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## **Fishery as a Livelihood Strategy for Tsunami Victims – A Study in Kilvelur Taluk, Nagapattinam District**

**S. Shanthi, M.A, M.Phil. and N. Malathi, Ph.D.**

### **Abstract**

This paper highlights the impact of the 26<sup>th</sup> December 2004 Tsunami on fisheries in Kivelur Taluk, Nagapattinam District. It focuses on accounting for the losses and damages to human lives, fishing equipments, livelihood and loss of employment and income of affected people. Rehabilitation measures by various assisting agencies and NGOs are also discussed and recommendations for better disaster management are provided.

### **Introduction**

All the countries bordering the Indian Ocean depend on fishery, which was affected on 26<sup>th</sup> December, 2004. Indonesia, Thailand, Sri Lanka, Somalia, India and its Andaman and Nicobar Islands have been some of the areas under stress due to Tsunami. The direct impact on the fishing industry includes the destruction of the boats, death of the workers, loss of equipment and the make-over of the coastal

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landscape. Fishing industries greatly rely on transportation systems to the market. The distribution of ports, roads, and rail systems has also taken a positive role on fishing industry. But all these have been terribly affected on that day and for a long subsequent period.

Communities along the coastal region depend largely on fishing, tourism and agriculture as their sources of income. Because of specific locational disadvantages, such as lack of arable land and other factors, many areas rely heavily on fishing as their main source of income. The tsunami affected the poor nations most and in these particular regions survivors saw little hope for future income after the disaster.

The tsunami of 26<sup>th</sup> December 2004 affected the States of Tamilnadu, Andhra Pradesh, Kerala and the Union Territories of Pondicherry and the Andaman & Nicobar Islands. Fisheries sector bore the brunt of the tsunami, as 2,260 km of the coastal area was affected accounting for 85 percent of the damages. Tamilnadu was the worst affected territory, with the Coramandal coast suffering the most losses. It has brought immense devastation all along the coast, extracting a heavy death toll of about 8018 persons and 1.26 lakh people were made homeless. It has destroyed completely the fisheries infrastructure and livelihood of fishermen and others in the coastal areas.

The coastal length of Tamilnadu is 1076 km which comprises over 12 percent of the entire coastal stretch of 8041 km. of the country. Nagapattinam District has a coastal line of 187.9 km and the entire stretch comprises 51 fishing hamlets. The fishing community was the single biggest section of people in Tamilnadu affected by the Tsunami. Nagapattinam District was the worst affected district with 76 percent of the deaths, while Kanyakumari and Cuddalore were also severely affected. Apart from death and destruction of houses, thousands of mechanized boats and catamarans and fishing harbours at Nagapattinam along the coastline were completely destroyed.

### **Statement of the Problem**

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Tamilnadu has 591 fishing villages and 362 fish-landing centres, which are mostly small and which cater to the needs of small mechanized fishing crafts and traditional boats. The fisheries sector has suffered major damage in terms of lives, boats, and to the infrastructure such as harbours and fish-landing centres. Even now fishing activity in Kancheepuram, Cuddalore, Tiruvallur and Nagapattinam has not recovered fully. Tamilnadu's fishing community is a significant contributor to the State economy with marine fish catch estimated at 380,000 tonnes per annum. About 58,000 tonnes of seafood valued at \$ 480 million dollars is exported annually from the seafood processing units located in the State.

Due to tsunami as many as 230 villages and 413 Kuppams (Hamlets) spread across 13 coastal Districts in Tamilnadu were flattened completely. Many productive assets of fishermen, agriculturists and other micro enterprise owners living along the coasts were either swept away or made non-functional.

Agriculture, fishing and its related activities are of economic importance along the Tamilnadu coast. Apart from actual fishing, fisheries related activities such as fish marketing, fish transport, loading, unloading and other labour associated with fish handling, fish processing (drying and curing), boat making and repair, net making and repair, repair of engines, etc., are important sources of employment and livelihood. In this context "Fishery as a Livelihood Strategy for Tsunami Victims – A Study in Kilvelur Taluk, Nagapattinam District" is discussed in this paper.

### **Objectives**

1. To explore the rehabilitation measures of the Government and NGOs, and
2. To examine the performance of fishing activities in the study area.

