, either dried, salted or smoked, meant a loss of employment opportunities, in particularly for the poor and women.

Box 1: Export of Ribbon fish from Gujarat

Originally, ribbon fish was considered a low value fish specie. It was sold to local fish processors and distributed by local middle men to local and domestic markets. In the early nineties, ribbon fish arrivals from Gujarat to the Mangalore market were very high. Groups of women from Trivandrum District would go to Mangalore to bring back lorry loads of salted ribbon fish to reprocess. They would sell in local rural markets where salted ribbon fish enjoyed a very good demand among the poor people. However, the development of a good export market for ribbon fish to China in the late 1990s, lead to this fish completely disappearing from the long distance salt fish trade. The commodity chain became more concentrated with fewer agents controlling the dried ribbon fish market, with apparently better prices for the fishermen. It affected large number of people whose livelihood was dependent on this trade and also affected the poor consumers of Trivandrum District who lost access to a cheap source of protein. On the other hand, boat owners, crew, export processing plants and their workers benefited because of better market prices and employment opportunities. Probably, it also has benefited the export processing plants and their workers. However, the sustainability of exports is in doubt because of the overexploitation of ribbon fish due to higher market prices. Those who currently benefit from the exports may not be able to sustain their livelihoods in the longer term. The local poor have substituted other 'low-value fishes' as ribbon fish has become too expensive. However, the availability of low-value fishes for domestic consumption may again come under pressure due to recent opening of surimi plants, using low value fish for the production of surimi, again mainly for the export market. Another concern is that the increase in price for almost all fish species could increase the pressure on the already overexploited aquatic resources, increasing the level of overfishing.

The total amount and value of seafood export has grown significantly over the years, from 40 million rupees in 1961-1962 to 511 million rupees[2] in 1999-2000 (Salagrama, 2001). According to Rao and Prakash (1999), export of seafood is the fourth largest earner of foreign exchange for the Indian economy. In terms of value the main export markets were Japan (44.4%), European Union countries (17.6%), United States of

[2] The average exchange rate for 1999 was R43.09 = U$1.00

America (15.2%) and main land China (including Hong Kong) (10.7%). Frozen shrimps are by far the most valuable export accounting for over 70% of the value with frozen finfish, cuttlefish, squid and fresh/chilled items of lesser importance. In terms of quantity however frozen finfish exports are more important making up over 38% of exports, much of which goes to China (MPEDA, 2001).

Provisional figures for 2000/2001 suggest that the value of exports has risen by 23.3% to reach Rs63 billion (US$1.34bn). In volume terms, the exports rose to 421,000 tons, an increase of 22.8% on 1999/2000. The rise is dominated by a 55% rise in value of exports to the US with US overtaking the EU in terms of trade. In terms of export value for 2000/2001, Japan account for 41%, US 18.6%, and the EU 15.3%. There has also been a substantial increase in exports to China, which along with Hong Kong now takes 12% in terms of value of Indian exports (Fish Farming International, 2001).

Shrimp continues to be the most important export in terms of value (71%) but only make up 26.8% in terms of quantity. The share of finfish has increased in 2000/2001 to 12.6% mainly because of the increase in exports of frozen ribbon fish to China which in volume terms rose by over 100% compared with the previous year.

From a macro perspective, the significant increase in total value of seafood exports is beneficial to India in terms of considerable foreign exchange earnings, increased employment opportunities and increased value to the production sector. However, the fishing sector has also become significantly vulnerable to economic, environmental and political trends, while a significant number of people, especially the poor, are thought to be negatively affected by the processes of globalisation. The following case studies illustrate some of these conflicting trends.

3.2 The Farm to Fork principle

Food safety legislation, food labelling requirements, traceability and legislative requirements in relation to environmental impact of fishing activities are having a major impact on the trade in seafood products such as high value fish species, shrimps etc. In particular, the Sanitary and Phytosanitary Standards (SPS) agreement of the WTO is having a significant impact on the global seafood trade, as illustrated by the ban on shrimp export from India to the EU in 1997 (Henson et al., 2000). The principle of the SPS agreement is that all countries are entitled to adopt *'measures necessary to protect human, animal or plant life or health'* provided they are scientifically grounded. However Walker (1999) warns that *'by phasing out other tariff and non-tariff barriers, the potential to misuse and misapply the SPS agreement to achieve political objective is greatly increased'*. Also Henson and Loader (2000) state that SPS measures can be more significant in terms of impeding a country's ability to export agricultural and food products than tariffs.

Countries outside the EU and other developed markets have found that the growing legislation and quality standards demanded by major importers have become barriers to trade. Developing countries often face logistic and financial constraints in trying to comply with such SPS measures and standards. Dillon (1993) identifies the following constraints:

- Lack of institutional capacity,
- Lack of equipment and facilities

- Lack of enforcement
- Lack of financial and human resources
- Lack of knowledge and access to information

The approach taken by the European Union towards ensuring the safety of seafood imports is that governments of third countries are responsible for seeing that their export industry complies with legislation by appointing a "Competent Authority". The Indian authorities should ensure that factories wishing to export to the EU comply with EU Directive 91/493/EEC, which covers both internal production systems and those from third countries. The directive covers design of processing plants, sanitation procedures, self-checks (Hazard Analysis Critical Control Point (HACCP). Export agencies and factories wishing to export to the EU can obtain an export licence number after having been given approval of meeting the EU directives by the Export Inspection Council (EIC). At present, the European Union is in the process of revising and updating its existing food safety rules or legislation. Current legislation or directives include separate directives governing fish and fishery products but it is the intention that in future there will be a merging into a single hygiene directive applicable to all food and food processors. One of the basic principles of the new hygiene rules is the introduction of the “farm to table” principle to hygiene policy. The present rules tend to leave a gap at the primary production level with most efforts at hygiene control being made further along the chain. Future rules will require traceability of all food and food ingredients thus requiring much more control, record keeping and transparency at all stages. This could have profound implications for all stakeholders in the production of export fish products from India.

USA and Japan have adopted slightly different approaches with regard to food safety regulation for export and import. The Japanese authorities tend to check for the presence of antibiotics and pesticides and they are not usually concerned so much with other aspects of food safety. The American legislation lays responsibility for safety on individual importers who are expected to demonstrate that their suppliers are producing safe products and using HACCP.

In 1997, the EU imposed an export ban on seafood imports from India (which lasted for 6 months) for non-compliance with the EU directives. The main reason cited that most shrimps were peeled in cottage peeling sheds that did not meet the hygienic standards as outlined in the EU directives. Since then, a number of cottage based peeling sheds have closed down and to some extent export companies have restructured their processing by integrating shrimp peeling under controlled and regulated conditions. In order to respond to the EU directives, the Indian government introduced Indian national standards in line with international requirements with a final date for implementation of December 2000. However, these food safety standards only apply to the export market and not to the domestic market. MPEDA made grants of 50 lakh Rp available to each processing plant to subsidise upgrading. The Indian Seafood Exporters Association estimate that US$25 million has been spent in helping to upgrade the Indian industry to meet EU legislation.

However, many companies have not been able to comply with the EU food safety directives and have either stopped exporting to EU markets or have closed down. In Andhra Pradesh, 45 of 55 processing plants are up to Indian food safety standards but

only 10 processing companies have received an export licence number, and four additional ones are awaiting approval. In Orissa, there are 25 EIA registered seafood exporters, of which 4 lost their EIA licence recently because of non-compliance with food safety standards. There are about 17 EIA registered seafood processing plants, of which 4 lost their EIA approval recently due to non-compliance. In the state Orissa, there has been a considerable concentration of the export trade with three exporters controlling 80% of the total export business, of which 50% is controlled by one single company (CMS, 2001). In particular, the pre-processing plants, such as cottage peeling sheds, were affected by this legislation, which resulted in the integration of pre-processing with the main processing plants. The poor are being marginalised by this situation in that they do not have access to or the means to acquire the required facilities or infrastructure to compete. Only those suppliers who can afford to run marketing/transport/distribution facilities, which meet these requirements, can supply fish to the export industry. Experiences of implementation of HACCP for the domestic market are limited, and as elsewhere in third world countries, the costs are perceived to outweigh the benefits. In Brazil, for example, only 6% of the companies operating for the domestic market had adopted HACCP compared to 45% of companies operating for the export market (Caswell et al., 2000)

The need for more sophisticated systems for the handling and distribution of fish products for the export industry has also an effect on the suppliers of goods to the industry. For instance, the "traditional" baskets and wooden boxes, usually locally produced, previously used for the transport and distribution of fish, are being replaced by modern fish containers (e.g. plastic boxes). Access to ice is a prerequisite in assuring the quality of fish. However, ice tends to be unavailable in poor/remote fisheries communities. High value products suitable for the export market may not be able to be preserved without a supply of ice provided by the fish purchasers. The traders purchasing fish at these locations would bring ice with them to preserve the fish they buy and would be able to manipulate market conditions to their own advantage.

However, fish landing sites, which are, in principle, also part of the "farm to fork" principle, are not being fully integrated in the enforcement of food safety directives. This is rather complicated as the landing sites are usually very scattered and therefore it is very difficult for MPEDA to control and improve the current conditions. It seems that the Indian government and MPEDA have adopted a merely reactive approach and only respond when needed; whereas it would be better to take a pro-active stance to explore possible impacts and how these could be minimised if negative.

