

**‘Globalisation and Seafood Trade Legislation:  
The effect on poverty in India’**

**A case study of Kerala State, India**

**South Indian Federation of Fishermen Societies,  
Trivandrum, Kerala**

## **Table of Contents**

<b>GLOSSARY OF TERMS</b> .....	<b>5</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>6</b>
<b>1. INTRODUCTION</b> .....	<b>11</b>
<b>2. BACKGROUND TO THE STUDY</b> .....	<b>11</b>
<b>3. STRUCTURE OF THE REPORT</b> .....	<b>11</b>
<b>4. A NOTE ON THE RESEARCH METHODOLOGY</b> .....	<b>12</b>
4.1 OBJECTIVES OF THE FIELDWORK .....	12
4.2 SELECTION OF RESPONDENTS .....	12
4.3 SITES FOR FIELDWORK.....	13
4.4 RATIONALE FOR SITE SELECTION.....	14
4.4.1 <i>Sites in the Ernakulam revenue district</i> .....	14
4.4.2 <i>Sites in the Kollam revenue district</i> .....	15
4.4.3 <i>Sites in the Thiruvananthapuram revenue district</i> .....	15
4.4.4 <i>Sites in the Alappuzha revenue district</i> .....	15
4.5 RESEARCH TOOLS USED.....	16
4.6 CONSTRAINTS .....	17
<b>5. THE GENERAL CONTEXT OF KERALA</b> .....	<b>18</b>
5.1 THE GEOGRAPHIC CONTEXT .....	18
5.2 THE DEMOGRAPHIC CONTEXT.....	18
<b>6. FISHERIES IN KERALA</b> .....	<b>19</b>
6.1 A NOTE ON FISHING METHODS IN KERALA .....	19
6.1.1 <i>Factors influencing choice of gear</i> .....	20
6.1.2 <i>Factors influencing choice of craft</i> .....	20
6.2 THE MECHANISED SECTOR.....	21
6.3 THE ARTISANAL SECTOR.....	22
6.3.1 <i>The motorised artisanal sub sector</i> .....	22
6.3.2 <i>The non-motorised artisanal sub sector</i> .....	22
6.3.3 <i>A note on artisanal fishing in Kerala</i> .....	23
<b>7. OVERVIEW OF MAJOR INSTITUTIONS RELATED TO FISHERIES</b> .....	<b>24</b>
7.1 OTHER INSTITUTIONS CONNECTED WITH THE FISHERIES SECTOR.....	26
7.2 FISHERIES RELATED GOVERNMENT BODIES AT THE STATE LEVEL .....	26
7.3 THE ROLE OF THESE INSTITUTIONS IN THE SEAFOOD EXPORT SECTOR.....	26
<b>8. MAIN SPECIES EXPORTED FROM KERALA</b> .....	<b>27</b>
<b>9. THE SEAFOOD EXPORT INDUSTRY IN THE CONTEXT OF KERALA</b>	<b>27</b>
9.1 OVERVIEW OF THE MAJOR STAKEHOLDERS IN THE SEAFOOD INDUSTRY .....	28
9.1.1 <i>The trawling industry</i> .....	28
9.1.2 <i>Aquaculture farming</i> .....	29

9.1.3	<i>The peeling shed industry</i> .....	35
9.1.4	<i>The processing/exporting industry</i> .....	35
9.1.5	<i>Other categories involved in the export industry</i> .....	37
9.1.6	<i>Other allied industries</i> .....	38
<b>10.</b>	<b>THE POOR WITHIN THE SEAFOOD INDUSTRY IN KERALA</b> .....	<b>40</b>
10.1	TRAWLER CREW .....	41
10.2	OWNERS OF ARTISANAL FISHING CRAFT AND GEAR.....	41
10.3	WORKERS IN PEELING SHEDS AND HOUSE PEELERS .....	42
10.3.3	<i>The peeling shed industry in the Aroor Chandrur belt</i> .....	43
CASE STUDY 3	<i>- The typical peeling shed</i> .....	46
CASE STUDY 4	<i>- The peelers of Neendakara Shaktikulangara</i> .....	47
10.3.4	<i>CASE STUDY - Local action against pollution</i> .....	48
<b>11.</b>	<b>PROBLEMS FACING THE KERALA SEAFOOD INDUSTRY</b> .....	<b>49</b>
11.1	SCARCITY OF RAW MATERIAL.....	49
11.2	CARTELISATION IN THE PROCESSING INDUSTRY .....	51
11.3	OVERCAPACITY .....	51
11.4	CHANGING STANDARDS.....	52
11.5	UNREASONABLE QUALITY REQUIREMENTS (TECHNICAL BARRIERS TO TRADE).....	53
11.6	LACK OF CONTROL OVER THE INITIAL STAGES OF THE MARKETING CHAIN .....	53
<b>12.</b>	<b>THE EU BAN</b> .....	<b>55</b>
12.1	EVENTS AFTER THE BAN .....	55
12.2	THE IMMEDIATE IMPACT OF THE EU BAN .....	55
12.2.1	<i>The impact on Kerala</i> .....	56
<b>13.</b>	<b>THE PERCEPTION OF QUALITY</b> .....	<b>61</b>
13.1	QUALITY AT THE FINAL PROCESSING LEVEL .....	62
13.2	QUALITY AT THE LEVEL OF PEELING SHEDS.....	62
13.3	QUALITY AT THE LEVEL OF THE FISHING HARBOURS AND VESSELS .....	63
<b>14.</b>	<b>IMPLEMENTATION OF EU LEGISLATION</b> .....	<b>63</b>
14.1	IMPLEMENTATION AND ENFORCEMENT AT THE LEVEL OF PROCESSING UNITS... ..	63
14.1.1	<i>NOTE – Why peelings sheds are difficult to get rid of</i> .....	65
<b>15.</b>	<b>POTENTIAL IMPACT OF INTERNATIONAL LEGISLATION</b> .....	<b>66</b>
15.1	POTENTIAL IMPACT ON THE PEELING INDUSTRY .....	66
15.2	POTENTIAL IMPACT ON ICE PLANTS .....	68
15.3	POTENTIAL IMPACT ON THE TRAWLING INDUSTRY .....	68
<b>16.</b>	<b>THE CHALLENGES OF PRESENT REGULATIONS</b> .....	<b>68</b>
<b>17.</b>	<b>CAPACITY TO COMPLY WITH FUTURE INTERNATIONAL SEAFOOD LEGISLATION</b> .....	<b>69</b>
<b>18.</b>	<b>CONCLUSION</b> .....	<b>69</b>
	<b>REFERENCES</b> .....	<b>71</b>

### **List of graphs**

Graph 1: Comparison of shrimp aquaculture productivity in AP, Kerala and Orissa.	31
Graph 2: Trends in landings of export species in Kerala .....	50

### **List of Tables**

Table 1: Sites covered as part of the fieldwork .....	14
Table 2: Research tools used .....	16
Table 3: Distribution of fishing craft and main fishing gears in Kerala .....	23
Table 4: Item wise export of marine products from Kerala .....	27
Table 5: Comparison of farm sizes across Kerala, AP & Orissa .....	30
Table 6: Comparison of per hectare productivity (in tonnes) .....	30

## **GLOSSARY OF TERMS**

AP	Andhra Pradesh
BF	Block frozen
CMFRI	Central Marine Fisheries Research Institute
C	Celsius
Crone	10,000,000
CIFT	Central Institute of Fisheries Technology
CMS	Catalyst Management Systems
CUST	Cochin University of Science and Technology
DFID	Department for International Development
EU	European Union
FAO	Food and Agriculture Organisation
FGD	Focus Group Discussion
GPS	Global Positioning System
HACCP	Hazard Analysis of Critical Control Points
HDI	Human Development Index
ICM	Integrated Coastal Management
IQF	Individually quick frozen
Lakh	100,000
MPEDA	Marine Products Export Development Authority, India
NRI	Natural Resources Institute
PD	Peeled and deveined
PPA	Participatory Poverty Assessment
PUD	Peeled and undeveined
Rs	Indian rupees
SEAI	Seafood Exporters Association of India
SIFFS	South Indian Federation of Fishermen Societies
USA (or US)	United States of America
WG	Whole gut

Exchange rate (as on 21/11/2002)

1 US Dollar = 48.3 Indian Rupees (taken to be 50 Indian Rupees for ease of calculation)

## **EXECUTIVE SUMMARY**

1. Kerala is one of the major maritime states in India accounting for 20.5% of the total marine fish landings in India in 1999 - 2000. The major species landed are oil sardine (14% by volume) and shrimp (13% by volume).
2. Kerala is also one of the prominent exporters of seafood from India. During 2000 – 01, Kerala accounted for 20.6% in volume terms and 16.0% in value terms of Indian seafood exports. The major export species from Kerala are shrimp (59% by value, 32% by volume), frozen cuttlefish (15% by value, 16% by volume) and frozen squid (13% by value, 17% by volume). Finfishes, which account for 28% by volume, are a relatively low value item accounting for just 9% of the total export value.
3. The EU is the main destination for seafood exported from Kerala with 33% of the volume (and 36% of value) during the year 2000 - 01 going to this market. Japan (11% by volume and 18% by value) and the USA (15% by volume and 22% by value) are the other major markets. South East Asia (mainly China), which accounts for 34% by volume accounts for only 16% by value, indicating that this market mainly buys lower value species such as frozen ribbon fish and frozen mackerel from Kerala.
4. The EU market has traditionally been the mainstay of the seafood export industry in Kerala. During the period 1995/96 – 2000/01, Kerala accounted for 47.6% by volume and 42.6% by value of the total Indian seafood export to the EU.
5. The EU has been and continues to be the main customer for most of the major seafood processors and exporters in Kerala. Kerala has lagged behind Andhra Pradesh (AP) in catering to the higher value markets of Japan and the USA. Buyers in Japan and the USA are said to have a preference for larger shrimp, which fetch a high price in the international market. However states like AP have been more successful than Kerala in tapping into these markets. The main reason is the lack of availability of large shrimp in Kerala. AP with its more extensive aquaculture industry is better supplied with the large high value variety of shrimp.
6. It is estimated that in Kerala around 10 lakh people depend directly and around 2 lakh people indirectly on the fisheries sector for their livelihood. A significant part of this population depends to varying degrees on the seafood export industry.
7. The seafood export industry in Kerala consists of various categories of players. Chief among them are artisanal fishermen, trawler crew and trawler owners, peeling shed owners and workers, the processing industry and those working in allied industries like transportation, ice plants etc.
8. Of the 48 processing plants that have EU approval 34 are situated in the Aroor – Chandrur – Munnambam belt in Kochi. Similarly, out of the 45 units, which

do not have EU approval, 35 are situated in this belt. Most of the registered peeling sheds in the state are also in this belt. A major reason for this level of regional seafood export activity is the presence of two major fishing harbours in the region, at Kochi and Vypeen. During the period 1999/00 – 2001/02, this region account for 81% of the total volume and value of the seafood processed in the entire Kerala state. Kochi is undoubtedly the nerve centre of the processing industry in Kerala. The other major centre for seafood export processing in Kerala is the Neendakara – Shaktikulangara region in Kollam revenue district.

9. There are no accurate estimates on the number of people who depend directly on this sector, but it is evident that significant numbers of people in certain pockets in Kerala (like the Aroor Chandrur Munnambam belt of Kochi) depend directly on seafood export related activity for their livelihood.
10. The livelihoods of the various players within the Kerala seafood industry are highly interrelated and anything that affects any one of the players will have its effects on all the others.
11. The peeling shed industry is allied to the processing industry and is entirely dependent on it for its survival. Traditionally, peeling sheds procured raw material such as shrimp, cuttlefish and squid, peeled the material and then sold it to processing plants, which in turn would process the material, pack and export. Traditionally peeling sheds were rudimentary establishments, which were mostly temporary or semi permanent in nature. Local women would work as peelers in these peeling sheds. Most of the women who work as peelers come from the economically weaker sections of the fishing community and income from peeling activity is important for their livelihoods. However, peeling is not the sole activity that is available to the women in these communities. Women from these communities also engage in fish vending, construction and also work as processors/sorters/graders/ packers at seafood processing plants.
12. Kerala has a large trawling industry, which is entirely dependent on fishing for export species such as shrimp, cuttlefish and squid. It is estimated that there are about 3,800-4,000 trawlers in the state employing around 30,000 fishermen as crew. Most of these fishermen come from the economically weaker sections within the fishing community. They work as crew as they do not own any fishing craft or gear and therefore do not have much control on the means of production. Fishermen, in general do not engage in non-fishing occupations. There are social and skill related factors, which prevent them from diversifying into other walks of life. This limits the employment opportunity of a fisherman especially one who does not have craft or gear. Thus the only alternate employment opportunity that most trawler crew have is to work as crewmembers in artisanal fishing crafts.
13. The trawling industry has been hit hard in recent years by declining catch quantities, rising fuel prices and the intense competition for the limited resources that are available. These factors have contributed to the declining income levels for trawler owners and trawler crew. Fish stocks in the inshore

have been severely depleted on account of indiscriminate and eco unfriendly fishing by the trawling industry. Trawlers are thus forced to venture deeper into the sea in search of new fishing grounds. This has forced an upgrading in trawler size and capacity and though the catches and incomes have been declining, new trawlers are being launched in the hope that they can better exploit any new deep sea fishing grounds.

14. The aquaculture industry in Kerala is entirely focussed on shrimp and is mainly export oriented. While the traditional method of shrimp filtration rotated with paddy cultivation has been practised in certain pockets in the state for a very long time, it was in the mid 1990's that modern methods of aquaculture were introduced in the state. Given the higher rate of productivity and other advantages such as larger and more uniform size of shrimp etc, many traditional farmers shifted entirely to the modern method. The industry was picking up when in 2000 the white spot disease hit resulting in large-scale losses to aquaculture farmers. Other issues including rejections by foreign buyers on account of the presence of antibiotic residues have also been a major problem.
15. Most farmers involved in aquaculture are relatively well off and are from outside the fishing community. Aquaculture is rarely the main source of income for these farmers and they generally have another business, which is their main income source. The role of the poor in aquaculture is minimal. It is mostly limited to providing labour for preparation of the field before the harvest, feeding the baby shrimp and harvesting the crop.
16. Kerala has lagged behind AP in aquaculture. This is particularly true in the area of per hectare productivity. In 1995/96, both states had a per hectare productivity of about 540 tonnes per year. By 2000/01, per hectare productivity in AP had increased to 746 tonnes, but the corresponding figure for Kerala was only 229 tonnes. Aquaculture shrimp production in Kerala fell from 9,000 MT in 1995/6 to 7,666 MT in 2000/01. AP on the other hand has increased its production from 27,140 MT to 67,615 MT during the same period. Shrimp aquaculture accounted for around 60% of the total Indian shrimp exports. Kerala's inability to keep pace in aquaculture has been a major reason why Kerala's contribution to all India seafood exports has been declining.
17. In 1997 the EU imposed a ban on shrimp imports from India and Kerala state was one of the worst affected. This was mainly due to the fact that most of the processing plants in Kerala were catering exclusively to EU markets. Within a short span of 4 months, six processing plants in Kerala upgraded their plants to meet EU standards and obtained licenses to export to the EU. At the time of the ban there was a sharp fall in beach prices of export species such as shrimp, cuttlefish and squid. After the ban was lifted on the six units that complied with EU norms the beach prices did not rise much. The market situation was that there were a large numbers of sellers and few buyers. This ensured that prices remained lower than the pre ban period. The early movers procured raw material at very cheap rates and tapped into the EU market. The other processing plants also followed suit and invested heavily in plant upgradation.



Over the next two years several plants obtained EU approval and re-entered the EU market. This resulted in increased competition for raw material, which drove up beach level prices. Beach prices today are higher than the pre ban price mainly on account of the increased competition and the raw material scarcity.

18. The EU ban had both a short-term direct impact and a long-term indirect impact on the peeling shed industry. The short-term impact was that overnight most of the processing plants, which are the sole customers of the peeling sheds, stopped purchases. Thus many peeling sheds found themselves without many of their traditional customers. The numbers of buyers fell sharply and competition among the peeling sheds for the limited market intensified. The ability to provide peeled material on credit to the processing plants emerged as a point of differentiation. Peeling sheds, which were able to provide material on liberal credit arrangements, were preferred. Thus the smaller sheds, which were unable to provide material on credit, were gradually pushed out of the industry. This led to a consolidation of sorts in the industry. There has been a decline in the number of peeling sheds in the aftermath of the EU ban. In place of the large number of individual small scale peeling sheds, there are now larger peeling sheds and peeling shed networks. Most of the small scale peeling sheds that currently operate work as sub contractors to the larger peeling sheds. The larger peeling sheds have been able to survive mainly on account of enlarging their raw material procurement base and the ability to provide peeled material on credit to processing plants.
19. The implementation of EU legislation regarding pre processing and processing of seafood has been varied at different levels of the industry. Since the number of processing plants are few and are required to be registered, there is a greater level of control that governmental bodies which are in charge of implementing legislation have over them. Processors complain that government officials have been too stringent in their interpretations of the EU directives and this has resulted in higher cost of plant upgradation. However a key aspect of the EU directives is that pre processing activity should be carried out on the same premises as the processing activity. The degree to which this aspect of the directive has been enforced is questionable. Many of the processing plants which supply the EU market continue to procure peeled material from independent peeling sheds in direct violation of this requirement of the directive. This is mainly because given the uncertain raw material supply situation and the dispersed nature of raw material availability, it is advantageous for processing plants to rely on the peeling shed industry to aggregate raw material and supply it to them. This reduces the cost of procurement and the risk attached to it (mainly the risk of spoilage) for the processing plants. EU approved processing plants have pre processing facilities attached to them. But in most cases these facilities are mere showpieces during plant inspections by the relevant authorities.
20. The fact that the peeling shed industry is still operational is itself testimony to the degree of implementation of EU directives. Not only are they functional (they should not be, if EU directives are strictly enforced), there are few

peeling sheds that conform to the process and infrastructure requirements as laid down in the EU guidelines.

21. One of the main complaints that processors/exporters have about the EU legislation is that it is more in the nature of a non-tariff trade barrier than an effort to ensure food safety. Many processors are of the opinion that the quality and process standards that they are required to comply with are very expensive to implement and in addition processing plants in Europe are not required to maintain the same high standards. This in turn negatively impacts on the cost competitiveness of Indian exporters vis-à-vis their EU counterparts. The widely held view in the Kerala industry is that the EU directives are mainly targeted to protect the local industry from cheaper imports.
22. One of the long-term effects of the EU ban is the emergence of a small group of powerful players in the processing industry. It is estimated that in 1999/00 8 out of the approximately 80 seafood processors in Kerala handled around 80% by volume and value of the total seafood that was processed in the state. There are concerns that this same group could exercise greater control over the supply chain in the years to come, manipulate prices and thus hurt the other players in the industry.
23. The implementation of the EU legislation has at best been patchy. That explains to a large extent the lack of any significant impact on the livelihoods of people who depend on this industry. However, the situation could be very different if implementation is carried through thoroughly. The first casualty of a thorough implementation could be the peeling shed industry, as EU legislation requires all pre-processing activities to be carried out in approved pre processing facilities attached to the main processing plant. If the farm to fork principle, which requires traceability, is carried out it could have cost implications for all players in the supply chain. It remains to be seen how the various players will cope with any such strict implementation of international seafood legislation.

## **1. INTRODUCTION**

This study has been undertaken as part of a DFID funded research project on “Globalisation and Seafood Trade Legislation: The effect of poverty in India”. At a workshop organised in Vishakapatnam, Andhra Pradesh in June 2001 by NRI and its Indian collaborators; Integrated Coastal Management, Catalyst Management Systems and South Indian Federation of Fishermen Societies, it was agreed that a mapping of the export chains of the main seafood export species would be vital in understanding the impact of international seafood legislation on the various players involved in the seafood export industry. This study resulted in a review of export supply chains in Kerala. The present report builds on this earlier work endeavouring to understand the impact that globalisation and seafood trade legislation has on the stakeholders in the supply chain.

## **2. BACKGROUND TO THE STUDY**

The impact of economic globalisation on the livelihoods of the economically weaker sections of society in the third world has long been an area of concern. The economic liberalisation process in India in 1991 and the subsequent entry into the WTO has meant that small and subsistence level producers in India increasingly find themselves competing in the global marketplace and therefore necessarily forced to comply with international standards and legislation or be left out.

One of the areas of the Indian economy where the impact of globalisation has perhaps been keenly felt is the fisheries sector in particular the seafood export industry. This is mainly on account of the fact a large industry is devoted to the culture, capture and processing of species such as shrimp, cuttlefish and squid solely for export purposes. Significant numbers of people depend directly and indirectly on this industry for their livelihood. Among them are large sections of the fishing population, which is among the least developed communities in India.

The present study is an effort to document the effects, if any, that globalisation and in particular various international seafood legislations have had on the seafood industry in Kerala, which is one of the leading exporters of seafood from India. The specific area of focus is the impact that such legislation has had on the poor and vulnerable sections of society that have traditionally depended on this industry for a livelihood such as fishermen and fish peelers.

