Post-tsunami Rehabilitation of Fishing Communities and Fisheries-based Livelihoods in Tamil Nadu, Kerala and Andhra Pradesh, India

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Contents

Introduction

The objectives of the study were:

- to provide an overview of major interventions related to rehabilitation of fisheries-based livelihoods and analyze some of the key issues/ challenges arising from their design and impact on fisheries resources and fishing communities; and
- to provide an overview of shelter and reconstruction interventions specific to fishing communities, and discuss their merits and demerits

Duration and Coverage of Study

The study was conducted during October-December 2005, covering the three coastal States of Tamil Nadu, Kerala and Andhra Pradesh. In Tamil Nadu, the study covered five districts (four on the Coromandel Coast and one – Kanyakumari – further south). In Kerala, two affected districts – Alappuzha and Kollam – were covered, while in Andhra Pradesh, the study covered five coastal districts in the central and southern zones of the State. For logistical reasons, the study concerned itself only with the marine fishing communities, and the people in other subsectors – for example, inland capture and aquaculture – were not covered. The list of villages visited during the study is provided in Annexure I.

Some Clarifications

In the post-tsunami rehabilitation programmes, there were far too many initiatives with much diversity in their approaches, directions and outcomes; attempting to draw generalisations right across the board, even within a State, is extremely difficult. That many activities were still in various stages of progress also means that they could develop differently from the way foreseen by this study. It is also too early to understand and explain the long-term implications of the different interventions – such as changes in fishing patterns (at sea and on shore), costs and returns, relative importance of different players in the production and market chains, etc. – and the poor fishing that characterized operations during the last few months also made it difficult to ascertain how some of the interventions worked in reality.

It thus needs to be acknowledged that the conclusions arrived at in this report necessarily come with a string of exceptions and qualifiers that may not always be explicit. Time and logistical constraints also meant that the visits to the tsunami-affected areas were necessarily brief and covered only some locations; linguistic barriers further constrained a free exchange of information. All the same, the study strove to draw its conclusions from a wide range of sources and validate the same in various ways, in order to present the best possible evidence on the many issues discussed here.

This diversity also necessitated focusing on certain areas – for example, Tamil Nadu, especially the Coromandel Coast – more than on others, and charting the progress of rehabilitation programmes in these areas in more detail. The discussion about the other areas (Kerala and Andhra Pradesh) had perforce to be confined to highlighting certain features that were specific to those areas or differed significantly from the rehabilitation programmes – in terms of content, planning, implementation or uptake – in Tamil Nadu.

For a variety of reasons, this study focused on the qualitative aspects of rehabilitation and this may have been at the expense of providing robust quantitative data. It was also found to be very difficult to verify the data obtained from different implementing agencies at the village level, either because the programmes were still in various stages of implementation or because (in several instances) the informants in the village did not know the provenance of some kinds of assistance they had received. Under-reporting the assistance received was an endemic problem in most villages visited during the study, and physical verification was not always possible.

Finally, it has to be made clear that this study is an effort to take stock of what was happening on the rehabilitation front and to explore how things could be improved, and is certainly not an exercise in pointing fingers, which is why all mention of specific persons or organizations have been avoided in the report. If some conclusions are critical about particular aspects of the rehabilitation work (particularly on the issue of giving boats), they are presented with the belief that the situation could still be improved. Dealing with the tsunami was a totally new experience for everyone, and the magnitude of the disaster was unprecedented, which naturally meant that people had to invent the systems to cope with it by trial-and-error and, that too, in the shortest possible

time; under the circumstances, the issue was not that there were some mistakes, but that there were so few of them.

Structure of the Report

The next chapter focuses on the impact of the tsunami on the fisheries sector in the three States. The third chapter discusses the components of the post-tsunami rehabilitation programmes related to fisheries livelihoods, and the following chapter addresses some key issues related to rehabilitation of fisheries livelihood programmes. The fifth chapter summarizes the issues concerning the shelter programmes and their relevance for the fisheries-related livelihoods in the three States. The sixth chapter discusses the institutional context in which the rehabilitation programmes took place, and the final chapter summarizes the findings of the study.

Impacts of the Tsunami on Coastal Fishing Communities

Extent of Damages

In India, the tsunami of 26 December 2004 affected the States of Tamil Nadu, Andhra Pradesh, Kerala and the Union Territories of Pondicherry and the Andaman & Nicobar Islands. Approximately 2,260 km of the coastal area (besides the entire Nicobar Islands) was affected, and the fisheries sector bore the brunt of the tsunami, accounting for 85 per cent of the damages.

According to the Government of India's Report to the Nation in June 2005, as many as 12,405 lives were lost: 8,009 in Tamil Nadu, 3,513 in Andaman & Nicobar Islands, 599 in Pondicherry, 177 in Kerala and 107 in Andhra Pradesh. The toll included 14 Indians overseas, including 13 in Sri Lanka and one in the Maldives (Joint UN Report, 2005:3).

Among the three States covered by this study, Tamil Nadu was the worst affected, with the Coromandel Coast taking the most losses. The coastal areas south of the Coromandel Coast, that is, the Palk Bay and large parts of the Gulf of Mannar were spared, but the southernmost district in the State, Kanyakumari, was hit badly along its west coast. In Andhra Pradesh, the impacts of the tsunami were felt by six southern districts (from Nellore in the south, extending up to East Godavari). In Kerala, the effects of the tsunami were felt in a relatively small area, consisting of villages in Kollam, Alappuzha and Ernakulam districts, with most damages concentrated in Kollam district. However, compared to the scale of damages in coastal Tamil Nadu, the physical and economic losses inflicted by the tsunami on Andhra Pradesh and Kerala were fewer. This was apparent from the fact that people in these areas (especially in Andhra Pradesh) seemed to have largely overcome the effect of the tsunami, except for rehabilitation purposes.

Impacts on Craft, Gear and Infrastructure

The ADB/UN/World Bank report summarizes the fisheries-related losses due to the tsunami as follows:

The tsunami destroyed or damaged nearly 5,000 mechanized boats, causing damage valued at Rs. 663.1 crore ($152.4 million) – a total of 7,933 FRP boats/ vallams valued at Rs. 50.1 crores ($11.5 millions); about 24,580 boats of other categories, mainly motorized, valued at Rs. 121.0 crore ($27.8 million); and 35,483 wooden catamarans valued at Rs. 90.0 crore ($20.7 million). In addition, 2,342 outboard motors worth Rs. 10.1 crore ($2.3 million) were damaged or lost… Nets sets valued at Rs. 44.4 crore ($10.2 million) were damaged or lost. Boat seines worth Rs. 19.9 crore ($4.6 million) were lost in Kerala.

Damages have been reported on both coasts to about 388 ha of shrimp ponds (worth Rs. 8.4 crore or $1.9 million), and five hatcheries (Rs. 0.25 crore or $57,500), and to 102 small-scale oyster farms in Kerala valued at Rs. 0.102 crore ($23,500).

Losses Related to Fishing Implements in the Three States

The main impacts of tsunami related to marine fisheries included: loss or damage to fishing boats, nets and engines; infrastructure for landing, fish processing and trade-related activities, apart from loss of lives of active fishers.

Tamil Nadu

According to the Department of Fisheries, the total number of boats damaged by the tsunami was 51,078. Besides the fishing boats, 78 shrimp aquaculture farms, with a total area of 370 hectares, were damaged. The Department of Fisheries puts the number of shrimp hatcheries damaged at 22.[1]

Table 1: Damages to fishing equipment in Tamil Nadu

	Catamarans		Vallams	Mechanized boats	Fishing Nets
	Wooden	FRP			
Chennai	1493	169		568	2992
Cuddalore	5530	862		505	4935
Kancheepuram	1994	784	19	8	2873
Kanniyakumari	6582	0	694	385	7236
Nagapattinam	6144	0	1761	869	7604
Pudukottai	191		473	30	2342
Ramanathapuram	0		290		180
Thanjavur	47		232		522
Tiruvallur	516	570			2888
Tiruvarur	0		19		19
Tirunelveli	1285		82		1160
Thoothukudi	644		600		2203
Villupuram	1691	1017		26	3223
	26117	3402	4170	2391	38177

Source: Lost and Damaged Property: Boats. Extracted from the table on page 16. "Tiding over tsunami", Government of Tamil Nadu, 2005.

Andhra Pradesh

According to the internal[2] documents of the Department of Fisheries and *Velugu*, the nodal agency for tsunami rehabilitation in the state, the total number of boats affected by the tsunami was 11,394. Of these, 2,418 were lost and 8,976 were damaged.

Kerala

In Kerala, losses to fishing equipment in the four affected districts were as shown in Table 3.

Losses to Infrastructure Related to Fishing

The losses to economic infrastructure – access roads and bridges, transport systems, communication facilities, harbours and jetties, fish landing, processing, marketing, packing and transporting infrastructure etc – were quite significant on the Coromandel Coast. This proved to be a serious handicap to undertake rescue and rehabilitation activities as well as to resume fishing operations subsequently[8]. The tsunami also highlighted the fact that, for many fishing communities along the Coromandel Coast (as elsewhere), poor access to infrastructure continued to be a serious handicap, adding significantly to their physical and economic vulnerability.

Losses Related to Housing

According to the ADB/UN/World Bank, the estimated numbers of damaged houses in the three states were as follows:

In several villages in Andhra Pradesh and Tamil Nadu, where sea erosion was a big problem, the land near the beach was avoided by the more affluent people, which was an opportunity for the poor people to build their houses on the beach. The tsunami washed away many of these houses in large numbers, carrying away the meagre assets that these families had, and their capacity to recover from such shock is often very low.

Summary of Damages and Losses

The ADB/UN/World Bank study summarizes the damages and losses in India (in $million) as follows:

Problems in Loss Assessment

The figures related to fisheries-related losses, given in the foregoing section, show that the loss assessment was confined largely to the productive assets. The ADB/UN/World Bank report notes this: "In their evaluations, the governments have focused on the damage to the productive assets but paid less attention to damages caused to livelihoods in fishing villages, and to those who provide support services." The report goes on to list a number of other problems with the loss assessment methodologies.

Even within the specific areas where loss assessments had been done, there were wide gaps: no

Table 2: Damages to fishing equipment in Andhra Pradesh

	Lost			Damaged					Nets lost				
	Wood cat	FRP cat	Wood nava	FRP nava	Wood cat	FRP cat	Wood nava	FRP nava	Mech boats	Gillnet	Trammel net	Shore-seine	longline
Srikakulam	0	0	0	0	223	16	2	6	0	252	45	21	0
Vizianagaram	2	0	1	0	24	35	7	0	0	40	0	0	0
Visakhapatnam	4	0	1	0	376	167	0	0	170	567	0	8	36
East Godavari	0	0	102	0	0	185	1156	289	149	8021	1435	5	657
West Godavari	33	9	15	2	109	6	116	17	0	360	14	6	0
Krishna	0	0	213	0	0	0	1428	72	0	5093	930	23	98
Guntur	0	0	4	0	13	0	36	0	0	1036	0	23	0
Prakasam	763	24	0	11	1804	154	262	271	0	6883	2073	42	0
Nellore	1156	78	0	0	880	1003	0	0	0	5169	1224	6	0
Total	1958	111	336	13	3429	1566	3007	655	319	27421	5721	134	791

cat = catamarans/*kattamaram*s

reliable numbers were available about the different varieties of fishing craft operating in different areas in the pre-tsunami period. Lack of baseline data makes loss assessment a tricky business and leads to big differences in the assessments made by different agencies. Although the Department of Fisheries in Tamil Nadu conducted a detailed census of the fishing boats in the state in 2000, the figures needed updating. As the following table shows, the assessment of losses made by three organizations in Kanyakumari comes up with three different sets of figures, with wide variations between them (from Johnson Raj's presentation at the TRINET workshop in May 2005).

Such wide disparities in numbers have contributed to some of the confusion that assailed the rehabilitation efforts, leading to exaggeration of losses[9] and duplication of efforts.

Impacts of the Tsunami on Different Livelihood Groups

While the boat owners were the most important and *visible* losers from the tsunami, the loss of boats and the consequent stoppage of fishing operations for extended periods had an impact on the long chain of intermediaries in the production and marketing chains. Even among the primary producers, while many boat owners lost their productive assets, the crewmembers suffered from long periods of inactivity following the tsunami. It took some time before the boats could be repaired or replaced and the crewmembers – by virtue of their low savings – often fared badly.

Many people involved in processing (traditional or modern), trade and ancillary activities lost their tools of trade and several people also lost huge quantities of fish spread on the beaches for drying.[10] While the losses to the processors in terms of physical assets might be low (especially in comparison with the boats), there was no denying that the tsunami affected them in several ways: firstly, many people who died at crowded fish landing centres like Nagapattinam belonged to these categories and the death of the main bread-earners had been a serious handicap for their surviving family members. In several cases, this necessitated the surviving members of the family to begin working. Secondly, many of these people came from poor economic backgrounds and the low-surplus, subsistence nature of their activities often forced them to use their working capital to meet their consumption needs, so that by the time the fishing activities started again, many of them found themselves at the mercy of moneylenders or simply forced out of their traditional occupations. Several people from non-fishing communities, who play a direct or indirect role in the production and marketing chains, also suffered badly as a result of tsunami.

A majority of investments in the sector came from the informal sector and it is said that the people worst affected in the tsunami were the moneylenders and the trader-financiers, who lost sizeable investments in the sector.

Impact of the Tsunami on Natural Resources

Erosion of beaches, which provided a number of services to the fishers, was a serious concern in many places including the Coromandel Coast and Andhra Pradesh. The fishers contended that the sea had encroached upon the beaches and reduced the space available for keeping the boats, auctioning catches, mending nets, drying fish and firewood and doing a host of other things that they generally did on the beaches. In Anumandai Kuppam in Villupuram district, the fishers reported that the sea had encroached nearly

Table 3: Damages to fishing equipment in Kerala

	Kollam[3]	Alappuzha[4]	Ernakulam[5]	Thrissur[6]	Kannur[7]
Fishing craft	540 catamarans; 875 engine boats; 101 mech boats	596	50	33 canoes; 36 craft; 12 boats	13
Outboard motors		43	41		7
Nets	160	670	62	40	51
Other fishing equipment	435			13 China nets; 7 Chapa and 3 hatcheries	

40 metres inland, reducing the space available for keeping boats, which were now crowded in a very small area. In Vodarevu in Andhra Pradesh, the fishers complained that the sea had encroached quite a long distance inland and, in most cases, these losses were permanent.

There were also reports of changes in the quality of beaches in some areas. In Koonimedu Kuppam in Villupuram district, the fishers reported that the clayey areas near the shore had now become sandy (this was reported to be the other way round in some Cuddalore villages). As evidence of the change in the texture of land, they showed the example of coastal vegetation (including coconut and Palmyra trees on the beach), which was defoliating and dying. The fishers even suspected that the chemical composition of the waters in the nearshore waters might have undergone some changes – this was reflected in a change of colour of the waters – which might have contributed to a whole range of changes to *everything* in the sea.

Many fishers on the Coromandel Coast contend that the fishing grounds had changed as a result of tsunami. There were complaints about the increase in depth at the traditional fishing grounds and also about a change in the water currents and the tidal patterns in the near-shore waters. At Chetti Nagar in Villupuram district, fishers had been fishing at an average depth of 8 fathoms before the tsunami, but were now reportedly fishing at 12-15 fathoms and similar experiences were related in many other villages. Many species of fish – particularly shrimp – were reportedly 'relocated' by the tsunami and the fishers had to seek new fishing grounds.

Given such perceptions at the fishers' level, one question that is quite important and yet has no certain answers is whether the tsunami had an impact upon the fisheries resources and consequently on fish production. There is evidence in the studies conducted by the Department of Ocean Development (among others), showing radical changes in the bathymetry and the oceanographic features of Bay of Bengal as a result of tsunami. These changes would have implications for the fisheries as they affect the behavioural patterns of fish, shifting or destroying their habitats as well as breeding and nursery grounds.

When the fishers restarted fishing in the post-tsunami period, they found good catches for the first two months[11]: May-June was a period when catches were reportedly good, which was explained as the result of extended periods of non-fishing in the coastal waters after the tsunami. From July onwards, there had been slump in fish catches, which was continuing when this study was conducted. During September-October, fishing had been so poor that fishers claimed it was not worth spending any time on it. Consequently, many fishers were simply idling on the shore, while their brand new FRP boats sat waiting on the beach.

There are reports that fish catches declined badly along the entire coast of Kerala, although the tsunami itself had only affected certain pockets within the state. Even the monsoon-fishing ban, which was generally followed by good landings of shrimp and other fish, had not improved the fish catches. Adding fuel to the suspicion about changes in the behavioural patterns of fish, two new species – the red crabs and the puffer fish – appeared in large numbers in fish catches in the state since the tsunami. The two species were quite destructive to the fishing gear and also dispersed the other species from the near shore waters (which earned them the nickname 'CRP' – the Central Reserve Police known for their dispersing tactics), adding a new

State	Pucca	Kachcha	Total
Andhra Pradesh	216	265	481
Kerala	13042	0	13042
Tamil Nadu	16957	113043	130000

dimension to the problem of poor catches. The magnitude of the problem was such that it was a hot topic of subject of discussion in the local newspapers. The prevalence of red crabs had since declined, but the puffer fish continued to be a problem at the time of the study.

Contrary to the general perception elsewhere, the fishers in Kanyakumari contended that the tsunami had no visible impact on the availability of fish and attributed the decline in catches to reduction in fishing capacity. Obviously, this was a result of damage or loss of fishing boats and delays in repairing or replacing them. The tsunami also engendered a fear psychosis among the fishers about fishing in the sea, which would not allow fishers to take to fishing as eagerly as they used to and also forced them to keep to 'safer' waters, i.e., nearshore waters, where catches were necessarily low. In due course, as more boats became available and fishers gathered courage to move into deeper waters (or were pushed to seek new fishing grounds due to competition), they reportedly found good catches. This was a trend that the fishers believed would hold and their contention received support from the fact that the availability and cost of fish in the local markets remained the same as before the tsunami. A cursory examination of the transactions of the fish marketing society in Colachel indicated that there was a decline in the society's business from Rs. 25 lakhs in the first ten months of last year to less than Rs. 15 lakhs during the same period in 2005, but considering that there had been no fishing at all for the first six months in the year, this might actually mean that fish catches had improved in the region in the post-tsunami period.

It is possible that fish declines on the Coromandel Coast and elsewhere were a continuing trend from the pre-tsunami period rather than an outcome of the tsunami. The reported declines in fish catches in some parts of Andhra Pradesh, for instance, were generally agreed by the fishers to be a continuance of the old trend. However, the fishers of the Coromandel Coast were quite clear that the tsunami did influence the fisheries, as their catches had never been so bad as they were this year, particularly during peak fishing seasons. November-December was the peak fishing period on the Coromandel Coast and the fishers suggested it would be the defining period to assess the impact of the tsunami on the resources. In the event, November was more or less washed out by repeated floods to the various rivers in the state, which deterred the fishers from going to the sea, so the issue remained unresolved.

All the same, as scientists urge, it may be too early to identify a relation between the tsunami and the declines; it would require monitoring the situation over a few fishing seasons at least before some definite conclusions can be drawn about it.

Fisheries scientists as well as some experienced fishers forecast another – more positive – outcome from the tsunami. The vigorous churning of the waters in the Bay of Bengal from top-to-bottom by the tsunami, they claim, contributed to an upwelling from the nutrient-rich benthic strata to the upper layers, contributing to enhanced primary productivity, which might be reflected further down the food chain as an increase in fish production over the coming years. The post-tsunami period also saw repeated floods to most rivers in the state; while their impacts upon the land and the people had been devastating, their effect on the coastal fisheries resources was considered to be positive. It is thus possible that the fisheries in the state might see a boom in the coming years (H M Kasim, pers.comm.).