More research is needed to develop an understanding of the impact of EU food safety directives on employment opportunities and conditions, especially within the context of the closing down of export companies and peeling sheds. For example, one impact has been the migration of women from Kerala to work in export companies in other Indian states. Originally, predominantly women were involved in peeling shrimps, which was often done in cottage based peeling sheds or at home. Through closure of these informal peeling sheds, many women and children lost their sources of income, and are often excluded from working in export companies given the socio-cultural norms, political issues (i.e. child labour) and values that limits women and children's occupational mobility to work outside their homestead or close community (Delap and Lugg, 1999). In particular, the use of child labour in shrimp processing plants is

subject to cultural globalisation processes, in which basic human, worker and child rights play a principal role. However, there are warnings against a 'one size fits all' approach, but rather interventions should be based on specific needs and circumstances to secure benefits, both financial and human, to those they aim to protect. Abolition of child labour without any compensation of loss of benefits will probably do more harm than good (Landmark, 2000; Delap and Lugg, 1999).

Another question to consider is what would be the impact on the livelihoods of the poor if quality control commenced at the landing sites in part, through an increased concentration of large controlled landing sites? The need for, and the trend towards, more "sophisticated" and centralised facilities for landing and initial marketing of fish tend to concentrate these facilities and take them away from more remote and smaller landing sites. The rural/remote fish processors/traders therefore have less access to fish and reduced opportunities for income generation than they might have had in the past.

3.3 Globalisation of trade and environment

Globalisation processes touch very much on environmental trends as eco-systems are increasingly linked and there has been an intensifying pressure on natural resources globally. The 'tragedy of the commons' debate, the convention on biodiversity, intellectual and common property rights and international environmental movements are just a few of many 'green' hot topics within the globalisation debate. On the one hand, globalisation processes offer environmental opportunities in terms of increased access to markets, information, capacity sharing and cleaner technologies but on the other hand also environmental threats such as increased pressure on natural resources, pollution, degradation and generation of waste (see also IIED, 2000). Also in the context of Indian fisheries, there are ample examples of where ecological concerns are an important part of wider trends. During the early nineties, as the growth of India's fish production declined with reduced fish catches per effort per capita, it was increasingly realised that there was a need to manage the fisheries resources in a more sustainable way, and the emphasis shifted from production to sustainable management policy objectives and post harvest issues. Aquaculture was seen as an alternative to marine fisheries as a means of meeting international market demand for high value fish species such as shrimps, and was subsequently heavily promoted by the Indian government and multilateral donors, such as the FAO and World Bank. Increasingly, the negative side effects, both environmental and socio-economic, of intensive aquaculture have become more obvious, as discussed in the next section.

The following sections then present two cases of how environmental concerns in the western world, namely conservation of endangered species (turtle) and air and water pollution, have negatively influenced small-scale fishers' livelihoods. More research is needed to understand the actual impact of international environmental legislation on the poor fisherfolk, how effective these legislation are and how negative impacts can be avoided.

3.3.1 Shrimp aquaculture: a pink revolution or the blue death?

At present, aquaculture is considered as one of the fastest growing food producing sectors and provides an important source of fish. Conventional fish production from the inland and marine capture fisheries is failing to meet demand, due to both increased demand and declining catches (Pokrant and Reeves, 2001). Although, there

has been a tradition of controlled fish cultivation for centuries, it has only been since the late 1970's that highly intensive fish cultivation schemes predominantly for the export market, were established, heavily promoted by India's government and multilateral donors such as the World Bank and the FAO. In particular, states such as Andhra Pradesh, Orissa and Tamil Nadu have seen an impressive growth of aquaculture farms from the late 1980's onwards thanks to incentives provided by the government to encourage large internationally linked joint venture operations involved. Today, India is the world's fourth largest cultured shrimp producer. A pink revolution evolved, with the aquaculture business booming. Between 1990-1991 and 1993-1994 exports increased from 61,896 tonnes to 86, 541 tonnes, and due to increased international market prices, the export value of cultured shrimps rose by over 200% to Rs1770 crores during this period (Prokant and Reeves, 2001).

However, after the initial euphoria, environmental and socio-economic problems inherent to the rapid development and uptake of aquaculture, became all too apparent. There have been serious knock-on effects on agriculture, environment and livelihoods in general, and even more tragically, the costs are/were mainly born by those who hardly benefited from this pink boom, usually the poor. An operational problem, such as the failure to develop hatcheries, negatively affected the environment and consequently the capture fishery in general. Shrimp farms relied heavily on shrimp fry collection, although providing a small income for many poor involved in shrimp fry collection, the consequences for the ecological stability of marine and inland fisheries were disastrous, triggering a further decline in catches.

'As the shrimp farms spread, there is destruction of agricultural livelihoods and food production, destruction of land, forests and marine stock, salinisation of ground water, pollution of sea and coastal agriculture, displacement of fishing communities, drinking water crisis, social conflict and violence…. The oppressed and the poor are paying a high environmental and social cost for this expansion, which is largely disregarded by governments and companies (Mukul cited in: Pokrant and Reeves, 2001).'

In 1996, local resistance from farmers and environmentalists against the aquaculture industry gained momentum when India's Supreme Court decided that aquaculture was only allowed in a sustainable context, which meant for example that all aquaculture farms that were located within the Coastal Regulation Zone, a notification handed down by the government of India in 1991. At the same time, aquaculture was hit by serious disease, which lead to the destruction of stock on many farms and falling international market prices for Indian shrimps. In 1999, despite strong lobbying from the aquaculture industry to defeat the Supreme Court's decision, the Parliament was working on a Bill on aquaculture to promote ecologically sustainable shrimp farming, and existing shrimp farms have to be judged on their merits as well as on environmental grounds (Pokrant and Reeves, 2001)

There is some controversy about the pros and cons of aquaculture on the livelihoods of the local poor. Stakeholders such as larger landlords, investors, processors and exporters justify the business in terms of export earnings, employment generation in food processing industry (peeling, deheading etc), trade, transport sector and shrimp fry collection. They suggest that most of aforementioned problems such as environmental and agricultural degradation, are mainly an outcome of unplanned

developments but can be largely avoided by putting appropriate and facilitative policy instruments in place. However, opponents, including small farmers, landless, fishers, national and international NGOs state that implementation and enforcement of law are subject to biased interpretation and intimidation. According to them, aquaculture has many negative side effects, ranging from degradation of common pool resources such as land, water, forests, and biodiversity, unequal distribution of economic benefits and employment opportunities and concentration of land ownership, further depriving agricultural based livelihoods. (Pokrant and Reeves, 2001; IIED, 2000; Robbins and Roberts, 2000; Delap and Lugg, 1999). It is further argued that the presence of shrimp farms do not contribute to local development. As described in Delap and Lugg (1999), *'No new roads, school or college have been constructed nor are there any signs of industrial development. It is assumed that the total amount of shrimp earnings goes to towns and other metropolitan cities.'*

More research is needed to find out what the impact of the aquaculture has been on the household level. As Pokrant and Reeves (2001) cite Immerfall *'Globalisation takes place in situ, and it is there where it can be best de-mystified as an anonymous force'*. How have livelihood strategies been affected, how have people coped or adapted to these changes, who has benefited or lost in what way, and what are people's perceptions of such changes? In what way can institutions monitor and influence some of the outcomes to ensure an equal, and more balanced outcome of such processes?

Global environmental legislation and local livelihoods

There is a growing awareness that there is a need to link globalisation processes to sustainable development issues, in which global environmental concerns play an increasingly significant role. One example is i.e. the international Convention of Biodiversity. Multilateral environmental agencies like CITES have developed lists of endangered species. WTO has put procedures for international trade in place to enforce protection of endangered species. If necessary, the WTO can impose an international trade ban on particular species/products and countries can be denied access to the international market. One such an example is the ban on trade in turtles since 1972, which especially affected Indian Ocean countries (ICTSD, 1997). In particular, this ban had implications for small scale fisheries, as previous fishing grounds have been closed and are allocated as conservation areas. In addition, regulations concerning use and type of fishing technology have been put in place, for example, shrimp trawlers must use turtle excluder devices if fishing in Orissan waters. No difference is made between type and scale of fishing technologies, i.e. small scale fishers versus shrimp trawlers and to what extent they threaten present turtle population dynamics. Although the small-scale fishery does not harm the turtle population, it is very much affected by the regulations put in place such as the provision of turtle excluder device nets and the imposition of turtle conservation zones. These conservation zones, which usually stretch up to 150 km out of the coast, are often the main fishing grounds for small fishers with their small boats and limited engine capacity. Recent experiences have shown that the use of turtle excluder device nets is not really beneficial to the conservation of the turtle population[3].

[3] Presentation by Sebastian Mathew (ICSF), *'Globalisation, WTO and Environmental Legislation and its impact on the poor*' at the Inception Workshop 'Globalisation and seafood trade legislation – the impact on poverty in India', 21-22 June 2001, Visakhapatnam, Andhra Pradesh, India

Building on such conservation initiatives and concerns from the international green lobby is the introduction of eco-labelling, which put traceability of product as the core prerequisite for eco-labelled certification of fish products. The US for instance requires that turtle excluder devices be used in trawl nets used for catching prawns. This could require that traceability is established to particular vessels/nets. EU legislation is likely to require the ability to trace the product more fully so as to ensure food safety. This will require that each player in the distribution chain will be able to demonstrate that they can identify the supplier of their food and also to whom they have supplied their product. Thus, a complete supply chain can be attributed to a particular product, each business being responsible for identifying the one step above and the one step below them in the chain.