### **Methodology**

In Nagapattinam District, Kilvelur Taluk had the second largest loss of lives and hence it is selected for the present study. Secondary data were collected from government officials and NGOs about rehabilitation measures to tsunami victims and

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from tsunami victims in Kilvelur Taluk comprising 120 women engaged in any of the fishing activities. These primary data include details of capital investment, net profit, gross income and cost of production of the respective fishing activity.

**Table 1**

**Details of Tsunami (2004) Death in the Taluks in Nagapattinam District**

Sl. No.	Name of the Taluk	Adults		Children		Total
		Male	Female	Male	Female	
1.	Nagapattinam (15)	1143	1495	404	336	3378
2.	<b>Kilvelur (10)</b>	<b>537</b>	<b>448</b>	<b>253</b>	<b>260</b>	<b>1498</b>
3.	Tharangambadi (22)	72	225	93	136	526
4.	Sirkali (10)	65	204	111	136	516
5.	Vedaranyam (15)	66	34	26	21	147
	<b>Nagapattinam District (72)</b>	<b>1833</b>	<b>2406</b>	<b>887</b>	<b>889</b>	<b>6065</b>

**Source:** Collector Office, Nagapattinam District.

**Note :** Figures in the parentheses denote the number of villages affected by Tsunami in 2004.

Details of deaths due to tsunami (2004) in the Taluks of Nagapattinam District are shown in Table 1. As observed in the Table, number of deaths was the highest in Nagapattinam Taluk (3378) constituting (55.7 %) in total, whereas Vedaranyam has the lowest deaths 147 (2.4%) among 5 Taluks of the Nagapattinam District. Kilvelur Taluk had second largest member of deaths (1498) in Nagapattinam District (24.7%). With respect to villages affected by tsunami, Kilvelur Taluk has the lowest member of 10 villages.

The economic impact of tsunami on the selected families relates to the loss of life with damage to entitlements, damage to the houses, boats and fishing nets and loss of household possessions. Important documents, other livelihood materials and livestock were also lost.

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The psychological consequences were frustration, guilt, frequent crying, depression, fear, breathing trouble, rapid heart beat, stomach cramp, aches, weakness, difficulties in concentrating, lethargic thinking, difficulties in taking decision, poor attention and confusion.

The social impact of tsunami is the life pattern of social gathering before and after tsunami, constraints experienced by the respondents in temporary shelters, changes in social living and educational impact of tsunami on the children of the affected families.

### **Profile of the Study Area**

The total population of Kilvelur Taluk is 127580 which include 62,588 males, and 64,992 females. Out of this, the loss of human life in 2004 tsunami was a total of 1498 comprising 537 male adults, 448 female adults and 513 children. Loss of animal husbandry in the tsunami was a total of 175 comprising 60 cows, 35 sheep and goat and 80 hens. Loss of total cultivated land is 533 hectares in this Taluk.

The fisheries sector had very severe damages never before witnessed in the District. 7604 units of nets, 6144 wooden catamarans, 1761 vallams and 869 mechanized boats were damaged in the Nagapattinam port. In the Kilvelur Taluk 318 catamarans, 19 vallams, 31 mechanized boats, 31 catamaran nets, and 331 vallam nets were damaged.

### **Results and Discussion**

In order to analyze the appropriateness of fishing activity as a livelihood strategy for tsunami victims in Kilvelur Taluk, the results are discussed under the rehabilitation measures and performance of fishing activities.

### **Tsunami Rehabilitation Measures**

The study provides an overview of issues relating to livelihood recovery assistance and achievements since the December 2004 Tsunami. Livelihood programs

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were intended to help tsunami affected households to resume productive activities and return to 'normal' life. They formed an important component of the Tsunami recovery portfolios of the Government of India. Many international donors have distributed millions of dollars worth of equipment, cash and other forms of support to Tsunami victims. This article focuses on the effectiveness and impact of some of these programs to the victims villages, particularly during the early phases of recovery.

Cunawardena and Kanchana (2010) examined two types of aid transfers such as boats and houses that were made to rehabilitate tsunami affected fishery households in Sri Lanka. This study investigated the distributional impact of these transfers and the effectiveness of targeting. The study also attempted to quantify the factors underlying the allocation of such asset transfers. The findings suggest that there was better targeting of households with regard to the allocation of houses than boats. It also shows that housing transfers resulted in improved asset equality among fishery households.