However, lacking more precise information, many of these issues remain in the realm of hypothesis and there is a clear need for a thorough investigation as soon as possible. As far as could be ascertained, however, no studies have yet begun to determine the impact of the tsunami on the fish resources and its possible consequences for the fisheries sector.

Impact of the Tsunami on the Psyche of Fishers

The fishermen of Kanyakumari district, particularly on the west coast, always prided themselves about

	Damage and losses			Effects on livelihoods
	Damage	Losses	Total	
Andhra Pradesh	29.7	15.0	44.7	21.2
Kerala	61.7	39.1	100.8	36.3
Tamil Nadu	437.8	377.2	815.0	358.3
Pondicherry	45.3	6.5	51.8	5.9
Total	574.5	448.3	1022.8	421.7
By sectors:				
Housing	193.1	35.4	228.5	
Health and education	10.7	12.9	23.6	
Agriculture and livestock	15.1	22.4	37.5	26.0
Fisheries	229.6	338.2	567.8	338.2
Livelihoods (micro enterprises and others)	20.0	37.5	57.5	57.5
Rural and municipal infrastructure	28.0	1.6	29.6	
Transportation	35.2	0.3	35.5	
Coastal protection	42.8	0	42.8	

their seafaring abilities and adventurousness, and with good reason too. The fishers of the Coromandel Coast never doubted that they knew their sea, its moods, the currents and the winds, and took pride in explaining their knowledge of the sea at length, and also with good reason. After all, they spent more time upon the sea than on the shore and made a living out of it.

But now, the fishers claimed, the sea was suddenly alien to them. This alienation and the sudden distrust that had sprung between the people and the sea was a constant refrain in many villages. While there was evidence that fishing operations were coming back to normalcy in several areas, fear psychosis continued to be a threat to resuming operations. And this was not confined to the men going to the sea; in fact, the women were far more vehement about their distrust of the sea and insisted that the men confined their operations to the closer shore waters. The men were worried not so much by the fear of being caught in another tsunami (the fishermen of Kallar actually boasted that even the tsunami could not do anything to them when they were at sea; it was only on land that they were helpless!) as by the apprehensions about the wellbeing of their families while they were away. This had also led to changes in the number of fishing days, depth and distance of fishing grounds, duration of fishing – all of which reflected in poor catches and low incomes.

The changes in seasonality, in the wind and wave patterns and in the fisheries had meant that the indigenous knowledge the fishers had gained over the years was of no use to predict anything as the sea and its behaviour had become quite erratic.

Some of the fishers (for e.g., in Akkaraipettai) moved into land-based activities, including house construction, although the same people would have disdained such activities not very long ago. Even the many categories of people who came into the village regularly – for fish trade and allied activities and for various other purposes – confined their stay in the village to the daylight hours and returned before 5 pm.

Impact of the Tsunami on Social Networks

In a closely integrated sector like fisheries, the sudden disappearance of a number of people from the scene – either due to death or due to moving away – must lead to serious imbalances and disruption of social networks. In Kallar village, people felt that the death of 90 adults out of a total 600 (15 per cent of the population) was a big shock and loss in various ways; in practical terms, it handicapped fisheries operations: there were not enough crew to operate the boats; there were fewer hands to help in launching and hauling them; the fish processors were not able to find enough assistants and the women traders found it difficult to pool together and visit the markets in the

	Government	Kottaur Social Services Society (KSSS)	Tsunami Reconstruction and Rehabilitation Committee (TRRC)
No of villages affected	33	31+19	40
No of families affected	31175	32332	35041
No of persons dead	824	916	1339
Houses fully/partially damaged (Total)	5152	5534	8993
Wooden/FRP catamarans	10407	6892	11455
Wooden/FRP vallams	154	1423	2876
Boats	159	395	
Outboard motors	1491	3615	3051
Nets	19650	24385	22334

neighbourhood for selling their fish. In some other villages, it was reported that the death of people also changed the political configurations in the villages and new combinations emerged among the survivors, swinging the power balance from one side to another.

It might be instructive to see the impact of such disruptions upon the life and livelihoods of several other categories of people, like the aged, children, the single-women and so forth, but this was beyond the scope of this study, which would however like to recommend this as a possible area to explore in the immediate future.

Rehabilitation of Fisheries-based Livelihoods

Packages for Supporting Fisheries-based Livelihoods

Tamil Nadu

In Tamil Nadu, the Government made provision for replacing or repairing all fishing equipment damaged in the tsunami. The package for rehabilitation of fishing livelihoods included: replacing fishing nets for *vallam*s and *kattamaram*s; repair of engines (both outboard and inboard); and assistance for repair or reconstruction of *vallam*s and *kattamaram*s, with the quantum of assistance being 100 per cent of the unit cost in case of wooden *kattamaram*s and 50 per cent in case of replacement of FRP *vallam*s and *kattamaram*s. The assistance to the mechanized sector was confined to 60 per cent in case of repairs (subject to a maximum of Rs. 3 lakhs) and to 35 per cent in case of fully damaged or lost boats (up to a maximum of Rs. 5 lakhs). Provision was made for the mechanized boat owners to obtain bank loans at subsidised rates for the balance amount necessary for undertaking repair or reconstruction. In all cases, the Government's support was confined to providing monetary assistance to the fishers. It also exempted payment of sales tax on the purchase of selected materials necessary in the repair and reconstruction of the boats damaged by the tsunami[12].

Besides the primary producers, the Government of Tamil Nadu also made provision for assistance to aquaculture owners, fish transporters and ice-manufacturers; for repairing fishing harbours, jetties and landing centres; dredging and related activities necessary for resumption of fishing; and for undertaking repairs to its boat building yards to undertake repairs of boats. With long-term assistance from the World Bank (the Emergency Tsunami Reconstruction Project – ETRP) to the tune of $423 million and from the Asian Development Bank (under the Tsunami Emergency Assistance Project – TEAP) to the tune of $143 million, the state government is also undertaking restoration programmes related to fisheries livelihoods, infrastructure and capacity building.

The response from the civil society organizations (CSOs) – both international and national – to the tsunami was staggering. Many local NGOs received partnership assistance from a number of international and national funding agencies and it was reported that in the period from January to June 2005, about 650 NGOs/INGOs have put in their share of relief and rehabilitation work in the 13 tunami-affected districts

in various parts of the country[13]. Although figures are hard to come by, i is estimated that at least Rs. 4–5000 crores would have gone into the INGOs/NGOs for tsunami relief and rehabilitation services. Much of the CSO assistance for rehabilitation of fisheries-related livelihood took the form of providing boats, mainly of the FRP motorized category. Some self-help group (SHG) initiatives were promoted among women, besides strengthening the existing ones and there were also a few initiatives to develop alternative/ supplementary livelihoods, targeting the rural youth.

Although less documented, the existing social networks in the fishing communities often played a crucial role in the relief and rehabilitation work in many areas. The informal *panchayat*s and other local community groups helped the victims by extending immediate assistance, by ensuring that everyone was properly accounted for in the relief and rehabilitation and by regularly following up with the rehabilitation agencies. At least some processors and traders also managed to get back into business with the money they had received from the caste *panchayat*s, which had collected a share from the compensation paid by the government for lost or damaged boats in the village (while the persons who'd lost them would often get the assets replaced by the NGOs) and from auctioning the new boats and other assets that the NGOs provided in the villages. This was redistributed among the villagers and came handy in restarting fishing and trade[14].

The private sector also played a crucial, and similarly unrecognised, role in the rehabilitation of the affected people. The fact that many categories of fishers (especially in the post-harvest sector) could stand on their feet after the tsunami owed as much to the moneylenders and trader-financiers as to the relief and rehabilitation support extended by the government and the CSOs. Besides, the corporate sector in India also contributed significantly to the rehabilitation efforts both directly (to the tune of US$ 8 million) and through contributions to the Prime Minister's National Relief Fund (to the tune of US$ 9.2 million).

Kerala

Matsyafed, the co-operative federation in Kerala, was made the nodal agency for rehabilitation measures in the coastal areas affected by the tsunami and assigned the task of distribution of fishing implements to the affected people. Of the total requirement for compensating the losses of the fishers in the state, assessed at Rs. 13.91 crores, the State Government released Rs. 13.86 crores for replacement and repair of fishing implements. Fifty per cent of the assistance for boats and nets was originally intended to be given as a loan, but this led to protests and it is not known how the matter was finally resolved. The lists of beneficiaries took a long while to prepare, and as on 1st of July, i.e., a full six months after the tsunami, the assistance released was only about 40 per cent of the sanctioned sum. There were also many allegations about misappropriation funds, leading to much confusion and lack of clarity on the rehabilitation in the state. From the information available, it appears that the rehabilitation support included assistance for repair and replacement of fishing crafts and engines, provision of nets and working capital assistance.

In the NGO sector, many agencies also provided boats, engines and nets to the fishers, mostly on a group-ownership basis. Other interventions included: setting up self-help groups among the women; assistance in setting up small businesses in several areas; and helping the youth in taking up alternate employment in construction and other sectors.

Andhra Pradesh

Although the actual losses and the rehabilitation measures were quite small in Andhra Pradesh, the interesting thing about the tsunami rehabilitation programmes was the institutional framework that had been put in place to channel support to the affected people. The World Bank-aided Andhra Pradesh Rural Livelihoods Programme, '*Velugu*', was the nodal agency for rehabilitation of tsunami-affected fishing communities in the state and it did the loss assessment and beneficiary selection for tsunami rehabilitation with the technical assistance of the Department of Fisheries. The *Velugu* women's groups in the villages acted as channels for extending support to the affected people and in several villages, new women's groups were formed to ensure adequate coverage of the affected people. This had implications in different directions, which are discussed later.

In the rehabilitation phase, *Velugu* made arrangements for *in situ* repair of damaged boats. The cost of repairs – ranging between Rs. 1500 and Rs. 2000 per boat – was borne by *Velugu* and was

made through the women's groups. Boats that were lost or fully damaged were replaced with new boats, mostly of FRP make, and this was done on a group-ownership basis. Three-quarters of the cost of the boats was subsidised by *Velugu*, while the rest was given as a loan. The responsibility for ensuring repayment of the loan component was vested with the *Velugu* women's groups. Replacement of lost nets was also done very early on to enable fishers to undertake fishing immediately and the cost of replacement was subsidised by the Government.

The NGO contribution to the fisheries rehabilitation in the state remained rather low-key and involved provision of a few boats on group-ownership basis. There were a few interventions for supporting women, but the overall scale of NGO involvement was not high.

Issues Related to Restoration of Boats

In all three States, restoration of fisheries-livelihoods was taken to be synonymous with provision of fishing boats. Of the three broad categories of fishing boats in existence, i.e., artisanal (non-motorized), motorized and mechanized, boats of the intermediate category (motorized FRP boats[15]) dominated the rehabilitation packages. There was a strong feeling among the agencies and individuals involved in rehabilitation – supported by evidence in several villages – that the extent of support for FRP motorized boats was more than adequate to replace the losses.

FRP Motorized Boats

In Tamil Nadu, the government made detailed assessments of losses and allotted funds for repair or replacement of all boats damaged/destroyed/lost in the tsunami. The procedures for obtaining compensation were rigorous and most of the money *did* go to the people – indicating that a sizeable proportion of boats *could have been* rehabilitated with government support (even after discounting 'leakages'). In reality, the damaged boats were produced for collecting the compensations, which were generally pocketed, while the NGOs supplied new boats to the fishers. This was the reason for the continued presence of damaged boats on the beaches in some villages.

The Government's support for repair and reconstruction of boats lost in the tsunami had given rise to a need among the NGOs to seek out new beneficiaries for providing boats. Many boats thus went to groups of former crewmembers ostensibly to enhance their asset base and ensure equitable distribution of assets; at least in a few cases, it was an excuse to provide more boats than were necessary. In some villages in Cuddalore and Villupuram, boats were also given to women groups. There were reports in Kanyakumari of some fishers receiving more than one boat each, which was justified on the ground that the seasonal diversification of fishing activity and migration necessitated the fishers to have two boats for fishing in two different environments.

There was a manifold increase in the numbers of the FRP crafts on the Coromandel Coast (especially in Nagapattinam and Cuddalore districts) in the post-tsunami period, although it would be very difficult to find out exactly how many boats had been really given and almost impossible to compare them with their previous strength. In Kanyakumari, the number of boats might not be as high as on the Coromandel Coast and might also be less than originally proposed, but it is very sure that they would be higher than their pre-tsunami number. Also, the fact that many new FRP boats were still being constructed at dozens of boatyards that had sprung up in Kanyakumari, Nagapattinam and Marakkanam areas indicates that the boat programmes still had some way to go before running out of steam.

The replacement of boats in Kerala and Andhra Pradesh had been within limits. The number of boats lost in these states was small to begin with, and the rehabilitation packages were unlikely to add significantly to the existing numbers. There was relatively little NGO activity in these states, which kept the flow of funds into the sector rather low-key. However, in both these states, there was a possibility that the surplus boats in Tamil Nadu would be sold to the local fishers (subject, of course, to the suitability of the designs and shapes to the local context and also the quality of the boats being to the satisfaction of the buyers), which might add to the overall fleet strength, but the conditions prevailing in the sector in these two states would indicate that investments on the new boats might not be high.

Wooden *Kattamaram*s and Other Artisanal Boats

The emphasis on FRP boats in the rehabilitation

packages meant that many of the wooden *kattamaram*s destroyed/damaged in the tsunami were not repaired or replaced and there was a decline in their numbers, or even total disappearance in some areas (Muralidharan, pers.comm.), in the post-tsunami period.

In Tamil Nadu, the Government paid out all *kattamaram* damages in full and it was possible that both the numbers of boats compensated and the amount paid was quite generous. That the fishers did not need to attach proof to their claims relating to the loss of a *kattamaram* meant that the real numbers of boats lost might be less than those for which compensation had been claimed. Yet, very few wooden *kattamaram*s were really replaced, and according to some estimates, the number of wooden *kattamaram*s now was only 40 per cent of their pre-tsunami strength, although there was really no easy way to confirm this. One argument in support of the shift to FRP boats was that availability of wood was a constraint for building *kattamaram*s in the required number.

The drastic increase in FRP motorized boats in many villages in Tamil Nadu raises questions about the continued survival of the wooden *kattamaram*s. Many fishers and NGO functionaries were of the opinion that it might be a matter of time before the wooden *kattamaram* would vanish from the Coromandel Coast. On the other hand, such gloomy prognoses (which had been made time and again about the old survivor) were belied by the poor quality of the new FRP boats provided (as well as the increased costs they'd entail), indicating that the fishers would require to invest in new boats sooner rather than later and, lacking the necessary wherewithal, at least some of them would be forced to go back to the *kattamaram*. Already, in villages like Kallar, it was said that a contingent of fishers was planning to visit Kerala in November to obtain *kattamaram*-grade *Albyzzia* wood.

But the return to wooden *kattamaram*, as the fishers observed, would not be easy. Speed was an important requirement for surviving in a highly competitive environment and in a context where a large number of boats were chasing a few fish, those who reached the fishing grounds first would have access to the best catches, and so they could not afford *not* to use engines to rush to the fishing grounds first. Also, as Bavinck (2001:96) suggests, there was the comfort factor that characterised working on a motorized boat, which would make it very painful to revert to the old systems. Thus, if the cost of operations with the FRP boats kept going up, they might take to some adaptations like longer fishing trips to save fuel or use smaller engines etc., and would go back to *kattamaram* only as a last resort.

The Mechanized Sector

In Tamil Nadu, support to the mechanized sector was confined to government's compensation for repairs and replacement. There was a clamour from the mechanized boat owners for payment of the compensation without the necessity to repair/replace the boats. This was because, for many people, the need for taking a sizeable bank loan to replace the boat was a risky proposition, particularly in the context of poor fishing over the years. Many of the boat owners were also reportedly over 50 years of age and did not like the idea of spending the rest of their life with the burden of loan repayment hanging heavy over their heads (Praxis, 2005:68). Many of the boats had outstanding debts to the export companies and commission agents and putting a repaired boat (or a new boat) back into operations meant that the owners would have to allow the old debts to be revived, which would not be the case if they simply moved out of fishing altogether. The insistence of the banks for security (the boats did not count as collateral) was another constraint, as also the bureaucratic hassles involved in obtaining a bank loan, which had not lessened after the tsunami despite assurances to the contrary. The growing unrest among the fishing crew, which was manifested in many places (including Pondicherry) in the demand for a share in the compensation received for repairs and replacement of boats and went on to become a serious issue threatening to destroy the social organization in many fishing villages (Nambiar Nagar, Akkaraipettai etc.), also made some boat owners uneasy about continuing in the sector.

In the event, the Tamil Nadu Government refused to relax the provisions for paying compensation and insisted on the boats being replaced/repaired in order for the fishers to receive the money. In many senses, this was a lost opportunity. Still, it is possible that several mechanized boat owners managed to get the

compensation money without actually opting for new boats. Some of the former mechanized boat owners thus managed to get FRP motorized boats from the NGO rehabilitation programmes, while others diversified into shore-based activities (mainly fish trade and ancillary activities related to fishing). This may have led to an overall decrease in the number of mechanized boats in some areas and the reduction in this sector in places like Nagapattinam was put at 30 percent, which must however be understood in the context of the fact that there had existed a surplus capacity of over 50 per cent in the mechanized sector in the state (Narayana Kumar, pers.com.), meaning that there was a net surplus capacity in the sector after the tsunami.

On the other hand, many new boats (including some steel boats) were still being built in the state. The fact that a 'steel barge' costs nearly Rs 25 lakhs and yet there were reportedly some 25 boats under construction in the area was a paradox that could not be explained by the fishers any more than they could explain why there should be such a clamour for more FRP boats when (as they repeatedly asserted) the existing ones had been facing rough weather for a long time. It is very likely that many of these boats – like their older counterparts – would be put into operation in the Palk Bay and off the Sri Lankan waters, rather than compete with the other fishing systems for the inshore waters (at least in the short term).

Post-tsunami, there were a few proposals to convert some of the mechanized boats on an experimental basis to target the yellow-fin tuna (YFT) and other offshore resources. But the changeover would require considerable investment, which makes the whole idea a dicey proposition for many boat owners, particularly in a context where the availability as well as the marketability of YFT was still an untested hypothesis.

Adequacy of Rehabilitation Assistance for Boats

In districts like Nagapattinam, the boat owners expressed their satisfaction with the numbers of boats provided. In fact, in some Cuddalore villages like Pudukuppam, the fishers complained that giving so many boats was of no use to them as fishing in the area was poor anyway. In Kanyakumari, the fishers constantly complained about not receiving enough boats, notwithstanding the existence of huge numbers of new boats on their beaches. The numbers of boats reported by the fishers to have come into the villages were often so low as to make one wonder where could all those new boats have gone. In the northern Coromandel Coast too, one heard complaints about not getting enough boats, in spite of strong evidence to the contrary in the form of brand new FRP boats sitting in long rows along the beaches.

Still, to the extent that the assessment of the losses was accurate, one could say that the post-tsunami investments on rehabilitation were adequate and even exceeded the actual losses in several areas, as some micro-level studies (for e.g., Thaddeus, 2005) clearly showed, although this would be very difficult to quantify at the state-level for various reasons. In terms of fisheries-related investments, given the proliferation of FRP motorized boats and the generous compensation for *kattamaram*s and *vallam*s, there was an overall increase in investments within these segments as well as in the sector as a whole. In case of shelter, considering the previous condition of a majority of the habitations in the fishing villages, it was certain that the new programmes would mean a quantum leap in the size of investments on this front too. This generalisation applies to Andhra Pradesh and Kerala as well.