In addition, the move towards eco-labelling schemes requiring that it can be demonstrated that particular products come from particular fisheries, will require more traceability in the future. To be able to trace small quantities of prawns to individual fishermen in order to prove that they operate in a sustainable and/or turtle friendly manner would be a major challenge. The future of broader eco-labelling schemes, such as those being promoted by the Marine Stewardship Council (MSC), is uncertain at present, although there is a general feeling amongst advocacy groups for small-scale fisheries workers that these could have adverse repercussions for this sector. It is felt that too often conservation agencies use these measures to fight market forces without much consideration for the livelihoods of the poor. In addition, it is suggested that the Indian government overreacted to the pressure from the US and the green lobby about the conservation of turtles. On the other hand, however, it is recognised that there is a need to make some concessions to the WTO in order to get concessions in other areas of conflict. It is suggested that environmental concerns should be taken into account but there is an urgent need for a much more holistic, transparent and pro-active approach engaging all stakeholders right from the beginning, rather than on an ad hoc basis, as is usually the case.

Another new emerging threat is an upcoming ban on two stroke engines, especially for the artisanal fishermen who have shifted to Out-Board Motors (OBMs). At present, there is an ongoing campaign in California to ban two-stroke OBMs, and already OBMs manufacturers like Suzuki are thinking of discontinuing two stroke production and shifting to four stroke production. The problem is that the kerosene conversion which actually made OBMs unaffordable phenomenon is not being planned for the 4 strokes, as yet. This means fishermen of India will be left high and dry. It is not yet clear whether seafood caught with 2 stroke OBMs will be considered as anti-environment and become included in trade barriers in the near future. There are a large number of environmental issues that are going to haunt fisheries trade in the near future.

4 RECOMMENDATIONS, RATIONALE AND FOCUS RESEARCH

From previous sections, it has become obvious that outcomes of overall globalisation processes are diverse and very much location specific with some people benefiting, whereas others clearly lose out. There is very little literature and information available that focuses on the dynamics and complexity of globalisation processes on local level and its implication for sustainable development. There is a clear need for an improved understanding of such processes and the link between globalisation and sustainable development to identify ways in which institutions and governments can develop facilitative and supporting policies beneficial for sustainable livelihoods, in particular for the poor. Globalisation and liberalisation are not sufficient conditions in themselves to improve the well being of small producers and other micro- and small-scale entrepreneurs. Without adequate policies there is a danger that rapidly globalising markets will increase the polarisation both within countries and between nations. As Coote et al (2000) point out, *'...it is important to stress that few developing countries are likely to see major short-term benefits from international trade liberalisation. The economic principles on which these global trends in policy are based depend on long-term processes of specialisation, development in areas of comparative advantage, and capacity building. In the short-term there may be some success stories, but sustainable growth in export and domestic sectors is only likely to come from a well-rounded long-term process of economic and social capacity building.'*

4.1 Rationale of research

Although there are different processes of globalisation, such as those incorporating environmental and food safety legislation, the research project will focus on the impact of food safety legislation on the Indian fishing sector. The seafood export industry is an important source of foreign exchange for India. However, food safety regulations, imposed by the EU, US and Japan challenge the extent to which the Indian fisheries, in particular the seafood export sector is able to comply with these food standards and thus to compete with other seafood exporting countries such as Thailand and Vietnam. The EU is currently in the process of revising the food safety directives both for domestic and imported food products, which will entail a greater emphasis on the total food chain, incorporating the 'farm to fork' principle. This will require further changes to the infrastructure and processes put in place within the Indian fishing sector regarding seafood for the export market. Traceability of produce, proving that products are from a secure supply source, will become an integral part of food safety policies as all stages of the food chain will be subject to more rigorous quality assurance systems, starting from the fishing boat or fish pond to the export processing plant through to the point of export. This may prove problematic when, for example, small quantities of produce are coming from many different sources. In addition, supply may come from different production systems such as:

1) Wild caught prawns from small fishing units, producing small quantities per trip
2) Wild caught prawns from larger vessels producing large quantities from several trawls of the net per trip

3) Aquaculture units with no particular links to a processing plant, likely to be small scale fish farming units
4) Aquaculture units integrated with established links to processing plants and/or owned by processing and/or export companies, likely to be capital intensive and large scale fish farming units.

The assumption is that it may be easier for large scale producing units, in particular aquaculture units integrated within a processing system, to comply with future food safety regulations including the 'farm to fork' principle than for small scale fishing units. It may result in a further polarisation and concentration of the fishery export sector, with aquaculture producing units having a comparative advantage over fishing units and in particular over small scale fishers and fish farmers. Before anything can be said about the potential impact of more stringent food safety regulations, a better understanding is required about current processes and impact of international food legislation on the various stakeholders, as that is currently poorly understood and inadequately documented.

The research should explore:
a) What has been the impact of present international food safety regulations on the poor participants in the Indian fishery sector; small scale fish producers and other fish based livelihoods, such as traders, shrimp peelers, fish processors and ancillary industries which provide services to the fishing sector.
b) To what extent do the present regulations (including HACCP) pose challenges to existing and would-be producers, processors, and exporters?
c) To what extent is there capacity for compliance with current international food legislation? This not only includes the costs involved but also the extent to which institutions within India have the management and facilities to undertake this work?
d) What would be the impact of more stringent food safety regulation, including traceability of fish produce, for the different supply systems, in particular the small scale producers, how would and could they cope?
e) Recommendations for policy makers on likely impacts on local livelihoods, possible scenarios and ways to off set some of the negative impact for the poor.
f) To what extent does the Quality Assurance Management System (QAMS) operated by the Indian authorities need to be broadened to take into account these future challenges?

In particular, it should be noted that there is a lack of understanding of the relationship between globalisation and gender issues. This is mainly attributable to a generally biased focus on the formal sector, ignoring the importance of the informal sector, which plays, especially in the developing countries, a crucial role within wider market sectors. Women's participation in the informal sector is considerable but often overlooked, thereby increasing their invisibility. Women are often in a disadvantaged position as they usually have limited access to information flows, low levels of literacy and limited access to and control over assets. Globalisation processes can increase women's vulnerability while at the same time offering opportunities such as new global conventions and agreements on labour standards and human rights. (Chambers, 2000). Within the context of the Indian fisheries, women are usually involved in processing and trading activities. Section 3.2 highlighted how women, previously involved in processing and trading ribbon fish have seriously been affected

by global changes in trade. Similarly, the imposition of food and safety regulations by the EU and other major importers has seen a shift from small scale cottage-based peeling operations to large scale processing plants, in particular affecting local employment opportunities for the most vulnerable group, women and children. Therefore, research activities for the second phase should include a strong gender focus by ensuring that gender issues are incorporated in design and implementation of research activities.

5 Exchange Rates

Mid 1998

140 JapaneseYen/US$
42 Indian Rupee/US$

Current

133 Japanese Yen/US$
48 Indian Rupee/US$

Source: http://www.economist.co.uk/markets/currency/

6 Overview of seafood exports from India

In 1970 the exports of fish and fisheries products from India stood at 37,175 tonnes worth just over 47 million US$. During the 1970s the figures rose to 74,000 tonnes in 1980 and 80,000 tonnes in 1985. In the late 1980 the industry began to expand considerably and in the six years between 1985 and 1991 it doubled to 163,000 tonnes and then more or less doubled again to 313,000 tonnes by 1998. The value of the exports rose along with the quantities and by 1998 earned India over 1,168 million US$. In the decade 1989 to 1999 marine product exports from India have constituted

Figure 1 - Quantity of Indian Seafood Exports

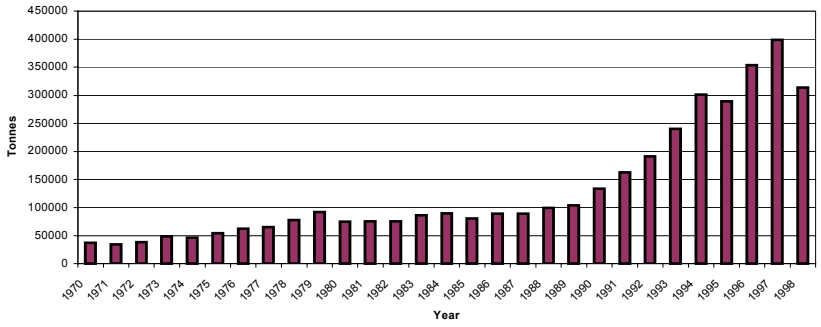
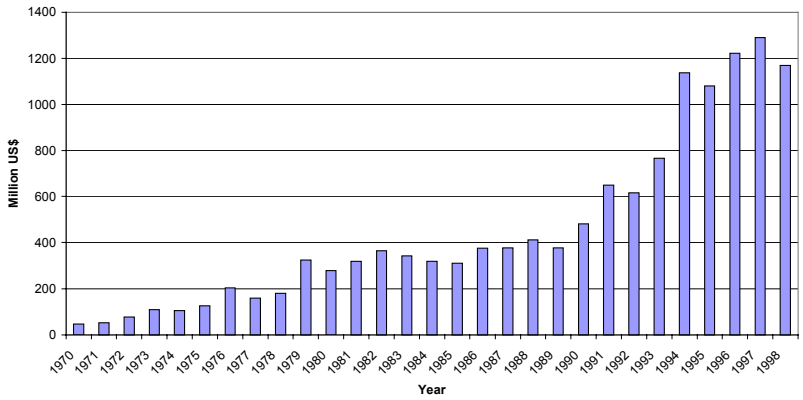


Figure 2 - Value of Indian Seafood Exports

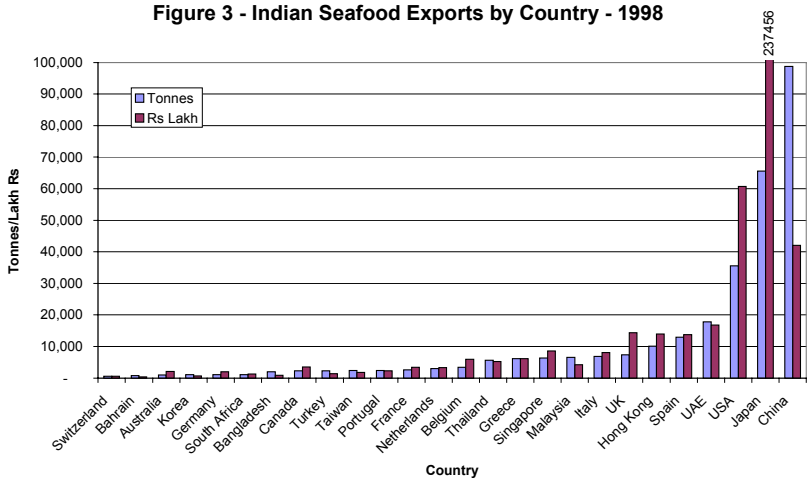


between 2.3 and 4.3% of total value (in US$ terms) of exports from the country averaging 3.3% over the decade.