Chiwaula and Waibel (2009) and Thorburn (2009) assessed the impact of risks and shocks on household welfare due to tsunami in Nigeria and Indonesia. The authors estimated income loss in consumption equation to assess the impact. The findings identified death of adult members of the family, drought and social conflict are important shocks in the areas. These shocks are more significant in reducing household food consumption and non-food consumption. Additionally, the authors found that farming-dependent households suffer more from social conflicts; fishing households suffer from loss of livelihood assets. The impact of death of an adult member does not depend on household livelihood strategies, such as agriculture, fishery and microenterprise activities.

In Tamilnadu, the government made provision for replacing or repairing the fishing equipment damaged due to tsunami, which included nets for vallams and kattumarams; repair of engines (both outboard and inboard); and assistance for repair or reconstruction of vallams and kattumarams, with subsidy ranging between 100

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percent (in case of wooden kattumaram) to 50 percent for replacement of [Fiberglass Reinforced Plastic (FRP)] vallams and kattumarams of the unit cost.

In all cases, the government support was confined to providing monetary assistance to the fishermen. The subsidy to mechanized sector was confined to 60 percent (subject to a maximum of Rs. 3 Lakhs) in case of repairs and to 35 percent (up to a maximum of Rs. 5 lakhs) in case of fully damaged or lost boats. Provision was made for the mechanized boat owners to obtain bank loans at subsidized rates for the balance amount necessary for undertaking repair or reconstruction. Besides, the Government of Tamilnadu also made provision for assistance to aquaculture owners, fish transporters and ice-manufactures; for repairing fishing harbours, jetties and landing centres; dredging and related activities necessary for resumption of fishing, such as spending for boat building yards to undertake repairs of boats.

In Tamilnadu there were a few systematic efforts to understand the livelihood – specific needs of fishermen and address them meaningfully. There were some programmes that targeted some of the people directly or indirectly, but their scope, coverage, relevance and effectiveness remained largely 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 crew members. Many of the people in the production and marketing chains had largely remained invisible from the policy perspective.

Some categories of people involved in various activities included traders, intermediaries, fish processors, ancillary workers (transporters etc.), technical people (boat builders, engineer mechanics etc.) besides people involved in non-fishing related activities (for e.g. basket weavers), who depended for their survival on the fisheries sector. A majority of them are from poor and working class backgrounds and worked for daily wages. Many such categories of people got back to business with borrowed money. The money provided as part of relief packages also helped a few of

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them to survive and even reinvest the savings in their business. Improvement in the infrastructure in villages and better access to roads, communication facilities and transport systems would help in ensuring quicker marketability of the fish catches, thus adding to their income. However, social capital or community net works like SHGs and NGOs appear to have been the best support for many of the ancillary traders to get back into business and ensure its sustainability.

The response from the NGOs both international and national to the tsunami was staggering. It led to a huge collection of funds for relief and rehabilitation activities, which contributed to a competition between different NGOs to work in the tsunami-affected areas and to spend the funds as quickly as possible. The initial focus of the NGO activities was on the worst affected areas, Nagapattinam in particular but subsequently spread over all affected areas in the State. In the NGO sector, rehabilitation of fisheries related livelihood activities take the form of providing boats mainly of the Fiberglass Reinforced Plastic (FRP) motorized category on a group ownership basis and this was mainly targeted at the crew members.

**Table – 2**  
**Details of Assistance to Fishery Activities in Kilvelur Taluk**

Agency of FRP boats	Per capita Assistance to Fishery Activity	
	Rs.	%
Government	62,300	64
NGOs	35,000	36
Total	97,300	100

**Source:** Computed

The Table-2 exhibits the per capita distribution of assistance to fishery related livelihood activities. As observed in the Table per capita provision of assistance is Rs. 97,300 for fishing activity with the share of 64 per cent contributed by the government and (36) per cent by NGO.

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## **Performance of Fishing Activities**

Global action intimated Micro Enterprises Rehabilitation Project (MERP), which distributed equipment for tsunami affected people to enable them to recommence their respective livelihood measures in this Taluk. Tsunami affected women received training in production and marketing skills, which helped them to enhance their small business. The training also served as a motivator for setting up micro enterprises in fishery in this Taluk.

It is a widely accepted fact that poverty has a gender bias as 70 per cent of the people living in abject poverty are women. A high proportion of coastal fishing community is below poverty. The approach and mission of micro finance is helping poor to move out of poverty.