At the micro-level, the issue of adequacy of assistance was not often easy to resolve because, as several fishers (for instance, in Arcotthurai and in Keezha Manakudy) argued, in a situation where they were effectively recipients of charity, it was not really appropriate to raise questions about the adequacy of support. There was also the problem that 'adequacy' was a difficult state to achieve, especially in the fisheries context, because of the short lifespan of the tools used and the prevailing lack of understanding about how the systems operated in a 'normal' context[16].

Thus, to the extent that the support was aimed at replacing the lost assets, it might not be appropriate to discuss about the adequacy of support. But where the rehabilitation brought about a change in the mode of operations for the fishers, it would be necessary to discuss how adequate the support had been as otherwise it would be difficult for the fishers to adjust to the new set of conditions that the new operations imposed upon them. The major change for most fishers involved shifting from wooden *kattamaram*s to motorized FRP boats, from being crewmembers to joint-owners, the adequacy of support

received in this particular instance would need to be discussed.

In most cases, the provision of engines and nets was not commensurate with the numbers of boats provided. In some cases, the NGOs provided their quota of boats and left an area, leaving the fishers to find their own resources to obtain nets and engines. There were often questions about the usefulness of the nets provided because of their poor quality, inadequacy and, frequently, inappropriateness. The fishers often received nets that had no use for them: some managed to exchange the nets for more appropriate varieties, but not all could do so. The nets often reached the fishers only after the right season for using them had come and gone; they would be useless until next year and the fishers still had to buy nets appropriate for the current season. That this was mainly a problem of the new boat owners was apparent from the fact that other people who had been boat owners and obtained boats again could restart operations sooner by getting their old nets mended and their damaged engines repaired.

In Andhra Pradesh, the nodal agencies – *Velugu* and the Department of Fisheries – organized exhibitions where net-manufacturing companies displayed their wares and the fishers had a chance to place orders for themselves for specific nets suitable for their operations (subject to a maximum limit in value). Thus, there were few complaints about nets in Andhra Pradesh. In Tamil Nadu too, some NGOs did organise such events, but overall, the responsibility for selecting and distributing nets to the fishers lay with the NGOs.

The provision of motorized boats also led to a need among the people for immediate working capital (mainly for fuel) to start fishing. This was exacerbated by the fact that the new FRP motorized boats boasted higher horse-powered engines (9-10 Hp in place of the 5-7 Hp in the past), which would increase the efficiency of the boats, but also add to the cost of operations. This was clearly a burden because, for one thing, many of the new boat owners had been crewmembers or just moved up from being owners of non-motorized *kattamaram*s, and naturally had little money to invest in fuel and other necessities. The long period of waiting on the beaches also diminished their investment potential. When they did manage to restart operations, extended periods of lean fishing meant that they had to keep investing in the hope that fishing would stabilise in due course and start paying back.

Many new boat owners had to turn to the moneylenders for meeting their investment needs, and restart the cycle that had made them poor in the first place. Here too, the old relationships between the former boat owners and the trader-financiers helped them to obtain loans more easily while such help was more difficult to come by for the new boat owners.

Problems were also reported with engines in Arcotthurai, which were clarified (by the local dealer) to be due to the installation of a new type of gearbox. There were problems with gearbox, nozzle and the silencer and as a result, the consumption of fuel increased. In Kanyakumari, the fishers' complaints related to poor quality of engine manufacture. Considering that complaints about engines were a regular feature in the motorized sector (the engines had never really worked properly at sea), this might also be a case of continuation of the old story, rather than to be solely blamed upon the tsunami and the rehabilitation programmes.

Issues Related to Targeting

People Who Missed the Boat

Although the numbers of boats provided overall was more than adequate, it is possible however that their spread was not uniform across the coast: while some villages received more than their due, there still were some where the needs were not fully met. It is also possible that, at least in some cases, the people who benefited from the rehabilitation support had not always been those who had lost boats in the tsunami. What this means is that while the overall numbers might have gone up, there might still be some gaps at the micro-level. This study identified three categories of people who failed to obtain support from the rehabilitation programmes.

Absentees

Several people had abandoned their villages in the immediate aftermath of the tsunami, fearing a recurrence of the tidal waves and spent a few weeks in the interior and it was during this period that the loss assessments were made, thus leaving them out. Such people were often only a small proportion in a village: for instance, in Mulukuthurai (in Killai area) in Cuddalore district, eight out of 113 families had been

left out. But taken together, they added up to a sizeable number and it could also be argued that their small numbers would be a constraint to making themselves known or heard. A few managed to get into the rehabilitation lists subsequently, but the existence of a few more families who still required rehabilitation assistance was a constant complaint in several villages. In some instances, the village *panchayat*s were taking steps to share the assistance received by the other members of the community with those who had been left out.

People in Shadow Zones

The region northwards from Villupuram district up to Chennai is in the 'shadow zone' of tsunami, it did not suffer spectacular damages like Nagapattinam and the number of deaths was not as high as in other districts, so there were complaints that the extent of assistance to this zone had been less. Clearly, the loss of boats and nets, landing centres and other infrastructure in this zone was as significant and debilitating as in the others, but received less attention as the focus had been mainly on the worst affected districts like Cuddalore and Nagapattinam[17].

In Kerala, in the village most affected by the tsunami in Alappuzha district, Aratupuzha, only three wards (later reorganised into four) were officially designated as being affected by the tsunami, which meant that the people living in the other wards in the same village were unable to access to rehabilitation support, even though they had individually suffered as badly as the people in the affected areas. Yet another category of people who could not make it to the lists in the same village in Kerala were the fishers who had been affected by the aftershocks of the tsunami, which followed a few months after the actual event and did sizeable damage to houses and fishing implements, but the victims of the aftershocks could not get recognition as tsunami-affected and thus failed to obtain support. There were promises of a 'second list' of tsunami victims to be prepared 'in due course'.

Then there were the people who were not directly affected by the tsunami, but who suffered indirectly from its consequences. For instance, fishworkers organizations in Kerala were of the opinion that the tsunami affected fish catches very badly by upsetting the benthic ecosystems. A majority of fishermen in the state had reportedly remained idle since the tsunami and the impacts were felt on a number of downstream activities.

Migrant Fishers in Andhra Pradesh

Perhaps the worst affected group of people in Andhra Pradesh by the tsunami was the migrant fishers. December was the month when seasonal short-term migration would be at its peak in the north and central zones of coastal Andhra Pradesh (East Godavari and Visakhapatnam districts, in particular) and many migrants, some with their families, were residing in makeshift tents on the beaches quite far from their homes at the time of tsunami. Many lost their temporary shelters along with everything they contained. Their boats were damaged and fish kept out to dry were washed away in large quantities. The unique conditions that characterise the migrant lifestyle in the new areas meant that information about their wellbeing was not easily available to the relief agencies, which hampered timely aid from reaching them. Post-tsunami, the migrant fishers found themselves largely bypassed in the rehabilitation programmes: neither the villages where they came from, nor the villages, on the fringes of which they had been residing at the time of the tsunami, refused to include their losses in the official lists as both feared that doing so would reduce the quantum of assistance to their local constituencies.

Interventions Aimed at Fish Processors and Traders

In Tamil Nadu, in the rush to provide boats to the fishermen, the needs of the other players in production and market chains generally took a back seat. Notwithstanding some excellent micro-level documentation about diverse categories of people in the sector[18], there were few systematic efforts to understand their livelihood-specific needs and address them meaningfully. There were indeed some programmes that targeted some of the people directly or indirectly, but their scope, coverage, relevance and effectiveness remained uncertain.

This might have partly to do with the 'tsunami-centred' approach to rehabilitation, which focused on the specific losses suffered by different people in the tsunami, notwithstanding the prevalence of 'social equity' arguments for giving boats to the crewmembers. Partly, the reasons were also historical: many of the people in the production and marketing

chains had largely remained invisible from the policy perspective. Yet another reason appeared to be that a majority of the people in the production and market chains came from economically weaker sections, which meant that their investments were miniscule compared to, say, investments in the boat sector, particularly in a context where huge amounts of money needed to be spent quickly. As one fisherman leader from Nambiar Nagar suggested, "It is always easier to give one FRP boat than to distribute the sum among 30-40 women." Put simply, it was not often cost-effective to address their needs.

The fact was that the investments of the fish traders – often ranging across Rs. 2-5 thousand – were small *from the point of view of the donors*, but not from that of the people themselves. For many traders, it was all they had to survive on and it certainly meant a lot to them. Their level of operations was such that an additional income of Rs. 30 a day often meant a 50 per cent increase in their returns. On the other hand, extended periods of not being able to ply their trade meant consuming their working capital and falling behind in their trade. Also, apart from such hand-to-mouth categories, there were also some people – dry fish producers, for instance – who did lose substantially by any consideration. Some of these large-scale processors in major fish landing centres in Tamil Nadu (like Akkiraipettai) were from Kerala, who employed the local people to buy and process fish for them. Many of these processors sustained major losses to their enterprises, but these losses remained un-quantified and un-addressed. This was reflected in the collapse of some large-scale activities, with downward implications for the livelihoods of poorer people who worked as processors' assistants etc.

Similarly, the lack of interest in supporting mechanized sector also extended to the large numbers of poor people depending upon the mechanized boat landings for a living, which meant that a sizeable number of people working in the fishing harbours remained largely out of the pale of rehabilitation efforts. For example, on an early October morning in 2005, this team counted over 27 categories of people involved in various activities at Nagapattinam fishing harbour. These included traders, intermediaries, fish processors, ancillary workers (transporters etc.), technical people (boat builders, engine mechanics etc.), besides a number of people involved in non-fishing related activities (for e.g., basket weavers), who depended for their survival on the fisheries sector all the same. A majority of them came from poor and working class backgrounds and worked for daily wages. At least a third of the people belonged to non-fishing castes (mainly *dalit*s). The shore-based workers outnumbered active fishers by 4:1, but at other times (and in many other areas) the ratio could go up to 7:1 or more. Many ancillary workers on the beach – carpenters, mechanics, fish-cutters, ice-sellers and crushers, fish transporters etc – lost their tools of trade as well as the money they had with them on that fateful day. A few did get some assistance, but it was random and sporadic.

The trouble with leaving out such groups of people was not only that it reduced their sustainability of their livelihoods, but also had implications on the production and market chains and weakened them. This would, as was apparent in some Cuddalore villages, ultimately affect the primary producers (who had largely been the main target of the rehabilitation programmes) by reducing their access to inputs, services and markets. If this had not become a big issue so far, it was because of poor fishing in many areas, but it was clear that the weakening of links in the production and market chains would become serious once fishing operations gained momentum.

Many such categories of people got back into business with borrowed money. The money provided as part of relief packages also helped a few of them to survive and even reinvest the savings in their businesses, but social networks appear to have been the best support for many of the ancillary traders to get back into business. For instance, the bicycle fish transporters in Nagapattinam, who helped to carry the fish from the landing centres to the processing areas for the women, received money from their clients to buy their bicycles; the interesting part is that the women themselves had borrowed the money from local moneylenders and needed to repay it too. Local networks of social support – including 'sell first-and-pay later' mechanisms – helped several people to stand upon their feet again.

On the other hand, there was evidence that the numbers of fresh fish vendors was increasing in several locations with the daughters and wives of the fishers who had died in the tsunami venturing into the activity. Being 'fresh' entrants, they would not be considered

as victims of the tsunami and their investment needs were met either from the compensation received from the death of the men or from the private sector.

In Andhra Pradesh and Kerala too, the rehabilitation efforts were marked by lack of attention to people other than those actively involved in fishing.

Interventions Aimed at Women and People of Non-fishing Communities[19]

On the Coromandel Coast, the fact that the women and people of non-fishing castes were not members of the caste *panchayat*s restricted opportunities for developing need-based interventions specifically aimed at them. In their anxiety to obtain as many boats as possible, the leaders of caste *panchayat*s also exaggerated the losses to their boats while underplaying those of women and other categories. The fact that many women in fish trade and processing came from single-headed households (for example, single women constituted 60-70 per cent of the traders in Poompuhar; the Praxis studies in several villages also reinforce this view)[20] made their case even weaker because they had no representative to talk for them in the *panchayat*. At the same time, rather ironically, some women groups and *dalit*s had been provided with boats in some districts like Cuddalore and Villupuram. The implications of this would be discussed in the next chapter.

In Kanyakumari district, long history of working with women groups helped the NGOs to extend some meaningful support to them. This was because the NGOs had a good understanding of the women's needs; besides, they also had to use the existing groups to channel support to the communities, which they could not do without ensuring that the women also benefited. The fact that the NGOs (including the church-based ones) had a long-term stake in the wellbeing of the communities in the area ensured that the interventions were more need-based and appropriate, although this was not always possible to achieve in the face of much rehabilitation assistance coming from outside.

Overall, as the programmes for giving boats were beginning to decelerate towards the end of the year and the NGOs were settling down to long-term engagements with the communities, there were indications that activities focusing on women and other categories of people in the sector (and beyond it) were taking prominence in the programmes. Many new programmes were reported to be coming up over the next year to address women's needs more meaningfully.

In Andhra Pradesh, the involvement of women's groups set up under the ongoing *Velugu* programme led to serious problems as the men were upset with the women playing a dominant role in rehabilitation ignoring the usual channels like co-operatives. The hurried formation of new women's groups to cover everyone in the villages in the rehabilitation programmes may have compromised the original objectives of the *Velugu* programme itself, while people who could not become members of the groups (widowers, for instance) were upset at being left out. The men's antagonism to the involvement of women seemed to have come down subsequently, but the effectiveness of the women's groups as a conduit for channelling development support – though admirable in a theoretical sense – remains doubtful in the long term.

Infrastructure in Fisheries

In Tamil Nadu, the Government was the main investor in this important area and it drew up elaborate plans to develop basic infrastructure related to fisheries in many areas and, wisely, accommodated the tsunami-related needs into their long-term strategies for fisheries development (see, for example, the Policy Note of the Fisheries Department outlining plans for 2005-6). It was suggested that the savings that the Government had made because of the active collaboration of the NGOs (mainly in the shelter activity) went into construction of roads and other basic infrastructure. Generally, construction of roads, bridges and other basic infrastructure was speeded up in the aftermath of the tsunami. There was a definite improvement in the infrastructure in many villages and many remote villages now had better access to roads, communication facilities and transport systems. This would help in times of emergency, but more importantly, in ensuring quicker marketability of the fish catches, thus adding to their incomes.

In Kerala, the post-tsunami period saw a flurry of activities on the infrastructure front: the construction of the fishing harbour in Alappad was expedited and there were also proposals to build new bridges to connect the relatively inaccessible villages to the

mainland. There was also a proposal to build a sea wall right along the coast to protect the villages from the sea ingress during monsoons. Although work on these activities had begun, it was reported to be moving at a snail's pace (see John Swamy's note, *The Tsunami in Kerala*).

However, much of the existing and proposed infrastructure in fisheries fell into the conventional patterns and there was a need for reorientation at two levels: firstly, the rapid changes happening in the international trade and quality control regimes would necessitate building or upgrading the infrastructure with the present and future international demands for seafood in mind. Secondly, the infrastructure would need to be livelihood-centred, i.e., focusing upon the needs of a number of livelihood groups involved in the sector rather than being commodity-centred; in other words, keeping in mind that the infrastructure-related needs of the traditional fish processors would be very different from those of the shrimp exporters. The NGOs could play an important role in this.

Also, management and maintenance of infrastructure had traditionally been a major bottleneck in many areas. The fact the government had set it up would be taken to mean that the Government must also manage and maintain it, while people confined themselves to taking advantage of it as long as it was functional. The poor state of several public structures was a direct result of this attitude and there is a need for setting up user-based management and maintenance systems for the proper upkeep of the infrastructure in the villages, which – if properly implemented, might even pave way for the communities taking care of their future infrastructure needs on their own. Obviously, this is easier said than done, but is well worth trying now when 'user-pays' principles are becoming practical realities.

There was also a perception in districts like Nagapattinam that the tsunami had helped promote the use of ice in different activities in the sector. It was felt likely that everyone would start using ice in due course in a big way. While increased use of ice would add to the fishers' incomes, it would be necessary to understand the full implications of such developments before promoting the idea. Questions about the possible negative consequences of increased usage of ice for other people (say, traditional fish processors) and about who would have control over access to ice would need to be properly addressed while promoting the use of ice. There would also be a need to understand the economies of scale before setting up ice plants anywhere.

Credit in Fisheries

Access to credit was a crucial need and an integral component of many fisheries-related activities and unfortunately, this had not received much attention in the post-tsunami rehabilitation programmes. It was asserted by a number of the respondents met during this study that investments in developing sustainable credit systems could have significantly reduced vulnerability of fishers and enhanced their incomes manifold.

Notwithstanding tall promises made in the aftermath of the tsunami, most fishers complained that access to institutional credit remained as bleak as before. Even the mechanized boat owners had serious problems in obtaining bank loans and at least a few of them reported to have dropped the idea of getting their boats rebuilt because of the unfriendly attitude of the bankers. For several others, the long bureaucratic process of sanctioning the loans had meant that they were still waiting to receive the money at the time of this study. In Arcotthurai, it was said that the banks insisted on collateral security for sanctioning loans and did not budge even when the Department of Fisheries officers offered to stand surety for repayment[21].

One important intervention targeted at the women in the post-tsunami period was the formation of Self Help Groups (SHGs) in the villages. There was much competition to form SHGs among the NGOs, which resulted in a profusion of SHGs in many villages. At the end of November 2005, it was reported that there were some 4150 new SHGs spread over all the Tsunami affected villages[22]. The assistance provided to the women in SHGs varied from group to group, ranging from Rs. 1-2 thousand per member, which – the women complained – was barely sufficient to meet their consumption needs, leaving nothing to restart businesses and pay back the loan component. This led to a rather predictable pattern to SHG membership in villages like Thammanampettai in Cuddalore, where each woman became a member of three SHGs (set up by the three NGOs working in the village). In bigger villages like

Devanampattinam, it was reported that the women could become members of more SHGs because there were more NGOs working there. This helped the women in the short term, but the implications for the sustainability of SHGs in these villages would be a cause for concern.

Informal credit was assuming importance again in every village. Primary producers (who needed money for nets and working capital) as well as post-harvest workers had begun to depend on moneylenders (and, to a much lesser extent, on traders) to restart their operations. At the same time, access to informal credit itself had reportedly come down in the post-tsunami period. The cost of credit too had gone up. This was said to be due to losses suffered by moneylenders themselves, who now viewed the sector as risk prone. The traders and commission agents, who supplied to the credit needs of the fishers, lost their investments and received no compensation at all, but it was possible that their investments had begun to come down even before the tsunami.

Petty traders and other people with very small operations, whose main source of credit was hand loans from neighbours and friends, reported that they found it difficult to get hand loans nowadays because there was little money in the villages and everyone was in need of making investments themselves. Women in Cuddalore and Kanyakumari reported to have pledged their gold ornaments to get loans. *Kandu vaddi*, the system that involved paying daily interest was back in most villages and as one informant in Anumandai Kuppam in Villupuram put it: "Depending on the kind of loan taken, we have a retinue of moneylenders visiting us at regular intervals: there is a daily moneylender, a weekly one and a monthly one and so forth. We take money from one to pay the other, so the same money gets to be rotated while we are increasingly pauperised!" The rates of interest varied from 2 per cent to 5 per cent per month, with the boat owners paying the lower rate while the poorer fish traders paying the higher interest. Some traders also borrowed short-term loans, which would be repaid the next day along with an interest of up to 10 percent. For a petty fish trader, payment in interest amounted to between 25 and 60 per cent of her income.