The trends in seafood exports at a macro scale are illustrated by Figures 1and 2 with data taken from MPEDA 2000.

It can be seen that the major markets in terms of quantity are China, Japan, USA, European countries and the Middle East. This is illustrated in Figure 3.

Figure 3 - Indian Seafood Exports by Country - 1998



Individual countries within the EU are relatively small in terms of market share but taken as a trading block the EU is third in importance in terms of value. (see figure 4.) Because China imports such a large quantity of low value products it figures as number one in terms of quantity imported but only fourth in terms of value. (see Figure 5.)

As a trading block the European Union has had a profound influence on the development of the seafood export industry not only in India but also in other developing economies. This is because it has been in the forefront of the development of food safety standards. As will be seen from the discussion below the EU standards are enforced and regulated at the country level and thus a restriction of exports to the EU under the regulations affects all members of the export community. For exports to other countries, such as the USA and Japan, the food safety import regulations are generally enforced at a company basis and so a restriction on imports will only affect one particular exporter.

Figure 4 - Value of Exports by Country/Region - 1998

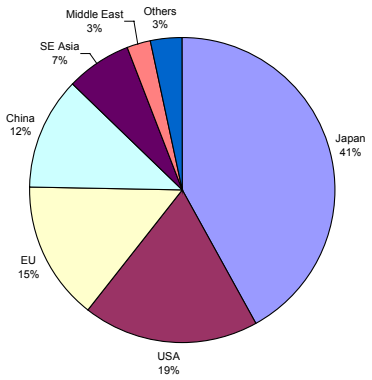
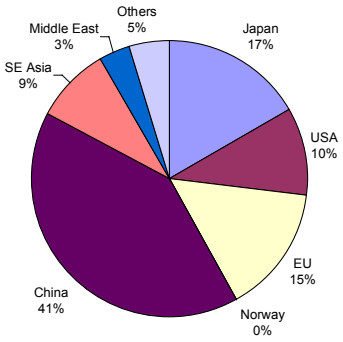


Figure 5 - Quantity of exports by Country/Region - 1998



7 Indian Seafood Export Legislation

Quality assurance systems in respect of products exported from India was introduced under the Export (Quality Control and Inspection) Act in 1963. Under the provisions of the act five Export Inspection Agencies were established in different cities in1966 to act as field organisations for implementing policies of the Central Government's Export Inspection Council. Initially only frozen and canned shrimp products were subject to regulation under the Act but subsequently more seafood products were subject to inspection under the act. Initially the system was conectrated on simple organoleptic quality inspection with bacteria examination being introduced in 1973. This system of end product/consignment inspection contiunued until the end of 1977 when an In-process Quality Control system (IPQC) was introduced. This entailed not only end product inspection but also requirments for processing, freezing, storage, transport and in-house testing of products. (Shrivastava, 1998)

In 1995 this sytem was revised to take account of concern regarding the risks to human health posed by harmful chemicals, antibiotics, heavy metals and the introduction of the concept of own checks during processing by producers, the Hazard Analysis Critical Contol Point System (HACCP).

This system known as the Harmonised "Quality Assurance and Monitoring System" (QAMS) is harmonised to meet the requirements of both the EU Directives and the US-FDA regulations and at the same time flexible enough to meet the individual National Standards of importing countries. Contractual arrangements between export and import companies are also recognised so that certain minimum specifications are met. Processing of fishery products are only permitted in establishments or on board factory vessels that meet the approval of the Export Inspection Council. These approved units are regularly monitored by the Export Inspection Agencies (EIAs) to ensure they comply with the requirements. Approved units are allotted a distinct approval number, which is required to be marked on export packaging. In addition to the Council itself there are Inter Departmental Panels (IDPs) and Supervisory Audit Teams (SATs) which comprise representatives draw from Government authorities such as the Export Inspection Agencies, Marine Products Export Development Authority (MPEDA) and the Central Institute of Fisheries Technology. The SAT supervises the actions of the EIAs in order to verify that the monitoring system is effective and implemented uniformly throughout India. Major deficiencies observed during monitoring by staff of the EIAs or SATs are reported to the EI Council which takes action against the processing establishment. It is on the basis of these mechanisms that the competent authority issues to the Indian seafood industry approval for exports to the EU and produces the approved list of exporters.

8 Exports to China

In terms of quantity of exports China is by far the most important market accounting for over 40% by volume but only 12% of value. Exports to China consist primarily of frozen finfish – particularly ribbon fish. (see Figure 6.) The Chinese market is able to absorb more or less any products as long as it is cheap enough. The export of high volumes of low value products to this market is therefore the norm.

Figure 6 - Volume of Exports to China by product - 1998

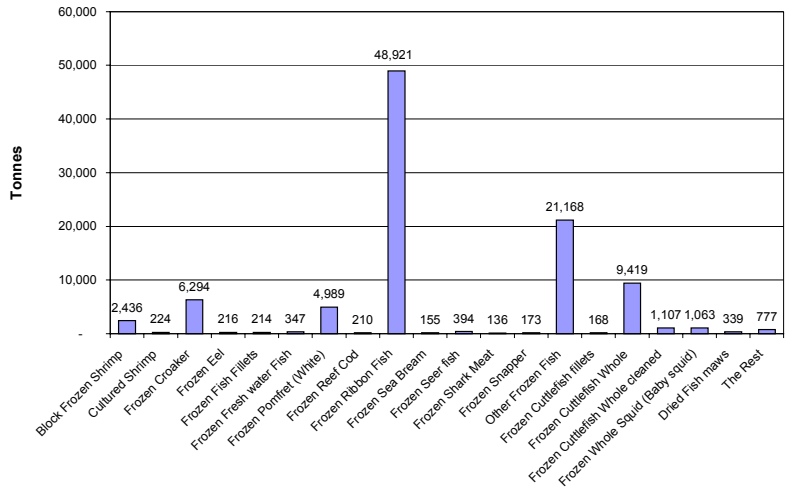
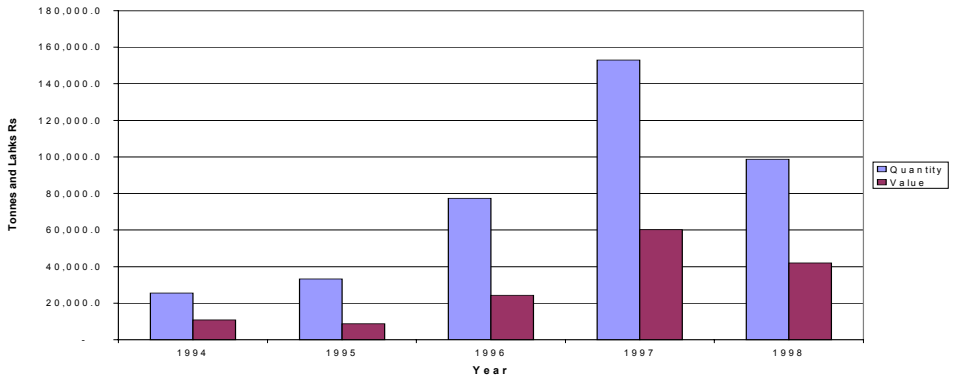


Figure 7 - Exports to China by Year



MPEDA export statistics (MPEDA 2000) show that exports have grown in recent years from 25,699 tonnes worth 10,800 lakh Rs in 1994 to 153,000 tonnes in 1997 and just under 100,000 tonnes in 1998. (see Figure 7).The drop in exports in 1998 is probably attributable to the tightening of controls imposed by the Chinese authorities in response to the grey market trade in fishery products referred to below.

The MPEDA export statistics referred to above show great differences when compared with the import statistics from India provided by the Chinese authorities.

This disparity between export statistics from India to China and import statistics into China from India make it very difficult to draw firm conclusions regarding the size of the trade. The statistics on the fish trade are issued from official sources by the FAO supported organisation known as INFOYU (INFOFISH in Chinese) (INFOYU, 2000).

As has been discussed above the major export to China from India is frozen ribbon fish. Indian export figures indicate that nearly 49,000 tonnes of frozen ribbon fish were exported in 1998. The Chinese import statistics do not list ribbon fish as a separate commodity and so one must assume that they are included in the "other frozen fish" category. The figures for 1999 in Table 1 indicate that official imports from India for this category amounted to less than 4,000 tonnes. The inconsistency between the two figures (although from different years) probably reflects the dominance of grey imports into China discussed below. Indeed the Indian export statistics presented above show 21,000 tonnes under the MPEDA "other frozen fish" category adding to the confusion especially taking the ribbon fish and other fish export figures together (approximately 70,000 tonnes) which is over 10,000 tonnes more than the Chinese statistics show for all countries.