## **3. STRUCTURE OF THE REPORT**

The report has been organised as follows. Section 4 is a brief note on research methodology covering issues relating to the choice of research methods and tools, respondents and geographical location covered. Section 5 deals with the general context of Kerala state. Section 6 is a note on fisheries in Kerala, which deals with general aspects of fishing such as common fishing methods used, a overview of the major fisheries related institutions and export performance of Kerala. Section 7 attempts to provide an overview of the major fisheries related institutions in India. Section 8 provides details on seafood exports from Kerala state. Section 9 is a note on the seafood export industry in Kerala. This details the various key stakeholders in the

industry, namely the trawling industry, aquaculture farmers, peeling shed workers and owners, processing and exporting industry and the various types of traders that are involved. Two case studies on the livelihoods of aquaculture farmers in Kerala are included. Section 10 attempts to identify the poor within the seafood export industry and discusses in brief their dependence on the sector and issues relating to their vulnerability. Three case studies on the peeling shed industry are included in this section. Section 11 discusses the main problems that the various stakeholders in the industry are facing. This section also deals with the impact that stringent implementation of international seafood legislation is likely to have on the various stakeholders. Section 12 discusses the short term and long term effects that the EU ban on Indian seafood in 1997 had on the various stakeholders. Section 13 documents the changes in industry practices that have taken place after the imposition of the EU ban. Section 14 deals with the nature and degree of implementation of EU legislation in Kerala. Sections 15 & 16 deal with the challenges of present legislation and the capacity within the industry to comply with any future seafood legislation. This is followed by a concluding note

#### **4. A NOTE ON THE RESEARCH METHODOLOGY**

The research methodology used was primarily field based. Sites were identified for fieldwork and extensive key informant interviews and focus group discussions were conducted with important stakeholders and knowledgeable people within the fisheries sector (in particular those connected with the seafood export industry). The selection of sites and the choice of respondents were made in such a way as to satisfy the following objectives.

##### **4.1 Objectives of the fieldwork**

1. To gain an understanding into the structure and dynamics of the seafood export industry in Kerala, in particular to identify the major stakeholders in the industry and the roles they play vis-à-vis one another.
2. To gain an understanding into the level of enforcement by government officials and compliance by the various parties with international standards and regulations such as the HACCP and the EU directives.
3. To gain an understanding into the manner in which international seafood legislation has affected the industry as a whole and in particular the livelihoods of the various stakeholders (specifically the poor within the industry) if at all and the coping mechanisms that have been developed over time.
4. To gain an understanding into the likely impact of future international seafood legislation on the seafood export industry and the likely responses to it.

##### **4.2 Selection of respondents**

Given the above objectives the following categories of stakeholders in the seafood export industry were identified as respondents for the study. The respondent categories were selected based on the information obtained from the export supply

chain study that was done prior to this study. This study provided a good picture of the major stakeholders in the export industry. In addition, respondents were also selected based on information gathered during the fieldwork.

1. Fishermen

- Trawler crew - The mechanised trawling industry in Kerala is almost exclusively geared to capture export species such as shrimp, cuttlefish and squid. Consequently fishermen who work year round as crew on trawlers depend entirely on export species for their livelihood.
  - Artisanal fishermen dependent on export species – All artisanal fishermen using Out Board Motors or using non motorised craft do seasonally get some shrimp which is of great interest to them in view of the high value. However export species is a significant part of the catch value only in some areas. For example, the hook and line fishermen of Trivandrum get a substantial income from cuttlefish and squid. There are no women in Kerala who fish.
2. Middlemen traders – Middlemen traders based at fishing harbours and major fishing villages, mainly dealing in export species.
  3. Owners of peeling sheds – The peeling shed industry is an integral part of the export industry and provides employment to a fairly large number of poor women who work as peelers.
  4. Peeling shed workers – Most of them come from the economically vulnerable sections of the fishing community itself and depend substantially on income from peeling activity.
  5. Aquaculture farmers – Aquaculture in Kerala is undertaken almost exclusively for export purposes and hence this industry depends heavily on export markets. Farmers with very small farms (farm size < 1 acre) who are operating on a very small scale, as well as those with medium and large farms (farm size > 100 acres) were interviewed in order to gauge the impact of the international legislation on the entire spectrum of the aquaculture farming community. There are very few women aquaculture farmers in Kerala.
  6. Owners of processing plants – Processing plants are key players in the seafood export industry as their demand for raw and peeled material drives the rest of the industry.

Other key informants – Key persons from organisations related to the industry such as the MPEDA, CIFT and SEAI were interviewed in order to obtain an overview of the export industry and the trends within the industry.

### **4.3 Sites for fieldwork**

Out of the fourteen revenue districts in the state of Kerala, nine are maritime districts, with significantly large communities that are dependant on marine fishing for their livelihood. Among the maritime districts, the largest amount of export species is

caught in the fishing centres located in the districts of Ernakulam, Kollam and to a lesser extent Thiruvananthapuram. Hence the fieldwork was mostly limited to these districts.

**Table 1: Sites covered as part of the fieldwork**

<b>Revenue district</b>	<b>Places covered</b>	<b>Categories of people interviewed</b>
Ernakulam	Kochi fishing harbour	Traders, trawler crew
Ernakulam	Aroor	Aquaculture farmers, peeler, owners of peeling sheds (those currently operating and those closed down), ice plant workers, fishermen working on ring seine units mainly for domestic species such as mackerel and sardine
Ernakulam	Vypeen fishing harbour	Traders, trawler crew
Ernakulam	Ernakulam city	Seafood exporters and processors, MPEDA, SEAI, CIFT, CUST officials, Experts on HACCP and fishery sciences
Alappuzha	Tykal	Traders, trawler crew
Kollam	Neendakara Shaktikulangara	Traders, trawler crew, peeling shed owners and workers
Kollam	Port Kollam village	PPA with selected people from the village
Thiruvananthapuram	Marianadu village	Traders, artisanal fishermen, Participatory Poverty Assessment exercise with selected people from the village

#### **4.4 Rationale for site selection**

##### *4.4.1 Sites in the Ernakulam revenue district*

The Ernakulam district can be described as the nerve centre of seafood export related activity in the Kerala State. This is evident from the fact that in the year 2000-01, 80.9% by volume of all the seafood that was processed in Kerala was done within the Aroor – Chandrur - Munnambam belt that is within the Ernakulam revenue district (SEAI internal document). The Kochi fishing harbour (which falls within the Ernakulam district) is also one of the largest fishing harbours in Kerala. In addition to this, out of the 93 export processing plants in Kerala that are registered with the MPEDA, 83 are situated within the Ernakulam district. Also the Aroor – Chandrur-Munnambam belt that is within the Ernakulam revenue district is considered the nerve centre of the peeling shed industry within Kerala as the vast majority of the peeling sheds in the state are located here (estimates from different sources). In addition, key fishery related research institutions such as the CIFT, CMFRI and the College of Industrial Fisheries are situated in Ernakulam. Ernakulam is also home to the national level head office of the MPEDA which is an important government body related to seafood export. Hence the Ernakulam district was the focus of fieldwork activities for the study.

The following are the fieldwork activities undertaken within the Ernakulam district.

1. Interviews with officials of the MPEDA, CIFT, SEAI and the College of Industrial Fisheries and an FAO consultant on HACCP.
2. Focus Group Discussions with peeling shed owners and workers at the villages situated in the Aroor – Chandrur belt.
3. Focus Group Discussions with trawler crew at the Kochi fishing harbour.
4. Interviews with middlemen traders based at the Kochi and Vypeen fishing harbours situated within the Ernakulam district.

#### *4.4.2 Sites in the Kollam revenue district*

The Kollam district is important in any study of the seafood exports from Kerala because of the Neendakara – Shaktikulangara harbour which is one of the largest fishing harbours in Kerala. The Kollam district is also home to a few major export-processing plants. This district is second to Ernakulam in terms of the number of export processing plants it has. This district also has a fairly large number of peeling sheds many of which are situated around the harbour area.

The following are the fieldwork activities undertaken within the Kollam district.

1. Focus Group Discussions with trawler crew at the Neendakara - Shaktikulangara fishing harbour.
2. Interviews with middlemen traders based at the Neendakara - Shaktikulangara fishing harbour.
3. Interviews with officials of processing plants situated in Kollam
4. Focus Group Discussions with peeling shed owners and workers at the villages situated around the Neendakara - Shaktikulangara fishing harbour.

#### *4.4.3 Sites in the Thiruvananthapuram revenue district*

There are a few fishing villages in the Thiruvananthapuram district that have sizeable numbers of small-scale artisanal fishermen who use small motorised and non-motorised boats to catch export species such as cuttle fish. Marianadu is one such village and hence it was chosen as one of the sites for fieldwork in order to gain an understanding into the likely impact of international seafood legislation on this category.

#### *4.4.4 Sites in the Alappuzha revenue district*

The Alappuzha district is not very important from the standpoint of the seafood export industry. However, there are a few villages where export species are caught during certain periods of the year. Hence it was decided to include the Tykcal village in the Alappuzha district as part of the fieldwork in order to obtain an understanding into the

dynamics of the export industry in that district and the impact of international seafood legislation on the fishermen in this area.

#### **4.5 Research tools used**

The following are the research tools that were used during the course of the fieldwork.

1. Focus Group discussions – Focus Group discussions were conducted with trawler crew, small-scale artisanal fishermen and peeling shed workers. The FGDs were conducted based on checklists that were developed for the purpose. The objective of the FGDs were to understand the importance of export species to the livelihoods of the stakeholders, changes that have taken place in their trade over the last few years, in particular the impact they believe international legislation has had on their livelihoods.
2. Participatory Poverty Assessment – The Participatory Poverty Assessment tool was used at Port Kollam and Marianadu in order gain an understanding of who constitute the poor within the fishing communities. PPAs were conducted using the framework provided by NRI. The effort was to encourage knowledgeable locals to come up with their own definitions of social and economic categories that are relevant to their village and to place the various stakeholders such as artisanal fishermen, trawler crew and peelers in these categories based on their observations.
3. Semi structured interviews – Checklists were developed for interviewing various categories of persons related with the sector. Personal interviews were conducted with officials of the MPEDA, SEAI, owners and managers of export processing plants and owners of peeling sheds and other key informants. The interviews were designed in order to get the point of view of government officials and industry sources regarding the challenges they face from the legislation and the coping mechanisms they have adopted. Key informants such as technical experts in the field of fish processing technology were also interviewed in order to get a technical perspective on the relevance and the implementability of international legislation in the Indian context.

**Table 2: Research tools used**

<b>Category of respondents</b>	<b>Tools used</b>
Trawler crew	Focus group discussions (using checklists)
Artisanal fishermen	Focus group discussions (using checklists)
Middlemen traders	Personal interviews (using checklists)
Owners of peeling sheds	Personal interviews (using checklists)
Peeling shed workers	Focus group discussions (using checklists)
Aquaculture farmers	Personal interviews (using checklists)
Owners of processing plants	Personal interviews (using checklists)
Officials of the MPEDA, CIFT, CUST	Personal interviews (using checklists)
Key informants	Personal interviews (using checklists)

Since the objective of the study is to evaluate the impact of international seafood legislation on the poor within the fishing sector, it was initially thought that a detailed



household survey would be essential to understand the impact on livelihoods. However after discussions in focus groups with fishermen and discussions with key informants, it was clear that the impact on livelihoods, if any, was minimal. Therefore it was decided to do without a detailed household survey, as the general impression was that it would not be a very efficient tool for achieving the objective. Secondary stakeholders such as head load workers; transporters and basket makers were not covered in the study as it could be reasonably inferred from discussions with primary stakeholders that the impact was not very significant.

#### **4.6 Constraints**

The following were the problems/constraints encountered during the study.

1. Cynicism – There was some cynicism among the fishermen regarding the study. One of the stated reasons for this is that research projects relating to livelihoods are conducted from time to time but the fishermen never benefit from such studies, as they never result in policies that take their concerns into account.
2. The objective of the study – Every interview/FGD was prefaced with a brief description of the purpose of the study and the purpose of the interview. There was genuine concern among many stakeholders (especially fishermen and traders) as to whether the results of the study, which is being done for a foreign agency, would be used by foreign countries to formulate policies that harm them.
3. Lack of access to CMFRI data on fish landings – The CMFRI, which is the premier research institution undertaking resource estimates, is uniquely placed to provide certain types of information such the patterns of landing of export species on the Kerala coast, historical data on fish catches etc. Unfortunately, the current policies of the Government of India and the Indian Council of Agricultural Research (ICAR) make data access from CMFRI very difficult. While other states have their own data collection machinery and bring out statistics, Kerala has not developed its own system so far.
4. Lack of information on prices and margin structures – The prices of the various export species vary daily and from place to place and there is very little reliable information that is available. There is no method of cross checking the veracity of the price information that is provided by various parties and very often the claims regarding margins are conflicting. For instance some exporters claim that as much as 90% of the price that the consumer pays for the final product goes to the fisherman. However, the fishermen whom we interviewed dispute this.
5. Lack of adequate access to information from the harbours – Conducting personal interviews or FGDs with traders or trawler crew at the three harbours proved problematic. Many of the traders seemed suspicious of our motives though it was not openly expressed. Note taking was not possible as this made the respondents even more suspicious and many cases the responses were less forthcoming when we attempted to take notes. Also the people we wanted to

meet were generally busy and this also affected the quality of the responses and also the extent to which we could probe and seek clarifications.

## **5. THE GENERAL CONTEXT OF KERALA**

Kerala was formed in 1956 from portions of the former Travancore-Cochin state and the former Madras state, including much of the Malabar Coast. The state capital is Thiruvananthapuram. The official language of Kerala is Malayalam. There are 14 revenue districts in the state.

The main agricultural products of the state are rice, coconut, tapioca, pepper, rubber, tea, coffee and cardamom. Fishing is the source of income for a large group of people. The main industrial products are related to cashew, coir, tiles, textile, ceramics, fertilisers and chemicals.

### **5.1 The geographic context**

Kerala occupies an area of 38,863 square kilometres and is situated in the south-western part of India. Kerala is surrounded by Karnataka in the north, Tamil Nadu in the East and the Arabian Sea in the southwest. The average temperature in various parts of Kerala is between 21° C and 32° C. Rain fall is at a maximum during the months of June to August and annual rainfall in the range of 3,000mm.

Kerala has a coast line of 590 kms (7.26% of the India coastline), 44 rivers with a total length of 3,200 kms and a water spread of 85,000 ha, 30 extensive interconnected backwaters and estuaries with a water spread of 243,000 ha, 30 reservoirs with an area of 30,000 ha and a large number of ponds and tanks totalling to about an area of 4,000 ha.

### **5.2 The demographic context**

According to the 1991 census, Kerala had a population of 2.9 crores with an average population density of 749 persons per square kilometre. The population in village areas is 2.14 crores (73.6%) while that in the town areas is 0.76 crores (26.4%). About 60 percent of the population are Hindus, about 20 percent are Muslims and the remaining are Christians. The literacy rate among men is 93.6% and that among women is 86.2%.

Kerala has a Human Development Index of 0.638 (2001 figures). Compared to this the HDI for AP is 0.415 and that for Orissa 0.406. The higher HDI mainly indicates that Kerala is better developed in the areas of education and health care. However, it must be noted that there are no HDI figures for the fishing community in the state. This section of the population is generally considered to be far below the other sections of Kerala society in the areas of education and health. Therefore the HDI figures for the state may not reflect the reality in the fishing communities. However, the HDI of the Kerala fishing communities is likely to be much better than that of Andhra and Orissa.

Kerala also has a poverty index of 19.93 (1991 figure, on a scale of 0 – 100, lower the score the better) and is placed fourth in the list of states with the least poverty. AP has

a score of 39.78 (ranked 19 out of 32) and Orissa has a score of 49.85 (ranked 31 out of 32).

## **6. FISHERIES IN KERALA**

Given that Kerala is endowed with a long coastline and a number of rivers and other water bodies it is perhaps not surprising that fishing and related activities have been a way of life for significant sections of the population for a very long time. There has been a long tradition of fishing in the coastal communities of Kerala and fishing communities in various parts of the state have developed craft, gear and fishing methods that is best suited to the conditions that they work in. Related activities such as marketing of fish and fish products, fish preservation (ice plants etc), fish peeling etc. provide employment to sections of the population. Fish is also an integral part of the diet of most sections of the state’s population.

Fishery resources contribute around 3% to the state’s economy and provide occupation to about 10 lakh people directly and 2 lakh people indirectly. The state accounts for 22% of the marine products exported from India in value terms. Fish and fish products account for about 25% of the total export earnings of the state. (College of Fisheries report, 2002)

An assessment of fisheries resources made by CMFRI reveals that there is a potential for capture fisheries to the extent of 7.50 lakh tonnes per year in the marine sector. This includes 5.70 lakhs from the inshore areas and 1.80 lakh tonnes through offshore and deep-sea fishing. The fish catch from the inshore has crossed the 6-lakh tonne mark. The inland fish production is more or less constant around 0.75 lakh tonnes. (College of Fisheries report, 2002)

### **6.1 A note on fishing methods in Kerala**

The Kerala coast is characterised by a wide diversity in fishing craft and gear. The fishing fleet can be broadly categorised into the “mechanised” and “artisanal”. This nomenclature is somewhat context oriented but may be appropriate over most of India’s coast. While the distinction between the two sectors is technology based, it is however much more than just technology. The term “mechanised” largely refers to “modern” harbour based fishing boats with inboard diesel engines that came into being in the 1960s. The bottom trawl boats are by and large the mainstay of the mechanised sector. There are however small groups of gillnetters and purse seiners that are also part of the mechanised sector. It must be kept in mind that when someone talks of mechanised boats in Kerala (and most of India) they are essentially talking about the trawlers.

The “artisanal” sector of today is essentially the “traditional” sector that existed prior to the introduction of the mechanised boats and its various transformations. From a sector composed of non-mechanised traditional boats using a variety of traditional gear, the artisanal sector has changed substantially due to the competition for resources from the mechanised sector. While there is still a number of sailing and towing boats, the artisanal sector is today dominated by a variety of craft (both traditional and non traditional) that are powered by Out Board Motors (OBMs). The gears are also substantially different with ‘ring seines’ and “mini trawls” being used

in addition to the traditional gears. These gears are essentially based on copying the gears used by the mechanised boats. Thus the artisanal sector is a highly diverse and heterogenous group, which is further, divided into “motorised” and “non-motorised” sub sectors. The entire artisanal sector sees itself as being in opposition to the mechanised trawlers. Obviously, the sectoral divisions are not merely technical but also socio-political.

The use of certain types of craft and gear are limited to certain areas of the Kerala coast. Traditionally, fishermen in various parts of the coast have developed craft and gear that is best suited for the conditions in which they operate. There are various factors, which influence the choice of craft and gear.

#### *6.1.1 Factors influencing choice of gear*

1. **Predominant species that are available:** The predominant species of fish that are available in the area of operation determine the choice of gear. The main categories of gear used on the Kerala coast are the gillnets, the trammel nets, the shore seine, the boat seine, the ring seine, the mini trawl nets and the hook and line. In areas such as Alappuzha, where species like mackerel and sardines are available in large quantities the gear of choice is the ring seine. In the fishing villages of Thiruvananthapuram district, the gear of choice is the hook and line as this type of gear suits many of the major species that are found in this area.
2. **Seasonality:** The choice of gear can also vary from one season to the other depending on the predominant species that is available at a point of time.

#### *6.1.2 Factors influencing choice of craft*

1. **Nature of the sea:** The choice of craft depends to a large extent on the how the sea behaves for most parts of the year. Fishermen operating in areas where the sea is generally rough for most parts of the year, prefer smaller crafts such as the catamaran which are easier to manage in case they capsize. In areas where the seas are calmer and hence the chances of the craft capsizing are smaller, fishermen prefer larger crafts. The main categories of craft that are used on the Kerala coast are the dugout canoes (large, medium, small and very small), plank canoes (very large, large, medium, small and transom), kattumarams (3 log and 4 log varieties) and the plywood boats (very large, large, medium and small). The kattumaram is the smallest type of craft on the Kerala coast and is found exclusively in the Thiruvananthapuram and Kollam districts where the seas are rougher than in other places. The plywood boat, which is a relatively new introduction on the Kerala coast, has caught on mainly in the Thiruvananthapuram and Kollam districts as a substitute to the traditional kattumarams. A fairly large number of plywood boats are also found in the northern Kerala districts of Kannur, Kozhikode and Malapuram. The motorised plank canoes are mainly found in Alappuzha, Ernakulam and Thrissur districts. The non-motorised plank canoes are found in Thiruvananthapuram, Alappuzha and Ernakulam districts. The dugout canoes are mainly found in northern Kerala districts of Kasargod, Kannur, Kozhikode, Malapuram, Thrissur and Ernakulam.