Thus, it was clear that in spite of much support going into the sector in the post-tsunami period, a majority of fishers continued to be indebted to informal moneylenders paying extortionate rates of interest. It was equally clear that, barring an unexpected turn of events like the tsunami, a majority of them do repay one way or another as otherwise it would not have been possible for the informal lending systems to survive for so long and even flourish, which gives the lie to the oft-repeated contention that the fishers were compulsive defaulters.

Under the circumstances, as several people have suggested, it might have been a wise move on the part of the NGOs to think along the lines of setting up new channels (or at least strengthening the existing ones) to make credit affordable and accessible to the different categories of people in the sector. It was reported that some innovative credit programmes (mainly through SHGs) were being implemented in many parts of Coromandel Coast, but information about them was rather sketchy. It might take some time to establish appropriate systems to suit the fisheries sector, but it would be well worth the time and effort because, going by available evidence, enhancing access to credit at affordable costs would, even without any other changes to the status quo in the sector, very likely enhance incomes of a wide cross-section of the people.

At the same time, while there was some justification in discouraging institutional finance for providing boats (although putting the blame for non-repayment entirely on the fishers was ignoring the complexity of the issue), there still were a large number of other people in the sector who never had access to institutional credit and who would undoubtedly benefit from it if only the systems for credit delivery and recovery were developed to suit the unique conditions that characterised their activities. The tsunami gave opportunity for the first time to make institutional credit available to marginalized groups within fishing communities, (which – going by the experience of mechanized boat owners – might have turned out to be another tall promise), but the avenue did not seem to have been explored at all.

Disaster Preparedness and Sea Safety Issues

Unlike in the case of other recent disasters (Andhra Pradesh in 1996 and Orissa in 1999, to name just two), the tsunami did not seem to have given rise to many disaster preparedness (DP) programmes. This was

perhaps understandable because one could not be prepared for a mega-disaster like tsunami (which was also, going by the historical trends, a once-in-a lifetime event). However, this might also mean that the tsunami took hold of people's imagination to an extent that the other regular visitors to the coasts like cyclones had taken a backseat. Places like Nagapattinam still remained as vulnerable to a future disaster as they had been in December 2004, and the floods in November highlighted the urgent need to develop multi-hazard response plans for coping with future disasters in a typically low-lying area like Nagapattinam.

Historically, security concerns had made the Government impose restrictions on installing shore-to-vessel communications systems and the restrictions remained in force at the time of the study. This meant that the boats could not carry any communication systems onboard, hence remained vulnerable to natural disasters at sea. According to the officers of the Department of Fisheries, the same restrictions also affected the promotion of offshore fishing in the area; even though the fishers were interested, it would not be possible without installing GPS and advanced communication systems onboard. In an era of cellphones and satellite phones, the ban was really superfluous to contain the threat from Sri Lanka, but it remained a major barrier to enhancing the sea safety of the fishers.

There were some reports about the introduction of community radio by NGOs in some areas, which would be worth exploring and, if successful, promoting along the coast. There were also some new initiatives by the international and national organizations, often in collaboration with one another, which began to take a close look at the issue of sea safety in an integrated manner, training people, assessing the capability of the existing fishing systems to cope with disasters at sea and developing appropriate mechanisms to improve the quality and other issues important for sea safety.

There were few programmes to develop community-based disaster preparedness because, some NGO informants suggested, the existing packages were inadequate to meet the needs of the fishers. Mere drills and role-playing only engendered apathy in the fishers and made the programmes ineffective in the long term. For a DP programme to be sustainable, it was felt necessary to include it in the regular community development programmes like livelihood support packages, but in practice, this was not happening.

The tsunami showed up the gross inadequacies in the current knowledge about many things related to the fisheries sector and the people in it. An important constraint that people kept facing in both relief and rehabilitation phases had been in terms of not finding reliable and appropriate data about the affected communities. It was clear that a good information system was absolutely essential for coping with future disasters. There were some initiatives in Nagapattinam district, such as NCRC Village Information Centres, which were trying to address this need at different levels and although it was still too early to assess their effectiveness (many of them had not been fully functional), it was clear that they could show the way forward for other districts too. By being located at the micro-level, they had the potential to collect as well as disseminate information, which would make them very efficient disaster warning centres in the long term.

Fisheries Management

Prior to the tsunami, the fisheries sector had been characterised by over-capacity, which contributed to the overexploitation of the fisheries, with negative consequences all round. While there had been proposals and programmes to reduce fleet strengths and strengthen the coastal resource management systems, these could not be implemented for a variety of reasons. The sorry state of affairs was reflected in the fact that there had not existed a mechanism to register (or even keep count of) the boats operating in the coastal waters.

The tsunami, as some organizations suggested, was an opportunity to redress the problem. On the one hand, it reduced fleet strength and, on the other, it opened avenues for (i) moving people out of the sector by providing sustainable alternatives (perhaps in shore-based activities) and (ii) implementing more responsible fisheries management programmes for conserving the coastal resources. From all indications, the fishers too were largely agreeable to the idea because of a variety of reasons and would have welcomed the opportunity to withdraw from the sector, if given sustainable alternatives. Many

mechanized boat owners, as discussed above, were not even particular about being shown alternatives and were willing to move out after taking the compensation package. In other words, the tsunami made it possible to do something that would have taken a considerable time to materialise. It was an opportune moment to streamline the sector and put in place some restrictions on the unchecked and unregulated entry into the sector.

However, this turned out to be another lost opportunity, at least for the time being. As indicated, the Government firmly refused to entertain the plea of the mechanized boat owners to be allowed to take the compensation money and leave the sector. That a few people still managed to obtain the money without necessarily replacing the boats was perhaps lucky, but the fact remained that implementing the provisions would have meant (and still did mean) restoring status quo, with the attendant problems of destructive fishing, competition and conflicts.

While the destructive nature of mechanized fishing was recognised by the NGOs, which led to taking a firm stand against extending support for its revival, the capacity of the 'artisanal' boats (particularly the FRP motorized category) for overfishing – which was as much a cause of overexploitation as destructive fishing – was underestimated, leading to provision of large numbers of new boats that would definitely contribute to the crisis in the sector. Although some NGOs insisted upon compulsory registration of the craft, not all new boats were registered and the situation with numbers was no better than it had been before the tsunami.

Thus, in the absence of opportunities for diversification of fishing grounds, both mechanized boats and the motorized boats would compete for fish in the inshore waters and that it will be a case of the same quantity of fish (as earlier) being taken by a much larger number of boats, with reduced per capita availability all round. This indicates that the post-tsunami rehabilitation programmes might have actually contributed to exacerbating an already difficult situation.

There were indications towards the end of the year that fisheries management was coming to the fore and some programmes (involving international and national efforts with government and NGO participation) were being formulated for implementation over the coming years.

Livelihood Diversification and Alternative Income Generation

Post-tsunami, there were reports of an increase in migration of fishers from Nagapattinam district to other areas, which included destinations in Southeast Asia (Singapore and Malaysia). There was also a parallel movement into non-traditional activities, particularly among the younger people who were reportedly moving to towns like Tirupur, Chennai and Coimbatore in search of work. In Arcotthurai, women were reported to be working in neighbouring towns, running various businesses (like operating telephone kiosks) and working as domestic help. Some were working in agriculture. In Kerala, while the men were waiting for the boats to come through and, in some cases, for the Government to prepare the long-promised 'second list' for damage assessment, the women undertook a wide range of activities to feed the families. In Vattachal (in Aratupuzha), the women's earnings from coir processing (a traditional activity in the area) were said to keep the families afloat.

In Kanyakumari, geographical migration was a seasonal feature for a long time, but it was reported that its intensity had increased in the post-tsunami period. The tsunami did not seem to have made a serious impact upon the migratory patterns of fishers in Andhra Pradesh.

The rehabilitation programmes gave rise to some new opportunities for employing the fishers. In Prakasam district, where the fishers had traditionally depended on the carpenters from Chennai area to build their wooden boats, an opportunity arose to train them in building the boats when the contractors from Chennai left midway through a rehabilitation project to build boats and the subsequent events showed that the fishers had no more need to go to Chennai for getting their boats built. Similar stories were heard in Villupuram district and elsewhere.

However, the massive house construction programme, where much scope existed for people to work, did not seem to have caught the interest of the fishers. There were efforts to involve the communities in house construction and a few fishers did get involved, but a large majority tended to remain out of it. Some NGOs provided training in house construction and encouraged the fishers to contribute to building their own houses, but the response was said to be lukewarm. There were also some local

initiatives like brick making, which might have helped the neighbouring non-fishing communities (particularly the dalits in Nagapattinam) more than they helped the fishers. Partly, this was to do with the fact that the fishers (especially the Pattinavars) considered it beneath their dignity to indulge in such work. Another explanation had to do with the fishers' apprehensions that if they showed an inclination to work in non-fishing activities, they would be implicitly accepting that there were alternatives to fishing and thus risk a reduction in the flow of funds into the sector. Also, there was a fear that there might be much building work going on currently, but it would be over within a year or so, and there would be very little building work for a long time to come, particularly if many people had taken to it.

Obviously, any alternative income generation programme would have to contend with such factors and come up with some meaningful responses, but it was clear that for many fishers, working in the fish production and marketing chains still remained the only option to meet their livelihood needs.

Key Issues in Rehabilitation of Fisheries-based Livelihoods in Tamil Nadu

Changing Patterns of Boat Ownership

The fishers complained that most NGOs came with set ideas to give boats and if the fishers had refused to take them, they stood lose everything because the NGOs had little else to offer besides boats. Some fishers even said that they had been so grateful to the NGOs who fed them, clothed them and gave them shelters to live in at a time of need that they could not simply refuse the boats or demand for other, more necessary, items.

While this might be the case in some areas, there was no doubt that the fishers themselves played a major role in allowing the proliferation of boats. Even the same people who complained about too many boats going into the villages would, when the time came, suddenly change tune and demand more boats. Of course, they said, it was true that there were more boats than there had been previously, but they all went to the 'other people' or to the 'other side of the village' or to the neighbouring village, but never to 'us' or to 'our village'. Except in Nagapattinam district, it was rarely that people admitted they had received sufficient numbers of boats.

According to the field functionaries of NGOs (supported by physical evidence in the villages), the fishers' complaints about not receiving their due were often not true; they complained because they knew the NGOs would only give boats and not money, so it made sense to demand boats only to turn them into money at the first opportunity. They were also aware that outsiders would find it difficult to determine how many boats had actually gone into an area and even if they did, it would be nearly impossible to compare them with the boats that had existed in the pre-tsunami period in the area.

Many long-term NGO representatives, *panchayat* leaders, community members and leaders of fishworkers' organizations met during the study repeatedly stressed how they had to remain helpless spectators for fear of drawing flak from the fishers.

In fact, in Nambiar Nagar, it was stated that the caste *panchayat*'s resistance to accepting boats in large numbers was an important reason for the eventual overthrow of the *panchayat* itself[23].

The fact was that, it *was* the dream of every fisherman to be the owner of his boat and the tsunami offered many fishers the once-in-a lifetime opportunity to fulfil their wish and they were certainly not going to worry about the investments, overcapacity and overexploitation at such time. Also, the motorized boat was the most expensive item a fisherman could hope to get from the rehabilitation effort and they took it even when they had no need for it, knowing they could always sell it and buy a cheaper one in due course.

The demand for more boats had also been explained as an outcome of the fact that, for the fishers, there were really no alternatives. They had no skills to diversify and they did not have the investment required to take up another activity. Considering that the situation in other primary sector occupations was even worse, there were really not many options available anyway. Of course, if the situation continued this way for a few months more, they would have to bow before the inevitable and work in other activities because all their surplus would be gone by then and they'd be moving back to a very basic stage of existence, but they'd rather fight to the bitter end than prepare to move out already. In the meantime, the motorized boats would help them go farther out and fish for longer durations, so they opted for them. Post-tsunami, the fishers claimed, fishes had moved into

Group Ownership in Mulukuthurai

The problems with group ownership were apparent even in backwater villages like Mulukuthurai in Killai area and it might be instructive to look at how group ownership was shaping up here.

Starting from Pichavaram estuary and reportedly extending up to Parangipettai in Cuddalore district, many plank-built *kanna thoni*s operated in the backwaters and these were truly household ventures in that a man and his wife used to fish.[24] Every family in the area thus had a *kanna thoni* and the individual fishers were masters of their operations in the backwaters. The tsunami washed away or damaged most *kanna thoni*s in the area and the fishermen showed preference to have the same replaced in the rehabilitation programmes. This was because, while fishing with *kanna thoni* in the backwaters might not be lucrative, it at least helped them to make a reasonable living. Few of them were experienced in operating motorized boats at sea and they also feared about the cost of operations. There was also strong opposition from the women to taking FRP boats, because they feared – rightly, as it turned out – that the boats would reduce their role in fishing.

But the NGO decided that manual punting and rowing in a heavy boat like *kanna thoni* was hard work and that the fishermen should take advantage of labour-saving and more efficient technologies and it convinced the fishers they would be better off by changing over to FRP motorized boats. The fishers agreed reluctantly and soon became the co-owners of new FRP motorized boats. But within months, they started facing problems with the new arrangement. There were operational problems: it was difficult to make all owners to agree upon anything; this had less to do with their quarrelsome nature and more to do with indecision and inability to accept responsibility in a group situation. Simple day-to-day issues like who should do what, how to share expenditure on diesel, where to obtain new nets from, who to undertake maintenance suddenly acquired momentous dimensions. On any given day, at least 4 or 5 boats would remain on the shore as one of the crew would fail to turn up and the rest could not simply take off without one of the 'owners'. At sea too, with five owners onboard, there was a breakdown in the organization of fishing activity, leading to constant bickering. That the boats needed frequent repairs and maintenance did not help matters much either.

So now the co-owners of the boats were devising some new arrangements to make things work. Each boat now had a leader who, by virtue of being better off than the others, was expected to bear all the expenses for fishing, on the understanding that he would take his money back (along with some 'incentive') from the returns. The next stage in this arrangement was that, in case fishing was poor on a given day (which normally had been the case in the recent past), the leader would go on investing until such time that fish catches improved sufficiently to enable him to recover his investment, plus the interest. Ever since this arrangement came into existence, the crew became reluctant to allow the leader to take some of his investment back even on the days when fishing was good, suggesting instead that he could always recover his money when fishing 'really' improved. The leader's investments on the boat were thus mounting all the time and one could already visualise what might happen next: the leader would become the de facto owner of the boat in a year or less.

So as it unfolded, the story in Mulukuthurai went like this: the fishers who had once been owners of their boats, were now trying to cope with being co-owners of the motorized boats, which would sooner rather than later come to be owned by the leaders, thus relegating the remaining 'co-owners' to being labourers on the boats. While this was something that the fishers seemed to welcome, the irony remains: the programmes were intended to make boat owners of the crew, not the other way round.

deeper waters and they needed to fish farther out than previously, which justified the demand for motorized boats in place of the wooden *kattamaram*s, because the motorized boat would help them fish in the deeper waters. Whether they really took the boats into the deeper waters was doubtful because of the prevalence of poor fishing conditions in the post-tsunami period.

There was yet another angle to this: although the fishing villages of the Coromandel Coast (as well as in Andhra Pradesh and Orissa on the east coast) were apparently homogeneous, there had been simmering tensions between the boat owners and the crew – each felt the other to be benefiting at their expense. The crew complained about a decline in their share from the catch returns while the owners complained about the increased risks. When the tsunami occurred, the issue came into the open when the crew demanded that they be provided a share of the compensation amount received by the boat owners. For the owners, who had been complaining that they had not received a fair share in the compensation packages, this was clearly out of the question and so they refused. Over the next few weeks, the issue became increasingly heated and the respective positions of the owners and the crew became increasingly irreconcilable. This eventually led to the crew demanding not only that they be given boats, but also that the former boat owners should not receive any (because they'd received compensation from the Government). This also culminated in toppling the owner-dominated caste *panchayat*s in several villages on the Coromandel Coast, particularly in Nagapattinam district.

So, for the crew, owning a boat was a means of balancing the power equation in the villages and being treated as equals by the boat owners; it helped that the NGOs had enough money to help them realise their dream. Now that everyone in a village was a boat owner, it would be interesting to see how the arrangements concerning the fishing operations would work out. There is no doubt that a majority of the new boat owners would continue to work on the same boats that they had been working on prior to tsunami (it was already happening in many villages), but the arrangements would certainly be different. They might be more equitable, although it would be difficult to see that happening in a system where a lion's share of the catch returns was gobbled up by the engines. As a fisherman from Nambiar Nagar suggested, a line had now been drawn between the owners and the crew and it was likely that their future relations would be coloured by whatever had happened in the aftermath of the tsunami.

In some cases, the former boat owners who received compensation from the Government either did not opt for a new boat from NGOs or were barred from doing so (mainly due to pressure from the crewmember organizations; see the next section), and many of them ended up as crewmembers on others' boats. Considering many former crewmembers had now become owners of their boats, this led to a reversal of roles and the impacts of such role reversals upon the social and economic fabric of the communities would remain to be seen.

Group Ownership

In all three States, a majority of boats had been provided to the fishers on a group ownership basis: each boat was provided to three to five people, although scarcity of boats occasionally required spreading the ownership to 8 people in some areas. Although group ownership was promoted in both Andhra Pradesh and Tamil Nadu, there was an interesting difference: in Andhra Pradesh, it was a measure to spread the benefits of a few boats over many claimants, whereas in Tamil Nadu, it meant increasing the number of claimants to justify distribution of more boats.

In Nagapattinam and Kanyakumari districts, the concept of individual ownership was strongly rooted and the fishers were quite clear that group-ownership would not work and all group-owned boats would soon become individual operations. For these fishers, past experience with group ownership, tried out unsuccessfully in the co-operative sector, clearly showed that it did not work for many reasons. The most important reason for the failure was that the impetus for sharing in many of these initiatives came from outside, often from above. People took boats in groups to satisfy the requirements, but the boats soon came to be owned by individuals. The organization of marketing activities, as they exist now, also favoured individual ownership, particularly when it came to negotiating credit and trade arrangements. Group ownership was also considered to give rise to complications related to insurance, resale, registration and accessing development support.

Notwithstanding the experiences from Killai and elsewhere, group ownership cannot be dismissed out of hand as impractical for a number of reasons. The first of these is the fact that group ownership *has existed for a long time in several villages on the Coromandel Coast itself*. Many motorized and mechanized fishing systems are jointly owned by up to four people in many parts of Villupuram, Pondicherry and Cuddalore districts; in several villages like Chinna Mudaliar Savidi, group ownership was actually the norm and individual ownership, an exception. In Koonimedu Kuppam, 32 out of the 45 boats in the pre-tsunami period were group-owned and in some cases, according to a reliable source, the boats boasted as many as six owners each. However, two- or three-people owning a boat was the norm.

According to the fishers in these villages, group ownership became necessary with the arrival of mechanized and motorized boats in the 1960s and 1980s, as they required sizeable investments that were beyond the capacity of individuals to make from their own pockets. As the new technologies also required regular investment to run and maintain, group-ownership too was said to have survived into the recent times as a means to reduce risk. However, it was possible that the system had existed even before the modernisation programmes began. For instance, the president of the Nadukuppam *panchayat* asserted that, "When my grandfather bought a wooden *kattamaram* for Rs. 600, he had two other partners investing Rs. 200 each," which makes group-ownership in this area a hoary tradition indeed.