Table 1. "Other Frozen fish" imported into China in 1999

Classification	Country	Quantity (tonnes)	Value (US$)	US$/ tonne
Other Frozen Fish	Norway	10,555	12,761,274	1,209
	Iceland	3,834	5,742,254	1,498
	New Zealand	4,774	3,333,930	698
	Japan	3,285	3,297,837	1,004
	Russia	3,735	3,137,282	840
	South Korea	2,946	2,053,548	697
	Netherlands	3,160	2,699,109	854
	Hong Kong SAR	4,212	2,042,229	485

India	3,981	1,856,490	466
USA	1,945	1,436,055	738
UK	1,462	1,274,285	872
Thailand	1,534	1,062,228	692
Spain	591	918,128	1,554
Mauritius	1,198	883,357	737
Denmark	1,246	831,976	667
Korea Rep	3,860	766,624	199
Australia	892	651,466	730
Indonesia	1,311	628,823	480
TOTAL	59,692	50,425,028	845

Source: (INFOYU, 2000)

The table indicates the main competitors for Indian exporters as being to China come from developed fishing nations such as Norway, Iceland New Zealand Japan and Russia. It is unlikely that the products listed as under this "other frozen fish" category and coming from these countries is frozen ribbon fish. However the size of the Chinese market is such that it is possible that white fleshed fish such as ribbon fish competes with many other fish in the market from both tropical and temperate waters. It can be seen however that the unit value of the fish imported from India is only about one third of that from Norway and Iceland.

Apart from “official” exports there are reported to be grey imports into the country through southern China. Import tariffs on seafood in the late 1990s were set at 20-30% plus a 17% value added tax. This made it attractive to import “illegally” thus avoiding these high duties. One way of doing so was for importing companies to purchase quotas for catches from international waters which have no duties payable and then use the quotas against imports purchased on the world market rather than caught by their vessels. The size of this grey market is indicated by the fact that in 1997 Chinese customs data indicated that 850,000 tonnes of seafood were imported whereas large traders and fisheries estimate that imports were nearer 1.5 million tonnes. In the case of exports from India to China MPEDA figures put exports at 98,750 tonnes for 1998 whereas Chinese Customs Statistics (Anon 2000a) estimate only 7,279 tonnes for the same year – a 13.6 fold difference. In order to try to stem the flow of unofficial imports the Chinese authorities instituted a crack down in April 1998, tightening currency controls and regulation of duty free imports. This had the effect of making payment of foreign suppliers much more difficult and resulted in Indian exporters being left in the lurch with non payment for exports. In order to regularise proceedings and to encourage legal imports the Chinese authorities announced a 50% across the board tariff reduction for seafood in January 2000.

8.1 Chinese Regulations

In order for fish imports to be made the products may have to be inspected by one or more of the following bodies:

China Commodity Inspection Bureau checks products for quality, weight and quantity.

China Animal and Plant Quarantine are concerned with the health and sanitation of the imported products

Health Inspection Bureau will test for various problems as well as labelling issues for imported processed products.

Once these inspections have been cleared the China customs impose the relevant tariff (based on the value) and once cleared through customs the goods will be free for marketing and distribution.

It is apparent that these "end-product" at import inspection methods are designed to control the quality and safety of food products rather than the more "process control" methods now used for imports to the other main markets for Indian seafood.

Whether the grey imports referred to above are subjected to the same system is unclear. It is probable that the vast majority of imports into China from India not only by-pass the regularised customs systems but also the food safety checks that supposedly regulate the imports.

9 Exports to Japan

Export of fish and fishery products to Japan account for 17% of Indian exports by volume and over 40% by value. This indicates that the products are generally of high unit value and are dominated by frozen prawns both from marine sources and aquaculture. This contrasts starkly with the exports to China where the percentage figures are more or less reversed. The volume of exports to Japan over the last decade has more or less doubled, but the value in Rupee terms has risen from 34,566.0 lakh Rupees in 1990 to over 237,000 in 1998. In 1998 MPEDA statistics (MPEDA 2000) indicate that the volume of exports reached 65,568 tonnes. (see Figure 8.)

The exports to Japan are dominated by frozen shrimp, which the MPEDA statistics divide into block frozen and cultured shrimp. Block frozen shrimp account for approximately 50% (32,000 tonnes) of the overall total with the cultured shrimp accounting for another 30% (20,000 tonnes). (see Figure 9.) This dominance of one type of export to the Japanese market could make the Indian exporters very vulnerable to changes in the Japanese market both in economic and legislative terms. Indeed there are indications that seafood imports were affected by the downturn in the Japanese economy in recent years.

Competition with other importers into the Japanese market could also be a factor in sustainability of the trade. Japanese import statistics do not disaggregate frozen shrimp/prawn into the sub categories given by MPEDA statistics. The import statistics from Japanese sources (Anon 1999) for 1998 and 2000 are given in Table 2. These show that India and Indonesia share top spot in the league table of imports, each contributing about 20% of the trade in terms of volume. Thus the trade with India in frozen shrimp/prawns plays an important role in the viability of Japanese importers. It can be seen that the unit price of Indian imports in 2000 was 1,170 yen/kg. This is lower than both Indonesian unit prices (1,375yen/kg) and Thai unit prices (1,606yen/kg) indicating perhaps that Indonesia and Thailand export products with greater added value a reflection of their longer established place in this market. It can be seen from the figure of export commodities from India to Japan that Individually Quick Frozen (IQF) shrimp exports only amounted to 187 tonnes in 1998 again a reflection perhaps of the lack of value addition amongst Indian exporters. Of the

other major exporters of tropical frozen prawns to Japan, Vietnam and China have unit prices below the 1,000yen/kg mark whereas Australia has a figure nearing 2,000yen/kg.

Table 2 - Japanese imports of shrimp products (1998 and 2000)

Commodity	Year Country	2000 Quantity (kg)	2000 Value (Yen x 1000)	1998 Quantity (kg)	1998 Value (Yen x 1000)
Shrimp and Prawn Frozen	TOTAL	246,627,293	297,937,967	238,906,122	336,911,589
	India	50,005,233	58,551,388	50,410,926	71,523,809
	Indonesia	49,795,278	68,492,813	53,692,746	86,764,255
	Vietnam	33,098,442	32,753,970	26,697,082	28,920,380
	Thailand	18,650,672	29,958,304	17,778,818	33,410,106
	China	16,545,367	15,188,004	12,141,230	10,218,201
	Greenland	9,845,054	7,131,027	10,015,428	8,625,153
	Canada	9,224,111	7,625,570	10,278,107	9,191,876
	Russia	8,008,076	9,192,182	4,149,226	4,898,660
	Australia	5,282,242	10,265,405	5,641,366	10,246,695
	Argentina	3,503,115	3,825,279	1,829,936	2,297,420
	Ecuador	2,609,198	4,141,220	4,554,397	6,880,452

Source: (Anon, 1999)

The next most important export to Japan is surimi, a product produced from a mixture of fish often of low market value. Surimi is however an important raw material for production of Japanese value added products. In spite of anecdotal reports that the Indian industry has had difficulties in obtaining raw material supplies and that Indian surimi plants are running at less than full capacity, as far as the Japanese imports are concerned, India seems to play an important role. As can be seen from Table 3 Thailand is far and away the most important supplier accounting for about 80% of the imports in 2000. However India is the second most important source with about 15% of the trade. Since Japan is more of less the only market for surimi it is important for the Indian companies involved in this trade to maintain their market with Japan.

Table 3 Japanese imports of surimi (1998 and 200)

Commodity	Year Country	2000 Quantity (kg)	2000 Value (Yenx1000)	1998 Quantity (kg)	1998 Value (Yenx1000)
Surimi	Thailand	40,689,256	7,702,454	31,166,585	6,331,535
	India	7,436,010	1,362,873	3,374,759	620,534
	Indonesia	1,178,460	160,703	599,540	111,641
	Myanmar	355,760	55,864	163,080	32,290
	Viet Nam	39,140	7,578	191,420	52,426
	Malaysia	24,420	3,849	95,940	16,981
	China	1,800	4,145	4,540	958
	Taiwan	-	-	14,000	1,820
	Hong Kong	-	-	747,360	196,108
	TOTAL	49,741,046	9,297,466	36,365,344	7,365,579

Source: (Anon, 1999)

9.1 Japanese Regulations

Standards for imports of fish and fishery products into Japan are governed by the legislation set out in the Food Sanitation Law and the Quarantine Law. The laws prohibit *inter alia* the imports for sale of unsanitary foods, foods not conforming with prescribed specifications of composition, standards of manufacture and storage. The consignments may be checked for signs of decomposition such as rotten smells and the level of total basic nitrogen as well as for the presence of foreign matter, and that they conform to particular microbiological standards. They are also checked for the presence of contaminants such as antibiotic residues, mercury, pesticides etc. (Ramamurthy K, 1990)

Under the quarantine law, notification of import must be made prior to import to the director of the quarantine station at the port of import. The sanitation inspectors of these quarantine stations examine food destined for import. This inspection may involve on the spot checks of the goods themselves and laboratory tests if deemed necessary. Ideally import notification should be made 7 days prior to the arrival of the cargo or else immediately on arrival into the bonded area. If repeated imports by the same manufacturer are to be made importers may submit an import plan to the authorities on the occasion of their first import and if no problems are found subsequent imports may be exempted from import notifications.

In this way it is possible for manufacturers to obtain a waiver from repeated inspection where the same product is imported repeatedly and also to register their company and products so that all that is usually required at import is examination of documentation. In the case of most frozen food stuffs these arrangements are made on a yearly basis from the day of first notification. The general principles of this pre-certification system for imported products are outlined in the "Seafood Export Journal" of December 2000 (Anon, 2000b).