2. Average catch sizes: In areas where the catch sizes tend to be large, fishermen prefer larger crafts. The economies of scale tend to work in favour of larger crafts as they allow fisherman to bring larger quantities to shore and thus help cover their operating costs per trip better. The larger the craft, the more storage space it has and the longer it can stay out at sea per trip and give itself the chance of catching more fish. Thus the fixed cost per trip of launching the craft into sea is covered better.

## **6.2 The mechanised sector**

Mechanised trawler boats are primarily involved in ‘shrimping’ i.e. fishing which revolves almost entirely around shrimp capture. Trawlers are expensive to operate and hence necessarily have to target the higher value export species such as shrimp and cuttlefish. The typical argument given by many trawler crews is that given the high operational cost, shrimp is the only species that make trawling viable.

There are 3,800 mechanised trawlers in the State (Expert Committee for Fisheries Management Studies, Kerala, 2000), which employ a maximum of around 30,000 fishermen as crew. Trawlers come in a variety of sizes. Whereas until about 5 years back most of the trawlers were about 32 – 40 feet long, most of the trawlers launched in the last five years measure 45 – 50 feet and the really big trawlers measure as much as 60 feet. In fact the trend towards larger and consequently more expensive trawlers has been forced upon the industry by the lack of availability of shrimp in traditional fishing grounds, which are relatively closer to shore. This has forced trawlers to go deeper into the sea and stay longer (which necessitates larger boats). Trawlers are designed to stay at sea for anywhere between 7 and 20 days at a stretch depending on the storage and fuel capacities. Many of the trawlers carry modern equipment like echo sounders and GPS, which increase their efficiency in locating fish. Almost all trawlers irrespective of size take a crew of 7- 8 per trip.

The trawling industry is characterised by high operational costs. A trawler crew interviewed during the fieldwork reported that the average cost of operations for each day at sea for a 40-foot trawler is in the range of Rs. 10,000/- (USD 200). The main component is the cost of diesel, which has nearly doubled during the course of the last decade. This high cost necessarily means that the trawlers have to target export species in order to be viable. However, the depletion of fishery resources has meant that trawlers are forced to go deeper and stay longer at sea merely to breakeven. The unsustainable large number of trawlers that are operating in the Kerala waters further compounds the problem. An additional problem that this industry faces is that there is a ban on the use of mechanised trawlers in the state during the months of June, July and August. During this period, trawlers are forced to remain idle and this results in loss of livelihood for trawler crew.

The main landing centres for trawling boats are the Neendakara harbour in Kollam district and the Kochi harbour in Ernakulam.

This sector accounted for 78.6 % of the total penaeid prawn landings in Kerala during 1997/98. (Expert Committee for Fisheries Management Studies, Kerala, 2000).

Informed sources suggest that this sector accounted for 92% of the cephalopod landings in Kerala in the year 2000 - 2001.

### **6.3 The artisanal sector**

The artisanal sector forms the core of the fishing population of Kerala. John Kurien (2000) estimated that the total employment generation potential of the artisanal sector remained constant around 146,000 jobs in 1998, of which the non-motorised sub sector forms 25 percent and the rest is made up by the motorised sub sector.

#### *6.3.1 The motorised artisanal sub sector*

The motorised artisanal sub sector in Kerala encompasses a large variety of craft and gear. No single type of craft or gear is representative of the whole Kerala coast. Fishing units in the artisanal sector are small in their scale of operations and normally fish for species that are sold in the domestic market such as tuna, seer fish, pomfret, sardines, mackerels etc. In most locations on the Kerala coast, landings of export species such as shrimp and cuttlefish by these units are seasonal. Shrimp is the most preferred among the export species as it is considered most profitable. However, the artisanal sector accounted for a significant 21.5% of the total penaeid prawn landings in Kerala during 1997/98 (Expert Committee for Fisheries Management Studies, Kerala, 2000). Most of the shrimp landed by these units is during the months of June, July and August when there is a trawling ban in effect in Kerala waters. However during the other months, export species are merely incidental catch (i.e. fishermen do not chose their gear with the intention of capturing export species). The general impression is that export species while always welcome (as they help generate some surplus) are not treated as the main breadwinner by the average artisanal fisherman. However, there are isolated villages on the coast (such as Marianadu in Thiruvananthapuram district) in which operators of motorised artisanal units depend heavily on export varieties like cuttlefish. There is no agreement on the contribution of the export species to the total annual income of the average artisanal fisherman. Figures vary from 20% to as high as 70%. In exceptional cases like that of the Marianadu village, the contribution could be as high as 70% of the annual income.

Notwithstanding the unavailability of information on this count, it is certain that artisanal fishermen will definitely be worse off if the income from export species is denied.

#### *6.3.2 The non-motorised artisanal sub sector*

This sub sector, once the most dominant in large stretches of the Kerala coast has been rapidly marginalised with the advent of large-scale motorisation. Artisanal fishermen prefer motorised craft to the traditional kattumaram as it gives them greater flexibility and versatility in fishing operations. There are however isolated villages on the coast where the kattumaram is still preferred to any other craft.

The traditional kattumaram is now mainly used for fishing quite close to the coast. The traditional craft, which is limited by its lack of propulsion, is mainly used by retired fishermen and those who are unable to find employment in the motorised artisanal sub sector or the mechanised sector. During the course of the fieldwork,

there was mention of some fishermen currently using motorised craft thinking of shifting to the kattumaram. The advantage of the non-motorised kattumaram is that it has virtually no operating or maintenance costs and therefore there is no breakeven level to be achieved. This is in contrast to the motorised units where fuel and maintenance costs have to be met and there is a real danger of suffering a loss for an individual trip if the catch is poor.

However, the fieldwork did not reveal any instance of an actual conversion from motorised to non motorised craft and knowledgeable sources at SIFFS suggest that it is highly unlikely any time soon, especially in villages where motorisation is well entrenched.

The contribution of the non-motorised sub sector is considered negligible to the fishing sector in general and the export sub sector in particular.

**Table 3: Distribution of fishing craft and main fishing gears in Kerala**

<b>Fishing craft</b>	<b>Areas where mainly used</b>	<b>Main fishing gears used</b>
Plank canoes	From north of Neendakara (Kollam district) up to Malapuram district	Ring seine, Gill net, Hook and line, shore seine
Dugout canoes	From Kasargod to Ernakulam	Ring seine, Gill net, Hook and line, mini trawl nets
Kattumarams	Thiruvananthapuram and Kollam districts	Hook and line
Plywood boats (decked)	All districts except Ernakulam	Mainly hook and line. Gill net and ring seine are also used
Plywood boats (open)	All districts except Ernakulam	Mainly large mesh gillnets.

Adapted from ‘A census of the artisanal marine fishing fleet of Kerala 1998’, SIFFS

### *6.3.3 A note on artisanal fishing in Kerala*

Artisanal fishing has been a way of life in Kerala since time immemorial. Fishermen developed craft and gear to uniquely suit their working conditions. Thus there is a myriad of traditional craft and gear that can be found on the Kerala coast.

Fishing has traditionally been a means of livelihood for many coastal communities and has mostly been a small-scale affair. The advent of commercial trawling in Kerala in the 1960’s and its subsequent intensification in the 1970’s forced the artisanal fishermen of Kerala to abandon their traditional non-motorised crafts in favour of modern small scale motorised fishing crafts (fibre glass plywood boats with outboard motors operated on a mixture of kerosene and petrol). Intensive trawling for shrimp was depleting the inshore waters, which was the main stay of the artisanal fishermen. These motorised crafts allowed them to venture further into the sea, operate round the year in all but the most adverse weather and reach fishing grounds faster and hence spend more time and effort in the actual fishing operation. The new technology enabled artisanal fishermen to better compete with the trawling industry.

But the technology also brought with it several new problems. The investments required for the new boats and motors were several times that of the traditional crafts.

Fishermen who adopted the new technology were forced to take large loans. The general impression in the banking sector that fishermen are not bankable did not help and lenders from the informal sector filled the gap and in the process many artisanal fishermen were caught in arrangements, which were very harmful.

The operating costs per trip for the new crafts were also higher than that for the traditional ones with the cost of fuel being the main component. Since there is no guarantee on the outcome of a fishing trip, there is a chance that the operating costs for an individual trip may not be covered by the value of the catch. In addition the cost of repair and maintenance is also relatively much higher than for a traditional craft. The modern crafts and engines have a maximum life of about 7 to 8 years. Within this period, the average fisherman has to repay the loans he has taken, meet the operating costs and maintenance costs, save up for equipment replacement and if possible generate a surplus. The situation is made worse by the dwindling stocks and increasing number of boats that compete for those stocks. All these combine to make artisanal fishermen economically more vulnerable than before.

## **7. OVERVIEW OF MAJOR INSTITUTIONS RELATED TO FISHERIES**

Given that India’s long coastline, and the large number of people who are directly and indirectly involved in fisheries and allied activities, the importance of fisheries to the Indian economy and the individual state economies cannot be understated. Seafood is one of the largest net export earners for India and provides employment to over 10 million people in the country. In order to support this vital sector, the Government of India has set up a number of research and promotion bodies to help the sector achieve its potential. In the section that follows a brief description is given about the major institutions in the fisheries sector.

Fisheries, in India is considered a sub sector of the larger agricultural sector and thus falls under the purview of the Department of Fisheries which is part of the Ministry of Agriculture Government of India. However, under the Constitution of India, fisheries is categorised as a state subject. What this essentially means is that the individual states within the Indian Union can frame and implement fisheries policies of their own. For instance, a state government can decide the period of the monsoon ban within the territorial waters within its control. The maritime states of India have control of the seas up to a distance of 22 kilometres from the shore. The Central Government has control over the seas from the 22-kilometre ring to 200 kilometres from shore (the Exclusive Economic Zone of India).

The Department of Fisheries (DoF) of the Ministry of Agriculture Government of India has overall control over some aspects of fishing in the Indian territorial water. The DoF is headed by the Fisheries Development Commissioner. For instance, it is the DoF that decides on issues such as whether foreign fishing vessels should be given access to Indian marine resources. Also issues relating to imposing bans on the capture of endangered marine species are the prerogative of the Ministry of Environment & Forests Government of India. The state governments have little say in these matters.

Research in the area of fisheries is undertaken by both the Central Government and the individual state governments with each having institutions of their own. However,



almost all the prominent research and training institutions related to fisheries fall under the control of the Indian Council of Agricultural Research (ICAR) which in turn is under the control of the Department of Agricultural Research and Education, Ministry of Agriculture Government of India.

The following are the various fisheries related institutions that are under the control of the Government of India.

1. Central Inland Capture Fisheries Research Institute (CICFRI), Barrackpore, West Bengal - This institute is the oldest premier research institution in the field of inland fisheries research and training in India. This institute is under the control of the ICAR.
2. Central Institute of Brackish water Aquaculture (CIBA), Chennai, Tamil Nadu – This institute is mandated to conduct research for development of techno-economically viable and sustainable culture system for finfish and shellfish in brackish water. This institute is under the control of the ICAR.
3. Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar, Orissa – This is a premier Research Institute on Freshwater Aquaculture in India and is under the control of the ICAR.
4. Central Institute of Fisheries Education, Mumbai (CIFE), Maharashtra – This institute which is the first fisheries university in India is mandated to conduct education and research programmes leading to post-graduate (M.F.Sc.) and doctoral (Ph.D.) degrees in specialised disciplines of fisheries science and technology. This institute is under the control of the ICAR.
5. Central Marine Fisheries Research Institute (CMFRI), Kochi, Kerala - This is a premier research institute dedicated to Marine Fisheries Research and is under the control of the ICAR. One of its major activities is the collection and analysis of marine catch data in order to compile fisheries statistics and make stock assessments from time to time.
6. Central Institute of Fisheries Technology (CIFT), Kochi, Kerala - This is a premier research institute that undertakes basic and applied research to address the problems related to a wide spectrum of marine and inland fisheries activities in relation to the global scenario. The research programmes of the Institute aim at solving technological problems of the fisheries industry in the country. The CIFT is under the control of the ICAR. It is a multidisciplinary organisation researching into diverse areas like chemistry, biology, preservation, boats, gear nets, instrumentation fish packaging etc.
7. Fisheries Survey of India (FSI) – The FSI estimates potential fish stocks. It is under the control of the Ministry of Agriculture, Government of India.
8. Integrated Fisheries Project (IFP) – This project is an extension of the Indo Norwegian project that was started in 1953 at Neendakara in Kerala. The basic aim of the project was to enable the development of fisheries and the fishing community in the country.

### **7.1 Other institutions connected with the fisheries sector**

1. Marine Export Development Authority (MPEDA) – MPEDA functions under the Ministry of Commerce, Government of India and acts as a co-ordinating agency with different Central and State Government establishments engaged in fishery production and allied activities. The role envisaged for the MPEDA is comprehensive - covering fisheries of all kinds, increasing exports, specifying standards, processing, marketing, extension and training in various aspects of the industry.
2. Export Inspection Council (EIC) - The Export Inspection Council (EIC), which is under the control of the Ministry of Commerce, Government of India, was set up in 1963, in order to ensure sound development of export trade of India through Quality Control and Inspection. The EIC operates through five Export Inspection Agencies. (EIA), one each at Chennai, Delhi, Kochi, Kolkata and Mumbai. One of the main activities of the EIA is to issue certification of quality to exporters of fish and fish products. Any seafood exporter who wants to export to the EU market for instance must get the approval of the EIA before he can export a consignment. Thus, this organisation plays an important role in the seafood export sector.

### **7.2 Fisheries related government bodies at the state level**

Each state government has institutions of its own which conduct research and training in fisheries. These are mainly in the form of Colleges of Fisheries and University departments. In addition, many states have specialised bodies such as fish marketing agencies (such as Matsyafed in Kerala) that work for the welfare of the fishing population within the state.

### **7.3 The role of these institutions in the seafood export sector**

Among the various organisations that are involved in the fisheries sector, the organisations that are directly involved in seafood export industry are the Marine Products Export Development Authority (MPEDA) and the Export Inspection agency (EIA). The MPEDA has the mandate to develop the local seafood industry by providing technical assistance (through extension services and contact programmes) and financial assistance (in the form of subsidies and loans) and promoting its products abroad. MPEDA has offices in major importing countries including the USA (in New York) and Japan (in Tokyo) through which it seeks to promote Indian seafood in the world market.

The EIC is the apex authority under the Government of India, which is responsible for monitoring of quality standards, issuing of licences etc. The EIC works through the regional EIAs, which are the implementing arms of the council. The EIAs constitute Inter Departmental Panels (IDPs), which perform inspections of seafood export processing plants and recommend on issue/withdrawal of export licences based on the inspections. The IDPs are the actual implementers of international legislation such as the EU directives and the nuts and bolts of interpretation of legislation depend entirely on individual panels.

The Central Institute for Fisheries Technology (CIFT) contributes to the export sector by developing appropriate technologies to help the Indian seafood industry maintain international standards. They also play a vital role by contributing technical manpower to the Inter Departmental panels (IDPs).

The Central Institute of Brackish Water Aquaculture (CIBA) and Central Institute of Fresh Water Aquaculture (CIFA) contribute to the development of aquaculture in the country. Aquaculture has grown by leaps and bounds in the country during the last decade and currently accounts for about 59% of the total shrimp export from the country.

## 8. MAIN SPECIES EXPORTED FROM KERALA

The main species exported from Kerala are shrimp, frozen cuttle fish, frozen squid and finfishes. Shrimp is the main item of export and accounts for over half the total value of seafood export from Kerala. Frozen cuttlefish and squid are also important items of export. Frozen fishes such as ribbon fishes, which are relatively low value, are exported in large quantities.

The initial study on export supply chains in Kerala deals with exports from Kerala in greater detail.

**Table 4: Item wise export of marine products from Kerala**

Year	Qty		Value		Qty		Value	
	00-01		00-01		99-00		99-00	
Item	Tonnes	%	Rs. Crores	%	Tonnes	%	Rs. Crores	%
Shrimp	28290	32.0	596	57.6	35708	39.0	705	62.0
Frozen cuttle fish	14473	16.4	155	15.0	19436	21.2	188	16.5
Frozen squid	14915	16.9	139	13.4	16050	17.5	140	12.4
Frozen fin fish	24882	28.2	97	9.3	13220	14.4	52	4.6
Others	3239	3.7	33	3.2	2072	2.3	21	1.9
Octopus	2256	2.6	9	0.9	4794	5.2	25	2.2
Lobster	157	0.2	4	0.4	183	0.2	4	0.4
Dried	63	0.1	1	0.1	76	0.1	1	0.1
Chilled/live	79	0.1	0.5	0.0	4	0.0	0	0.0
Grand Total	88355	100	1034	100	91543	100	1137	100

Source: SEAI Internal document

## 9. THE SEAFOOD EXPORT INDUSTRY IN THE CONTEXT OF KERALA

Relevance of seafood export to the Kerala economy – Kerala is one of the premier fish producing states in India. Kerala occupied the second position in the total marine fish production of India and contributes 20.5% of the volume of the all India landings for 1999 - 2000. Out of the total marine landings in Kerala during 1999 - 2000, shrimp accounted for 13% by volume and cephalopods (squid, cuttlefish and octopus) accounted for 6% by volume. These species are mainly sold in the export market and very little is seen in the domestic market. The local population generally does not consume cephalopods and the majority cannot afford shrimp. The export market for shrimp fetches a significantly higher price than the domestic markets and the small

quantities of shrimp that are seen in the domestic markets are generally the ‘export rejects’ i.e. shrimp that does not meet the export standards for quality and hygiene. Ironically these ‘export rejects’ still fetch a high price in the domestic market. Whereas species such as seer fish, which are in high demand in the domestic fetch between \$3 and \$5 per kg (retail price), export varieties such as shrimp fetch between \$8 and \$10 per kg.

### **9.1 Overview of the major stakeholders in the seafood industry**

The seafood export industry can be described as an ‘industry within a sector’. This is a distinct industry within the fishing sector with significant infrastructure dedicated exclusively to cater to the export demand for seafood. The seafood export industry in turn comprises five distinct entities, which are exclusively focussed on catering to the export markets. They are

1. The trawling industry: This is the mainstay of the export industry. The vast majority of the export species is caught by this industry.
2. Aquaculture farming: This is a sub sector which is exclusively devoted to prawn culture and contributes around 10% of the total prawn production in Kerala
3. The motorised artisanal sub sector: This sub sector which represents the bulk of the artisanal fishing population accounts for about 21% of the penaeid prawn landings in Kerala (1997/98 figures). The contribution of this sub sector to the export industry has declined steadily owing mainly to the intensification of trawling activity over the last 15 years.
4. The peeling shed industry: This industry has been a vital part of the seafood export industry since the 1960’s when seafood exports from Kerala started in a big way. It has undergone several changes with major consolidations taking place since the EU ban of 1997. Women peelers from the economically weaker sections of society form the workforce in this industry and thus a study of this industry is necessary to gauge the impact of legislation on the poor.
5. The processing/exporting industry: Kerala has a vibrant seafood processing and exporting industry, which has been at the forefront of adopting new technologies and methods to keep up with international practices.

The section that follows elaborates on the players mentioned above.

#### *9.1.1 The trawling industry*

The trawling industry is entirely geared towards the capture of shrimp and cephalopods (in that order of priority). Any catch of other domestic species is mostly incidental. The main argument for this is that only the export species can help cover the high operating cost of trawlers and recoup the high initial investment in equipment. There are about 3,800 trawlers on the Kerala coast (Balakrishnan Nair report). Given that all trawlers irrespective of size take around 7-8 crew per trip the trawling industry has a maximum employment generation potential of 30,400 jobs.

However, it is not clear as to how many of the trawlers are currently in operation. Visits to the Kochi and Neendakara harbours revealed many trawlers lying idle.

The trawlers vary in size from 32 – 60 feet. The newer trawlers are bigger in size as they have larger fuel tanks (which enable them to travel farther out to the sea) and large storage capacities (which enable them to stay at sea longer). Almost all the trawlers in operation today are equipped with the global positioning system (the GPS) and the most up to date ones are equipped with the echo sounder (used as a fish finder). Trawlers entail heavy initial investment ranging anywhere from Rs 15 lakhs to 30 lakhs depending on size and equipment on board.

One of the unique features of the trawling industry is the phenomenon of the absentee owner i.e. whereas the crew comprises entirely people from the fishing community the owner is from outside the community.

Traditionally, most of the fishing vessels in the state are owned and operated by active fishermen. This used to be the case in the trawling industry until two decades back. However, with the increasing costs associated with owning and operating trawlers, those in the fishing community found it beyond their reach to own and operate these vessels. The significant increase in catch quantities during the late 1980’s and the early 1990’s encouraged many businessmen, politicians and other prominent people from outside the fishing community to view trawling for prawns as an attractive investment option. Many new trawlers were built and launched during this period. A new class of ‘absentee owners’ came into being i.e. boats owners who never go to sea. For these trawler owners, fishing is not a means of making a livelihood; it is an opportunity to make profits. Trawling is just one of many businesses that they own. Over a period of time, the ownership of trawlers has passed out of the hands of the fishing community. It is rare to come across a fisherman who owns an active trawler now. The fishing community has no direct control whatsoever on the trawling industry and is reduced to providing labour to this industry. However, even this is now beginning to change.