In group-owned boats, partnership was always based on equal shares: all expenditure and returns were shared equally. Although there were some doubts about *all* shareholders in the enterprise taking the same amount of interest in the fishing operations, which gave rise to occasional change in the partners, the fact remained that the system worked and had done so for a considerable period of time, which was mainly because it came from within, rather than forced upon the people from outside.

Even in Kerala, in Aratupuzha, group ownership of boats was reported to be in existence from the pre-tsunami period itself and the fishers foresaw no problems in operating the boats provided subsequently as group ventures. Going further back in time, one could see many instances where group-ownership prevailed in the fishing communities. Assets like shore-seines and madavalai (lift nets) were communally owned and operated up to the present time in parts of Andhra Pradesh and Tamil Nadu. Also, over time, as the costs and risks in many fishing and related activities began to mount, one could see a change back to the group-ownership of assets in many areas in Andhra Pradesh and Orissa. For instance, shore-seines in Srikakulam district came to be group-owned (after a period when they had been owned by individuals in other areas) in order to share the catches over a larger number of people in the village and reduce their food insecurity during lean periods. Fish processing women in many villages began to operate in groups, which was a good risk minimising strategy.

In the case of post-tsunami boat programmes, the fishers suggested that the involvement of *panchayat*s in providing boats on joint-ownership basis would lessen the potential for troubles among the co-owners: the *panchayat*s would play a role in minimising frictions and, if necessary, 'transfer' a owner from one boat to another until a balance was established. How practical the idea would be in implementation was doubtful, but the fact that the fishers were aware of the possibilities for strife and worked out possible coping strategies would indicate that they would be able to take care of the problems.

Thus, dismissing the idea of group-ownership as unworkable is akin to implying that the fishers were – apart from being habitual defaulters – also inimical to concepts like cooperation and working together. If anything, there is a justification for making group-initiatives such as this to work both as a coping strategy to reduce losses as well as to achieve economies of scale in the markets, so this might be an area where the NGOs could put more efforts in the coming years. To begin with, a study to determine why and how group ownership works in some areas and fails in others could be a good starting point.

It may be more appropriate to say that group-ownership works in some areas and in some instances, especially where the groups have a history of sharing with one another. Given that, in the case of post-tsunami rehabilitation work, the boats were provided with hardly any homework to ascertain the inclinations of the fishers or to develop systems for enhancing scope for their working together, it is likely that group-ownership would fail in a number of cases. On the

other hand, in a context where risk sharing was slowly becoming an established practice, people might find group ownership to be a more convenient arrangement than the previous system and ensure that it works. Put simply, to the extent that group-ownership had been no more than an excuse to give boats and spend money, it would be very likely to fail, but where it was rooted in practical reality, it would succeed.

Ownership of Boats by Women

On the Coromandel coast, women's self-help groups had been provided with boats at the rate of one boat for five or six people. The idea was that these women would hire the boats out to the men or get their husbands to do the fishing and use their share of returns for setting up group savings activities. The women would thus be the owners of the production assets, with men contributing the labour to run them, so it was a perfect marriage of assets with skills in an ideal world.

Unfortunately, this is not an ideal world and the only good thing about this particular programme is that, unlike some of the other issues discussed above, there is no ambiguity about its fate: going by historical precedent[25] as well as from the way the programmes were implemented now, one can predict that it will not work in a majority of cases. The men – whether hired labour or the women's husbands – would become the *de facto* owners of the boats and, if anything, make the women to pay from their savings towards the frequent engine repairs and other maintenance costs. In the end, the asset would become a burden on the women.

Adding to the confusion, some NGOs insisted that at least two out of the five women receiving a boat should be widows, or divorced, or somehow single. Trouble raised its head when the boats were operated by the men who were husbands of the women in the group. Sharing became a contested issue because it was based upon the number of people going for fishing and since the single women had no one to represent them onboard, the fishers were unwilling to share *equally* with them; in rare cases, where the husbands of the group members reluctantly agreed to share with the single women (at the prodding of the NGOs), the extra hands they'd hired for fishing refused to go along with the arrangement. Even the caste *panchayat*s, which had been given the responsibility of handing the boats to the women, seemed rather bemused about resolving the issue amicably.

The same social equity arguments that provided boats to women's groups may also have contributed to actually reducing the women's stake in fishing in some areas. As indicated in a previous section, the only instance of women taking an active part in fishing operations on the Coromandel coast[26] was observed in the backwaters of Pichavaram. Here, the women had been fishing in the creeks along with their husbands on the plank-built *kanna thoni*s and also selling the catches, thus playing a dominant role in the household economy. When the tsunami destroyed a majority of the wooden *kanna thoni*s and the NGOs provided FRP motorized boats in their stead to the men, the women found themselves literally stranded on the shore because they did not have a role in the marine-fishing FRP boats. They were reduced to being sellers of fish or just housewives. As a woman explained it: "Earlier, we caught fish together and I had control over the sales and expenditure. Now the whole thing is out of my control. Only men can go now and they sell their catches for ready cash. My husband hands me a trifle or, frequently, nothing. He says fishing is poor and I have no way to ascertain it. Many times, he comes back and says they did not catch anything and asks me money to pay for the next day's fishing. Earlier, when we came back empty-handed, it was no big loss because all we would have lost was a day's work. The new boat took away my work, my husband and my savings and gave me nothing in return." Thanks to the new FRP boats, the fact of women being involved in fishing in Pichavaram might soon become a distant memory. That the modernisation technologies marginalized women in fisheries was an established fact, but the paradox is that this should happen in a context where 'social equity' was the name of the game.

The Possible Impact of New Boats on Fisheries Resources

More than the mechanized boats, it would be the increase in the FRP motorized fleet that would now be a cause for concern. In other words, the enemy is now within the artisanal sector and destructive fishing might give way to overfishing. There was potential for increasing strife within the sector as the same kinds of boats, originating from the same villages, compete

for the same fishing grounds and the repercussions would be manifested in various ways both at sea and on shore. In Arcotthurai, for instance, lack of space for keeping the boats on the beaches was reported to be a big problem, as all boats must be accommodated on the narrow stretch of shoreline that belonged to the village. With the neighbouring villages too becoming owners of several new boats, there was little scope for expanding the boundaries of the beach available to the village, so the beaches were all crowded in a much smaller area and the fishers complained that it would take a long time to pull a boat into the sea. Also, the fact that many boats were generally anchored at a distance from the beach (just beyond the surf) meant that they constantly bumped into one another. The damages were more serious because of the poor quality of the boats.

There were also problems at sea, which were reported in many areas and related to nets being overrun by others, fights brewing between boats at sea, etc. In the absence of opportunities for diversification of fishing grounds, it would most likely to be a case of the same quantity of fish (as earlier) being taken by a much larger number of boats, with reduced per capita availability. Going by the available literature on the artisanal rule systems, it does not appear that the traditional governance could cope with conflicts within the same category of fishing systems as effectively as they could with those between different categories of boats. This would mean that there would be a chaotic situation in the nearshore waters in the coming years and its impact upon the coastal resources would not be positive.

For a number of reasons, it is unlikely that all the new FRP boats would actually be operated or even, in some cases, that the number of new boats would be as high as reported.

Cost of Operations

Simple economic logic ruled out the possibility of many boats being put to the sea. The cost of fishing operations was considered so high that fishing became an extremely risky proposition in most areas covered by this study in all three states. Two factors added to the costs since the tsunami: one, the engine powers had increased, requiring more fuel for operations; two, the cost of diesel went up by over 30 per cent (from Rs. 22 to Rs. 35 per litre) in the la st year. On average, the cost of fuel accounted for two-thirds of the gross earnings. With the increased cost of fuel, there was bound to be a hike in the ancillary costs of operations too. On the other hand, while the cost of operations was going up, the price of fish remained constant over the years and, in the post-tsunami period, even went down in many villages as a result of fewer traders coming to take them. In Kerala, where the cost of kerosene used in fishing operations was subsidised to some extent, the rising cost of operations was a serious constraint. The kerosene provided by the Matsyafed outlets – some 225 litres per month per *vallam* – was enough to run the boats for a maximum of four to six days, and the fishers would have to depend on open-market kerosene for the rest of the month so, as one fisherman quipped, "The engines get fat at our expense!" Naturally, people preferred to stay at home rather than risk a fishing trip if they were not absolutely sure of getting their investment back. Given the rise in cost of fuel, many fishers suggested that the actual numbers of boats that would eventually be involved in regular fishing would be even less than those that had been in operation before tsunami. Under the circumstances, no matter how many boats had been provided, only a few would actually become operational.

Apart from the cost of fuel, the cost of maintenance was also very high: in Koonimedu Kuppam (in Villupuram district in Tamil Nadu), it was said that every week (or after using 25-30 litres of oil)[27], at least Rs. 250 must be spent on engine repairs. If a boat capsized at sea or overturned while crossing the surf, which was a frequent occurrence, the engine alone would require some Rs 5000 to be repaired. The increasing variety and quantity of fishing nets, and their short lifespan, meant huge recurring costs adding to the overall burden, a fact that was not often recognised in the rehabilitation efforts.

All this meant that many fishers, confronted by the harsh realities of life as boat owners, were becoming painfully aware that they had overreached themselves. It was a frequent refrain in many fishing villages that being a crewmember on the boat was preferable to owning it, a fact that was confirmed by other studies too (Muralidharan, pers.comm.).

Possibility of Resale of Boats

There were indications that several boats would most probably be sold. This had already begun in many areas and if this was not more widespread, it was

The Case of a Marakkanam boat in Vodarevu

Osipilli Narsulu was a fisherman operating an FRP Teppa along with his sons. When an NGO provided six Marakkanam boats to the village in the post-tsunami period, he purchased one in open auction by paying Rs40,000. The first two fishing trips with the boat went off well but on the second day of the third trip, they observed water leaking inside the boat. The boat capsized within an hour, sinking along with nets, engines and the catches. There were some other boats fishing in the neighbourhood, which rescued Narsulu and his sons. Quickly, they got the capsizing boat dragged to the shore with the help of four boats. The repairs to the boat came to Rs10,000, but a full repair would cost nearly Rs40,000. No one – the NGO, the *panchayat* or the contractor who built it – was willing to take responsibility for the repairs. After many negotiations, the contractor agreed to repay the Rs10,000 already incurred in repairs, but that did not solve the problem. Nowadays, Narsulu reverted to fishing with his old *teppa*.

because of lack of buyers. Many fishers in the 'shadow zones' were still hoping to get boats from NGOs, but once they understood that it was unlikely to happen, they would start buying from the fishers already owning boats. This was reported to have already begun in some Kanyakumari villages like Colachel. The advantage in buying a tsunami boat was, of course, that it would be very cheap: for instance, in Colachel, a new boat that was said to cost Rs. 67 thousand to build was available for sale at Rs. 41 thousand and there was a chance that it would come down further.

This kind of redistribution would take place both within the state as well as outside of it. While the differences in size and design of the boats between one region and another might act as a constraint, it was reported that the 'Marakkanam' boats of Tamil Nadu were now finding a good demand in the fishing villages of Andhra Pradesh, right up to Vodarevu in Prakasam district, indicating the possibility of spread of new designs to these areas.

Problems with Finding Crew for Fishing

Lack of manpower was a serious problem in many villages. With everyone becoming a part-owner of a boat, there was a big shortfall in the numbers of crew available to man the boats and this was reflected in the reduced number of fishing days. Prior to the tsunami, growing unemployment had been an endemic problem in many villages and the influx of new boats created new employment opportunities for some of them. Still, there was a big gap in the requirement for crew; in some villages, there was a fear that the shortage of crew was contributing to an increase in the numbers of dropouts, because some fishers were reportedly forcing the children to skip schools to take them fishing. Such imbalances might be expected to lead to an increase in the crew shares, but the available evidence showed that this was simply not possible in a context of high costs and uncertain (often poor) returns.

The changed owner-crew relations would require some adaptations like the boats operating on a 'shift' system – only half the boats would go fishing on any given day – and this was already happening in some villages. This would reduce the number of fishing days per boat, but was considered necessary to reduce conflicts and ensure sufficient number of crew were available for fishing. It was also suggested that some of the boat owners would simply leave their boats on the beaches and go fishing as crew on others' boats, because the current demand for crew made it more lucrative being one than being a boat owner!

Quality Concerns with the New Boats

More than any other factor, it is the technical problems that might be the determining factor in discouraging many boats from putting out to sea. The quality of FRP boat construction was extremely poor and resulted in what the fishers called as 'use-and-throw' boats, because many boats developed serious problems during the first fishing trip itself. Few NGOs had the knowledge or the skills to supervise quality control and fewer still had insisted upon a properly drafted contract with the boat builders to ensure prompt after-sales service.

In many locations affected by the tsunami, the expertise, capacity and infrastructure for FRP boat construction had been very inadequate. In the rush to

build boats, even established boatyard found their experienced workers abandoning them in order to set up independent units of their own, often recruiting local workers who had little knowledge of dealing with FRP. Many NGOs had even less experience in boat construction and often relied on intermediaries (or the boatyards themselves) to guide them. There were obviously compromises in terms of reducing thickness or using poor quality material, besides serious structural shortcomings. Many boats were reported to buckle frequently and capsize while negotiating the surf. The need to give boats as quickly as possible also led to insufficient setting time for the layers, which came apart at the first opportunity.

In spite of the fact that FRP had come to be used as a boat building material in the area since early 1980s, the fishers were not knowledgeable about the quality aspects in FRP boat building anymore than the NGOs or, in some cases, the boat builders themselves did. The fact that many of them were graduating from wooden *kattamaram*s also reduced their capacity to take control of the boat building activity. Even in cases where the fishers were knowledgeable about quality issues (many of them undoubtedly had their own yardsticks), the boats were often built at a distant location and the fact that many NGOs (as always, there were a few exceptions) worked directly with the *panchayat*s and not with individual beneficiaries meant that there were at least two screens between the fishers and the boat builders.

In Andhra Pradesh, during the repair phase, *Velugu* constituted village-level quality control teams to supervise the quality of repairs, which had been done in the villages. Payment for the repairs was made only after the quality teams (and the beneficiaries) satisfied themselves about the quality of the work. It was a different matter when it came to the building new boats, but there were relatively few complaints about quality in the repair phase.

Lacking such arrangements, the boat programmes in Tamil Nadu frequently gave rise to what a fisherman characterizd as 'use-and-throw' boats. Many boats developed serious problems in the first few trips (often in the first trip itself). A majority of boats suffered with water leaking into the boat and several also sported hairline cracks on the body. Although an FRP boat was generally guaranteed to last 8-10 years, none of the fishers who had received boats was really that optimistic: they suggested the new boats would perhaps last a maximum of 5 years, but many would go much sooner than that. During the field study, when it was enquired of the boat builders in Kanyakumari what kind of guarantee they would give for the boats, the answer was succinct: "No guarantee for tsunami boats!" The same boat builders were willing to give some guarantee for privately constructed boats, but not for tsunami ones, although the unit costs were the same for both (in fact, the private boats might be cheaper).

All the same, many boatyards had indeed given a warranty of one year for the boats and had been responsive enough to undertake repairs in many boats, but the fishers had a point when they asked: if the boats developed serious problems in a few weeks of operation, could one trust their seaworthiness? Also, it was already six months since the boats had been given, so the warranty would expire in another six months and who would pay for the repairs then? More importantly, the boats had reached the fishers via the NGOs and when the NGOs left the place, the fishers would not even know who had built their boats, let alone approach them for repairs. Many fishers were of the opinion that a sizeable number of boats might be discarded within a year, i.e., as soon as the guarantee period was over, giving substance to the 'use-and-throw' concept.

Naturally, the fishers were scared to take the boats deep into the sea because they were afraid they might sink and their experiences with the new boats over the last few months amply justified the fears. In Melamanakudy and Tranquebar, the fishers ruled out fishing for seer and flying fish with the new boats because that would require fishing at depths over 40 fathoms, which would be too risky to undertake with boats of such poor quality. "These boats would be crushed like paper dolls," one Tranquebar fisherman noted. Already, there were many reliable stories of how the boats had created problems at sea for the fishers, which came from every area visited during this study.

In some areas in Nagapattinam district, where some NGOs got some old boats repaired while also providing new boats, it was reported that there was much competition to take the repaired boats and people had actually paid a premium to exchange their new boats for a repaired one! There were also instances

when old boats accidentally hit new boats and the latter suffered serious damages.

In Melamanakudy the fishers returned the faulty boats to the NGO rather than agree to get them repaired and were using their old boats again. Considering the widespread nature of complaints about the quality of boats, it is likely that sea safety will become a serious issue in the near future with the boats provided under tsunami-rehabilitation programmes.

Diversification

It is also possible that although most fishers received boats, at least a few of them had shifted to shore-based occupations in the meantime and took boats with a view to sell them. When mechanized fishing started again, many of the former crewmembers drifted back into their old positions on the trawlers. This might sound a little surprising considering the fact that they were at loggerheads with the owners not so long ago, but there was no apparent rancour, perhaps because both knew they needed each other's support and agreed to bury the hatchet (at least for the time being). Whatever be the reason, it meant that at least some of the new boats would not now be operated. It was also possible that the boats could be hired out to others or run by the family members of the fishers.

Exaggeration in Numbers

On the other hand, there were also possible exaggerations in the numbers *actually* provided for at least two reasons. Firstly, there was much 'recycling', which resulted because of the connivance between the fishers and the boat builders on the one hand and between the boat builders and the field-level functionaries of the NGOs on the other. Put simply, this meant building boats on paper, and obtaining requisite testimonials from the relevant parties in order to get paid.

In Kanyakumari district, for instance, there were stories of the same boats being distributed more than once. It happened this way: the fishers would demand for a certain number of boats from an NGO, which would place the order with a local boatyard. The boatyard would build the boats in required numbers and these would be distributed in an impressive ceremony to the fishers, who would return them to the boatyard as soon as the NGO personnel had departed from the area. When another NGO came into the village, the *panchayat* would once again place before it a detailed list of people in need of boats and the NGO would place order with the boat builder, who would simply remove the dust off the boats and arrange for another impressive boat distribution programme. And so on. This kind of recycling meant that the number of boats actually built could be less than as reported by the NGOs.

Secondly, the number of boats provided was exaggerated as a result of multiple-entries in the records: the NGO at the grassroots level would give a number that was repeated by its donors at the state-level and by the donors' donors at the international level – in the end, the number of boats provided in this instance would be three times as high as it really was. It was likely that not all promised boats were unlikely to be given in districts like Kanyakumari. Already, many NGOs, which promised to give boats, had left the area and the few that remain were hoping to wind up their operations by the time of the first anniversary of the tsunami.

Rehabilitation of Fishing Communities

Land and Shelter Issues

Housing in the coastal areas was a major casualty in the tsunami, which damaged or destroyed huge numbers of houses right along the coast. The Government and the NGOs responded very promptly in setting up temporary shelters for housing the dispossessed and followed it up with massive programmes for construction of permanent houses for the affected people.

Details of Shelter Rehabilitation Programmes

In Tamil Nadu, the Government undertook a major housing programme to build 130,000 houses in the affected areas at a unit cost of Rs.1.5 lakh each[28]. Apart from the houses, the Government programme envisaged providing basic infrastructure facilities like roads, water supply, sanitation, rainwater-harvesting systems, etc. The Government sought private-public partnerships for construction of permanent shelters and community assets such as, schools, primary health centres, community shelters, etc., and encouraged NGO investments in these areas. The land for relocation was provided by the Government, which

also came up with a set of guidelines for house construction. For damaged houses, an amount of up to Rs.75,000 was provided based on the value of assessed damages. A noteworthy initiative of the Tamil Nadu Government was to give joint title deeds in the name of the man and the woman of a household to the land on which the new houses were coming up.