If a cargo has been inspected by an official laboratory in the exporting country for certain conditions and the inspection results are attached to the import notification, the cargo may be exempt from further inspection at the import quarantine station (this does not include conditions such as microbiological changes that might occur during transport and storage). In practice it appears that exports from India can and often are analysed for the presence of antibiotics and pesticide residues prior to export and the certificates of inspection submitted to the Japanese authorities along with the import notification. This obviates the need for inspection and testing for these contaminants at the port of import.

Further information and details of regulations governing the import of seafood into Japan can be found in the following publications available for down loading from the Japanese External Trade Organisation (JETRO) website <http://www.jetro.go.jp/>

1. Food Sanitation Law - March 1999
2. Procedures for Importing Foods and other related products into Japan - Under the Foods sanitation Law - March 1999
3. Handbook for Agricultural and Fishery Products Import Regulations - October 2000

Figure 8 - Exports to Japan 1990 - 1998

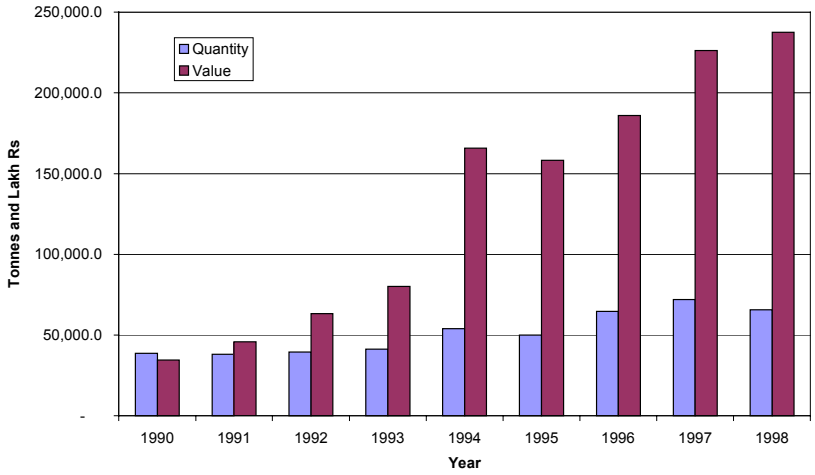
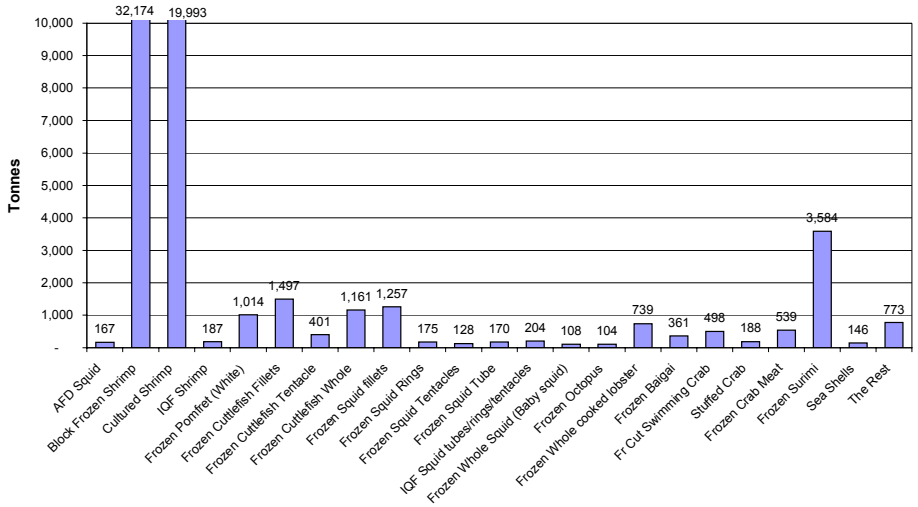


Figure 9 - Volume of Exports to Japan by commodity - 1998



10 Exports to the USA

Exports to USA account for approximately 10% by volume and 20% by value of total Indian exports of fish products. The value of the exports has risen steadily over recent years indicating a rise in unit value of the exports based on a relatively stagnant quantity of exports (see figure 10.) This may be a reflection of changes of types of fish exported, higher value addition for US exports or a general increase in market prices over the relevant years.

Figure 11 shows that of the 35,500 tonnes exported in 1998 nearly 12,000 tonnes was block frozen shrimp this, along with a further 7,000 tonnes of other shrimp products, indicates the high demand for shrimp products in the USA. In addition cephalopod products (mainly value added squid products) contribute a further 7,000 tonnes to the total. Of the other products frozen seer fish at nearly 5,000 tonnes also plays an important role.

Figure 10 - Indian Exports to USA by Year

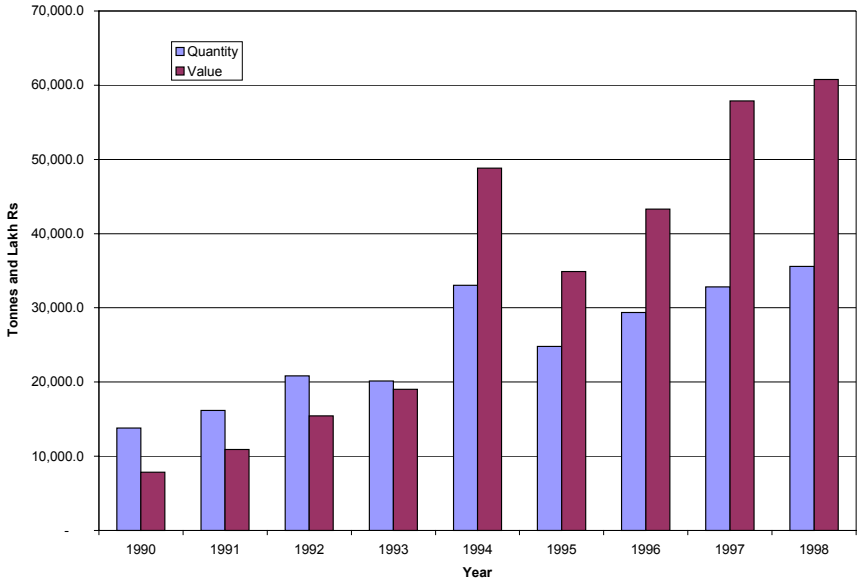
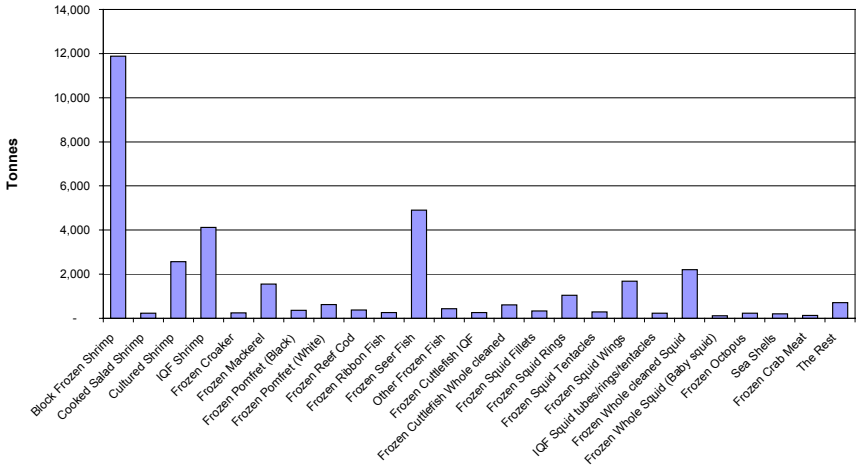


Figure 11 - Quantity of Export to USA by commodity - 1998



American import statistics (National Marine Fisheries Service, 2001) allow further analysis since they are disaggregated still further. In particular, the imports of shrimp products are broken down into a range of products by size and type of preparation as shown in table 4.

Table 4 below gives details:

Table 4 - Shrimp Imports to USA (1998)

Product	Weight (tonnes)	Value (1000 $)	Unit value ($/kg)
Shrimp canned	7	105	15
Shrimp Frozen Other Preparations	2,583	16,719	6
Shrimp other preparations	17	475	28
Shrimp peeled Fresh/Dried/Salted/Brine	81	2,344	29
Shrimp Peeled Frozen	10,618	42,193	4
Shrimp Shell-on Frozen <15	858	13,253	15
Shrimp Shell-on Frozen 15/20	1,490	23,677	16

Shrimp Shell-on Frozen 21/25	1,374	19,697	14
Shrimp Shell-on Frozen 26/30	790	9,733	12
Shrimp Shell-on Frozen 31/40	841	7,405	9
Shrimp Shell-on Frozen 41/50	458	3,312	7
Shrimp Shell-on Frozen 51/60	314	2,008	6
Shrimp Shell-on Frozen 61/70	224	1,247	6
Shrimp Shell-on Frozen >70	296	1,471	5
TOTAL Shrimp Imports	19,951	143,639	

Source: (National Marine Fisheries Service 2001)

It can be seen that over 50% of the shrimp imported into the USA in 1998 was peeled frozen product of low unit value (4$/kg). In 1998 the total import quantity for peeled frozen shrimp into the US market amounted to 119,250 tonnes indicating that India contributed approximately 9% of these imports. The other major importing countries for 1998 were Thailand with over 27% of the market, Ecuador with 20% with Peru and China both contributing 4.5% and 4.8% respectively.

It can be seen that block frozen products sorted by size and frozen shell on can fetch four times the price of the peeled frozen products. The figures show that over 6,600 tonnes of sorted shell on blocks were sold into the US market from India with the larger specimens fetching prices of up to $16/kg.