Over the last few years, trawler owners in Kerala have shown a preference for employing fisherman from neighbouring Tamil Nadu over employing local fishermen. The main reasons given for this is the militancy of the local labour force (Labour militancy and unionism has been one of the major problems faced by the Kerala economy in general).

Surprisingly, even though trawling is no longer as profitable as it used to be a decade ago, many business houses continue to invest in new trawlers. The main motive behind this is to hide unaccounted for money (black money).

### *9.1.2 Aquaculture farming*

Much of the aquaculture in Kerala is for shrimp almost entirely for the export market. According to MPEDA most of the aquaculture farms in Kerala are ‘traditional farms’, which means that the farms are small in size. This is in contrast to large commercial farms where the economies of scale enable farmers to invest in the most up-to-date farming methods. According to MPEDA data (for the year 2000 – 2001) there are 2,592 aquaculture farmers in Kerala State and a total aquaculture farmland of 17,643

hectares (including a water spread area of 14,703 hectares). Most of the aquaculture farming is done in the Ernakulam district. Aquaculture is generally considered a risky business due to the possibility of entire crops being wiped out on account of disease or crop being rejected by buyers on account of poor quality or harmful residues.

**Table 5: Comparison of aquaculture farm sizes across Kerala, AP & Orissa**

State	No of farm holdings				Total no of farmers
	0-2 ha	2-5 ha	5 – 10 ha	> 10 ha	
<b>AP</b>	69,738	2,190	336	238	72,502
<b>Orissa</b>	7,580	100	51	13	7,744
<b>Kerala</b>	1,297	699	234	362	2,592

Source: MPEDA internal document 2000 – 2001

Table 5 gives a comparison of the farm sizes in the states of AP, Orissa and Kerala. While it may appear that a larger percentage of farmers in Kerala own farms with an area greater than 10 hectares, this is misleading. The aquaculture industry in Kerala has a totally different character to that found in AP. Many of the large farms in AP are quite large and intensive aquaculture is done on a commercial scale, whereas most of the aquaculture farming done in Kerala is non-intensive in nature. This can be clearly seen from a comparison of the per hectare productivity of the two states as shown in Table 6

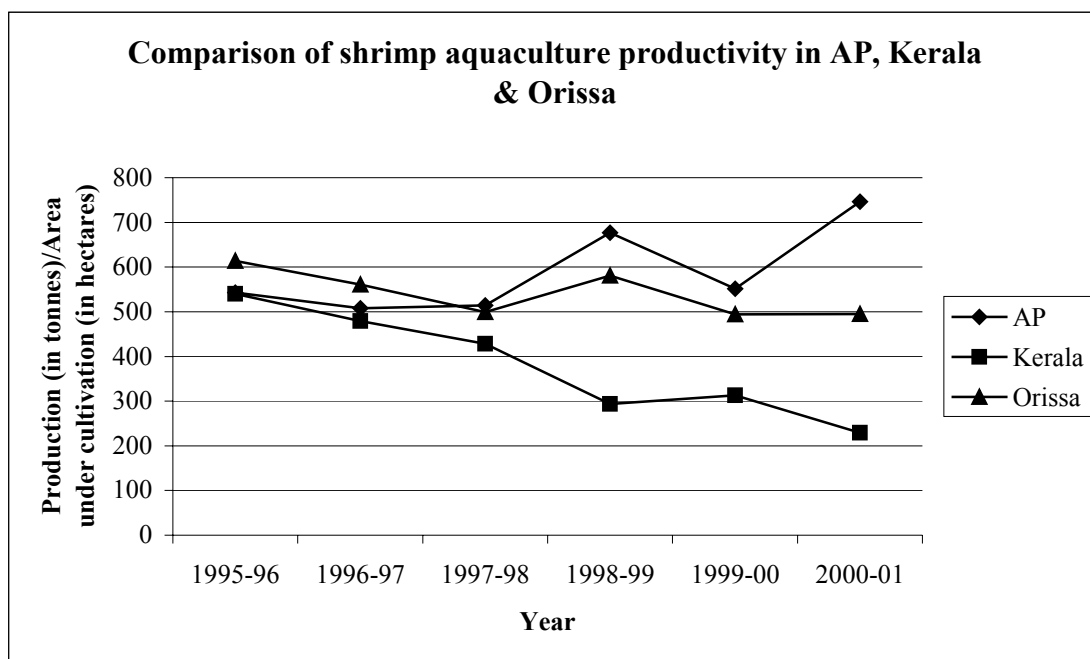
**Table 6: Comparison of per hectare productivity (in tonnes)**

Year	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
<b>AP</b>	542.8	507.5	514.0	677.1	551.3	746.0
<b>Kerala</b>	540.1	479.4	428.3	293.8	312.7	229.2
<b>Orissa</b>	614.0	561.1	499.5	581.2	494.1	494.7

Source: MPEDA internal document 2000 – 2001

The table is presented in graphical form in Graph 1. It is clear that there has been a consistent rise in the per hectare productivity of shrimp aquaculture in AP, whereas there has been a corresponding decrease in Kerala during the period 1995/96 to 2000/01. The increase in the case of AP can perhaps be mainly attributed to large-scale intensive aquaculture for commercial purposes. One of the chief reasons for the consistent decrease in per hectare productivity in the case of Kerala is the problem of the white spot disease.

**Graph 1: Comparison of shrimp aquaculture productivity in AP, Kerala and Orissa**



Source: MPEDA internal document 2000 – 2001

**CASE STUDY 1 - The pokkali fields of Aroor**

The pokkali form of aquaculture has been practised by rice farmers in the paddy fields of the Aroor Chandrur belt in the Ernakulam district for a very long period of time. In the pokkali method of aquaculture, a traditional variety of paddy called ‘pokkali’ would be cultivated for five months of the year (i.e. from June to October). Once the paddy is harvested, then water from the adjoining backwaters would be let into the field. The water let in would generally be rich in shrimp seedlings. The water would be allowed to stay in the paddy field for about five months (until March end) and then the shrimp would be harvested. The paddy field would be kept fallow for two months of the year.

There exists a very unique system of sharing the aquaculture harvest. The traditional practice has been that the owner of the pokkali farm would announce the date of the harvest a few days in advance and all the locals who are interested are free to come and take part in the harvesting. In the traditional system where the seedlings are taken from the surrounding water bodies which is a common property resource, the locals can legitimately join in the harvesting of the crop and they can keep what they harvest. The farm owner is free to employ people to do the harvesting side by side with the locals and he keeps what he gets.

This practice of aquaculture has been prevalent in this particular belt for a very long time, undoubtedly on account of the presence of shrimp rich backwaters, which surround the belt. Pokkali aquaculture is done by rice farmers in the area and not by fishermen. This method is considered eco friendly as the pokkali cultivation was said to undo the negative effects that the aquaculture had on the soil. Also the other major advantage was that the crop was relatively free of diseases. While there are no concrete figures available on the per hectare yield from traditional pokkali farming, it was considered quite low (by modern standards) and also quite unpredictable.

**‘Globalisation and Seafood Trade Legislation: The Effect on Poverty in India’  
A case study of Kerala State, India**

However, the advantage is that the investments required in this method are very low as the seedlings do not have to be purchased and no additional feed is given.

Whereas traditional pokkali aquaculture was practised by farmers with small land holding, many of the modern aquaculture farmers have large holdings running into one hundred acres or more. Most of the aquaculture farmers do not own the fields they cultivate. They take it on a yearly contract (called a ‘paattom’). Under the ‘paattom’ system, a certain rent is fixed for the year, and the lessee has to pay that amount irrespective of the yield from the land that he has leased. This rent is a sunk cost.

Under the modern method, two to three crops are harvested in a year, with each crop taking about ninety days to mature for harvesting. One crop is taken during the October – December period, the next crop during the January – April period and depending on the preference of the individual farmer, either a paddy crop or shrimp farming is done during the period September – May. Since, the aquaculture farmer has to make significant monetary investment in the modern method, he retains a larger share of the harvest when practising modern aquaculture in comparison to what he retains when he does it the traditional way. As mentioned earlier, in the traditional method, the farmer keeps what he (or his employees) is able to harvest on that day. However, in the modern method, the farmer can keep half of all the shrimp that is caught on the day of the harvest. The other half is divided amongst the locals, with each person keeping what he/she managed to catch.

The initial investment in the preparation of the farm and the seedlings is high. The seedlings have to be fed with certain types of prescribed feed (prescribed by the MPEDA) in order to ensure that they gain adequate weight. Also the farmer has to watch out for signs of diseases like ‘white spots’, which can destroy a whole crop within a span of a week. Antibiotics are added to the feed in order to prevent such outbreaks. At the end of the three-month period the crop is harvested and sold to peeling sheds/processing plants. Aquaculture farming is not very labour intensive. Some labour is required to prepare the farm before the seedlings are introduced. This is mostly done by local casual labourers. During most of the three months only one or at most two people are employed to feed the seedlings and watch out for disease. At the time of harvest the people from the local communities join in and get a certain share of the catch depending on the sharing formula that is prevalent in the area. Aquaculture is resource intensive and hence is not a means of livelihood for the poor. It is mostly the profession of the relatively well off, in particular of people who have some other secure source of income and hence do not depend exclusively on aquaculture farming for a livelihood.

With the advent of modern aquaculture in the early 1990’s, the situation changed dramatically. The pokkali farmers of the area started realising that there were great benefits to be had by adopting scientific methods of aquaculture. One of the obvious disadvantages of the traditional system (in comparison to the modern method) was the lower per hectare yield. A desire to increase the yield prompted many traditional aquaculture farmers to shift to modern aquaculture shrimp farming. In contrast to the traditional aquaculture, the yield from modern aquaculture is in the range of 1.5 – 2 tonnes/hectare depending on the investment made.

Many of the farmers, started adopting modern aquaculture by the mid 1990’s and they received technical help from MPEDA for the changeover. The new method of aquaculture meant that the farmers had to purchase seedlings from government or private hatcheries (as opposed to the earlier practice of taking them from the surrounding water bodies). In addition, the farmers also had to invest in feeding the



**‘Globalisation and Seafood Trade Legislation: The Effect on Poverty in India’  
A case study of Kerala State, India**

hatchlings and also in antibiotics and other medicines to prevent the outbreak of diseases. However, most farmers considered the additional cost worth it as the returns more than covered the additional cost.

The lure of profits also convinced most farmers in the area to abandon the less profitable paddy cultivation in favour of the more profitable aquaculture. Thus by the late 1990's most farmers in the area were cultivating shrimp round the year. However, the year 2000 was a disastrous one for the aquaculture farmers of the region. Many of the aquaculture fields were afflicted with the white spot disease and in many cases entire crops had to be destroyed. In a few cases, some of the harvest could be salvaged and but the shrimp was small sized and hence did not fetch a good price. Many farmers are of the opinion that the disease was a direct result of the abandonment of the traditional form of pokkali farming in which the cultivation of paddy is said to offset the negative effects of aquaculture farming on the soil.

This year i.e. 2001 – 2002, many farmers are taking a more conservative approach and are shifting to the less profitable pokkali cultivation with a view to saving the more profitable aquaculture crop from disease. It must be understood that there is no known scientific basis to the belief that the pokkali cultivation offsets the negative impact of aquaculture. The School of Industrial Fisheries of the CUST is currently investigating the merits of this claim.

The farmers of the area are facing a major problem with respect to diseases affecting their crop. On the one hand is the threat of diseases wiping out entire crops; on the other hand is the threat of their crop having no takers on account of the presence of antibiotic and chemical residues (used to fight diseases) in the crop.

Modern aquaculture, which once seemed a sunshine industry for the people of this belt, has reached a major crossroad within a short span of a decade. It no longer seems as attractive as when it was first eagerly adopted. Many farmers are reaching the conclusion that the risk of losing investment and livelihood on account of crop disease is too great to be worth their while. Added to this is the problem of environmental pollution, which invariably accompanies intensive and extensive aquaculture farming. Local activists complain that the waste let out from the aquaculture farms pollutes the surrounding water bodies which inhibits the growth of fishes and shrimp, upon which many of the poor families in the region depend for their livelihood for at least some part of the year.

**CASE STUDY 2 - Livelihoods of Aquaculture farmers in Aroor**

Aquaculture in Kerala is mainly the preserve of the relatively well off. For the majority of aquaculture farmers, it is not their primary source of income. It serves more as an investment opportunity for surplus money generated from other occupations. Aquaculture farmers, generally speaking have other businesses ranging from money lending to ownership of boats, retail shops etc.

Alexander is a case in point. Alexander cultures tiger prawns in 3 different plots of one-hectare area each. He owns one of these plots and gets the other two plots on 'paattom' (the paattom system is explained in section on 'The pokkali fields of Aroor'). He started out as a seagoing fisherman but later started working as a watchman on one of the larger pokkali fields in the area. The shift was mainly on account of the declining catches from the sea and the resultant fall in income. It was here that he was able to pick up the nuances of aquaculture farming. Along with this he also started lending money to local fishermen on interest, in an effort to diversify his income sources. With the advent of modern methods of aquaculture farming in the

**‘Globalisation and Seafood Trade Legislation: The Effect on Poverty in India’  
A case study of Kerala State, India**

early 1990’s, many traditional pokkali farmers adopted the new practices. Alexander was not one of the early adopters. He decided to wait and evaluate the pros and cons of the new method. The significant increase in catch quantities that the new method brought coupled with the boom in prices convinced him to join the fray. In 1998 he leased two plots of land of one-hectare area each (the lease amount for a hectare for a one year period is Rs 35,000 (USD 700)) and started his own pokkali cultivation.

For the first year he stuck to the traditional method and cultivated paddy for five months and shrimp for five months. He adopted modern methods in the culture of shrimp during the five-month period by introducing hatchery seedlings into the water and giving the hatchlings the recommended feed and nutritional supplements. He obtained a bank loan for his venture and also received subsidies from MPEDA. He also received technical assistance from MPEDA through the contact programmes that were organised for aquaculture farmers in the region. Alexander found the results encouraging as he found a substantial jump in his income.

In an effort to maximise his returns during the second year, he decided to abandon the traditional pokkali form of aquaculture in favour of year round cultivation of shrimp (three crops of four months duration in a year). This again was successful as the crop was good and so were the prices. According to Alexander the total cost incurred per hectare is in the range of Rs 1.25 – 1.5 lakhs (USD 2,500 – 3,000) per year (three crops). The income for that particular year (1999 – 2000) was about Rs 3 lakhs (USD 6,000) per hectare per year, thus resulting in a profit of approximately Rs 1.5 – 1.75 lakhs (USD 3,000 – 3,500) per hectare per year.

The third year (2000 – 2001), during which Alexander continued to practice round the year shrimp farming, proved disastrous. The ‘white spots’ disease struck aquaculture farms in the area and one of Alexander’s plots was badly affected forcing him to completely destroy the crop from that plot. The disease also affected the crop in the other two plots that he had although to a lesser degree. He had to destroy part of the crop in those two plots as well and had to sell the remaining shrimp much before they had attained their optimum weight and size, thus forcing him to sell at a very low price. Alexander incurred heavy losses.

In retrospect, Alexander feels that the disease was caused by the general abandonment of the traditional pokkali farming in favour of round the year farming of shrimp. There is a growing feeling among the aquaculture farmers in the local community that the pokkali method of cultivation somehow prevented disease in the shrimp crop and maintained a favourable ecological balance.

Alexander is of the opinion that the extensive use of antibiotics in modern aquaculture pollutes local water bodies into which the farms drain, thus resulting in the spread of disease from farm to farm. In addition, processing plants and peeling sheds also release their effluent water untreated into backwaters and cause widespread pollution and cause disease in the shrimp. This according to him is the major threat to the industry in the area. He suggests that if nothing is done immediately to clean up the water bodies and stop further pollution aquaculture farming will cease in the area in 5-10 years.

Alexander has decided to play it safe this year and has shifted to the traditional pokkali method of farming. However, he is a bit sceptical about the outcome and is keeping his fingers crossed. He says that if he does not get a good return this year he will quit the business. He has other businesses to fall back upon on as he is a

partner in a purse seine boat which fishes for local species such as sardines and mackerel, and he has an additional income from money lending.

### *9.1.3 The peeling shed industry*

The peeling shed industry is exclusively geared to cater to the export market. While there are no accurate figures on the exact number of peeling sheds most of the peeling sheds in the state are in the Aroor – Chandrur – Munnambam belt of Ernakulam district. The other major concentration of peeling sheds is around the Neendakara – Shaktikulangara harbour in the Kollam district. According to the MPEDA there are 160 registered peeling sheds in the Ernakulam district. MPEDA admits that there are at least an equal number of unregistered peeling sheds in the area (this opinion was confirmed by key informants working in the area). There are also a large number of ‘seasonal’ peeling sheds, i.e. peeling sheds, which operate only during the peak fishing season. Hence the number of peeling sheds is dynamic and it is not possible to give an accurate figure. Almost all these ‘seasonal’ peeling sheds have no permanent infrastructure to speak of and they function as peeling subcontractors (i.e. they do the peeling for a fixed per kg. rate) to the major peeling sheds.

A peeling shed employs anywhere between 25 – 100 peelers depending on the size of operations. Most of the peelers are women from the local fishing community. There are very few outsiders working as peelers in the Aroor – Chandrur – Munnambam belt.

In addition, there are many women in the local region who collect raw material from the large peeling sheds, peel it at home and bring it back to the peeling shed. They too are paid a fixed rate based on the quantity peeled. It has not been possible to get any figures on the numbers of such house-based peelers. However, local sources say that the numbers are significant and most of the women involved in house peeling contribute substantially to the family income through this activity.

The house peeling industry is dealt with in greater detail in the section analysing the poor within the seafood industry in Kerala.

The peeling shed industry plays a vital role in the health of the local economy as a significant portion of the population depend directly on peeling and related activities (transportation of fish, ice, operation and maintenance of ice plants etc)

### *9.1.4 The processing/exporting industry*

The seafood processing industry in Kerala also exclusively caters to the export market. There are 93 EIA approved processing plants in Kerala. Of these 48 have EU approval. However all the major processors have EU approval as the EU was the main market for Kerala seafood before the ban and continues to be so. Of the 48 processing plants that have EU approval 34 are situated in the Aroor – Chandrur – Munnambam belt in Kochi. Similarly, out of the 45 units, which do not have EU approval, 35 are situated in this belt. Thus it is evident that Kochi is the nerve centre of the processing industry in Kerala. According to unofficial statistics, about 81% by value of the total seafood that is exported from Kerala is processed by processors based in and around

Kochi. Next to Kochi, the Neendakara- Shaktikulangara area in Kollam district has the largest number of processing plants with 7 EU approved plants in this area.

Figures also seem to suggest that a large share of the seafood export is handled by a handful of companies with the others increasingly becoming marginalised. According to unofficial statistics, out the total amount of seafood that was processed by the 69 processing plants within the Kochi belt during 1999-2000, 87% of the quantity was processed by just 8 processors. There is an increasing trend towards consolidation of the seafood processing industry.

The seafood processing plants employ women for pre – processing<sup>1</sup>, grading, sorting and packing. The number of women employed in a processing plant could range from 100 – 250 depending on the scale of operations. Most of these women come from economically weaker sections of society and in many cases exclusively from the local fishing communities (since they are reputed to be better at specialised tasks such as peeling, grading and sorting). The income from pre processing activity is significant for the families of these women. The main breadwinner in the case of most of such families is a seagoing fisherman. Since, income from fishing can fluctuate widely on a day to day basis, a steady income source is very important for these families and thus the income from pre processing gains importance in the context of the total family income.

There seems to a trend towards employing women from outside the fishing community in tasks such as packing, which do not require much specialised skill and are highly automated. The reasons for this are not very clear. However, some processing plant owners suggest that the reason for employing outsiders is that there is a surfeit of highly educated unemployed women in the job market who are willing to perform blue-collar jobs like packing etc. These women are preferred over the lesser educated women from the fishing community as it is felt that they can be better trained to take over supervisory and management responsibility later.

There are different categories of processors/ exporters in Kerala. Not all the players are involved in both activities.

#### 9.1.4.1 Processors who also directly export

This category forms the bulk of the processing and exporting industry. All the major exporters in Kerala own their own processing plant(s). They secure orders from clients abroad, procure the raw material via a network of agents and peeling sheds. They then either get the material pre processed by an independent peeler or at their own pre processing plant, process and pack the material at their own processing plant and export it to their clients abroad. In most cases the foreign buyer repacks the processed material under his own brand name and sells it.

Some of the biggest exporters have their own brands and directly sell their products to supermarket chains in foreign countries. Almost all such branded material is value added in nature and is in semi cooked or ready to eat table-serving form.

---

<sup>1</sup> In the context of this report, the terms ‘peeling’ and ‘pre-processing’ are used synonymously. This activity includes washing the raw material, deheading, deveining, deskinning, and filleting depending on the species. This is explained in greater detail in the first report.