In Kerala, in the three districts affected by the tsunami, namely Kollam, Alappuzha and Ernakulam, provision was made for the construction of a total of 3,608 houses with the support of NGOs. The unit cost was fixed at Rs. 1.75 lakh for a normal house and between Rs. 2.75-3.25 lakhs for fortified houses, and the government provided land (where required) for the relocation of houses and subsidised the cost of each house to the tune of Rs. 50,000, while the rest of the money was raised by the NGOs, who also undertook the actual construction work.

In Andhra Pradesh, the Government sanctioned the construction of 40,000 houses across the 9 coastal districts at a unit cost of Rs. 40,000 each, of which Rs. 20,000 would be provided as subsidy and Rs. 17,500 as margin money at a subsidised rate of interest, while the remaining sum of Rs. 2,500 would be contributed by the beneficiary. The package was not new, and was a continuation of an ongoing programme for rural housing, except that the quantum of support, which had been reduced earlier to Rs. 20,000 per house, was restored to Rs. 40,000 after the tsunami. Where the new houses could not be built *in situ*, the Government would make provision for construction of the houses on its own land or by acquiring *patta* land by paying a fixed price.

Relevance of the Shelter Programmes for the Coastal Communities

Overall, the field visits to the villages gave a strong impression that the housing programmes were very positive investment in terms of improving the fishers' quality of life, reducing their future vulnerability and enhancing their economic wellbeing; in other words, the housing programmes could contribute significantly to livelihood sustainability. This was particularly valid when the housing conditions in the pre-tsunami period in many of these villages (in terms of quality of houses, water and sanitation, access to transport and other basic facilities) were taken into account. The fishers were aware of this which was the reason why, in spite of all their anxieties and concerns, they were resolved to move into the new houses and sort out things from there. Also, this was why the various shelter-related issues that came up during the interactions concerned the hitches in implementation rather than question its overall relevance (as happened, for instance, in the boat programmes).

The Issue of Relocation

In Tamil Nadu and Kerala, depending on the availability of land, the houses were being provided either *in situ* (i.e., on the same spot where the victims' houses had stood) or, when it was not feasible (due to congestion or insufficient space; many houses were also located close to the sea), in alternate locations where the Government provided land for the purpose. The issue of relocation had been the source of much debate and many anxieties both for the communities as well as the aid agencies. The issue was more complicated on the Coromandel Coast (particularly Nagapattinam and, to a lesser extent, Cuddalore) than in Kanyakumari and other districts where the number of people requiring relocation was comparatively less.

Put simply, the issue of relocation boiled down to a fundamental dilemma that fishing communities everywhere faced: life security vs. livelihood security. Living on open beaches, the fishing communities were always exposed to the natural disasters and were the first to be affected in times of any sea-borne disaster. On the other hand, their livelihood activities were intricately linked to their being on the beaches and a shift away from the beach (which was an important social space in the village) could mean serious trouble. The close integration between fishing and the social and economic organization of the communities would mean that a shift away from the beach could have potentially wide-ranging consequences.

The fact that security of tenure had always been a contested issue for the fishers also explained their contradictory responses: on the one hand, they were reluctant to leave their existing habitats because being close to the sea was the only way they could assert their rights to it; they could not leave it because the land they would vacate could easily be alienated for some other purpose, as happened many times in the past. On the other hand, they were eager to move into the new houses because that would give them

the security of ownership of their house, a privilege many of them never had.

Possible Impacts of Relocation

The distance from the sea remained a big concern for the fishers. They argued that, in order to be able to fish, they would need to stay on the beach at all times and keep a watch on the movements in the sea, ready to launch their boats at a moment's notice and rush after a passing school of fish. Being on the sea also helped to launch the boats at all times of day and night and this would become impossible if they were to be relocated. The need for many hands while launching and hauling the boats would also mean that a good number of people must be on the beach at all times. The boats would frequently capsize while negotiating the surf and there was a need for people to lend a helping hand in such emergencies. If the villages were to be shifted inland, none of this would be possible. Also, keeping watch on the boats, nets and engines while living elsewhere would be going to be another concern.

The sea beach (*kallâram or Kadalorum*) which was between the fishing settlements and the sea was the most important common space for the entire village and facilitates a number of activities: berthing the boats, auctioning fish catches, mending nets, drying fish and firewood, besides fulfilling many social functions (see Bharathi, 1999). This dependence on the sea beaches also determined the spatial organization of the villages along the north-south direction, rather than in the east-west direction and also explained the fishers' reluctance to move away from the beaches.

Overall, most fishers – and their wives – believed that it would complicate life manifold if they were to be shifted inland. Many of them argued, quite eloquently, that they must remain on the beach for professional reasons.

Apart from the fisheries related concerns, the fishers foresaw a few other consequences arising out of relocation. Firstly, with only one half of the villagers opting to move out, there would be a disruption in the social fabric of the community and the impacts could be far-reaching for everyone; for some, the shift would be an opportunity to improve themselves or to get out of the clutches of the elites in their villages, but for some others, it might mean uncertainty and loss of social security. The shift would certainly weaken the traditional governance systems (caste *panchayat*s) and upset the hierarchies that governed their supra-organization. Similarly, many grassroots level attempts at community-organization might also suffer.

Secondly, the new areas where the fishers were moving into, largely inhabited by people of a non-fishing extraction, might lead to confrontations between the local communities and the newcomers, even leading to a sort of ghettoisation of the fishers. In villages like Kallar, there was a strong resistance to move inland because the local agrarian communities would dominate them and insist upon the fishers working according to the existing *panchayat* rules. Also of particular concern would be the plight of people who would be relocated in small groups over several locations – their minority status could potentially marginalize them and lack of access to traditional social networks might increase their vulnerability.

In administrative terms, one outcome of relocation might be that there would be an increase in the number of fishing villages. This means that the number of fishing villages in TN would continue to remain a matter of great debate for years to come.

The Twin-house Concept

This confusion was quite evident in people's responses in many villages during the field study, giving the impression that they had not clearly thought through their responses, which was reflected in frequent shifts of stance and wavering between extremes.

A majority of fishers accepted the need for a shift to the interior, but also argued in favour of retaining their old house on the beach for operational convenience. In other words, they were seeking two houses – or, more accurately, one house without having to give up their existing dwelling. But the Government's rules were quite clear on this: that a person would get a new house only after signing away the rights to his existing house on the beach to the Government. This led to an impasse and finally the people chose to go along with the Government rules, in the hope that they would be able to find a way to hold on to their old houses. That the relocation was partial rather than wholesale in many locations (which meant leaving interstitial gaps in villages rather than big patches of vacant land that would lend themselves to alienation) also supported their belief in the 'two-house theory', as it had come to be called. There were

Living on the Edge in Nadukuppam

Natarajan had entered into his new house a week before the tsunami and was homeless by the next week. A local NGO helped him rebuild his house, but this too got washed away in the after-shocks that hit the village a few months after the tsunami. The foundations for a new house had been laid for the third time in a year by another NGO, when the District Administration stepped in to stop the construction because of the apprehension that the land on which the house was being built would be eroded soon. Land erosion in the area had increased manifold with the construction of a wall along the coastline, and this wall stopped some distance from Natarajan's house, making it most vulnerable to erosion. Now there was no alternative land available for relocating Natarajan and his family. Being very close to Pondicherry, land was very expensive and it would be necessary for the *panchayat* to pay half the cost to make up the shortfall in the government's allotment for the purpose. The *panchayat* shifted the responsibility for payment to Natarajan himself, and he simply did not have the money. A majority of the people who lost their houses in the tsunami in the area had opted for *in situ* construction, so had no such problems. Unable to do anything about it, Natarajan continued to live next to the half-built pillars on his land, providing an ideal picture of poverty for visitors. It was later clarified that the *panchayat* would help him to get the piece of land for his house, but Natarajan and his wife were two very anxious people for the time being.

also no clear indications as to what the Government would do with the fishers' homestead land after acquiring it, but it was certain to be more a political than an administrative choice.

This belief in 'two-house theory' actually encouraged more people to opt for relocation in many villages and some NGOs were even facing the task of relocating entire villages, which might end up undermining the basis upon which the 'two-house theory' stood.

House-for-house

The Tamil Nadu Government's insistence on replacing house for house, ignoring the differences in terms of area and the number of persons in the family, as well as the possibility of more than one family sharing a house in the past. While this was acceptable to households with small families, the joint family households considered this to be potentially disruptive. Joint families were reported to constitute up to 15 per cent of the households in a village and the house-for-house idea might mean taking some of them apart, which would be reflected in weakening social capital. Also, in case of houses shared by more than one family in the past, this would lead to some of the families finding themselves at a loose end. In many such cases, the temporary shelters would become their permanent houses.

Reluctance to Stay on the Beach

The two-house concepts and the tenacious arguments in favour of being able to reside on the beach notwithstanding, there were also people who looked forward to moving away for many reasons. For some people, the shift was an opportunity to diversify or to escape the tyranny of the elites in the villages. For instance, it was said that in villages like Akkaraipettai, the crewmembers were rearing to go out of the village and form a new settlement of their own and were suggesting that the owners should not be accommodated alongside them in the new settlements. It was said that once they leave the village, they would form a *panchayat* of their own and strive to develop independently of the mother village.

Another instance that illustrated the eagerness of the people to move out came from the same area and concerned the temporary shelters. In Akkiraipettai and Keechan Kuppam, the local NGO was building transit shelters for people on the same sites where their houses had stood before the tsunami. Each transit shelter cost Rs. 40,000 and their ostensible purpose was to house the people until the permanent houses were ready in another six months, while the real objective was to ensure, by putting up permanent constructions on the beach, that the people would not be alienated from their land even after moving out to their new settlements. In other words, it was

giving a shape to the two-house theory, although how it might work out was hazy. The women in the village asked, quite reasonably, why spend so much on transit shelters when they needed to live only six months in them. They suggested that, instead of the shelters, the NGO should give them the money and allow them to live somewhere else until their houses were ready. When it was explained that the shelters were supposed to ensure their ownership of the land, their response was revealing. This was what Kalyani told the study team: "We have now come to fear the sea so much that the sound it makes is very disturbing. We have lost so much that is precious to us – property, loved ones, children – and the memories haunt us night and day. When they dig up the place for setting up a shelter, we find something from a time when the village was intact, a small thing like a photo frame, or a piece of cloth, and it is enough to bring back the sad memories and I sit weeping for hours. Is it possible for anyone to go on living here and not be tormented day after day?"

Apart from the fear of the sea and bad memories, the fact that a few people had moved into non-fishing activities in the interior was another incentive for moving out. Proximity of towns (with the attendant advantages), value of real estate in the areas away from the shore and children's education were the other reasons cited for the preference to move out.

Progress of the Shelter Programmes

The progress in this programme varied from one place to another and from one NGO to another: in some places (e.g., Pudukuppam in Cuddalore district), houses had already been handed to the people, while in some other villages (for instance, in Kanyakumari district), even the acquisition of land could not be accomplished because of the high cost of land in the area[29]. The Government's willingness to pay twice or even three times the value of its own estimates was not sufficient temptation for people to sell their land. The progress with in situ construction, as can be expected, was much faster than with the houses in the new locations.

Non-availability of land was also a big problem in Villupuram district and this was particularly acute in villages located closer to Pondicherry. In Chetti Nagar, according to the fishers, there was space only for building 25 new houses, while the requirement was for building 170. The only space available here was on the seaward side, but the CRZ provisions would not permit construction on that side anyway. What it meant was that even if the Government and the NGOs were willing to invest in housing here, it was futile.

In Mulukuthurai in Cuddalore district, it was reported that due to delays in acquisition of the land by the Government, the NGOs and the local caste *panchayat* had to shell out the money to buy 15 acres of land in the neighbourhood. In this instance, the fishers claimed that since the new land was purchased with their own money (at least partly), it was an additional acquisition rather than an alternate one, so they could not be forced to give up their existing house sites on the beach to the Government.

In practical terms, the delays in housing meant prolonging the uncertainties for the fishers (after all, relocation was a major change for a people who had seldom faced such a prospect), giving rise to increasing doubts and worries about the possible impacts of the shift, and creating problems even for the implementing agencies, which found it difficult to cope with the vacillating stands taken by the people from time to time. Many of the apprehensions of the fishers might turn out to be baseless in practice, but so long as the people had not moved into the houses, this uncertainty would remain.

Notwithstanding the intense debates that raged over the shelter guidelines in the earlier period, the pendulum had swung in the other direction in the implementation phase and it was said that very few NGOs adhere to, or even give credence to, the shelter guidelines anymore, except in following the broad limits imposed concerning area and investment for each house. On the issue of quality of construction, the fishers were generally impressed, their frequent response being, "Far better than if we were to build the houses ourselves!"

As on 22 December, the progress with housing reconstruction programmes in Tamil Nadu were as given in Annexure 2.

Community Participation in Shelter Programmes

In case of *in situ* construction, the participation of the people was regular and their suggestions and supervision might be contributing to build the houses according to their needs. However, in the relocation

programmes, the extent of involvement of the communities varied from one NGO to another, with a majority NGOs apparently dealing only with the *panchayat*s. In some cases, they were no more than contractors, seriously going about their business without trying to engage with the communities in any way. Thus, in Kanyakumari, even as new houses were being built in their neighbourhood, the people in some areas like Colachel did not know much about them.

There were few specific efforts at involving women in determining the design, location and construction of houses in the relocated areas, in spite of the fact that the women often had a good idea of how they would want their houses built. In some villages in Kanyakumari and Nagapattinam, the women complained that they did not have a say in the matter of housing and even did not know where the new houses were coming up.

Poor community participation in some locations (like Kanyakumari) was said to be because of the relatively few numbers of houses being built in some areas, which made it difficult to incorporate changes to design and other aspects; in other areas, there was a fear that the needs and demands of the communities would keep mounting all the time, delaying and adversely affecting the programme[30]. Whatever the reasons, this was a lacuna that characterised all group-housing programmes in the past and could have overcome in this instance. After all, no one but a resident could determine what his housing needs were, especially in a context where the specific needs of the fishing households were not always understood by the aid agencies. The women in particular could have contributed to designing their houses according to their specific needs.

Some NGO functionaries also raised the issue that some of the changes in the new housing programmes – like the shift from thatched huts to RCC-roofed houses and, particularly, the changes in sanitary systems (to septic latrines) – might necessitate some behavioural changes on the part of the fishers and while this might not be a reason for putting better infrastructure in place, these issues would still need to be carefully monitored for a period after the people had moved in. For instance, one reason for the failure of sanitary latrines in many temporary shelters was said to be that the fishers were exposed to sanitary latrines for the first time in life (Muralidharan, pers.comm.).

Issues Related to Shelter in Kerala

Housing in Kerala stood up to the reputation that the state had for focusing on improving the quality of life of the people: the new houses were one-or two-storied structures, worth Rs. 3 lakhs each (it was reported that the NGOs ended up spending more than was specified in the Government plans), not including the cost of land. There was provision for water, sanitation and electricity and the houses were generally so well built and well equipped that many NGO staff quipped that they did not live in such houses themselves. The fishers were quite sure that the houses would withstand disasters quite effortlessly. All this would certainly mean that the tsunami-victims had managed to overcome their 'outlier' status. The number of houses given was at least twice as many as those lost in the tsunami, so there were few gaps in terms of coverage of people affected by the tsunami in the locations officially recognised as being tsunami-affected. There were reports that people from the fringe areas were moving into the newly evacuated temporary shelters, clamouring for recognition as tsunami-victims in order to receive houses.

However, two factors may have stood in the way of people receiving adequate assistance in Kerala. Between the two villages – Alappad and Aratupuzha – which were affected by the tsunami, one (Alappad) was better connected to the mainland, which allowed many agencies to come and work there at short notice, while the difficulties to reach Aratupuzha (need to cross a ferry or taking a long detour) were said to have hindered the extent of support received here. Moreover, access to the worst affected parts of the village was poor as the approach roads were covered by thick mounds of sand brought by the sea winds, further constraining rehabilitation activities.

Secondly, as explained in Chapter 4, only three wards (later reorganised into four) within Aratupuzha had been 'officially' declared as tsunami-hit, leaving out a number of people who had been as badly affected as anyone, but had the additional misfortune of not living in the 'right' wards. It had been difficult for a long time to have them officially recognised as tsunami victims, for the fear of opening the floodgates for a large number of other people to demand assistance as well, but finally the District Administration allowed some of the families to move into the

temporary shelters, thus granting them 'official' victim status. By then, most NGOs had already made their commitments and could not add to the numbers, so it might have been a pyrrhic victory for the newly anointed victims.

Within the same Aratupuzha, there were other victims who had lost their houses in the post-tsunami incursion of the sea-waves a few months after the disaster; but this was not a part of the 'official' disaster, so their losses were not included in the tsunami losses. These people were living in the local schools at the time of the field visits and reported to have received very little in terms of relief or rehabilitation! They were promised that there would be a second phase of tsunami rehabilitation, when their needs would be addressed, but as one fisherman remarked, "It would need another tsunami to prepare a second list of victims!"

In Aratupuzha, people affected by the tsunami had been living close to the shore and the siting of the temporary shelters away from the shore meant that they were now living in new surroundings and with new neighbours, although in the same village. The fact that these tsunami victims received all attention from the funding agencies had not gone down well with the 'local' people, which strained relations between the two groups. The NGOs working in the village had set up ward committees in each of the selected wards and the constitution of the committees too had been a bone of contention.

Impact of Housing on the Quality of Life and Livelihoods

The experience in Kerala show two things clearly: firstly, that the permanent houses had the potential to reduce people's vulnerability significantly and improve their quality of life manifold, particularly when compared to the conditions before the tsunami. Secondly, there still remained a number of people both in the same villages as well as in the adjacent areas, living in thatched huts or poor quality houses, who were unable to receive assistance because they had not been affected by the tsunami. They would obviously be the first to be affected in case of a future disaster. These two factors would hold good in the other states too.

This would highlight the need for a comprehensive and holistic programme to reduce the vulnerability of *everyone* living in the coastal areas, irrespective of whether they had been affected by the tsunami or not. From the livelihood perspective, providing better houses would definitely be a more positive intervention for the fishers than, for instance, giving them boats. After all, a house is not just a place to live in, but also a means to ensure economic wellbeing of the people, which gives them a sense of security, makes them creditworthy in the eyes of formal banking systems and helps them escape being 'outliers' in several respects. Also, even if the fishers chose to stay on the beach for occupational reasons and rent out the new houses, it would mean earning a supplementary income that would have no seasonality problems and could reduce their hardships during the hunger months considerably. This is as good a way as any to diversify the fishers' income sources sustainably.

Also, universal housing is a right and also a better means for ensuring social equity than giving a boat, because it does not discriminate in terms of gender, marital status, caste or occupation, the only criteria of support being the poverty and vulnerability of the people targeted by the programmes. One might go so far as to say that giving two houses to the fishers is far more preferable to giving two boats to them.

The Institutional Context

This chapter briefly discusses the role of different institutions in the rehabilitation of fisheries related livelihoods.