India exports a variety of squid products to the USA. The MPEDA export statistics show frozen squid fillets, rings, tentacles, wings, whole baby and whole-cleaned squid as well as IQF products. The total amount exported for 1998 equals 5,900 tonnes of which whole cleaned squid, squid rings and wings dominate. The import statistics for squid products into America disaggregate the group in a different manner however concentrating on species descriptions rather than product types as can be seen from the Table 5.

Of the eight squid products listed by far the most important is Squid NSPF Frozen/Dried /Salted/Brine at nearly 3,000 tonnes in 1998. The trade statistics show that the total imports in the category from all countries was 28,093 tonnes indicating that India has over 10% of the US market. The other major supplies of this product to US markets in 1998 were, China (28%), Taiwan (22%), South Korea (16%), Uruguay (10%) and Thailand (4%).

Table 5 - Squid Imports to USA (1998)

Product	**Weight (tonnes)**	**Value (1000 $)**
Squid (Loligo NSPF) Frozen/Dried /Salted/Brine	455	914
Squid (Loligo NSPF) Live/Fresh	19	43
Squid (Loligo opalescens) Frozen/Dried /Salted/Brine	662	2,413
Squid (Loligo pealei) Frozen/Dried /Salted/Brine	144	514
Squid NSPF Fillet Frozen	126	302
Squid NSPF Frozen/Dried /Salted/Brine	2,959	6,764
Squid NSPF Live/Fresh	123	247
Squid NSPF Prepared/Preserved	15	53
	4,503	12,250

Source (National Marine Fisheries Service 2001)

US import data indicate that the total for all squid products in 1998 was 37,810 tonnes with a value of $78.2 million. India's share of this market is 11.9% by weight and 15.7% by value indicating that it is a major contributor to the industry and that the unit value of its products are above average

10.1.1 American Regulations

Imports into the USA are regulated under the Federal Regulations often referred to as 21 CFR 123. Guidance for the interpretation of these regulations can be found on the US FDA Centre for Food Safety and Applied Nutrition web site - www.cfsan.fda.gov. (USFDA, 2001)

These regulations apply to domestically produced products and imports. They require that processors of fish and fishery products operate preventive control systems that incorporate the seven principles of HACCP. This involves processors producing HACCP plans and making them available for "official review and copying at reasonable times". The essence of the regulations is that the purchaser/importer of the products should be able to demonstrate to the authorities that the products have been produced in a safe and acceptable manner. This implies that the producers are using a quality assurance system that incorporates HACCP, standard sanitary operating procedures and good manufacturing practices. The sanitary procedures which are needed to ensure that the products meet the requirements for production are often referred to as Standard Sanitation Operating Procedures (SSOP).

The Food and Drugs Administration (FDA) is the main regulating agency in the United States and provide guidance and assistance to the industry to comply with the regulations. There are essentially two ways in which importers may verify their obligations under the regulations.

- Firstly they may obtain products from a country which has an active equivalence or compliance agreement with the FDA covering fish and fishery products. The FDA is actively pursuing Memoranda of Understanding with seafood trading partners. Under such an agreement the FDA has determined that the government of the foreign country is operating a food safety regulatory system for seafood that ensures that the product exported to the United States satisfy US safety concerns. Thus, these MOU will put the burden of foreign processors HACCP verification and other quality assurance means with the foreign government. Although India has yet to negotiate such an understanding active steps are being taken by the Government of India to finalise agreements with the US FDA to come to similar agreements as to those finalised with the European Union.(Anon 2001)

- The second means of verification where no agreement exists with the country of origin (as is the case at present with India) is that importers take their own "affirmative steps" to ensure that their suppliers are processing in accordance with the regulations. The regulations do not mandate what the affirmative steps might be but give examples which might include certification on a lot by lot or continuing basis from a competent and independent private party or from the appropriate foreign government inspection service. The verification that imports are compliant rests with the importer. The importers specifications must declare the limits for criteria which compromise the safety of the product and have written verification that affirmative steps are taken by the foreign exporter. In essence this

requires that the exporter has a HACCP programme which is adequate to address the hazards that are likely to affect the product and that the HACCP plan and sanitary procedures are being implemented consistently. The FDA enforces the HACCP requirements by examining products at point of entry and they have the power to inspect the importer's place of business to review the product specifications and records are in order. If a foreign processor is discovered by the FDA to not be implementing HACCP an "import alert" can be issued and shipments of product from the processor concerned can be blocked until HACCP has been effectively implemented.

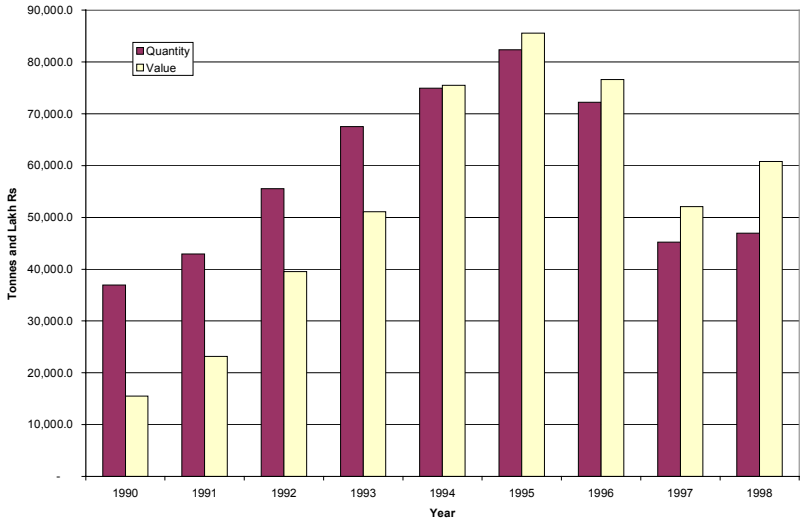
Some inspection authorities are producing lists of processors that are in good standing with those authorities and producing in accordance with US requirements. These lists if kept up to date may be used as a means of verification for importers that products are being produced in accordance with the regulations.

11 Exports to the European Union

The European Union as a trading group accounts for approximately 15% of the volume and value of seafood exports from India.

As can be seen from Figure 12, exports to the European Union grew considerably during the early 1990s, doubling between 1990 and 1994 in terms of quantity and their value increasing by about 5 times. The ban on exports imposed by the EU in 1997 had a dramatic affect on exports in that year. The recovery of exports in 1998 can be seen as the industry reacted to the needs imposed by the Union and the government brought its inspection and approval systems for exports in terms of food safety in line with the perceived requirements of the EU. The micro effect that this ban and previous restriction by the EU had on fishing communities and the industry in India is to be the subject of study conducted by this project so will not be covered here. However the macro effect can be clearly seen from these figures. It is also worth noting that in 1997 when EU exports dropped there was a rise in exports to all three other major markets (China, Japan and the USA) possibly reflecting a diversion of product to these markets and the exploration of new opportunities by the India industry.

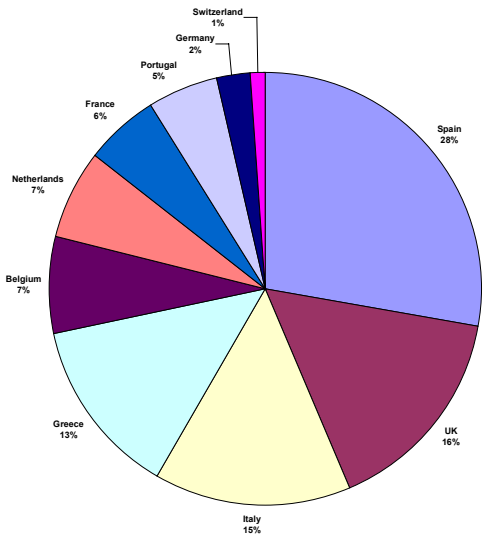
Figure 12 - Exports to the EU by year



The exports to the EU are concentrated in just a few of the 15 countries presently members of the Union. As Figure 13 shows they are dominated by Spain which accounts for about 28% of the exports followed by the United Kingdom Italy and Greece. These four countries between them account for 72% of the exports. The fact that once products enter the EU they have free movement across borders means, of course, that the country of export from India does not necessarily reflect the country of eventual consumption of the goods. However the composition of the exports does seem to reflect the culinary/eating preference of the various countries.

Appendix 1 provides a break down of quantities by product type exported to the top ten countries in the EU in 1998. It can be seen that exports to Spain and Greece are dominated by cephalopod products (cuttlefish, squid and octopus). For the United Kingdom the main export is block frozen shrimp and exports to Italy include substantial proportions of both block frozen shrimp and cephalopod products.

Figure 13 -Quantity of Exports to EU countries in 1998



11.1 European Regulations

In order to be allowed to export to any of the European Union members the system requires that the country from which the exports are made has to, in effect, be licensed to do so by the EU. Once the licence has been agreed the individual export country has to apply to the country from which it is exporting for permission to do so. This two tier system in effect means that the EU delegates authority for implementation and enforcement of its food safety legislation to the authorities of the exporting country though the appointment of a "competent authority".