Traditionally the level of value addition of seafood exported from India has been very low. Countries like Thailand and Vietnam are much more advanced than India in this respect in recent years. In fact industry sources suggest that a portion of the processed uncooked material that is shipped from India is routed through Thailand and Vietnam where it is value added and sent to western markets.

However, some of the processor exporters in Kerala have started focussing more on exporting value added products than merely the processed uncooked raw material and have developed their own brands to achieve this objective. The benefits include the higher margins that are available on value added products. The downside is the investments needed to build brands in foreign markets.

#### 9.1.4.2 Processors who do not export directly

The category of players who do not export directly has increased in number after the EU ban. They mostly comprise of those players who invested heavily in plant and machinery in the aftermath of the EU ban and currently have no working capital or are facing supply chain problems. Such processors lease their idle plants to other processors/exporters (who find their own capacity insufficient during the peak seasons) or to exporters who do have processing plants of their own. These processors merely lease out their plants on fixed per kg commission basis. The downside is the low returns on the huge investments they have made on plant and machinery, but they are shielded from the vagaries of the seafood export market.

#### 9.1.4.3 Exporters who do not have a processing facility

This category is dwindling in numbers. The advent of the EU legislation has forced exporters to have absolute control over their production methods or face a greater risk of having their consignments rejected. Not having one’s own production facility places definite limitations on the degree of control an exporter can have on the quality of the final output. Notwithstanding this severe limitation, a few people who have the necessary export license and the working capital required to buy raw material continue to lease out facilities and process material and export it.

#### 9.1.5 *Other categories involved in the export industry*

##### 9.1.5.1 Middlemen traders

There is a distinct category of middlemen who deal exclusively in export species such as shrimp, cuttlefish and squid. They are mostly concentrated in the major fishing harbours of Kochi and Neendakara. There are three types of middlemen traders that operate.

1. Company agents – Company agents are employed by processing plants. Their job is to purchase raw material conforming to the price and quality specifications given to them by their employer. They are remunerated on a per kg commission basis for the quantity they procure. The remuneration is the same for all the export species and hence there is no incentive for them to prefer one species to another. They are generally given some amount of

training in judging quality and freshness. They have to ensure that the raw material procured is iced adequately and hygienically at the harbour and transferred to the company via insulated vans. These agents purchase the raw material on behalf of the processing plant and hence do not have to invest any of their own money at any stage in the process. This category of traders are the smallest in number, but their influence is on the rise as processing plants are increasing their direct procurement of raw materials in response to EU legislation. Companies have started focussing more on directly procuring material from the major harbours along the coast in an effort to take greater control on the supply chain. Direct procurement via company agents is likely to become crucial for processing plants given the dwindling raw material supply situation.

2. Owners of peeling sheds – A number of the traders that are found in the Kochi harbour are owners of peelings sheds (or as in many cases the peeling sheds are owned by family members). They procure raw material according to the price and quality specifications of the order on hand. This category forms the second largest group at the Kochi harbour.
3. Independent agents – This category forms the largest group of middlemen traders at the Kochi harbour. They buy raw material from the trawling vessels and contact peeling sheds and processing plants to find out the best price and sell the material to the highest bidder. They decide the prices at which to buy the raw material based on the current prevailing prices, the demand and the quality of the material that is on offer. There are two main reasons why this category of middlemen traders is so important to the industry.
  - a) At the Kochi harbour trawlers never sell their material on credit. Material is sold only on ‘RC’ or a ready cash basis. Basically what this means is that the material is sold only to buyers who can give hard cash then and there. However, given the large amounts of money often involved, few buyers can afford to pay hard cash on the spot. That is where the independent middleman trader comes into the picture. He puts up the money, purchases the material and sells it to some peeling shed or processing plant. A fifteen-day credit period is the norm in this transaction. The independent middleman trader puts his money at risk in the process. The risk of losing the money is very real and there are several cases of payments pending for years.
  - b) With catch quantities dwindling at most landing centres, it has become imperative for peeling sheds and processing plants to enlarge their procurement base in order to get adequate raw material at reasonable prices in order to achieve economies of scale. It is not practical for most peeling sheds and processing plants to have their own agent at all the major landing centres. The independent agent fills this need.

#### *9.1.6 Other allied industries*

Apart from these, there other entities such as the ice plant operators, transporters, head load workers etc who depend to a certain extent on the export industry for work.

#### 9.1.6.1 Ice plants

Ice plants are an important component in the fishing industry and play a vital role in maintaining the cold chain which is indispensable for fish preservation. Given the tropical climate in Kerala, it is impossible to maintain any degree of freshness without the use of ice.

Thus, fishermen carry fairly large quantities of ice on the fishing vessels. By some accounts, they carry 1 kg of ice for every kg of fish they expect to catch during the fishing trip. Modern trawlers have large separate insulated cabins where ice is stored. The ice is manufactured in 50 kg blocks. The ice blocks are crushed using a mechanical crusher before it is loaded on the trawler. Smaller motorised units also carry sufficient quantities of ice during fishing trips. Interestingly, the common view is that the use of ice has increased compared to over a decade ago. This is true for both domestic and export species. It is not clear whether this is in response to any international quality legislation.

Once the catch is landed, it is re-iced after the auction and then transported. In the case of export species, the raw material is re-iced after it reaches the peeling shed only if it is to be kept overnight. If not, it is directly peeled. The peeled material is once again re-iced before it is transported to the processing plant.

As illustrated above, ice is extensively used along the supply chain. The ice is supplied by a large network of ice plants located along the Kerala coast. Virtually every fishing village in Kerala has at least one ice plant, and in most cases more than one. Most of the ice plants are owned and operated by local entrepreneurs. As in the processing industry, the ice plant industry also suffers from overcapacity. During the late 1980's and the early 1990's, when there was a fishing boom of sorts in the state, a large number of ice plants were established. However, ice plants are expensive to set up and to run. The major variable cost component is electricity. The demand for ice is seasonal. Demand is high when fishing is good and vice versa. While there has been an overall increase in the use of ice over the last decade, ironically many ice plants had to close down. For instance there are a number of ice plants around the Kochi harbour, many of which are closed down. The reasons are not apparent. There are no estimates available of the number of ice plants in operation.

The ice plant industry does not depend exclusively on the seafood export industry for its survival. In fact, it is likely that the seafood export industry is only a small client. Domestic species are caught in much larger quantities and thus consume much more ice than the export industry.

International seafood legislation requires, stringent quality standards for the water that is used to manufacture ice used to preserve seafood. However, none of the ice plants in Kerala have any facilities to test the water as required by such legislation. They merely convert local drinking water into ice blocks and sell them. There is no quality control to speak of and MPEDA, which is responsible for monitoring ice plants, does not seem to be paying much attention to this industry.

If international seafood legislation incorporating the farm to fork principle is strictly implemented, thus requiring ice plants to test the quality of water, it is highly unlikely that any of the ice plant owners in the state will take the trouble to install the expensive equipment that is required. They would much rather concentrate resources on meeting the demand of the domestic market, which is significant in itself.

#### 9.1.6.2 Head load workers

Head load workers are mainly seen in the Kochi and Neendakara harbours and also in the larger fishing centres in the state. Head load workers play the part of unloading fish from the boats to the harbour auction floor and from the auction floor to vans, which transport the material to peeling sheds etc. They are paid a mutually agreed rate based on the number of crates loaded/unloaded etc. Head load workers generally come from the economically weaker sections of society and this activity is the main source of income for most of them. They are highly unionised and order their work in such a manner that everyone gets their share of work.

### **10. THE POOR WITHIN THE SEAFOOD INDUSTRY IN KERALA**

As noted earlier in the report, the major objective of the study is to assess the impact that international seafood legislation has had on the livelihoods of the poor within the seafood industry. Rather than go in with preconceived notions of who were the ‘poor’ within the fishing community, it was decided that Participatory Poverty Assessment exercises would be conducted with members of the fishing community in order to know what their definition of poverty was and which section of the fishing community according to them constituted the poor.

Participatory Poverty Assessment exercises were conducted in the fishing villages of Port Kollam and Marianadu. Respondents were selected to represent the social and economic diversity of the village. An effort was made to get men and women from various age groups who were knowledgeable about the communities to participate in these discussions.

One of the interesting findings was that poverty was not merely defined only in terms of the material wealth that an individual/family had (or did not have), but also more importantly in terms of the perceived vulnerability of the individual/family to changes in the external environment. The explanation seems to be that, fishing is an occupation where income level can vary on a day to day basis and hence the lack of a financial cushion (in terms of savings etc) can hit even the fairly well off (i.e. fishermen with craft and gear of their own) very hard. Thus the fishing community considers an artisanal fisherman who has purchased a plywood fishing boat and an OBM (the combined cost of which would be about \$2,500) on a loan, more vulnerable than a labourer who has no craft and gear of his own. The logic is that any drop in fishing income will hit the boat owner harder than the labourer as the boat owner has the additional burden of paying back the loan he has taken. Trawler crew were also categorised as poor because they were perceived to have little control over the productive resources that were required for fishing and were at the mercy of trawling the industry over which the fishing communities have very little direct control.



## **10.1 Trawler crew**

In the fishing villages where the Participatory Poverty Assessment was conducted, fishermen who worked as trawler crew were considered to be part of the ‘poor’ within the fishing community. Until about a decade ago the trawling industry was considered an attractive option for employment. However, the progressively declining catch quantities for trawlers combined with the rising prices of fuel served to drastically reduce the income from trawling. The above factors meant that a large number of trawlers had to be put out of operation due to the high operational cost and the uncertainty about covering these costs. This in turn led to a large number of trawler crew being put out of work. Today, many fishermen consider working as crew in trawlers as the last option, as the work is challenging (requires fishermen to stay at sea for longer in comparison to motorised craft) and not as remunerative as some of the other options available. There is a trend towards employing greater number of fishermen from neighbouring Tamil Nadu as trawler crew as there are fewer takers for the job in Kerala.

Fishermen working as crew in trawlers are considered particularly vulnerable within the fishing community (as indicated during the PPA) because most of them do not own any of the productive assets that are required for fishing such as boats, engines and gear and have to depend entirely on trawler owners for work. They are also mostly those, who for some reason, do not find employment in the artisanal sector on a regular basis and thus are forced to depend on the trawling industry for work. As most of them stay away from home, the cost of maintaining two establishments for much of the year is a further burden. In the event of a bad season these families are generally most affected and dependent on loans for day-to-day consumption purposes.

Trawler crew are paid on a pre fixed income-sharing formula. Once the catch is auctioned and the money is paid to the trawler owner, the cost of fuel, ice, food for the trip, maintenance and other miscellaneous items are deducted. The balance amount is divided into shares depending on the number of crewmembers. For instance, if there are 8 crewmembers, the amount is divided into 10 equal shares, i.e. one share each for each of the crewmembers and one share each for the craft and gear (this goes to the trawler owner). If the owner worked as a crewmember during the fishing trip he gets his crew share as well.

In most cases the wives of the fishermen also work in order to support the family. Many of them are occupied in door-to-door fish vending (in cases where the village is situated near a town) or sell fish at the nearby local market (in cases where the villages are relatively far away from towns). They also get involved in peeling and construction activity.

In most cases these families own little more than the house they live in and the homestead. The children are more likely to get involved in fishing and related activities in order to supplement the family income than go to school.

## **10.2 Owners of artisanal fishing craft and gear**

This category was considered as ‘vulnerable’ (and hence poor) by respondents of the PPA. In terms of assets, this category was by and large described as ‘fairly well off’.

In addition to owning plywood boats, onboard motors and fishing gear, most fishermen in this category also have houses of their own. However in almost all cases the boats and engines have been purchased on loans from different sources and lower incomes on account of falling catch sizes have meant that these fishermen often have very little to take home after repaying the loan.

There are different sources of loan for artisanal fishermen

1. Local moneylenders cum auctioneers cum traders – In many fishing villages, traders are the main source of credit for fishermen (owners of artisanal craft). The arrangement is such that the trader who advances the loan is given exclusive right of auction fishermen’s catch and takes a prefixed percentage of the catch value as interest payment for the loan. This goes on until the fisherman repays the principal amount. The problem is that since the interest deduction is in percentage terms and not a fixed amount, the effective interest rate is very often unimaginably high. The system is highly exploitative and is widely thought of as one of the major reasons for the continued impoverishment of the fishing community in Kerala.
2. The second source of loans is cooperative societies like SIFFS. Loans are given for purchase of craft and engine. Bank interest rates are charged. No collateral is taken.

The above two are the most common sources. Mainstream banking institutions still consider fishermen unbankable since most of them have no collateral that they can offer. Add to that highly variable income patterns. However, some banks do issue loans if local cooperative bodies stand guarantors. This is not very common though.

In addition to the burden of loan repayment, a certain amount is incurred as operating cost (primarily for fuel) for every trip that is made and the result of the trip is uncertain in terms of catch size. In addition to this the cost of repair and maintenance also has to be incurred from time to time. All this adds up to low savings and a high degree of vulnerability to adverse external conditions.

### **10.3 Workers in peeling sheds and house peelers**

Peeling shed workers generally come from the economically weaker section of the fishing community itself. In most cases, the main breadwinner in the family works as crew in a mechanised unit or as in many cases does not work at all. The women work in order to supplement the family income. The work is mostly seasonal. The peelers are paid on the basis of the quantity they peel and even the most experienced peeling shed worker can earn only up to Rs 100 on a good day. Compared to this, unskilled daily wage labourers working at construction sites are paid a fixed amount of Rs 175 for a day. Agricultural labourers earn in the range of Rs 150 a day (fixed rates). Typically the income can vary from day to day depending on the availability of raw material. However, there are other employment opportunities for these women. In areas where there is construction activity, these women can choose to work as labourers at construction sites. This is considered a more attractive option as the wages are fixed. However, the bulk of the construction activities are in the major cities and towns and women who want to work there have to travel by public transport

for long distances. Generally, women who do this have little control over their time and are often unable to do justice to the role they are expected to perform on the home front. Therefore, while construction activity may seem a better alternative on paper, it is a viable option for women living in fishing communities quite close to major cities like Kochi.

Many of the women in this category who are less inclined to work outside the house for long hours collect raw material from a nearby peeling shed, peel it at home and return the peeled material and are paid on a per kg basis. They are paid about 15% less than their counterparts who work at peeling sheds. This trend is increasing since this apparently gives the woman more control over her time and enables her to devote more time to household work.

### *10.3.3 The peeling shed industry in the Aroor Chandrur belt*

The Aroor – Chandrur – Munnambam belt, which is in the Ernakulam district, is the heart of the peeling shed industry in Kerala. According to sources such as MPEDA and the SEAI, as much as 90% of all the peeling sheds in the Kerala state are situated in this belt. Peeling is a well-established industry in the area, providing employment and livelihood to a significant part of the local population. The vast majority of peeling sheds concentrate almost exclusively on peeling shrimp. While other species such as squid and cuttlefish are also peeled, this is not very common, as margins on shrimp are higher than those for cuttlefish and squid. Also, while shrimp is available in some quantity during most months of the year at the Kochi harbour, cuttlefish and squid are available mostly during the months of September to November. Peeling sheds in the area do not generally get cuttlefish and squid from distant landing sites as the cost of transportation reduces the margins on these varieties to the extent that there is little financial gain from doing peeling these species.

There are several reasons, which have been cited for the heavy concentration of peeling sheds in this belt. Chief among them are the close proximity of the Kochi harbour, which proved to be an abundant source of raw material during the 1980’s and the early 1990’s and resulted in the establishment of a large number of sizeable seafood export processing plants in the surrounding region.

As mentioned earlier, as many as 83 of the 93 MPEDA registered processing plants in Kerala are situated in this belt. Thus it is no surprise that this area also has the largest number of peeling sheds, which cannot survive without seafood processing plants, their sole buyers.

The processing industry is much older than the peeling shed industry in the region. The first seafood exporter from Kochi began in the late 19th century. While peeling has been a traditional activity in fishing communities, it was almost exclusively for self-consumption purposes. Peeling for commercial purposes started in a big way in the 1970s and 80s following demand from processing plants in the Kochi region.

The other major reason is the abundant presence of backwaters and other water bodies through out this belt. This is crucial since a peeling shed can be established only in an area with assured supply of water and more importantly a means to dispose of

wastewater without attracting the ire of the local communities. This is one reason why the all the peeling sheds are situated outside the main town area.

There is legislation to regulate the disposal of effluent water into water bodies. The legislation requires that the effluent be treated appropriately before being released into surrounding water bodies. In fact, MPEDA requires all registered peeling sheds to have a suitable wastewater disposal arrangement. However, this is rarely complied with, as this requires substantial investments in land and equipment, something that even the large peeling sheds can ill afford. There is however little complaint from local communities on this issue even though the pollution of water bodies directly affects them in the form of skin diseases, bad odour, death of aquatic life etc. This is because peeling provides employment to many people in the communities and is an important source of income.

If legislation is strictly enforced the village level peeling industry is likely to be affected. Peeling sheds will have to either invest in effluent treatment facilities or close down altogether. In the event of peeling sheds closing down, house peeling is likely to pick up as women working at home fill the void.

Yet another reason given for the high concentration of peeling sheds in the belt is that the women in the area are considered to be very skilled at peeling and thus minimise wastage and produce higher yields. It is particularly true for the smaller variety of shrimp, where more skill is required to peel. It is widely thought by peeling shed operators in the region that peelers there can give a 5% better yield than any other peelers in the country. Since the yield is more, getting material peeled by women from this area represents a competitive advantage. However, it is very difficult to verify this claim.

There are three broad categories of peeling activity in the region. They can be categorised in terms of the scale of operations, infrastructure and external market linkages. They can be thought of as forming a hierarchy of sorts. At the basic level are the house peelers (which strictly cannot be classified as peeling sheds, but nonetheless are an integral part of the industry). At the second level are the small scale peeling sheds which have some semi permanent infrastructure and are increasingly working as peeling sub contractors to large peeling sheds. At the highest level are the very large peeling sheds, which mainly act as aggregators of material from large numbers of landing sites, who peel from a variety of sources and sell to processing plants.

#### 10.3.3.1 House peelers

At the most basic level are the house peelers, where women in the household peel shrimp in their spare time. They collect raw material from the local peeling shed and return the peeled material to them. The house peelers are paid on the quantity of peeled material that they return. Up until 1997, house peeling was a very common activity but pressure from processing plants forced peeling sheds to stop (albeit temporarily) getting material peeled from house holds citing concerns over quality control. However, indications are that house-based peeling is definitely making a comeback of sorts in the area. The main reason for this is the consolidation that has taken place in the peeling shed industry. Prior to the EU ban, there was a large

number of small temporary peeling sheds. The ban indirectly caused the demise of many of these sheds. In their place came a smaller number of large peeling sheds. The volume of material handled by these large sheds is several times that handled by small peeling sheds. In cases where the raw material purchased cannot be handled by the workers of the peeling shed, the local house peelers are called in. However, peeling shed owners are increasingly finding this a better alternative since the overhead costs (such as cost of electricity and water) are not incurred when house peelers are employed. Only house peelers who have a record of maintaining some minimum standard of hygiene are employed. There does not seem to be much opposition from processing plants to this trend as long as the peeled material reaching them conforms to their quality requirements.

#### 10.3.3.2 Small temporary peeling sheds

At the next level are the temporary small-scale sheds. This used to be the most common kind of peeling shed in the belt. A typical enterprise would consist of nothing more than a temporary structure where peelers would be able to squat on the floor and work. In most sheds there is no running water and no permanent power supply. These structures require very little investment and can be dismantled at short notice. In most cases there is no permanent structure whatsoever that marks out the establishment as a peeling shed. Any ordinary shed near a water source can be converted into a peeling shed with little effort. The negligible cost of set up was perhaps what prompted a large number of entrepreneurs to establish peeling sheds during the 1980's and early 1990's. However, most of these sheds had to close down after the EU ban (reasons explained in detail in the section titled THE EU BAN). Some of them have made a come back in the last two years in the form of peeling sub contractors. These sub contractors collect raw material from large peeling sheds, employ a few peelers to peel the material and give it back. They get paid on a per kg basis. Large peeling sheds prefer to sub contract the work as it keeps their overheads down.

#### 10.3.3.3 Large peeling sheds

At the apex level are the large peeling sheds. These used to be few and far between. Now they are more common as a result of consolidation. A large peeling shed typically has a concrete structure in which the material is peeled. Even in large peeling sheds, peelers squat on the floor and work. Most of the large peeling sheds have running water and electricity supplies. Many of these facilities were set up under pressure from processing plants shortly after the EU ban was lifted. This had to be done to retain the customers. However, in an effort to handle large volumes while keeping overheads low, many of the large peeling sheds are sub contracting the peeling to smaller peeling sheds and house peelers.