The State Government

Apart from the usual quibbles that are part of government rehabilitation efforts anywhere, the state government in Tamil Nadu was widely seen to have handled the disaster admirably, particularly as dealing with the tsunami was a totally new experience for everyone. The Government went about the rehabilitation programmes in a transparent manner by putting all relevant information was put on the Internet and updated frequently. It also actively solicited public-private partnerships and allowed the NGOs and other civil society organizations to take a lead role in the rehabilitation effort, contenting itself with coordinating their activities and providing the backstopping support as necessary. This might have to do with the fact that the NGOs had more money for rehabilitation than the Government, but its own

rehabilitation programmes were also markedly farsighted and holistic, taking into account the long term needs of the people and addressing them by measures that went beyond the tsunami (for instance, see the Policy Note of the Department of Fisheries for 2005). Decentralisation of decision-making powers and delegating powers to the district administrations also ensured rapid responses to the crisis. Another important feature of the Government's efforts was the coming together of different line departments to work under a central command (i.e., the district administration), which helped in responding to the multiple needs of the affected people simultaneously, which was in contrast to the more restricted approaches of the other players in the rehabilitation work.

A notable difference from the other disaster situations in the country in the recent past was the very low profile maintained by the political class in the rehabilitation effort. The near complete absence of the political class in the rehabilitation programmes in Tamil Nadu was remarked upon by many people as having helped the smooth execution of the rehabilitation activities. However, one cannot but feel a little concerned about the lack of a role for people's representatives (particularly the *panchayat*s) in the decision-making processes at a momentous time like this and wonder about its deeper implications in the long term. But in Kerala, the tsunami was much politicised, to an extent that some organizations kept off working in Kerala on tsunami.

The Tamil Nadu Government's insistence on taking advantage of surplus funds to build better houses at a higher unit cost proved to be a very productive idea and may have partly stemmed to flow of funds into providing boats. Its shelter guidelines, though contested and finally ignored, acted as a benchmark and helped everyone to focus on the practical aspects of the shelter business. It was true that the Government could have come up with similar guidelines in other areas, particularly for fisheries sector rehabilitation to highlight issues related to problems with excess supply and quality control issues in boat building. Unfortunately, the Government's philosophy (compulsion?) of non-interference with fisheries-related rehabilitation efforts in the NGO sector contributed to its failure to curtail the over-enthusiasm of some of the NGOs to provide fishing boats in excess.

The Tamil Nadu Government's firm stance against the plea of the boat owners to be allowed to take the compensation money and move out was highly debatable and highlighted the need for a comprehensive long-term fisheries policy for the state. On the other hand, the Government's decision to extend assistance to the affected fishers in cash rather than in kind turned out to be – perhaps unintentionally – a wise choice, in so far as it allowed a few people to move away. Also, it was the compensation money for boats (which were seldom built, thanks to the NGO largesse on this front) that kept the communities afloat in the face of poor fishing, right from the time the relief assistance had been stopped.

Lack of clarity was a complaint that was frequently levelled at the Government's directives. This led to confusion and also giving different interpretations to the orders in different districts. One such issue related to the registration of boats: in Nagapattinam and elsewhere, group-ownership was allowed by the Department of Fisheries, but in Cuddalore, it was reported that boats would not be registered as group-owned, because of the potential for trouble such an arrangement would have for the administration. Similarly, while some district officers demanded compulsory registration of all new boats in the post-tsunami period, others were not so insistent. Even in districts where this was made mandatory, there was no apparent mechanism to ensure the strict implementation of such measures and several boats thus avoided being registered. The result was that no one still knew how many boats were in existence in Tamil Nadu now and it would take an elaborate census to obtain a reliable figure. The implications for fisheries management as well as for dealing with future disasters are quite clear.

There were also differences in the mode of payment of compensation to the tsunami victims. In Nagapattinam, the compensation for boats was paid in full, but in Kanyakumari, only a part of the money– about Rs10,000 per *kattamaram*–was provided. The remaining amount was deposited in a joint bank account with the Assistant Director of Fisheries as co-signatory, on the understanding that it would be released to the fisherman as and when he produced the new boat. Seeing that many fishers had already received boats from the NGOs, it was clear that the fisherman would not get a new boat built, so the

money might be a saving for the Government in Kanyakumari. The fishermen tried to pass off the NGO-given boats as new, but this was not possible where the NGOs took care to register the boats.

In Andhra Pradesh, the biggest constraint had been the choice of a nodal agency for rehabilitation efforts. The choice of '*Velugu*', an ongoing state government rural poverty elimination programme focusing on the poorest of the poor with a specific mandate and a clearly defined framework to implement it (see www.velugu.org) to act as the nodal agency for the tsunami rehabilitation programme, which involved short-term, one-off measures and addressed the needs of a much wider constituency of people than are covered under *Velugu*, was problematic. For instance, *Velugu*'s programme implementation strategies (group-based; women-oriented) did not jell with the objectives of a rehabilitation programme (particularly where a predominantly male-oriented support package – boats and nets – was sought to be implemented) and caused much heartburn among those not covered. Another very troublesome aspect of tsunami rehabilitation in Andhra Pradesh was that information on the progress of activities was not easily accessible to the public, which was in stark contrast to the situation in Tamil Nadu.

The NGOs

The non-governmental agencies played an important role in the relief and rehabilitation efforts to an extent that they dominated the post-tsunami scenario in every way. There were many heartening examples of the selfless service the NGO personnel did in many parts of the coast and these were much appreciated by the fishers. In fact, the fishers suggested, but for the prompt arrival of the NGOs soon after the tsunami to undertake relief, their condition would have been a lot worse. It helped that some of the NGOs had experience of working in other disaster areas – many had come from the earthquake-hit Bhuj area in Gujarat[31] – and were equipped to deal with the complex problems that the tsunami had left behind, often providing guidance to the Government on how to cope with the different facets of the disaster. The significance of the NGO contribution was reflected in the high esteem in which they were held by the Government officers and the fishing communities in many areas. Obviously, there was much to be proud of in the NGO work. At the same time, there were also lessons to be learned and 'unlearned' from the rehabilitation phase for the NGOs.

One of the most significant outcomes to have come out of the NGO involvement in the rehabilitation phase were the micro-level studies conducted by Praxis in several Nagapattinam villages. While the focus of these studies was on rehabilitation, they undoubtedly have a value far exceeding the immediate needs of the tsunami. Their significance lay in their holistic and multi-layered approach to life in a fishing community, which took a range of players, activities and systems into its ambit. Notwithstanding minor glitches, the studies were an excellent showpiece to demonstrate where the NGOs scored over the Government in their *approach* to development. Given the relatively short time it took to compile the studies, it will be a very worthwhile project to undertake similar studies for all villages right along the coast of India.

Having said that, it is also one of the tragedies of the rehabilitation phase that studies such as this were largely ignored while planning and implementing the programmes. A review of the rehabilitation programmes indicates that the NGO efforts were generally marked by a lack of understanding about the fisheries sector, its people and their needs. This was reflected in the inadequacy of interventions in some crucial areas (marketing, credit), while there was too much emphasis on others (in particular, providing boats). This left gaps in terms of coverage of women and other key stakeholders in the production and post-harvest chains and also reflected in the lack of appreciation for indigenous knowledge, institutions and technologies, which were, after all, important strands in development thinking and crucial for ensuring the sustainability of interventions in the long term.

It was suggested that the Praxis studies were done a little too late in the day (April-May), by when most NGOs had already put together their rehabilitation plans. However, it was very doubtful that many NGOs had done a detailed needs-assessment among their target communities and that even the few who did could manage to get anything useful from the people in those first months (when most proposals for funding were hastily strung together). This was

because, in the hurry to do something to help the people, the human cost of the disaster was perhaps underestimated: in many villages, the magnitude of the disaster was such that it had left people shell-shocked and it was patently illogical to expect them to respond coherently and rationally about their future needs at such a time. There was a need to allow people to stabilise a bit, to come to terms with their grief and to think more rationally once again, before beginning the rehabilitation effort, and from this, one could suggest that the Praxis studies were done at the right time.

The programme for providing FRP boats was a case in point. Most NGO proposals for providing boats had been put together quite early on in the post-tsunami period (mostly within a month after the tsunami) when the loss of productive capacity was a major constraint in restoring normalcy in the sector. Delays in processing the aid proposals and releasing funds by the donors had meant that other donors – including the Government – had begun to meet the demand in the meantime. However, for the NGOs that had committed to working in specific villages and on specific issues, there was often no alternative or latitude but to push ahead with provision of boats as per the original proposal, in spite of knowing that it was not only futile but also adding to overcapacity while there remained much to be done in other areas.

What was rather surprising was that even NGOs that had been working long with the fishers had only a hazy understanding about their livelihood related needs. It was possible, as an NGO functionary remarked, that the NGO work with the fishing communities was confined largely to land-based initiatives like micro-credit, health, education, women and children etc. and seldom focused on the dynamics of the sector itself. Still, one could say that many local, long-term, NGOs had a better appreciation of the local context and strove for more holistic interventions compared to the non-local NGOs, who were often only interested in handing out aid and leave the place[32], and this was reflected in the way many fisheries rehabilitation programmes were planned and implemented.

One major factor was also at work in pushing people to hasten the rehabilitation process: the tsunami generated funds to an unprecedented degree and that was almost as bad as not receiving adequate support, if not worse. Several dormant NGOs came to life all over the tsunami-belt and their capacity to handle large sums of money was at best doubtful. This inability, together with competition from other NGOs and the compulsion for showing quick results, ended up in the proliferation of boats on the beaches. In the chaos that ensued, people took a backseat while providing boats at any cost became more important. The situation could be gauzed from the fact that many funding agencies reportedly had problems to keep track of what was happening at the grassroots level with respect to the boat programmes. Quality was another casualty in the process and a majority of boats might not even last beyond two years; in the meantime, sea safety would become a major concern. It was such a dreadful waste of resources that one would be tempted to agree with the conclusion of an NGO worker who suggested that simply handing out the money to the fishers might have been a better option than giving boats.

In many ways, the same target- and number-driven approaches that had been held to be the characteristic of government programmes were replicated by the NGOs. The long-term NGOs, especially those with some understanding about the dynamics of the fisheries sector, did try to stem the tide through workshops to discuss the negative impacts of increasing fishing fleets beyond certain limits; everyone listened piously and even passed resolutions against increasing fishing capacity and then went out to do exactly that! In fact, the frenzy actually forced some NGOs working long-term with the fishers to give a few boats too, if only to avoid adverse comparisons with rival NGOs and possible negative fallout on their long-term plans in an area. But, as many people working in such organizations suggested, this compromise itself might have implications for the long-term plans of the organization, setting a precedent that it might find difficult to justify in due course.

Thus, with regard to the boat programmes, the performance of many NGOs left a lot to be desired. Almost by any yardstick that the NGO sector uses to evaluate its performance (use of participatory approaches, long periods of engagement, holistic interventions, maintaining clear distinctions between development and charity; emphasis on social equity and environmental sustainability, local institution

building and strengthening, building upon indigenous knowledge and technologies, etc), the boat programmes fail to stand up to expectations. There is certainly an urgent need for some hard soul-searching by everyone.

New Institutional Initiatives

Many NGO functionaries remarked on the cordial relationships that characterised their working with the Government officers in the post-tsunami period. This was particularly noteworthy since the pre-tsunami relations between the two were often decidedly cold. Frequent interactions bridged the gaps in understanding between the two streams and helped forge lasting linkages. The need for Co-ordination among the NGOs themselves as well as with the Government in the rehabilitation efforts led to institutional initiatives such as the NGO Co-ordination and Resource Centre (NCRC) in Nagapattinam and the Kanyakumari Rehabilitation Resource Centre (KRRC) in Kanyakumari. The performance of these initiatives over the past few months showed how the emerging Government-NGO partnerships might complement and work to the benefit of all concerned parties.

The extent of co-ordination varied from one district to another and was also perhaps more individual-oriented than institutional. Still, it was possible to visualise the potential for more initiatives involving government-NGO partnerships in the coming years in Tamil Nadu.

In the meantime, some teething troubles would need to be resolved. The first of these related to the co-ordination centres' location straddling the no-man's land between the government and NGOs, which might sometimes give rise to apprehensions about being too closely identified either with the Government or with the NGOs[33] and being co-opted by them. This would require a constant balancing act on the part of these organizations. The second issue related to the long-term vision for the co-ordination centres. It was true that they came into existence to cater to a specific need, but it was clear that their role could potentially extend beyond the tsunami rehabilitation and co-ordination work, and that they had the potential to develop a multifarious role in the long-term development of the areas where they work. Although no one realised it at the time, there had indeed been a need for such an institutional framework and now that they had come into existence, there was much justification for their continued existence. In fact, considering the long-term implications of some of the rehabilitation programmes, there was perhaps more need for the co-ordination centres now than previously if only to curtail such overenthusiasm in future. This would require more clarity regarding the role and work of the co-ordination centres and a greater degree of legitimacy and institutionalization.

The Traditional *Panchayat*s

The traditional *panchayat*s influenced – *and were influenced by* – the rehabilitation efforts in a way that had implications for their continued survival and functioning in the long term. In many cases, they acted as a one-stop shop for the rehabilitation agencies (both Government and NGOs) to channel support into the communities. It was reported that several NGOs dealt only with the *panchayat*s and rarely had interactions with the people themselves, with the result that the *panchayat*s came to wield considerable power in determining the flows of assistance into the villages.

While thus being an interface between the communities and the rehabilitation agencies, the *panchayat*s may also have acted as a barrier, affecting the scope and direction of the support programmes. This contributed to excluding some people and their needs for various reasons and the NGOs too were often afraid of upsetting the *panchayat*s and had to fall in line, rather than take independent initiatives to explore more options for extending support.

All the same, in many cases, the *panchayat*s did ensure equity in the distribution of assistance into the villages because, after all, the caste code insisted that even when they took advantage of the government and the NGOs, they had to ensure equity in the villages, which was the reason and the foundation for their continued existence. When some people did not receive assistance from the government (because their boats were not damaged or they did not have any boats at all) or from the NGOs (who had their reasons), the *panchayat*s ensured that the losers received some kind of assistance, which was mobilised from two sources: firstly, a lion's share of the compensation received from the government for boats – which were seldom built – was appropriated as community fund and distributed among the people. Secondly, even the NGO inputs were handed to the beneficiaries only

on payment of a fixed sum or, in some cases, by openly auctioning them. In fact, the money thus generated was reported by many fishers to have helped them survive since the relief programmes came to an end in April.

The rehabilitation phase also provided an opportunity (excuse?) to the asset-less fishermen to topple the leadership of existing *panchayat*s, undermining the *panchayat*'s authority and redefining their role. The conservative, inward looking, old *panchayat*s were considered to be a constraint in dealing with the rehabilitation agencies and obtaining more support and this necessitated a new breed of leaders take over from them. It was the complaint of the old *panchayat* leaders that they had been as badly affected as everyone in the tsunami and were still grieving over their losses when they were already accused of not doing enough for the people. Thus, the old guard was not only evicted rather unceremoniously, but also marginalized from taking an active role in the rehabilitation phase. The new leadership quickly obtained boats and became boat-owners themselves.

Leaders of the old guard met during the field study contended that experience was an important requirement to be a member of the *panchayat*. The intricacies involved in resolving tricky issues such as fishing conflicts or social discords (including domestic and marital issues) and the tact required to deal with the external world could only come from experience and the fact that the new *panchayat* leaders were mostly young meant they would be unable to deal with these issues confidently. The former *panchayat* leaders agreed that there were issues that required sorting out, but the thing to do would have been to seek accommodation of new people alongside the old, rather than doing away with one set of people and replacing them with another.

The new leaders agreed that they lacked experience and it was perhaps not right to remove the previous leaders *en masse*, but they contended that, in a set up involving a mix of the old and the new, the youngsters would have no voice at all. The problem with the older group was that they had increasingly become alienated from the rest of the village and were becoming a law unto themselves. And their interest was in maintaining status quo, i.e., protecting their own interests, which was clearly unacceptable, particularly when it was done at the expense of the others.

Apart from differences of status, there were two other facets to the revolt: firstly, it was a clash between generations – the new leaders were often in their twenties, while a majority of the previous leaders were at least in their fifties. Secondly, this was also a revolt of the educated people against the largely illiterate or semi-literate old guard. The educated people in fishing villages, whose numbers were constantly growing, were a frustrated lot because their 'educated' status meant they could not stoop to go fishing anymore and were unable to get a respectable job either. They had long been a butt of jokes in the villages and were shown as an example of what 'education' did to people. If many new *panchayat*s were clamouring for assistance to help people diversify out of fishing, it was partly to do with these two factors.

One outcome of these developments was said to be growing factionalism in the villages. The old *panchayat* members were now the most dangerous adversaries for the new *panchayat* leaders and their functioning even as the rest of the villagers were forced to take sides in this conflict. Factional violence was witnessed in places like Akkaraipettai.

The tsunami rehabilitation programmes also saw the caste *panchayat*s getting embroiled in legal problems, which gave rise to some moves to bypass them or even suppress them in the long term. It was true that caste *panchayat*s excluded women and people of non-fishing castes from *direct*[34] participation in the *panchayat* decision-making processes, which was problematic, but not quite deserving the scorn that had been heaped on them on this account. Undeniably, the *panchayat*s addressed many important needs of the fishers and attempts to dislodge them without putting sustainable alternatives in place could be potentially catastrophic for the fishers. On the other hand, there was enough evidence to show that the institutions were amenable to change and that it would be more practical and helpful if attempts were made to reform them to address the needs of the people more equitably. If the *panchayat*s are done away with, it is possible that the glue that held the communities together might weaken and lead to the disintegration of the fishing communities.

Community Organizations

The impact of the rehabilitation on ongoing grassroots-level institution building – involving the

formation of self-help groups and producers' co-operatives – was not very positive. In some cases, for instance in Kanyakumari, the involvement of existing groups may have yielded some all round benefits, but in others, particularly in Andhra Pradesh, this might have led to negative consequences for the groups and the concept of SHG itself.

There were instances (in Kanyakumari) where members of particular groups were reportedly discriminated against in rehabilitation programmes, while in others, there was an active cooption of members from existing groups into new ones. In areas where the NGOs took a principled stand against providing boats, they came under fire from their groups for not doing enough. This was a real dilemma because, if the NGO stuck to its principles, it stood to lose the groups that it had built by investing much effort and hard work; on the other, if it gave in to the demands, it would lose its ideological strength and that would surely have an impact on its own long term work with the people! A few NGOs did seem to overcome this problem unscathed, but for a majority of NGOs, the costs may have been quite heavy. As one NGO representative told us, "It was sad to see all the work we had done over the decades collapsing like a pack of cards in a matter of months and right before our eyes too." On the other hand, proliferation of village development councils and other SHG-like mechanisms was often done without proper foundation, with the result that these new groups were no more than channels to distribute boats and other support in the villages. Like the fisheries co-operatives of yore, people tended to take a mercenary attitude towards these new groups and this would have long-term implications for the future co-operative-oriented programmes in the villages.

Conclusions

Relevance of the Rehabilitation Programmes for Sustainable Fisheries Livelihoods

In the post-tsunami rehabilitation of fisheries livelihoods, there has been some ambiguity concerning whether 'rehabilitation' meant, in the strict dictionary sense, *restoring* the conditions of the fishers to the situation they had been in prior to the tsunami (the 'tsunami-centred' rehabilitation) or whether it was intended to address their livelihood needs going beyond the tsunami (the 'livelihood-centred' rehabilitation). In the first instance, the interventions would have meant making an inventory of the losses and replacing the lost assets, while the livelihood-centred approach would have required making a thorough assessment of the context in which the fishers worked and making (often long-term) interventions that might frequently have gone beyond replacing the tsunami-related losses. It is likely that most rehabilitation programmes have been a mix of both, although the demarcation lines between the approaches remain rather blurred. Also, considering there is still much to be done on the rehabilitation front, it will require some more time before such distinctions can be clearly made.