Based on PRA (Participatory Rural Appraisal) conducted during field visits, it was observed that there is insecurity of livelihood as the fishing is prohibited by various notification of the fisheries department for adopting conservation measures as well as for the safe guard of wild life sanctuary and missile testing range operation. The following livelihood opportunities including improvement in the present livelihood process as well as innovative emerging opportunities are identified and validity is analyzed taking into account local skills, markets, and potential available for utilization of natural resources in eco-friendly manner. The following livelihood activities are identified for economic uplift of women in coastal fishing community through adoption of SHG's movement.

## **Fish Vending**

In coastal fishing community, women take lead role in fish marketing. Over the years, even though the participation of middlemen and their involvement in this activity has come down, still it has a lot of significance in their livelihood. In all the coastal districts of the State, women vendors take up fresh fish vending within a radius 5-10 km mostly. On an average, each fisher women carries a head load of

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15-20 kg of fish, prawn, and crab in locally made bamboo baskets. Income generation from the activities varies between Rs. 30-60 per day and shows a wide fluctuation. Limited mobility on account of poor investment capacity, communication facility, perishable nature of the commodity and seasonal variation in catches are factors responsible for such wide fluctuation in price. With the development of communication facility, provision for basic preservation facility like ice and development of market places would give a boost to this livelihood.

### **Prawn Pickle Making**

Fish or prawns have very limited shelf life and they need to be processed immediately to preserve them for a longer period. Making pickle is one such easy method. Fish / prawn pickle can be made in any part of the country, but it should be made under proper hygienic conditions adding required salt, spices and preservatives pickle. This manufacture is concentrated on the north-east region in Nagapattinam District as it has ample varieties of fish and the non-vegetarian food is fairly popular in most of the states. Manufacturing process is not very complicated and the capital investment is not much. Hence a new entrant would not find it difficult to venture into this product line.

### **Net Making**

A fishing net or fish net is a net used for fishing. Nets are devices made from fibers by women in a grid-like structure. Fishing nets are usually meshes formed by knotting a relatively thinner thread. Early nets were made by women from grasses, and other fibrous plant material. Later cotton was used. Modern nets are usually made of artificial polyamides like nylon, although nets of organic polyamides such as wool or silk thread were common until recently and are still used.

### **Fish Frying**

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You hook ‘em’, we cook ‘em’ is this fishing-themed campground’s slogan and it means exactly what it says – catch fish at the campsite’s lake and for a nominal fee, guests can bring their fish to the café where the cook will fry them up. Or, campers can clean and cook the fish around their campsite’s fire ring. No fishing license is needed and there is no limit to the number of fish campers can catch. The campground offers 60 campsites some with full RV hookups, showers, restrooms and a swimming pool. This model can be introduced in the fishing towns and villages in Tamilnadu.

**Table - 3**  
**Performance of Fishing Enterprises in Kilvelur Taluk**

Rs. 000 per year

Sl. No.	Fishing Activity	Capital Investment	Gross Income	Cost of Production	Net Income	Rate of Returns (%)
1.	Net making	150	155	490	335	37
2.	Prawn pickle making	55	729	540	189	35
3.	Fish frying	30	560	400	160	40
4.	Fish vending	25	510	360	150	41

**Source:** Computed

The Table-3 shows performance of fishing activities in study area. The rate of return is the highest for Fish Vender (41%) whereas prawn pickle making has the lowest rate of return (35%) among the four fishing activities in study area. While the investment is the highest for net making, their rate of return is the lowest as compared to fish vendor and fish fry activity.

### **Conclusion**

The findings of the study suggest that through actively promoting Self-Help Groups and co-operatives among women in coastal fishing communities and through linking these associations with financial institutions, investment and working capital needs of their members can be met. To make the best use of capital inputs, SHGs and their federations need vocational and enterprise development training from NGOs and from Fisheries Training and Research Institutions as well as assistance for establishing links to new market outlets for their products, both domestically and for

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export. So, poverty in coastal fishing communities can be reduced and livelihoods improved with diversified micro finance and through micro enterprise development and training support.

The existing Self Help Group activities may be strengthened to involve more women in developing fishing related activities to sustain income and employment. Tsunami reconstruction by encouraging fishing activities is a successful example of Government and NGO as these agencies have built the houses and infrastructural facilities and provided other amenities to the tsunami affected people in the study region.

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