One of the main weaknesses of the peeling industry in this belt is its over dependence on Kochi fishing harbour for raw material. This also resulted in the major shake-up that subsequently took place in the local industry. Thus in the late 1990's catch quantities at Kochi harbour dwindled. This resulted in fierce competition and higher prices for raw material. This price hike resulted in the elimination of many small peeling sheds, which did not have the working capital to maintain operations. Increasingly peeling shed operators started looking elsewhere for cheaper raw

material. This led them to places as far as Mangalapuram in neighbouring Karnataka and landing centres in Andhra Pradesh. Typically a peeling shed would contact a middleman at a distant landing centre and appraise of their requirements. Based on availability and price, the transactions would be made. Along with this came the cost of transporting raw material from distant locations and the risk of spoilage (in case there is a delay on account of a strike or a transport breakdown).

However, not all who started out on this path of expanding their raw material procurement base succeeded. Some peeling sheds seem to have been able to manage the far flung network of middlemen better than others. Those that were not able to suffered from uncertainty in raw material supply. This along with other reasons led to the closure of many established peeling sheds in area.

Today, a consolidation of sorts has taken place and instead of the large number of peeling sheds there exist a relatively smaller number of larger peelings sheds. Typically the owner of a large peeling shed would also have a network of peeling sheds in the adjoining area. The network may either be owned entirely or partially by the operator or in some cases the peeling sheds may belong to sub contractors who service his peeling related needs.

#### *CASE STUDY 3 - The typical peeling shed*

Peeling sheds in Kerala come in all shapes and sizes. They range from the modern sheds, which apparently comply with many of the international norms to the rudimentary sheds that are nothing more than temporary shelters where material is collected and peeled. Most peeling sheds would fall somewhere in between these extremes

A typical peeling shed would employ about 25-50 women. This figure depends on the workload and can vary from day to day. The building would be a permanent one, and in most cases the roofing would be either asbestos or aluminium sheets and the flooring would be concrete. Women squat on the slightly raised cement platforms in 4 or 5 parallel rows. The peelers are given the raw material in a container of standard measurement. The peeler places the raw material on one side and peels (depending on instructions on what kind of peeling is to be done) and sorts it according to the count (i.e. the size of the shrimp/ cuttle fish/squid) and place the peeled and sorted material into different vessels depending on the count. Once the material given to her is exhausted, she is given a token (a plastic disc) for her work. She is then given another batch of raw material to work on. At the end of the day, the tokens are converted into wages. In many peeling sheds a token is worth Rs 5.

Peelers complain, that the owners cheat by changing the standard containers that are used to measure out the raw material. This is particularly true with peelers who are young and inexperienced and will not protest. Thus they extract more work from them and do not pay them any extra money.

Also peeling shrimp, which is very small in size, is highly disadvantageous to the peelers. The time and effort required for peeling small shrimp is much more than for medium sized and large sized shrimp. The smaller the size, the larger the number of shrimp there are in a single container. Hence more the time consumed. Thus the throughput is reduced dramatically and thus the earnings. The peelers are not paid anything extra for peeling small sized shrimp, though the work is more laborious. The

**‘Globalisation and Seafood Trade Legislation: The Effect on Poverty in India’  
A case study of Kerala State, India**

wage system is loaded against the peelers as the peeling shed owners manage to extract more work out of them.

Seafood, being a perishable commodity, has to be processed in the shortest possible time in order to maintain quality. For this reason, peeling shed operators can ask the peelers to report to work at anytime of the day or night depending on the arrival time of raw material. The peelers are given short notice and since peelers are generally employed from within the local community, it is easy to get the information across.

*CASE STUDY 4 - The peelers of Neendakara Shaktikulangara*

The peeling shed industry in and around the Neendakara- Shaktikulangara harbour has undergone several changes since peeling became a means of livelihood for the local population about 30 years back. The Neendakara harbour was a direct beneficiary of the Indo Norwegian project, which introduced the modern trawler in Kerala during the 1960's. Ever since this region has been one of the major fish landing centres in the state. Peeling has emerged as a major allied industry in the region. The peeling is done exclusively by women belonging to the local fishing community, in particular those who come from the family of seagoing trawler crew and artisanal fishermen. Women of all age groups can be found performing this activity.

Prior to the large scale introduction of factory made nylon nets in fishing in the early 1970's, net making and mending were common occupations for the women in the fishing community of this region. This industry collapsed during the 1970's and is no more. The peeling activity in many ways filled the vacuum that was created by the demise of the net making industry. Peeling of shrimp, cuttlefish and squid is also a traditional activity, but this was mostly done for self-consumption purposes. With the advent of trawling for the lucrative export markets, women in the local communities saw an opportunity to make peeling a livelihood. House peeling for export purposes started in a big way during the mid 1970's. Traders would buy large quantities of shrimp at the harbour auction, distribute it among a few women peelers, who were to peel the material at home and return it to the trader who would then aggregate the material and sell it to processing plants. The women were paid on the basis of the number of kilograms of peeled material they returned to the trader (this ensured that the recovery was high as higher the recovery the more money the peeler made). This system had several advantages as the women could work as and when they wanted and it enabled them to pay attention to their household work. The disposal of waste and wastewater was not a problem as the peeling activity was dispersed. While in hindsight, maintenance of hygiene standards and uniformity was a problem; this was not so then. Processing plants did not insist on quality standards and the house peeling industry was well established. An additional problem that the trader faced was that he did not have complete control on timing of the peeling process. Thus, he was not sure when all the material would be returned and when he could deliver it to the processing plant.

It was only during the peak fishing seasons, when raw material supply was huge and continuous that the traders brought the women together under some temporary shed and had them peel.

The concept of the peeling shed came to the fore during the fishing boom of the late 1980's and the early 1990's. The sharp increase in catch quantities required traders to adopt more efficient ways to peel shrimp and cuttlefish (as opposed to house peeling). The peeling shed concept became popular because it is a more efficient method of peeling large quantities. Given the increased competition, traders had to

**‘Globalisation and Seafood Trade Legislation: The Effect on Poverty in India’  
A case study of Kerala State, India**

have greater control over the peeling process and setting up peeling sheds was a good way of doing that. Women from the local community were employed in the peeling sheds and were paid on the basis of the quantity they peeled.

This however did not mean the end of house peeling. Many women continued to be peel raw material at home as it gave them greater control over their time. They however earned less than their counterparts working in peeling sheds as the latter would at any rate peel more than them in a given day. The house peelers were supplied by small time traders who could not afford to establish peeling sheds of their own. The obvious advantage of peeling sheds was that the core activity was centralised resulting in greater control over timing and throughput. There was little sunk or fixed costs incurred. The disposal of waste and wastewater was also not problematic as the peeling sheds provided valuable employment to the local population and the resulting pollution of nearby water bodies did not ruffle too many feathers within the local community.

The impact of international seafood legislation in the late 1990’s has not made a significant difference to the peeling industry in the region. At present, there are in operation all kinds of peeling sheds in the area, which comply with international, and MPEDA legislation to varying degrees. On the one hand there is a peeling shed near the Shaktikulangara wharf which apparently complies with some of the EU norms (easily washable floors and walls, running water, chill room etc) but not with all (the peeling is done on the floor). Nearby there is a peeling shed, which is a rudimentary open-air facility, where peelers squat on the floor and peel material (no running water, cracks in the cement floor with stagnant waste water). The irony is that material from both the above mentioned peeling sheds is sold to a nearby processing plant, which is licensed to export seafood to the EU

In the last five years a new category of peelers has emerged in this area. A small number of women peelers have organised themselves and jointly take part in the auction, purchase raw material (mostly shrimp) peel the material in the harbour premises and sell this to traders who in turn sell to processing plants. This has many advantages. They give themselves the chance to make a profit from selling the peeled material at a higher price than they purchased, they have some control over the size of shrimp they peel (i.e. they can avoid the small shrimp which are difficult to peel) and hence avoid being exploited and they have greater control over their time use. The flip side is that only women who have some minimum working capital can join the group and there is a real possibility of making a loss when selling the peeled material. Most of the women in the group used to work at peeling sheds in the region, but left because of problems with work timings and pay. They felt that they were not being paid adequately for the work they were doing.

#### *10.3.4 CASE STUDY - Local action against pollution*

Seafood India is a seafood processing plant that is located within the Chellanam village area in the Aroor Chandrur belt. This was set up about 10 years ago mainly to take advantage of the peeling industry in the area. The plant also provided employment to some women from the local community. However, over a period of time, the disposal of waste and wastewater became a point of contention between the factory owners and the local community.

There are large water bodies in the form of backwaters and ponds in and around the Chellanam village and these are critical to the local population as it supplies them with water for all their needs including drinking and cooking purposes. Paddy fields and aquaculture farms drain into these water bodies and over a period of time they



have become polluted. Seafood India was also one of the contributors as it used to dump its untreated wastewater into these local water bodies (the proximity to a large water body was one of the attractions in setting up a plant in this area).

The pollution of the local water bodies reached a peak around 1998, and the locals started observing adverse changes in the water bodies they depended on. The water started becoming unusable for drinking and cooking purposes as the locals shifted to the corporation water supply in the village. Aquatic life in the water bodies was also affected and fish started to die.

The local community leadership immediately identified the Seafood India processing plant as the culprit and launched an agitation against the plant. Local protests were organised outside the plant premises and the protesters blocked vehicles bringing in raw materials. The plant owners could ill afford having delays in processing the highly perishable raw materials as the losses would be high. After a brief stand off, the plant management agreed to install a small effluent treatment facility to treat wastewater before releasing it into the local water bodies. The plants also decided to increase its intake of manpower from the local community perhaps in an attempt to win support and avert any similar local action in the future.

## **11. PROBLEMS FACING THE KERALA SEAFOOD INDUSTRY**

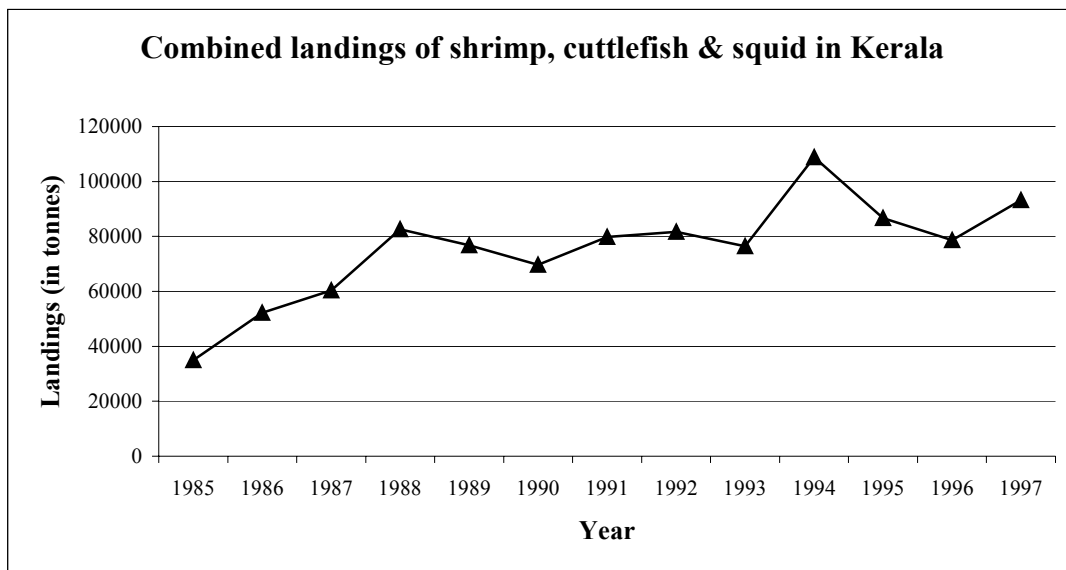
The Kerala seafood industry today is facing a myriad of problems, which has already affected its position as the top seafood exporter in the country. The increasing raw material scarcity coupled with the problem of overcapacity in the processing industry has put the industry under severe strain. There is a general feeling in the fishing community and the peeling shed industry that the consolidation that has taken place in the processing industry in the last few years after the EU ban in 1997, has resulted in the formation of a small and powerful cartel within the processing industry which is in a position to control raw material prices to their advantage.

The export processing community on the other hand has problems of its own. Ever increasing stringency with regard to quality on the part of importing nations coupled with what is generally perceived as non tariff trade barriers in the form of unreasonable quality requirements are the main problems on the demand side. The almost total lack of control over quality and hygiene at the initial stages of the marketing chain is the main problem on the supply side.

### **11.1 Scarcity of raw material**

The main problem facing the seafood export industry in the state is undoubtedly the scarcity of raw material. As can be seen in Graph 2, catch quantities have been unpredictable at best and have been showing an overall downward trend since 1994.

**Graph 2: Trends in landings of export species in Kerala**



Source: College of Fisheries Report 2002

As can be seen from Graph 2, the late 1980's and the first half of the 1990's were good years for the export sector. The year 1988 can be taken as a milestone of sorts with regard to catch quantities of export species. Catch quantities jumped from the 60,000 tonne mark in 1987 to the 80,000 tonne mark in 1988 and has been hovering around this marking since then.

The reasons for this sustained increase in output are not clear. Some experts attribute it to the monsoon-trawling ban, which was started in 1988. During this period there was also an increase in the number of trawlers in operation. Also the size of the average trawler was increasing.

The increased output during the seven year period made the trawling industry an attractive investment opportunity. New and bigger trawlers were built and trawling activity intensified. The growth of the peeling shed industry coincided with this boom in fisheries output. The best year was 1994, when the total export catch touched around 110,000 tonnes. This encouraged additional investments to be made. Trawlers were becoming more modern and consequently more expensive to own and maintain. But it was widely felt that the returns would be adequate to cover the costs. In an effort to recover investment and cope with the increasing competition, trawlers were going deeper, staying longer and resorting to indiscriminate fishing. It was also during this period that trawling as an occupation became attractive for artisanal fishermen who had no craft or gear of their own.

1995 was a bad year for the industry as catch quantities dropped by about 20%. The situation was made worse when the Gujarat plague depressed beach prices since there was widespread apprehension among exporters that demand for Indian seafood would suffer on account of this. This crisis in the trawler industry led to a shakeout, which resulted in a number of trawlers being put out of operation. A number of relatively new trawlers had to be sold off, as the owners did not have the working capital to finance day-to-day fishing trips. Trawler crew were laid off in large numbers. The second shakeout came in the aftermath of the EU ban of 1997, which resulted in

another round of lay off. However, there was such an unsustainably large number of trawlers in the state by 1994, that even after the crises of 1995 and 1997, a large number of trawlers were still left in the fray. It is estimated that there are about 3,800 mechanised trawlers in Kerala today. It is not clear as to how many of them are engaged in active fishing.

The falling catch quantities and the large number of trawlers have meant that an individual trawler gets an increasing smaller share of the pie.

Given the declining catch quantities throughout Kerala, there is increased competition among buyers for the limited amount of raw material available. Certain species are no longer found. The raw material scarcity has meant that peeling sheds and processing plants are forced to buy raw material via agents from landing centres located in other states and transport them in insulated vans to their plants. This means additional costs (the cost of transportation is in the range of Rs 4-5/kg from most landing centres). Landing centres in Karnataka, Tamil Nadu, AP and Orissa have emerged as major sources of raw material for peeling sheds and processing plants in Kerala. Peeling sheds in and around Kochi, which were mainly set up to take advantage of the abundance of raw material once available at Kochi harbour are now forced to depend almost entirely on landing centres situated outside Kerala. The raw material brought ashore at Kochi harbour is too little to sustain the local peeling shed industry. The lack of raw material has been one of the chief reasons for the decline of the peeling industry in the region and many peeling sheds have been forced to close down. The ones that survived have been able to establish and manage a network of procuring agents at the major landing centres outside the state. This has ensured an adequate supply of raw material albeit more expensive and more logistically involved.

### **11.2 Cartelisation in the processing industry**

Informed sources within the Kerala seafood export industry estimate that the top 15% of the seafood processors in the Kochi belt process around 90% of the total processed output of the belt. The Kochi belt in turn accounts for about 80% by volume and value of the total processed output of Kerala state. Thus a small number of processors handle nearly 70% of the total seafood processing and exporting in the state.

There is concern within the industry and the supply chain (peeling shed owners, traders etc) that the big eight could form a powerful cartel, control the entire supply chain in Kerala and manipulate prices to the detriment of other players thus further reinforcing their position.

### **11.3 Overcapacity**

Build up of overcapacity in the processing industry is the other major problem that faces the industry. The large and very expensive processing capacities built up by the industry soon after the imposition of the EU ban has had a negative impact on the long-term survival of the industry. The large investments made by many processors to gain EU approval, left many players without the working capital required to purchase raw material for processing. They in turn passed the working capital squeeze on to the peeling shed industry by delaying payments for supply of peeling material. Peeling

shed owners complain that there several instances of large payments that have been pending since 1997.

#### **11.4 Changing standards**

Rejection of consignments from Europe on grounds of poor quality or presence of antibiotic and chemical residues has been another major problem facing the processing industry. The general complaint made by the processing industry is that the EU is constantly changing the rules of the game by checking for newer kinds of residues all the time and rejecting seafood without furnishing adequate explanations. The EU is reported to be expanding the list of prohibited pathogens with every consignment that arrives at its shores. The losses incurred are very significant and there have been cases where a single rejected consignment has resulted in the closure of processing units resulting in financial losses and job losses.

A basic problem seems to be that the EU is unwilling to finalise a list of residues and pathogens, which need to be checked for. The Indian seafood industry has been pushing for a meeting with EU health inspectors to finalise this list so that Indian processors can check for them before sending a consignment. However the EU has not obliged so far.

In May 2002, an entire consignment of processed cultured shrimp exported by one of the leading processors in Kerala was rejected by EU health inspectors on account of the presence of 1.6 nanograms of Nitrofuron, a residue of antibiotics used in aquaculture farms for disease control (Source: SEAI). Industry sources say that the specialised equipment required to detect such minute traces of this chemical is available only in Europe. The EU had given no prior notification that it would check consignments for this chemical. The problem of detecting chemical residues is made worse by the fact that each class of chemicals requires different types of testing equipment. Most of the testing equipment is quite expensive and cannot be afforded even by the best plants in the state.

As a result of the Nitrofuron crisis the SEAI had instructed its members all over India not to procure raw material from aquaculture farms for some time. It must be noted that in the year 2000 – 01, aquaculture farms supplied 59% by volume and 86% by value of total shrimp exports from India. The Nitrofuron issue has thus put in jeopardy the largest source of shrimp for the processing industry.

This as mentioned before is not an isolated incident. Prior to the Nitrofuron issue was the problem of chloramfenicol (another residue of antibiotics used in aquaculture). However, China was the main victim of that crisis. The EU banned all exports from China on account of this. That crisis however awakened the SEAI to the problem and it in turn recommended that its members check for this residue. Quite interestingly, many Indian processors were contacted by Chinese suppliers to purchase their shrimp and export it to Europe labelled as Indian shrimp. The SEAI however issued a circular to urging its members not to resort to purchase material from China.

### **11.5 Unreasonable quality requirements (Technical barriers to Trade)**

The other major main compliant about the EU legislation is that the hygiene standards set for seafood are unreasonably high. For instance, the EU has specified microbiological standards for cooked crustaceans, but there are none for raw frozen shrimp and fish. Many in the Indian industry feel that in actual practice, EU health inspectors apply the same standards for raw shrimp and fish as they do for the cooked variety. This often leads to rejections to raw shrimp as it very difficult to ensure the same microbiological standards as in cooked shrimp.

According to an expert, the same stringent standards for testing the water used as well as the microbiological standards required of the final product do not apply to seafood processing plants in Europe. The standards there are a lot easier and cheaper to comply with.

This is perhaps what gives rise to the widely held suspicion among Indian processors that the EU is cynically using the issue of hygiene to protect its industry. In other words, the EU directive is widely seen by the industry as nothing more than a technical barrier to trade.

The technical barrier to trade has implications for cost competitiveness as the stringent quality requirements push up the cost of processing and quality control.

### **11.6 Lack of control over the initial stages of the marketing chain**

While there is a reasonable level of control over quality at the level of the processing plants this is not the case at the initial stages of the marketing chain. A recent study by the Export Inspection Agency and the Marine Products Export Development Authority (MPEDA) on the rejection of seafood shipments to the EU has found that contamination of the product started from the fishing vessel itself and more so at the landing centres and fishing harbours.

According to the SEAI, the quality chain from the fishing vessel, landing centre, pre-processing facility, factory, frozen storage and shipments is broken in the first two links of the chain. Most fishing vessels and trawlers observe no hygiene and there are no standards or inspection procedures to ensure that the vessels are kept clean to avoid product contamination. In the landing centres and fishing harbours, the catch is unloaded from the boats on to the floor for auctioning. Stray cats and dogs freely roam about at the fish landing sites and there is no pest or rodent control at these sites. As a result, the raw material is contaminated at the first stage of the quality chain. When the catch arrived in a contaminated condition at the processing centres, there was not much that the factory could do to process it into micro-biologically acceptable product fit for export.

There is an increasing realisation within the seafood export industry that tighter controls need to be maintained on the initial stages of the supply chain starting from the fishing vessels, the fishing harbours and landing centres, ice plants and peeling sheds.