This study focused on fisheries-based livelihoods, rather than on the tsunami *per se*, and attempted an analysis of the factors that have a bearing on the sustainability of livelihoods, which include, *inter alia*, tsunami and post-tsunami rehabilitation programmes. This meant, in the first place, recognising that the fisheries sector has some unique features that have determined the evolution of complex systems and processes for governing it, which require to be clearly understood prior to making interventions.

Many fisheries-related livelihoods in the areas affected by the tsunami had been ailing for some time and the crisis was deepening over the years. Virtually all activities in the sector – artisanal and mechanized fishing, capture and culture fisheries, traditional and industrial processing, domestic and global trade – were under stress and many stakeholders had been struggling with falling fish catches, rising costs of operation, marginalisation and growing vulnerability to factors beyond their control. In other words, the tsunami was just another nail on the coffin (albeit a big one!) in fisheries sector. Under the circumstances, for a number of people, being restored to where they had been prior to the tsunami was at best a doubtful proposition.

Secondly, experience shows that there were no simple answers to many of the issues confronting the fishers. Mere replacement of production assets would not automatically lead to 'sustainable livelihoods' because the production processes were linked to a range of other activities and stakeholders and also because of the crises in supply, production and demand areas. Much of the government and civil

society efforts were concentrated on this crisis at the time of the tsunami, involving development of programmes aimed at responsible fisheries management, sustainable livelihood diversification, holistic responses to the challenges posed by economic globalisation, fish loss-reduction and quality-enhancement programmes etc. There was widespread realisation that some deep-rooted systemic changes were necessary to address these issues meaningfully and that in an informal sector populated by a number of poor people, such changes were not easy to implement without adversely affecting the livelihoods of some (or many) of them, especially as social security nets and support systems were largely ineffectual. There was also a growing realisation amongst the policymakers and civil society organizations that community participation was much essential for developing meaningful responses to the crises. This was influenced not only by the fact that the fishers would ultimately have to face up to the challenges, but also by the realisation that there was much that one could learn about sustainable livelihoods from the fishing communities themselves.

Under the circumstances, the tsunami was, as many people have suggested, perhaps an opportunity to make fresh beginnings. As to whether issues like credit, infrastructure and resource management, which have their roots in the past be addressed within the framework of tsunami rehabilitation, one could reply that the tsunami presented, for the first time, the opportunity to address some of the crucial issues facing the sector in a meaningful manner. It drew enough funds, multi-disciplinary skills, manpower and policy attention to make long lasting contributions to the sustainability of fisheries resources and the livelihoods of the people living upon them. On the other hand, not being able to address some of the issues would not only make the rehabilitation efforts less than useful but also exacerbate the conditions prevailing in the sector.

Some of the conclusions that emerge from the foregoing chapters are summarized as follows:

Coverage of People in the Rehabilitation Programmes

- In terms of coverage, the focus was mainly on the primary producers, with boat owners receiving compensation from the Government while the crew received support from NGOs in the form of boats.
- Assistance provided to the post-harvest and ancillary trades was sporadic and patchy, resulting in several categories of people (a majority belonging to poor and marginalized sections, particularly women) being left out or receiving inadequate attention; this lack of support also contributes to a weakening of the production and market chains.
- Avoidance of mechanized sector in the NGO rehabilitation programmes contributed to ignoring the many intermediaries involved in the production and trade chains at fishing harbours.
- People of non-fishing castes (but involved in fishing), those living in the shadow zones, migrant fishers, and people who were not directly affected by the tsunami but suffered indirectly from its effects or remained vulnerable to future disasters were some other categories who received less attention.

Impact of Rehabilitation Programmes on Fisheries

- The impact of surplus boats on the natural resources would be negative, if it is assumed that all new boats would be deployed in fishing. It is possible that a majority of boats cannot be used for various reasons and those that do get to be used are unlikely to last long. This means that impact of new fishing vessels on fisheries resources, although too much in the short term, would reduce in the long term.
- The insistence of the Government on compulsory replacement of mechanized boats to be eligible for receiving compensation could have negative implications on the resources.
- Opportunities for diversification into offshore waters for new species like yellow fin tuna remain hypothetical and their viability is yet to be established, indicating that fishing effort will continue to remain focused on the inshore waters in the near future.
- With motorized boats, there is a possibility of change from shrimp to fish based operations, with positive implications for the resources, fishers, the poorer fish processors and traders as well as consumers.

- Fisheries rehabilitation programmes largely steered clear of fisheries management issues with the result that there are few controls over the expansion of fishing fleets or even a reliable database on their numbers. The possibility of a rise in fish catches over the next few years could potentially lead to a spurt in boat building particularly in the mechanized sector, and there are as yet no systems to control access to inshore waters.

Changes in Fishing Technology

- Traditional technologies like wooden *kattamaram*s and *kanna thoni*s were marginalized in favour of FRP boats; the latter contributed to marginalizing women from active fishing operations.
- Decline in the mechanized fleet was a good development and this could be partially due to the stand taken by NGOs against support to mechanized sector. But the construction of new trawlers would indicate that the sector was perhaps down, but not out.
- Many FRP boats face problems of poor quality and the communities are ill equipped to handle the technical defects on their own.
- Few specific programmes to address sea safety issues, but a bigger concern is the possibility of increased risk at sea from using boats of poor quality, which is likely to become serious in the near future.
- Surplus capacity on the beaches leads to shortage of manpower, affecting fishing operations.
- Onshore infrastructure related to fisheries activities likely to improve in some fishing harbours.

Impact on Investments and Credit

- Cost of fishing operations went up as a result of motorisation and increased engine horsepower; this might have more to do with increased fuel costs, but for people who were shifted from non-motorized to motorized operations and for people provided with engines of a higher horsepower, this was an outcome of the rehabilitation programmes.
- Need for investments for engines, nets, working capital for both fishers and the fishworkers only partially met by the rehabilitation programmes, with the result that informal moneylenders have begun to assume importance in the sector again.
- Access to informal credit may have become more difficult in the post-tsunami period, which has implications on the cost of credit and terms of repayment
- Access to formal credit systems remains as difficult as it always has been for many stakeholders in the sector
- No sustainable initiatives to make credit available at affordable rates for the different categories of people involved in fisheries and related activities.
- No attempts to understand market dynamics or to make interventions to develop the stake of primary producer communities in the major fish marketing chains.

Impact on Quality of Life

- Improved access to villages, better transport and communication facilities and provision of other basic infrastructure (water and sanitation, in particular) is likely to have a positive effect on people's life and livelihoods.
- The shelter programmes are likely to have a positive impact on the fishers' quality of life, reducing their future vulnerability and enhancing their physical and economic wellbeing.
- Relocation of fishers to the interior likely to affect their ability to go for fishing and also reduce their access to the beaches.
- Likelihood of improved access to healthcare and education in many areas
- Special programmes to address the needs of the vulnerable people – children, aged population, physically or mentally challenged, etc, which have the potential to improve quality of life of the fishers
- Some programmes to help the fishers diversify and get into alternate/supplementary income generation programmes, but their scope and impact are as yet limited.

Impact on Social Capital

- Changes in boat ownership patterns are likely to have an impact upon the social relations in the communities

- Social equity arguments for providing boats to crew on joint-ownership likely to fail as the emphasis was on providing boats rather than on the sustainability of the arrangements. The same applies to the boats provided to the women's groups.
- Possibility of reduced unemployment in the villages in the short term as a result of increased opportunities on the new boats
- Relocation of the some of the affected households likely to lead to disruption of social networks (including joint families) and complications with new neighbours.
- Existing community-based organizations are generally weakened; the long-term sustainability of the new initiatives remains suspect.
- Capacity of the caste *panchayat*s and other traditional structures in the fishing communities to cater to the needs of the communities reduced.
- Splits and factionalism in many villages, which are likely to have consequences on the socio-economic organization of the communities

Impact on Seasonal Deprivation

- Going by the experience of the last six months, when the fishers experienced a lean fishing period, it did not appear that the interventions made in the post-tsunami period addressed their seasonality related problems adequately. The fishers were depending on their traditional sources for surviving the lean periods.
- Migration on the rise in many villages, but has not received much attention in terms of improving the conditions of the migrants.

Impact on the Community's Capacity to Address Future Disasters

- The new houses and other infrastructure might reduce loss of life to a significant extent for those who received houses, but there remain a sizeable number of people whose capacity to cope with a future disaster remains as bad as it always has been.
- From a livelihood perspective, there is no evidence to indicate that the communities can cope with a future disaster more confidently. If anything, there is a likelihood that they will look to the civil society for support, which may not be forthcoming in such abundance as a result of aid fatigue.

Summary

Of the three major crises characterizing fishing livelihoods in the pre-tsunami period, the impact of rehabilitation on two – decline in fish catches and overcapitalisation of activities – is likely to be negative, while the third – uncertainties related to markets – has remained un-addressed. Thus, from a livelihood perspective, there is a question that whether the boats were an appropriate livelihood intervention at all. As the fishers of Pudukuppam (in Cuddalore district) asked, when there were no catches in the sea, what good did it do to have a boat? Then they quoted a Tamil proverb, which roughly translates as "What good is a silver spoon, if there is no food in the bowl?"

On the other hand, there is a fear that the rehabilitation programmes might actually have reduced the people's capacity to help themselves. True, the tsunami has given 'visibility' to fishing communities and gave rise to prime time debates about the fundamental problems they face; it also reinforced their status as 'first among equals' in the coastal areas and this is a welcome development. At the same time, so much aid has gone into the fishing communities over the last year that many fishers are perhaps happier being fed than feeding themselves and their expectations are only mounting. It took considerable pressure on the part of the women in several villages to force their men to go back to fishing and they were only partially successful. On the other hand, there was a perceptible fatigue on the part of the civil society and the NGOs in providing more aid to the fishers; the Government had already been receiving flak for pampering the fishers, so the fishers' access to external support in future is likely to be reduced.

The conclusion one can draw from this is that, at the end of the first year after the tsunami, there is still much to be done and, possibly, undone.

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Endnotes

[1] The ADB/UN/WB estimate puts the number of damaged hatcheries at 5 for the country.

[2] 'Internal' because no official documents were available in the public domain.

[3] http://kollam.nic.in/official_statistics_files/sheet008.htm

[4] http://alappuzha.nic.in/tsunami-status.htm

[5] John Swamy, The Tsunami in Kerala

[6] http://thrissur.nic.in/damage_details.htm

[7] John Swamy, The Tsunami in Kerala

[8] It must be noted that the infrastructure in coastal Tamil Nadu was generally much better in 2004 than it was in Orissa at the time of the Super Cyclone in 1999 and in Andhra Pradesh at the time of the cyclone of 1996.

[9] For instance, using the figures provided in the Statistical Handbook 2004 of the Government of Tamil Nadu (http://www.tn.gov.in/deptst/tab08_01.htm), which gives the total number of catamarans in the state as 31,695 in 2003-4 (which possibly includes the FRP catamarans), it is very likely that the number of catamarans reported to be damaged or lost in the tsunami (35,530, which includes 4440 partly damaged boats) was on the higher side.

[10] This was certainly true in case of fish processors in Akkiraipettai in Nagapattinam district and of the migrant fishers in some parts of East Godavari in Andhra Pradesh.

[11] Post-tsunami, on the Coromandel Coast, many of the FRP boats began fishing by the end of March 2005 and they were followed by Kattumarams, which began operations in April, and the mechanised boats, which began fishing only in June. At least some boats could have begun fishing sooner, but the caste panchayats imposed a ban on the operations until such time that the government announced its rehabilitation packages and the NGOs made commitments towards rehabilitation. If the fishers began fishing sooner, the panchayats feared, that might send 'wrong' signals to the funding agencies (i.e., that the fishers were capable of fending for themselves) and thus reduce the quantum of support. Only the fishers of villages like Arcotthurai – who belonged to the Padaiachi caste (and not the dominant Pattinavar fishing caste of the area, hence not controlled by the caste panchayats of the latter) – began fishing operations by late-January itself.

[12] *More details of the rehabilitation packages available at* http://www.tn.gov.in/tsunami/tsunami-relief.htm

[13] http://www.disasterwatch.net/Response/DPG.htm#top

[14] Incidentally, this underscores the function of caste panchayats as essentially redistributive

[15] A distinction is generally made between FRP vallams and FRP catamarans, but they are together treated as FRP motorised boats for the purpose of this study.

[16] For instance, it was never easy to ascertain the variety and quantity of nets required for a boat. One reason for this was that a fisherman never acquired all his nets in bulk; he bought them piecemeal, depending on the season and on the wear and tear, so could not satisfactorily quantify his needs.

[17] There were also some historical reasons for the neglect of this part of the coast: The lack of big NGOs or those engaged in long-term development of the coastal fishers in the area was an important constraint. Very few organisations worked in the fishing kuppams because they were considered (rightly) to be better off than the inland communities and also because of their insular, individualistic nature, so the focus of attention in the area had been mostly the *dalit*s. The recurring feuds between the Vanniars and the Pattinavars on the Coromandel Coast also made NGOs to think twice about working with fishers.

[18] Special mention must be made of the studies conducted by Praxis – see Chapter 7.

[19] The role of dalits came up as an important issue on the Coromandel Coast, particularly in Nagapattinam district, and this study only focuses upon their fisheries related livelihood concerns. Considering that their role in the sector was largely similar to that of the women, this section discusses them together.

[20] According to Bavinck (2001), the number of single-headed households in his study village was 16 percent; while concrete numbers were not available, in many villages covered by this study, anecdotal evidence put the single-headed households between 15 and 20 percent of the total number of households in a village.

[21] Not surprisingly, none of the FRP boat owners who obtained 50 percent subsidy from the State Government for replacing their boats found it necessary to obtain the balance from the

banks under the subsidised credit scheme introduced by the Central Government.

[22] http://www.disasterwatch.net/Response/DPG.htm#top

[23] Obviously, this had more to do with ensuring regular supply of crew for their own boats and less with concern for the health of natural resources; but, as it turned out, they were at least aware of the problems in upsetting the status quo without laying firm foundations for the alternatives to take root.

[24] There were some FRP boats too, which were used for marine fishing operations during some months, but the kanna thonis were operated round the year and were the main fishing units for a majority of people.

[25] There was at least one instance where boats were provided to the fishers through women's groups (in the aftermath of 1996 cyclone in Andhra Pradesh) and it failed miserably. There was also an attempt to channel development credit to the fishermen through women in some states, and the women often ended up repaying the loans from their earnings.

[26] Women's involvement in fishing is a general feature in many backwater fisheries on the east coast of India, and can be seen in West Bengal (Sunderbans), Orissa (Mahanadi delta), Andhra Pradesh (Godavari delta) and Tamil Nadu (Pichavaram).

[27] The difference in the quantity of fuel used between Kerala and several parts of the east coast is said to be due mainly to different engine horsepower of the engines used – the OBMs on Kerala coast sported 10 HP engines (using petrol and kerosene) and bigger boats used 20 HP and in places like Vizhinjam, even went for two engines of 20 HP each. The long-tail engines on the east coast were of 5-7 HP, using diesel. The fishers of Kerala were more concerned about speed and travelled long distances to reach the fishing grounds, while the east coast fishers generally stuck to near shore waters and used the engines mainly to reach the fishing grounds and return to the shore (Baburao, pers.comm..).

[28] The fact that in both Tamil Nadu and Kerala, the support for housing in the tsunami-affected regions was many times higher than the amount generally allotted in housing programmes for the poor raises a doubt: would the new provision apply to all future housing endeavours? If the amount was fixed after a thorough analysis of the vulnerability of the people to disasters, it would require the same provision to be made for all future constructions in the coastal areas, as any shortfall would imply compromising on the standards.

[29] The total requirement of land for relocation and rehabilitation purposes was estimated as 586 hectares and out of this, as of 22nd December 2005, some 80 hectares was yet to be acquired (http://www.tn.gov.in/tsunami/ tsunami-relief.htm)

[30] On the contrary, in the case of an NGO that had put considerable effort into enhancing community participation in the design and construction of the new houses, initially there was a feeling that the process took too long, but in the end, the results were seen to have been very positive and well worth the time and effort.

[31] On the other hand, NGOs that worked with fishing communities affected in the Orissa super cyclone were not very conspicuous in Tamil Nadu – this was a pity because the lessons learned in Orissa could have been useful here.

[32] In Kanyakumari and Kerala, where there had been many NGOs working with fishing communities, the influx of new NGOs was rather limited. On the Coromandel Coast, where few NGOs had been working in the past, NGOs from the outside did most of the relief and rehabilitation work.

[33] There indeed were apprehensions on either count in different districts.

[34] Bavinck (2001:88), for instance, notes that non-participation in panchayat meetings did not mean that women played no role at all in issues of sea tenure, and argues that their involvement was secondary and mediated by the men. The Praxis studies in many villages in Nagapattinam district show that the women – particularly old people and widows – had no difficulty in meeting the *panchayat* members and getting assistance from them.

Annexure 1: List of places visited during the field study

State	District	Town/Village
Tamil Nadu	Nagapattinam	Nagapattinam (fishing harbour)
		Tharangambadi
		Akkaraipettai
		Keechankuppam
		Kallar
		Nagoor
		Arcotthurai
		Poompuhar
	Kanyakumari	Colachel
		Muttom
		Keezha
		Manakudy
		Mela Manakudy
	Cuddalore	Mulukuthurai
		Pillumedu
		Devanampattinam
		Thammanampettai
		Pudukuppam
	Villupuram	Anumandai Kuppam
		Chettinagar
		Koonimedu Kuppam
		Nadukuppam
		Chinna Mudaliar Savidi
	Chinglepet	Reddy Kuppam
		Pudukalpakkam
Pondicherry		Pondicherry (fishing harbour)
Kerala	Kollam	Alappad
	Alapuzha	Aratupuzha
		Vattachal (Aratupuzha)
Andhra Pradesh	Nellore	Govinda Pallipalem
	Prakasam	Kothapatnam
		Vodarevu
	Guntur	Muthayapalem
	West Godavari	Pedamynavani Lanka
		Biyyaputippa
		Vemuladeevi West
	East Godavari	Vodalarevu
		Pallam
		Neelarevu
		BCV Palem
		Lakshmipatipuram
		Uppada
		Kakinada (fishing harbour)

Annexure 2: Progress of house reconstruction programmes in Tamil Nadu

DETAILS OF NO. OF HOUSES PROPOSED FOR CONSTRUCTION , CONSTRUCTION STARTED AND BALANCE - AS ON 22-12-2005
By NGOs (wherever MOUs signed)

SL. NO.	Name of the District	No. of houses proposed for construction through MOUs	No. of houses for which work started and stages						
			Earth work started	Foundation laid	Lintel/Roof laid	Completed	Already handedover	Total	No. of Locations
1	Chennai	@ '*3592	1392	--	--	2200		3592	--
2	Cuddalore	2323	403	156	1349	85	330	2323	--
3	Kanchipuram	4318	3946	331	41	--		4318	--
4	Kanniyakumari	2536	1256	111	188	981		2536	22
5	Nagapattinam	17461	12883	1965	1126	1053		17461	--
6	Pudukottai	--	--	--		--		--	--
7	Ramanatha Puram	--	--	--	--	--		--	--
8	Tanjore	--	--	--	--	--			--
9	Thoothukudi	716	612	50	54	0		716	2
10	Tirunelveli	1778	1403	336	39	--		1778	12
11	Tiruvallur	@ 468	--	--	--	468		468	--
12	Tiruvarur	--	--	--	--	--		--	--
13	Villupuram	1670	924	300	428	18		1670	19
	Total	**34862**	**22819**	**3249**	**3225**	**4805**	**330**	**34862**	**55**

* of these 2200 houses in Semmancheri lies in Kancheepuram District

' @ Built by TNSCB

Source: http://www.tn.gov.in/tsunami/tsunami-relief.htm