The main directive under which the competent authority operates is Council Directive of 22 July 1991 – 91/493/EEC – "Laying down the health conditions for the production and the placing on the market of fishery products". This directive applies to all products destined for the European market and applies equally to domestic and third country products.[4] Article 10 of this directive states that "Provisions applied to imports of fishery products from third countries shall be at least equivalent to those governing the production and placing on the market of Community products". In addition the directive states that "…products from third countries intended to be placed on the market of the Community must not qualify for more favourable arrangements than those applied in the Community…., provision should therefore be made for a Community procedure for inspection in third countries of the conditions for production and placing on the market in order to permit the application of common import system based on conditions of equivalence." (Fleury 2000)

Apart from the main text published in 1991 there are a number of complementary texts which expand upon and clarify the main directive. These include:

- Directive 92/48 concerning minimum hygiene rules on board fishing vessels
- Decision 94/356 to implement on check systems (HACCP)
- Decision 93/140 concerning parasites
- Decision 93/351 concerning maximum levels of mercury
- Decision 95/149 concerned with levels of Total Volatile Bases for certain species
- Decision 93/51 concerned with microbiological criteria for cooked crustacea and molluscs

Therefore the provisions require that the Indian authorities implement a system of regulation that satisfies the EU that fishery products destined for EU markets pose no more of a risk to the consumer than those produced within the Union. But the responsibility for ensuring that this is so is delegated to the Indian authorities. In the case of India this authority is vested in the Export Inspection Agency of the Export Inspection Council. Both EU directives above and the US FDA regulations require that the export industry implement systems of quality assurance that incorporate Hazard Analysis Critical Control Point (HACCP).

Moves are now being made within the EU to bring the legislation for the production of all food products under one directive and to extend the scope of the legislation to

[4] In addition to this major directive there is a similar directive (91/492/EEC), laying down the health conditions for the production and placing on the market of live bivalve molluscs. Since the Indian trade is not involved in trade in live bivalves this is not of concern in this paper.

cover not just the main processing functions but all the steps from the primary production to the consumer. This is known as the "farm to fork" principles. This legislation will supersede the individual commodity based directives referred to above. The result for exporting countries will be that all the steps in the chain from primary producers (fishermen and aquaculture units) will need to take on board in a more structured manner the principles of HACCP and other quality assurance needs thus broadening the scope of the competent authority in regulating the industry. The need to ensure that quality assurance measures are instituted prior to arrival at the processing factory gate will pose a major challenge to the Indian export industry and the small scale and non-industrialised sectors of the industry. Of even greater concern might be the fact that in order for the farm to fork principle to be seen to be working a system of traceability of products throughout the chain will need to be instituted. This will require that each person in the chain will be able to demonstrate that they know where the product has come from and where it has gone. A paper trail will thus be required tracking the movement of product. Where small quantities of product are consolidated into larger batches from, say, traditional fishermen to purchasers at landing points this could present particular problems as mixing of batches will mean that particular raw material supplies cannot be traced back to source. The knock-on effects that this might have on poor producers are yet to be ascertained.

12 Exports to Gulf States

It can be seen from Figure 3 that exports from India to the United Arab Emirates (UAE) are fourth in order of importance both in terms of value and quantity. Over 17,800 tonnes were exported here in 1998. This hides the fact that an estimated 60% of all food imports in to the UAE are re-exported to other destinations (Gulf Cooperation Council 2001). These include neighbouring countries within the Gulf Cooperation Council.

Figure 14 - Exports to UAE

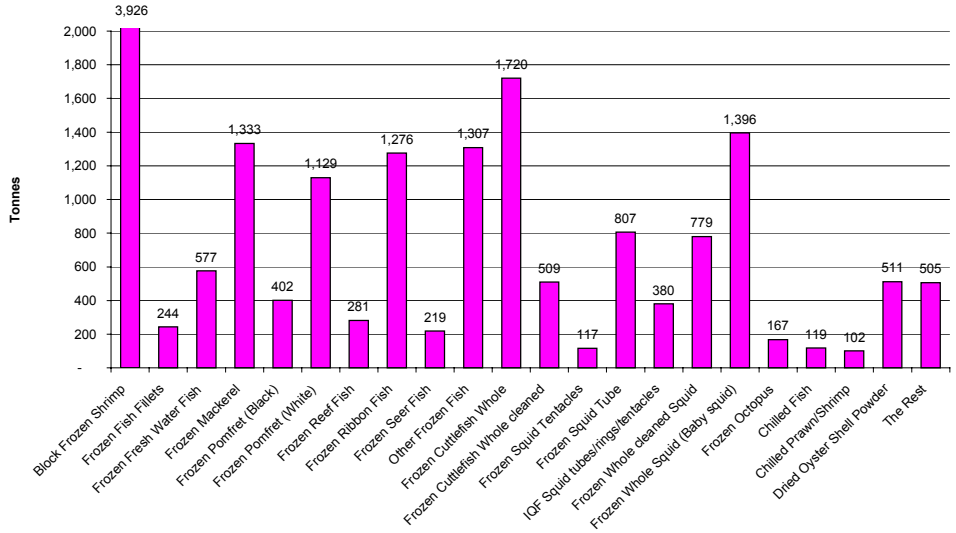


Figure 14 indicates the main export items to the UAE which although Block frozen Shrimp constitute about 22% of the total there is a spread of other items including a range of cephalopod products (squid and cuttlefish) which make up 33% of the total. It is reported[7] that many companies import large volume shipments into the UAE where they are broken down and consolidated into mixed containers for re-export to

other markets. In fact, because of the excellent port and communications facilities, several major retail and fast food companies have established their central purchasing operations in UAE.

Apart from the UAE the only other Gulf State that to which India exported more than 500 tonnes in 1998 was Bahrain with a total of 812 tonnes.

The Gulf Cooperation Council (GCC - 5) consists of Bahrain, Kuwait, Oman, Qatar and the United Arab Emirates. The GCC - 5 is a free trade oriented organisation with few trade barriers between members. Import duties for most food products are minimal with 0% for Kuwait and UAE (1995). In 1995 it is reported that Kuwait was considering imposing a 4-8 % duty. The fact that import duties to UAE were less than other members of the Council may explain its dominance as an export destination for Indian exporters. In addition UAE allows "English only" labelling of products whereas other countries in the region require product to be labelled in Arabic.

For the import of food stuffs into the UAE, products must be accompanied by a health certificate from the country of origin. It is planned that there will be harmonised import requirements across the GCC thus easing imports. Whether this will include moves towards a process approach to quality assurance is not known.

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FURTHER READING

Many articles relevant to the subject of this paper can be found in the paged of the Seafood Export Journal the official journal of the Seafood Exporters Association on India.

Further information of EU directives and developments can be found on the EU website.

APPENDIX 1

Indian Exports to EU countries taking more than 500 tonnes of product in 1998. Listing products of more than 100 tonnes

COUNTRY	TOTAL TONNES	COMMODITY	TONNES
Spain	12,958	Frozen Cuttlefish Whole cleaned	4,671
		Frozen Cuttlefish Whole	2,469
		Frozen Whole Squid (Baby squid)	2,274
		Frozen Whole cleaned Squid	1,052
		Frozen Cuttlefish IQF	670
		Frozen Octopus	363
		Block Frozen Shrimp	354
		IQF Shrimp	333
		Frozen Squid Tube	193
		IQF Squid tubes/rings/tentacles	155
		Frozen Fish Fillet	106
		The Rest	318
		Total	12,958
UK	7,370	Block Frozen Shrimp	5,218
		Other Frozen Fish	279
		Frozen Cuttlefish Whole cleaned	241
		Frozen Seer Fish	191
		Frozen Whole cleaned Squid	157
		IQF Squid tubes/rings/tentacles	143
		Cultured Shrimp	128
		Frozen Squid Rings	127
		Frozen Cuttlefish Whole	121
		Frozen Cuttlefish IQF	107
		The Rest	658
		Total	7,370
Italy	6,880	Block Frozen Shrimp	1,576
		Frozen Cuttlefish Whole cleaned	1,370
		Frozen Squid Rings	769
		Frozen Cuttlefish IQF	636
		Frozen Octopus	406
		IQF Shrimp	387
		Frozen Squid Tentacles	340
		Frozen Whole Cleaned Squid	263
		IQF Squid tubes/rings/tentacles	175
		Frozen Reef Cod	131
		Frozen Cuttlefish Tentacle	121
		Frozen Whole cooked lobster	119
		Other Frozen Fish	113
		Frozen Whole Squid (Baby squid)	113
		Frozen Cuttlefish Whole	112
		The Rest	249
		Total	6,880
Greece	6,177	Frozen Whole Squid (Baby squid)	2,323
		Frozen Whole Cleaned Squid	2,203
		Frozen Cuttlefish Whole cleaned	799
		Frozen Cuttlefish IQF	281

		Frozen Cuttlefish Whole	174
		Frozen Octopus	152
		The Rest	245
		Total	6,177
Belgium	3,455	Block Frozen Shrimp	2,180
		Frozen Squid Tubes	558
		Frozen Squid Rings	162
		Frozen Squid Tentacles	104
		The Rest	451
		Total	3,455
Netherlands	3,037	Block Frozen Shrimp	2,019
		Frozen Cuttlefish Whole cleaned	230
		IQF Squid tubes/rings/tentacles	189
		Frozen Cuttlefish Whole	113
		The Rest	486
		Total	3,037
France	2,635	Frozen Squid Tubes	647
		IQF Shrimp	476
		IQF Squid tubes/rings/tentacles	374
		Block Frozen Shrimp	230
		Frozen Squid Rings	223
		Frozen Squid Tentacles	177
		Frozen Reef Cod	156
		The Rest	352
		Total	2,635
Portugal	2,464	Frozen Cuttlefish IQF	567
		Frozen Cuttlefish Whole	480
		IQF Squid tubes/rings/tentacles	374
		Frozen Cuttlefish Whole cleaned	313
		Frozen Whole cleaned Squid	308
		IQF Shrimp	126
		The Rest	296
		Total	2,464
Germany	1,097	Block Frozen Shrimp	652
		Frozen Cuttlefish Whole cleaned	153
		The Rest	292
		Total	1,097
Switzerland	551	Chilled Fish	110
		The Rest	441
		Total	551