**‘Globalisation and Seafood Trade Legislation: The Effect on Poverty in India’  
A case study of Kerala State, India**

In September 2001, SEAI officials called on the Government of Kerala to create a corporation to manage the five main fishing harbours in the state. This was prompted by a study conducted by MPEDA and EIA, which concluded, that the main reason for the rejection of consignments of Indian seafood, despite world class processing facilities, is the lack of hygiene at the initial stages of the chain i.e. fishing vessels, harbours, ice plants, vans etc. There is also talk of requiring all fishing vessels to be registered with the Government (information from SEAI officials) so that some measure of control can be maintained on hygiene and quality.

There is no doubt that strict implementation of any farm to fork policy which requires traceability, will be disastrous for the poor within the fishing community who depend on export species. The reasons are not hard to see.

Going by the experience of the peeling shed industry, complying with international process requirements is likely to be an expensive affair. It is estimated that a pre processing plant built to the specifications of the EU directives would cost in the region of Rs 25 lakhs (approx \$ 50,000). It is doubtful whether there are people in the fishing community who can afford to make such investments. The trend in the trawler industry has been that as the cost of trawlers increased, the number of trawler owners within the fishing community decreased and control of the industry effectively passed out of the hands of the community. Currently, all of the artisanal fishing crafts and most of the peeling sheds and ice plants are still within the ownership and control of people within the fishing community. The well off within the communities are the owner operators and the poor provide the labour.

However, this situation is not likely to continue if legislation is strictly enforced thus requiring large financial investments. Just as in the case of the trawling industry, the control of these industries is also likely to slip away from fishing communities and they may in all likelihood be reduced to providing labour.

Once ownership passes out of the control of the fishing community, there is a likelihood that employment potential for the fishing community in these industries will also decrease. The trawling industry provides an illustration. With the advent of modern fish finding technology, the traditional skills of fishing the best fishing grounds that fishermen have honed over years of experience and training have become redundant. Nowadays, one strictly does not have to have a background in fishing to become a trawler crew. This has meant that people from communities that hitherto had nothing to do with fishing are competing with fishermen for employment in the trawling industry. Many of the fishermen who are involved in trawling today have no background in fishing. Technology has replaced many fishing skills and made them redundant.

The same can happen in the peeling industry. Peeling which is considered a skilled job may be replaced by technology if adequate investment is made. Today, peeling is almost exclusively done by women from the fishing community. This may not be the case in the future if the industry is forced to upgrade and invest in modern technology. Already, women from other communities are successfully competing with women from the fishing community for employment in modern pre processing and processing plants. In jobs like packing, where skill is not an issue, employers use education levels as the differentiating factor. Women from outside the fishing community generally

have a much higher level of educational attainment than those from the fishing community. If technology makes peeling skills redundant, the trend of preferring women from other communities is likely to continue.

## **12. THE EU BAN**

The imposition of a temporary ban on seafood from India by the European Union effective from August 1, 1997 was a watershed of sorts for the Kerala processing industry. The industry in Kerala bore the brunt of the ban, as it was the most dependent on this market. The ban had an immediate short-term impact throughout the export fishing sector affecting everyone from the fishermen to the exporters as overnight the single major customer for Kerala seafood stopped purchases. The ban also had a major long-term impact on the industry in Kerala as the crisis forced restructuring within the processing and peeling industries.

### **12.1 Events after the ban**

The EU imposed a total ban on the import of fishery products from India in the interest of health and safety of consumers with effect from August 1, 1997. This was after inspections by the EU Commission's Food and Veterinary Office, showed serious deficiencies in the structure of establishments, the hygiene quality of raw material, and in processing operations. The inspections also showed that the level of control by the national authorities was insufficient. The latter was an important factor in the decision to opt for a total ban. The ban was temporary in nature and was to be reviewed before 30 November 1997. ([http://europa.eu.int/comm/fisheries/news\\_corner/press/inf20\\_en.htm](http://europa.eu.int/comm/fisheries/news_corner/press/inf20_en.htm))

During November 1997, a two-member European Commission inspection mission visited India and inspected randomly selected processing plants throughout the country to find out the extent to which exporters to the EU were complying with the hygiene and sanitary standards prescribed by the EU for seafood products.

When in India, the team visited Kochi and inspected three of the five plants that were targeted earlier by the EU and according to the SEAI convener, Mr. Gul Kripalani, indicated, “They have indicated to us that the Cochin units are better than even the ones in the European Union itself”. (Source <http://www.rediff.com/business/dec/03eu.htm>)

Following the inspection, the four-month ban was partially lifted in November 97, with a few firms meeting the European hygiene standards and certified to export to the EU.

### **12.2 The immediate impact of the EU ban**

Perhaps the most profound impact of the EU ban was to shake the industry and the concerned government agencies out of their complacency. Shortly before the ban had come into effect, Indian officials in Brussels were citing the country's fish exports as a success story since India's fisheries exports to the EU had almost doubled from about Rs 7 billion per annum (\$200 million) in 1994. (<http://www.rediff.com/business/dec/03eu.htm>)

One of the main reasons cited by the EU for imposing a total ban (as opposed to a ban on individual processing units) was “insufficient level of control by national authorities”. The ban forced the Commerce Ministry of the Government of India to

lay down stringent qualification norms for firms to be eligible for export to Europe. As per these guidelines, the following are the steps involved in the approval procedure for an establishment to be considered fit to export to Europe.

1. Domestic firms wanting to export to the EU are required to first apply to the regional office of the Export Inspection Agency (EIA) under the Ministry of Commerce. The application is to be accompanied by relevant documentation such as HACCP manual, plant layout plan, water portability test results etc.
2. Upon receipt of the documentation, the Deputy or Joint Director of the EIA examines the file.
3. Applications that pass this stage are referred to an inter-departmental panel (IDP) comprising a representative each from EIA, Marine Products Export and Development Authority (MPEDA) and Central Institute of Fisheries Technology (CIFT), Kochi for further scrutiny.
4. If the documentation is found satisfactory the IDP will inspect the plant and upon finding the facilities and process methods satisfactory, the team will report to the Export Inspection Council (EIC), which in turn will issue the necessary license to export.

The plant is subject to unannounced random checks by the IDP. If on any such inspection the unit is found not to be complying with the norms set down, the export license may be withdrawn until the recommended changes in the facilities and the process methods are made and verified by a second inspection.

#### *12.2.1 The impact on Kerala*

Kerala undoubtedly bore the brunt of the impact of the EU ban. Prior to the ban in 1995/96, 48.5% of the total value of seafood exported from Kerala was to the EU. In 1996/97 this figure was 37%. However, in 1997/98, in the aftermath of the ban, this figure declined to 19.7%.

Among the Indian seafood exporting states, Kerala has traditionally been the major supplier of seafood to the EU. Prior to the ban in 1996/97, Kerala contributed 43% of the total value of Indian exports to the EU. Thus the ban perhaps hurt the seafood export industry in Kerala more than in any other part of the country. Most of the large processors in Kerala were geared to cater to the EU market and the ban came as a rude shock to them.

##### 12.2.1.1 The immediate impact of the ban

The impact of the EU ban on the fishermen was immediate. The ban came at a time (August 1997) when cuttlefish was being captured in large quantities and the EU is the main market for this species. The beach prices of export species (i.e. shrimp, cuttlefish and squid) dropped dramatically. While there are no reliable figures, it is commonly felt that the prices immediately after the ban fell to about 25% of the pre ban price.



The prices were slow to recover, as many peeling sheds and exporters stopped taking material completely. Only those who were catering to the Japanese and American markets were buying and they made the most of the sluggish demand.

The lifting of the EU ban in December 1997 did not improve the situation for the fishermen very much. In the period immediately after the ban there were only a handful of processing units, which obtained the license to export seafood to the EU. As the number of buyers were few in number, the raw material prices remained at low levels. As fish a highly perishable commodity the fishermen had no option but to sell at whatever rates were offered. It took about a year for the situation to improve as more companies obtained the EU license leading to greater competition for raw material, and higher prices for fishermen.

Since then raw material prices have been increasing steadily and current prices are far higher than at any point in the recent past. The main reason for the rising prices is dwindling catch quantities. The impression obtained during the fieldwork was that though the ban had an immediate and dramatic impact on the fishermen, it had little long-term impact on their livelihood. In fact, none of the fishermen interviewed recalled the ban without some initial prompting. This may be attributed partly to the fact that income from fishing can vary drastically and the price drop resulting from the EU ban was perhaps only one of many that most fishermen have experienced.

There is also a view held by some, that the impact of the ban was lessened somewhat by Indian companies exporting seafood to the EU even during the ban period via fictitious companies based in the Middle East. However, this was not confirmed by the SEAI and we have not been able to find out the extent of this practice and its impact on the industry.

The EU ban could not have come at a worse time for the trawling industry. After the boom of the late 1980's and early 1990's, catch quantities started to decline during the mid 1990's.

The hardest hit by the ban was the trawling industry as they had to either fish for export species or keep their boats idle. As mentioned earlier, only export species obtain prices that enable trawlers to cover their high operating costs and make profits. Fishing for domestic species using a trawler is uneconomical and generally not done. The EU ban had a long-term impact in that the prolonged period of low returns forced many trawlers to withdraw permanently. Given the high investment, keeping a trawler idle for long period is not viable and many trawler owners made the decision to sell their trawlers. Most of the trawlers were sold to buyers from the neighbouring state of Tamil Nadu. While it is not clear how many trawlers went out of business during the one and a half years immediately after the ban was imposed the number by all accounts was significant. It was around this time that trawling as a means of livelihood lost its appeal for many fishermen as income levels dropped drastically during 1998. Most of the trawler crews who were laid off (and also those whose income levels dropped substantially) went back to their villages in search of work. It is not clear as to whether all of them managed to find work, but in the villages where fieldwork was conducted most of them were absorbed in the local work force. In Port Kollam, for example, the local community devised a rotation mechanism in which a fisherman could go fishing only on alternate days. This was primarily to

accommodate the additional manpower, which had been laid off from the trawlers and ensure that everyone had some work. Thus every boat would have two sets of crewmembers. The system is such that active fishermen who are forced to sit it out for a particular day also receive a share of the income from the boat they normally work with. This system was in operation for a while immediately after the ban. Later, the situation improved with new artisanal boats being introduced thus alleviating the employment situation.

The motorised artisanal sub sector did feel the effect of the ban albeit to a lesser extent, since fishermen in this sub sector depended mainly on domestic species with export species being an important add-on.

#### 12.2.1.2 Impact on the Processing Industry

The seafood export industry in Kerala was the first to respond to the ban by investing large sums on upgrading plant to satisfy EU norms. Out of the first batch of seven processing units given an EU export license, in November 1997, six were in Kerala.

Almost overnight, these processing plants found themselves sitting on a goldmine. On the one hand, they had exclusive Indian access to EU markets as other processing units in India were still covered by the ban. On the other hand, export variety material (especially cuttlefish and squid the peak season of which is August to December) was available at very low prices (by some accounts at a quarter of the price just before the ban) as there was very little competition from other processing plants. This enormous early mover advantage was perhaps what prompted these units to invest large sums of money for plant upgrading. By all accounts many seem to have gone overboard and actually invested in much more expensive plants than envisaged or required by the EU legislation.

Part of the reason for the over investment was undoubtedly the stringent norms laid down by the Indian government for obtaining IDP approval. Exporters blame Indian government officials for interpreting the EU guidelines too stringently and thus inadvertently raising the investment required to upgrade. One of the most controversial issues centred around the EU’s insistence that the walls, ceiling and floors of the processing areas be covered with smooth easily washable material. As such the material to be used was not specified and was open to interpretation. Exporters complain that Indian officials in charge of inspection and certification insisted that the walls and floors be covered with highly expensive materials like marble and granite. This factor alone drove up the cost of upgrading significantly.

In spite of the high cost, a number of exporters joined the fray and invested large amounts of money to upgrade their processing units.

Large and very expensive processing capacities were built without giving adequate thought to the raw material supply situation. What is interesting to note is that the EU has been and continues to be the least profitable of the three main markets with Japan and the USA affording exporters better margins. There was little change in the prices that Indian seafood export commanded before and after the ban was lifted. In other words, the huge investments made by exporters served only to keep them in the EU market. However, this may be explained to some extent by the fact that the EU is the

best market for cuttlefish and squid, which do not find much demand in Japan and the USA. The general feeling is that though the EU market affords the lowest margin among the big three, it is still sizeable in volume terms and has to be serviced to maintain diversity in the clientele and avoid over dependence on any single market. Diversification into newer export markets for seafood like China, South East Asia, Cyprus and the Middle East is part of this wider strategy.

#### 12.2.1.3 The impact on peeling sheds

These huge investments left many major players bereft of adequate working capital to buy raw material from the market. This in turn had a negative impact on the peeling shed industry.

Prior to the ban the processing plants provided credit to peeling sheds to procure raw material and supply them the peeled material. However, the ban seems to have been one of the major factors, which turned this system around.

The EU ban adversely affected the peeling shed industry, as it robbed it of many of its major customers. Almost overnight, after the ban was announced, a number of major processing plants stopped procuring material from the peeling shed industry. Only those exporters who were mainly exporting to Japan and the USA continued buying material and that at a fraction of the pre ban price.

In the immediate aftermath of the ban, peeling sheds drastically cut purchase of raw material from fishermen. The material purchased was at far lower rates than that prevailing just before the ban. By some accounts, cuttle fish, which sold for Rs 80 per kg just prior to the ban, was sold for just over Rs 20 in the days after the ban. Peeling sheds catering to processing plants which were mainly supplying to the EU stopped purchases altogether as their customers were not in a position to buy material. Only those peeling sheds servicing processing plants exporting to Non EU markets purchased raw material. Overnight a situation emerged wherein a large number of peeling sheds wanted to cater to a relatively small number of processing plants. The low demand for raw material continued for about four months after the ban. The situation changed slightly when 6 processing plants in Kerala got EU approval.

Starved of buyers, many peeling sheds offered raw material on credit to processing plants in an effort to get some business. The first batch of exporters, who received EU approval in November 1997, willingly accepted the offer of credit. What started as a short-term business tactic quickly became the established norm in the industry. Thus peeling sheds went from being receivers of credit to being providers of credit almost overnight. This dramatic shift has been one of the main factors leading to an industry shake out and set in motion a process of consolidation, which is ongoing.

Almost overnight, the minimum requirements for setting up and operating a peeling shed changed significantly. Whereas during the pre ban period, anyone with a small shed and the ability to organise and manage a small workforce of peelers could start a peeling shed, post ban the ability to provide raw material on credit to exporters became a vital qualification. Peeling sheds without this ability found it difficult to find buyers and thus were quickly forced to adapt to the new reality or face closure. Closure seems to have been the option exercised by many in the business. While there

are no reliable figures on the number of peeling sheds that have closed down after the ban, the numbers by all accounts seem to be significant.

Those exporters who were among the first batch to obtain EU approval not only got raw material cheaply, but also got credit on their purchases. The terms were quite favourable, as no interest rate was charged and no timeframe was fixed for repayment. This is perhaps one indication of the lopsided relationship between the processing industry and the peeling industry. The peeling shed industry is entirely dependant on the processing industry for its very survival and if the latter for some reason is unable or refuses to buy peeled material from the former, then the peeling shed industry has to close shop. The processing industry on the other hand, while finding the peeling shed industry a necessary ally in reducing costs, can still survive by procuring and peeling material independently albeit at a higher cost. In other words the relationship is unequal. This is anecdotal evidence but a number of peeling sheds are yet to receive payments from exporters for peeled material sold years back (in some cases as long as 4-5 years back). The peeling sheds are also not in a position to insist on payments as they could very well find themselves out of the market in no time. The state of the peeling shed industry is further illustrated by the fact that peeling sheds continue to provide raw material on credit to exporters who owe them money for previous purchases.

#### 12.2.1.3.1 CASE STUDY – A peeling shed that failed

During the early 1990’s, Mr. John was one of the most prominent peeling shed owners in the Aroor Chandrur belt. At the height of his success in the field he owned three peeling sheds in the area employing more than 180 peelers. He describes the period between 1988 - 94 as the golden period of the seafood sector in Kerala. There was enough material available at the Kochi fishing harbour; export demand was rising (especially after 1991 when the Government of India opened up the economy and was working hard to promote exports). The price was good and many of the export processors and peeling shed owners made their fortune. The situation changed dramatically in 1994 when Indian seafood exports to the US were badly affected by concerns over the bubonic plague that hit the western Indian state of Gujarat. In an effort to make up for this, many exporters based in Kerala took the opportunity to venture into the Chinese market. The results were disastrous for many exporters as many of the Chinese buyers delayed payments for consignments and some even refused to pay citing poor quality. Many export processors are yet to receive payments from their Chinese buyers

This episode adversely affected the liquidity of many export processors, but it was the EU ban and the subsequent spurt in investment on the part of the processors, which made a bad situation worse. In a bid to obtain EU approval many processors over invested in plant and machinery and in the process depleted their working capital. In the seafood industry this can prove to be disastrous as buying raw or pre-processed material requires large amounts of working capital. However, the liquidity problem affected the peeling shed industry more than it did the processing industry. The liquidity burden was to a large extent passed on to the peeling shed industry. Peeling sheds in addition to providing peeled material were also expected to do so on very liberal credit terms (zero interest credit with no prefixed repayment schedule). Thus access to large amounts of working capital became a prerequisite to survive in the business. Many peeling shed owners did not consider the business worthwhile anymore and closed down. Mr. John however decided to take a different route. He took large sums of money from local moneylenders at exorbitant interest rates to

meet his working capital requirements. He did this in a bid to keep his regular clients. In hindsight, he says that this strategy to borrow money for working capital proved to be his undoing. The working capital requirement per day for his three peeling sheds was to the tune of Rs.100, 000 (approximately USD 2,000). The payments from his clients were irregular (credit periods ranging from 2 months to a year). Within a short period of time, the soaring interest cost by itself made the business unviable. Many of his old clients simply refused to pay him citing their own liquidity problems. Harassed by his creditors he had no option but to close down his business and go underground. His creditors attached his personal property. For the last year Mr. John has been working as a subcontractor to a major peeling shed in the area. The peeling shed provides him with the raw material and requires a certain minimum yield. He employs about 20 peelers and gets a fixed rate for the peeling activity. The main reason why he chose to return to the field is that this is the one activity he is most familiar with. More over, even though he makes only a meagre margin, he is happy that he is shielded from any financial risk.

#### 12.2.1.4 The impact on fishermen

The immediate impact was that beach prices of export species mainly cuttlefish dropped drastically. Many trawler owners and artisanal fishermen did not venture out into the sea for about a week to ten days, as they feared that the prices would not be enough to cover their operating costs. In the medium term the prices stayed depressed, but fishermen continued to fish for export species. Once the post ban demand peaked as more processing plants obtained EU approval the effects of the EU ban on prices or demand was nullified. This is mainly because of dwindling catch quantity, which served to push up prices to levels higher than those prior to the ban.

However detrimental the short-term impact may have been, it is interesting to note that none of the fishermen interviewed during the fieldwork could recall the 1997 EU ban. Some of them confused it with the 1995 USFDA ban on Indian seafood in the aftermath of the Gujarat plague. The reason is not hard to find. As negative as the impact of the ban may have been, sharp drops in beach prices, supposedly due to global events is a common phenomenon. Fishermen say that traders find all kinds of reasons to deny them a fair price. The Gujarat plague, the EU ban, the Kargil conflict in 1999 and the events of September 11 have all be given as excuses by traders to depress beach prices for export species ostensibly because these events somehow affected the international demand for Indian seafood. Thus it is perhaps not surprising that the impact of the EU ban was not well remembered.

### **13. THE PERCEPTION OF QUALITY**

There seems to have been a change in the perception of quality over a period of time especially after the EU ban was imposed. Quality has become a matter of concern at least at some levels of the marketing chain. The drive towards better handling and preservation of raw and peeled material seems to have been driven by the processing industry. This is not surprising given that processor/exporters based in Kerala have had their consignments rejected by EU health inspectors on account of poor quality on a few occasions. The rejection of a single container of value added seafood could result in heavy losses to the exporting firm. In 2002, one of the main exporters from Kerala had a consignment worth Rs 1 crore (approximately USD 200,000) rejected by EU health inspectors. (Source- interview with SEAI officials)

There seems to be a greater awareness for the need to maintain quality at all levels of the marketing chain. However, in most cases this awareness has not been transformed into reality, as the cost of ensuring quality is too high and in many cases requires better infrastructure, a factor that is not within the control of individual players.

### **13.1 Quality at the final processing level**

The greatest change in the perception and practice of quality control has undoubtedly taken place at the level of the processing plants. This is mainly because of tighter monitoring and regulatory requirements. Since the EU approved plants are subject to surprise checks, the integrity of the process and the quality of the raw materials used have to be maintained at a basic minimum level at all times.

The cost of ignoring quality issues can be high. In case of a rejection on quality grounds, in addition to the financial loss there is a real risk of the offending processing plants losing its export license. In such cases, government officials inspect the plant and suggest corrective measures and further consignments can be exported from the plant only if these are complied with. Even then the next few consignments are checked thoroughly before export is permitted. Processor/exporters complain of harassment by government officials in the event of the rejection of a consignment and this acts as an added incentive for them to ensure that quality is maintained.

Post EU ban, the use of gloves, facemasks and caps has become mandatory for those working within the processing area. According to industry sources such as the SEAI a high level of hygiene is maintained in most processing plants. This cannot be verified without actually visiting the processing area. This has not been possible during the fieldwork due to reluctance on the part of owners to allow us access. However, at least one EU inspector is reported to have said that some of the seafood processing facilities in Kochi are better than any in Europe.

### **13.2 Quality at the level of peeling sheds**

The maintenance of quality at the level of the peeling shed has been a mixed bag. The following are based on some of the observations made during the course of the fieldwork.

- Greater use of ice and insulated vans – There seems to be a gradual shift towards using insulated vans to transport raw material from the harbour to the peeling shed and from there to the processing plants. This is perhaps also due to the greater distances that the raw material is being transported. Also the ratio of ice to raw material used during transportation seems to have increased over time. Most peeling sheds claim to maintain a ratio of 1:1 for transportation and storage.
- Use of stainless steel tables at peeling sheds – In most peeling sheds peeling is done on the floor. However directives by Indian authorities specify that all pre processing activity should be carried out only on high stainless steel tables where the chances of contamination are low. This requirement has not been complied with in most peeling sheds. One of the major reasons cited for this is

that peelers prefer to sit and peel and standing affects their productivity. The investment that has to be made also acts as a deterrent. High stainless steel tables have been introduced in a handful of peeling sheds since this has been made a precondition by certain buyers. In many cases where the peeling shed did not have the money to invest, processing plants with which they have a long-standing business relationship have given them soft loans.

- The use of gloves and facemasks at peeling sheds. This is another area where non-compliance has been the norm. The reason given is that the use of gloves slows down the process of peeling since the peelers have never peeled using latex gloves and find it uncomfortable. It is reported by peeling shed owners that facemasks are unpopular with peelers as it prevents them from chatting during work and thus ironically reduces their productivity.
- There is no control whatsoever on the quality of water and ice that is used for pre processing the fish. In most cases the peeling shed takes water from a nearby water body and dumps its wastewater into the same water body.
- The level of hygiene maintained at houses where peeling is done has not been determined. However, on our visit to the Shaktikulangara wharf in Kollam, we found many individual women peelers squatting on the floor in an open shed within the wharf premises and peeling shrimp. None of the hygiene conditions requirements by the EU were being observed. The women supplied the peeled material to a local peeling shed which in turn supplies it to a nearby processing plant (which has EU approval) and the plant in turn regularly supplies seafood to clients in the EU.

### **13.3 Quality at the level of the fishing harbours and vessels**

This is perhaps the weakest link in the quality chain. According to a study conducted by the Export Inspection Agency and the Marine Products Export Development Authority (MPEDA) on the rejection of seafood shipments to the EU, the contamination of the product starts on the fishing vessel itself and becomes more contaminated at the landing centres and fishing harbours. This has been dealt with in greater detail in an earlier section listing the problems faced by the seafood export industry in Kerala

## **14. IMPLEMENTATION OF EU LEGISLATION**

The implementation of the EU legislation has been patchy at best. The EU legislation calls for implementation and monitoring at various levels of the export chain. Whereas at certain levels the implementation and monitoring have brought about significant change, in other areas implementation has been virtually impossible and any claims to the contrary need to be examined closely.

### **14.1 Implementation and enforcement at the level of processing units**

Implementation and monitoring of the EU guidelines at this level of the chain has undoubtedly proved to be the easiest. This has been possible because of the small

number of processing plants and the legal requirements that they need to satisfy in order to be permitted to export seafood from India.

The implementation and monitoring of the EU guidelines at the processing units is being carried out through the means of IDP’s that consist of officials from various government agencies such as the EIA, CIFT and MPEDA. Once a processing plant is inspected and found to comply with the EU guidelines, an export number is issued. The exporter can export seafood processed in this plant only in packaging, which bears this number. The team is to inspect the plant for hygiene standards and processing method once every fortnight.

Indications from industry sources, the SEAI, MPEDA and the CIFT are that the IDPs are performing their intended role. However, exporters complain of over inspection and harassment by government officials. In case any complaint is received from any exporting country, the offending plant is inspected and if defects are found, the plant is not permitted to export any seafood until such time as the defects are rectified. Exporters complain, that most of the complaints of contamination are baseless as the buyers in the exporting country bribe health officials to reject the material there in order to get the exporters to reduce the price. Reports of contamination are seldom verified by government officials and unilateral action is taken against the plant in question. Exporters also complain that the agencies which are responsible for certification and monitoring take no responsibility whatsoever for any rejection on account of contamination or other defects.

Another frequently heard complaint about the inspection process is that the majority of government officials involved in the process (except for the officials from CIFT) have very little knowledge of seafood processing methods and the economics of processing. As a result they tend to be insensitive to the various issues facing the processors and tend to make demands, which are too stringent. A classic case of over interpretation of the EEC directive on fishery products (91/493/EEC) has to do with interpretation of Chapter 3 of the directive (Chapter on “General Conditions for Establishments on Land). The EEC directive lays down the following conditions for processing plants wanting EU approval. (EEC directive quoted verbatim below)

‘Establishment shall afford at least the following facilities in areas where products are handled, prepared and processed

- a) Waterproof flooring which is easy to clean and disinfects and laid down in such a way as to facilitate the drainage of water or provided with equipment to remove water
- b) Walls, which have, smooth surfaces and are easy to clean, durable and impermeable.

In what is seen by the processing industry as ‘going overboard in an effort to please the EU’ Government of India officials in charge of inspecting the processing units (for granting EU approval) insisted that the walls and the floor of the processing area be covered with either marble or granite, both of which are very expensive. In face of such an interpretation of the EEC directive on ‘smooth and easy to clean surfaces’ plant owners had no option but to comply. The result was the cost of upgrading



processing plants to meet EU standards was pushed up significantly. The general opinion among seafood exporters is that, this single issue contributed significantly to weaken the overall financial position of many exporters. It is an oft-heard comment that the Government of India has unwittingly done enormous harm to the seafood export industry, which is ironically the fourth largest foreign exchange earner for the country.

Perhaps the most gaping hole in the implementation of EU guidelines has to do with the issue of pre processing activity. The guidelines require that any plant that processes seafood for export to the EU has to have its own pre-processing unit where the peeling, deskinning and other pre processing activities are to be carried out. Such a pre processing unit is required to be either within the compound in which the processing unit is situated or within a short distance of the same. The pre processing units are to comply with the EU guidelines concerning the same. According to the guidelines all pre processing activities are to be carried out only in such an approved pre processing plant and from nowhere else. Complying with such a requirement requires significant capital investment and forgoing the various benefits that the traditional peeling sheds bestow on processing plants.

*14.1.1 NOTE – Why peelings sheds are difficult to get rid of*

Peeling sheds act as aggregators of raw material. Given that the catches are small and dispersed throughout the Southern and eastern coast, peeling sheds play an important role in gathering raw material and feeding it to the processing plants. Given the large number of landing centres and the dynamics of the fish trade, it would be uneconomical for processing plants to set up their own network for collecting raw material. Given the nature of the business it is generally felt that a network of agents at landing centres is better handled by peeling sheds.

From the point of view of an exporter, it is cheaper to get material peeled from a peeling shed than to do it in-house. The main reason is the cost of labour. In order to get material peeled in-house the processing plant has to employ peelers and in addition to wages, other legally mandated costs such as Provident fund, gratuity and Employee State Insurance etc will have to be incurred. This is a fixed cost and will have to be incurred irrespective of the amount of work the work force does. Given that the raw material supply fluctuates, the cost of peeling (taking into account the fixed cost) will vary with it. Processing plants tend to avoid this altogether by outsourcing peeled material from the peeling industry and thus ensure that the cost of pre processing remain stable. Most of the peeling sheds in the state on the other hand do not fall within the ambit of labour laws and thus do not pay the peelers statutory benefits such as PF and ESI. Peelers are paid strictly on the basis of the quantum of work done. Therefore, there is virtually no fixed labour cost for the peeling shed and the entire cost is variable in nature. This is what enables peeling sheds to peel at a lower cost that what is possible for a pre processing plant attached to a processing plant. This is perhaps one of the most important reasons why the peeling shed industry seems to have survived attempts to close it down.

Peelings sheds have emerged in recent years as indirect providers of credit to the processing industry. This came to pass in a big way after the EU ban was enforced in 1997. Immediately after the ban, there was a shortage of buyers for peeled material

and peeling sheds had to compete fiercely among themselves to keep old clients. In an effort to gain an advantage over the competition, several peeling sheds started offering peeled material on credit and this practice quickly became the norm and continues to be so. Most peeling sheds indirectly provide a significant portion of the working capital requirements of most of their clients by giving peeled material on credit. In most cases the payment is made after a month or so after the receipt of the material. Given the business cycle of exporters, it is highly likely that in most cases the payment is made only after the peeled material has been processed, packed, exported and the payment received from the buyers that the payment is made to the peeling sheds. The prevailing perception within the peeling shed industry is that the processing industry is systematically exploiting it on this front. There are several cases where payments for peeled material have not been issued for 4-5 years after receipt of material by the processing plant.

## **15. POTENTIAL IMPACT OF INTERNATIONAL LEGISLATION**

It is clear that the EU legislation has had a minimal direct impact on the seafood export industry in Kerala. Given the gulf between the requirements of the EU legislation and the realities in the Kerala seafood industry, this lack of impact is perhaps surprising. However this can be mainly attributed to the lack of proper implementation of EU guidelines by Indian government agencies. In the section that follows, an effort is made to assess the potential impact of any rigorous implementation of international seafood legislation on the livelihoods of the various stakeholders in the Kerala industry.

### **15.1 Potential impact on the peeling industry**

If EU directives regarding pre-processing activity are strictly implemented, other things remaining the same, it will more or less mark the end of the peeling shed industry, as we know it today. The reasons are as follows.

The Kerala seafood industry is heavily dependant on export to the EU, much more than any other state. It has lagged behind AP and Tamil Nadu in tapping into the major high value markets of Japan and the USA. Kerala is mainly an exporter of lower value products (small shrimp, cuttlefish, squid etc) in comparison to these states. Given the nature of the raw material variety that is available in Kerala, it is unlikely that the state can successfully compete with AP in exporting high value items like head on tiger shrimp to high margin markets like Japan. Until such time, the lower margin EU markets will continue to be the mainstay of the Kerala seafood industry. Therefore the peeling shed industry is faced with the stark choice of either complying with EU directives or face closure.

The general interpretation of EU directives regarding pre processing activity is that the pre processing plant is required to be within the same premises as the processing plant. The strict implementation of the interpretation of this one point of the directive is sufficient to force the closure of hundreds of small and large scale peeling sheds and house peeling activity, which can be found, throughout certain areas in the costal belt like the Aroor Chandrur belt. Peeling activity is an important driver of economic activity in the belt and as such the implementation of the directive can adversely affect the region.

Even, assuming that the above-mentioned interpretation of the EU directives is not true does not make things much better for the peeling shed industry. The directives still call for a level of quality and hygiene, which is currently way beyond the reach of most peeling sheds in Kerala. A cursory comparison of the infrastructure and process requirements of EU directives and the general conditions of the average peeling shed in Kerala, make it evident that almost all of them require massive and expensive infrastructure and equipment investment at the very least. As mentioned above, this is definitely way beyond the reach of the vast majority of peeling shed operators in the state. Inability to comply would force peelings to either close down altogether or supply to processing plants, which mainly cater to non-EU markets. However, most of the processors cater mainly to the EU and those who do not are few and far between. House peeling as an occupation will also come to an end in the process as EU directives disallow this practice.

Falling incomes from fishing make incomes from other sources such as peeling and fish vending important. Thus a closure of the peeling industry will result in severe pressure on families, which depend partly, or wholly on this as a source. If the peeling shed industry is forced to close there will be a large number of women who find themselves out of work.

However, there are other employment opportunities that are available to such women. Women from the fishing communities also work as fish vendors, as unskilled labourers in the construction industry, as domestic hands in cities, as shop assistants, as tailors and as peelers, sorters and graders in seafood processing plants. In addition, there are employment opportunities available in seafood processing plants based in other states such as Gujarat and AP. Each one of the alternatives brings with it opportunities and problems. For instance the wages in the construction industry are almost twice that of what a women would normally earning in a peeling shed. However, this kind of work would require her to travel out of her village for long distances and leave her with less time of her household work. Also employment is not certain, as the construction industry is itself subject to the larger economic scenario.

There is a view among planners and organisations working in the fisheries sector, that the sector in Kerala is characterised by too many people depending too heavily on the increasingly dwindling resources of the sea, thus bringing to bear severe pressure on already strained natural resources. This in turn results in unsustainable levels of fishing activity and the employment of fishing methods, which destroy the ocean ecology in the long run. Thus there is an urgent need to alleviate this situation. It is thought that providing alternate employment opportunities will help this cause. Very small efforts have been made in this direction from time to time in the form of encouraging people from the fishing communities to acquire technical skills, open small businesses and seek employment in the mainstream services sector. Encouraging people to move from fishing to allied activities such as peeling, trading etc is not the answer to the problem as these industries indirectly depend on fishing.

Seen in this perspective, the closure of the peeling shed industry would force women within the fishing community to seriously evaluate occupations outside fishing. While it may do the community good in the long term, in the short term any large-scale closure is likely to be traumatic to the local economy and to those displaced.

### **15.2 Potential impact on ice plants**

Ice plants cater more to the domestic market than to the export market. Ice is sold to fishing units to carry on fishing trips, at landing centres to wholesalers, export agents and vendors, for fish preservation and also to peeling sheds. All the major processing plants have captive flake ice units (as required by EU directives) and thus are not major customers of small-scale ice plants.

International legislation that requires expensive upgradation is not likely to impact this industry adversely as sale for domestic use is the mainstay of the industry. At present there is no product differentiation in ice (i.e. ice used for storing export purposes is the same as that used for domestic species) and hence there is no price differentiation. Small-scale ice plant owners are thus likely to evaluate any future demand for ice that meets international standards and the possibility of charging a higher price for the same before deciding to invest in plant upgradation.

### **15.3 Potential impact on the trawling industry**

One of the main concerns for seafood processors with the present supply chain is that contamination of the seafood starts right at the fishing vessel itself. Hygiene is not always a priority on trawlers. Maintaining an appropriate ratio of fish to ice when preserving the fish is one of the problems that need to be addressed when trying to ensure that freshness is maintained. Abad Fisheries, one of the most prominent of the Kerala processors/exporters experimented with giving ice to trawlers in an effort to ensure that the fish reaches shore in a fresh condition. However, they reportedly discontinued the practice after it was found that there was no significant improvement in the freshness of the fish.

If quality standards and process requirements for trawlers are specified and strictly enforced it is likely that the trawling industry will adopt the changes as it exclusively depends on the export market for its survival. This is however likely to be conditional to the investment that is required to comply with any new legislation and the willingness of the processing industry to play its role in ensuring that the changes are made. The processing industry will play a vital role in the success or failure of any quality and process related legislation, since it is final stage of the supply chain. Any such legislation has the best chance of succeeding if there is a common understanding within the processing industry that it will procure material only from trawling boats that comply with the legislation. In the absence of such a reward and punishment mechanism it is likely that some trawlers would continue as usual and not be the worse off for it, thus decreasing the incentive for compliance. The question of how much additional financial burden the trawling industry can sustain in the face of sustained decreases in catch quantities and rising operating costs is one that needs to be carefully evaluated.

## **16. THE CHALLENGES OF PRESENT REGULATIONS**

The question of the extent to which present regulations pose challenges to producers, processors and exporters is inextricably linked to the government’s ability to enforce these regulations.

Present regulations do not require compliance from producers (fishermen) and the regulations mostly pertain to the activities of pre processing, processing, packaging and transportation. The main players who are expected to comply are the processors. While processors have made significant investments, to comply with EU regulations, in areas where compliance has proved to be economically unviable, non-compliance has been the norm. This is particularly true with regard to the regulations regarding pre processing. The end result is that the purpose of the regulations is defeated to a large extent.

While government agencies claim to be doing a good job of ensuring compliance with international seafood legislation, in practice there seem to be significant loopholes that have not be plugged. Constant monitoring of the processing methods employed and hygiene standards maintained at the processing plants seems to be the easy part in enforcing the relevant legislation. What has proved hard to monitor has been the question where the raw material was pre processed. There has perhaps also been unwillingness on part of some government officials to put processors in difficulty by insisting on pre processing raw material in house. Insisting on in-house pre processing could affect the viability of operations of most processors.

## **17. CAPACITY TO COMPLY WITH FUTURE INTERNATIONAL SEAFOOD LEGISLATION**

There is widespread apprehension in the export industry that the EU is likely to implement the farm to fork policy in the fisheries sector in the near future. In other words, the EU is likely to bring in legislation that requires EU approval at every stage in the export chain starting with the fishing boat itself. Future legislation is likely to make it mandatory for fishing boats, landing centres, ice plants, insulated vans to have EU approval in order to be able to be part of the export chain.

The main problem that may affect compliance is the dispersed nature of the fishing industry. Unlike many developed countries, India has a fishing industry, which consists of large numbers of small fishermen spread over a long coast dotted with fish landing centres. This perhaps the one feature of the industry that is most likely to undo any effort to introduce quality control. Introducing a quality control and monitoring mechanism that covers all fishing vessels and all the landing centres involved in fishing for export species (large trawlers and small motorised units) is likely to be impractical. In any case the track record of the Indian Government agencies in implementing EU directives in the much more organised and manageable processing industry does not inspire confidence. It is difficult to see how the same agencies can effectively handle a much bigger monitoring task.

## **18. CONCLUSION**

The entire seafood export industry in Kerala is facing a severe crisis on several fronts. International seafood legislation is only one of the many and it certainly is not the most serious one.

Any industry, which depends on natural resources, is subject to the vagaries of the same and the seafood industry in Kerala is no exception. Undoubtedly, the increasing

scarcity of raw materials is the most serious and immediate problem faced by all players in the industry. The unsustainably large number of trawlers worsens the situation as individual trawlers resort to indiscriminate fishing.

The EU ban only served to make a bad situation worse. The long-term result of the ban has been widespread consolidation in the peeling and processing industry. There is no indication that the EU ban per se has resulted in the loss of livelihood or has had an adverse impact on any section of the poor within the industry. While a number of peeling sheds closed down in the aftermath of the EU ban, indications are that women who worked as peelers in this industry have been absorbed into other occupations like fish vending and construction activity.

The EU ban has little to do with the decline in the fortunes of the trawling industry, which is mainly on account of the overcapacity in the industry. The effects of the EU ban on the trawling industry were short term in nature as the beach prices crashed in the aftermath of the EU ban and then went on to recover to above the pre ban levels mainly on account of increased competition for limited raw material supply.

The impact of the EU ban was probably most keenly felt by the processing industry, which had to invest heavily in complying with EU legislation. The EU market is central to most processors in Kerala and the whole effort has been just directed at merely staying in the EU market. Compliance with EU directives has not benefited Indian exporters in terms of better market price or market share for their products. The irony is that many processors invested so heavily in plant upgradation that they were left with too little working capital to run their plants. The EU directives are widely perceived as technical barriers to trade as it increases the capital cost of plant and equipment and negatively impact the cost structure of Indian seafood exporters.

It is clear that one of the reasons why the impact of the EU ban has not been more keenly felt throughout the industry is due to the inability of the government to enforce EU directives more stringently. It is also equally clear that the present structure and method of functioning of the industry is incompatible with the requirements of current EU legislations and the gap is likely to widen in the future. If international seafood legislation is implemented strictly it will result in even more far reaching changes in the industry. The changes are likely to be expensive to implement and it is likely that the poor within the seafood industry will be marginalized in the process.

## **REFERENCES**

College of Fisheries, Kerala Agricultural University, Kochi (May, 2002) ‘Project report for setting up of two seafood export promotion parks – one in Chertala - Aroor region and other in the Palluruthy – Munambam region of Kerala

Expert Committee for Fisheries Management Studies, Kerala (July 2000) ‘Report of the expert committee for fisheries management studies, Kerala by Prof. N. Balakrishnan Nair’ Directorate of Fisheries, Thiruvananthapuram

SIFFS (August 1999) ‘A census of the artisanal marine fishing fleet of Kerala 1998’, South Indian Federation of Fishermen Societies, Thiruvananthapuram

SEAI (April 2001) ‘Annual report of the Seafood Exporters Association of India 2000 – 2001’, Seafood Exporters Association of India, Kochi

Kurien. J and Paul. A (2000) ‘Nets for Social Safety: An analysis of the growth and changing composition of social security programmes in the fisheries sector of Kerala State, India’, Samudra Monograph, ICSF, Chennai