

# **‘Status of Life in Temporary Shelters’**

Nagapattinam District, Tamil Nadu

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## Executive Summary

The temporary shelters built along the Tamil Nadu coast in India prima facia represent the level of disorganisation and disconnect in the rehabilitation efforts plaguing the tsunami relief and rehabilitation program. This study was initiated to evaluate the level of normalcy victims' lives have reached, as claimed by official sources and the media, living in temporary shelters along the coast. This study covers displaced populations living in Sirkali and Tharangambadi talukas of Nagapattinam district and was timed to enumerate the vulnerabilities and risks faced by the communities ahead of the oncoming monsoons, and to recommend areas for immediate attention. The study utilises an innovative combination of methodologies combining survey and participatory evaluation techniques with the new, innovative Quantified Participatory Assessment methodology. It covers 11 settlements with a total of 2,048 temporary shelter units among them.

Two major issues immediately identified by the communities were of severe heat in the summer and leaking of structures during rains. Taking into consideration these two factors, none of the temporary shelters achieved the benchmark set for evaluating liveability. All the shelter sites suffered from poor site selections and negligence to undertake corrective measures before, during or after construction. Additionally, all sites experienced some level of flooding in the recent rains which had severe impact on lives of the people. In the case of water supply, though most of the villages met benchmarks set by the study, the quality of water, maintenance of the installed systems, unequal distribution and errand timings of supply were identified as areas needing immediate attention. Sanitation was evaluated according to general cleanliness, status of toilets and solid waste management. General sanitation was found to be within reasonably good standards. At the same time, toilets were seen as a failure in all the settlements and only 4 villages met benchmark scores in solid waste management. This highlighted the need for immediate and focused action in these areas. A disconnect was observed in the health

service delivery as the need and scope for improvement were suggested by the community. A shift from mere referral, to focused camps for specific diseases, population groups and preventive action came into discussion, with only two villages reaching the benchmarks set by the study.

In relation to identifying risks and vulnerabilities related to temporary shelter structures and sites, fire figured as the top issue. This was exacerbated by the recent upgrading work undertaken on the temporary shelters with high risk thatches. Another top issue was of flooding in low lying shelter sites, which was experienced by most communities in the recent rains. Others included risk of diseases, due to unsanitary condition and poor quality of drinking water, and insects and bugs.

This study recommends immediate action on the part of the government and NGOs to address shortcomings and vulnerabilities of the temporary shelter structures and sites. As the reconstruction programs are delayed indefinitely, the need for reinvestment in shelters is becoming more and more evident. The need for participatory action in addressing drainage of shelter sites, water and sanitation and health services is immediate. Participatory risk assessment exercises need to be undertaken to facilitate understanding and effectively address the various risks identified. As the study itself condemns the universal solutions adopted thus far, the recommendations are structural and forward thinking in nature. Additionally, this study strongly recommends the need to develop and implement community-led local solutions.

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## **List of Acronyms**

<b>NCRC</b>	<b>NGO Coordination and Resource Centre</b>
<b>NGO</b>	<b>Non-Governmental Organisation</b>
<b>QPA</b>	<b>Quantified Participatory Assessment</b>
<b>ANM</b>	<b>Auxiliary Nurse Midwife</b>
<b>DeWaTS</b>	<b>Decentralised Waste Water Treatment Systems</b>
<b>PLWH</b>	<b>People Living With HIV/AIDS</b>

## **Introduction**

For the first time in half a century, India experienced the devastating effects of a tsunami, caused by a series of earthquakes in the Bay of Bengal. The first and strongest earthquake occurred off the West Coast of Northern Sumatra, Indonesia at 6.29 AM Indian Standard Time on December 26, 2004 (magnitude and intensity 9.0 USGS), followed by one 81 kilometers (km) west of Pulo Kunji Great Nicobar, India (7.3 USGS) some three hours later. 115 aftershocks were reported, of which the magnitude of 103 tremors was between 5.0 and 6.0 USGS and 12 were over 6.0 on the Richter scale.

The earthquakes set off giant tsunami tidal waves of 3 to 10 meters in height, which hit the Southern and Eastern coastal areas of India and penetrated inland up to 3 kms, causing extensive damage in the Union Territory (UT) of the Andaman & Nicobar Islands, and the coastal districts of Andhra Pradesh, Kerala and Tamil Nadu and the Union Territory of Pondicherry. Approximately 2,260 km of the coastal area besides the Andaman & Nicobar Islands were affected. According to Government reports 10,881 people in India lost their lives and 57,924 persons were reported missing with 6,913 injured. In Tamil Nadu over 7,983 deaths were reported. Of the 13 coastal districts affected in Tamil Nadu, Nagapattinam, where 6,051 people died, was the worst affected. Over 824 died in Kanniyakumari district and 612 were reported dead in Cuddalore district.

The disaster devastated communities with high tolls on human lives, injuries, family networks, homes and livelihoods. There are long term consequences for families torn by death or disability of members, and for widows, single parents and their children, orphans, children separated from their families, PLWH and elderly. In all the tsunami-affected states and Union Territories, more women and children have died than men. The majority of those affected on the coast were fisher folk who suffered the most damage in terms of housing and livelihoods with loss of dwelling units, household assets, and productive assets like boats and nets. Farmers suffered from destruction of

crops nearing harvest due to salt water ingression rendering the cultivable lands useless for near future, severely affecting their livelihoods.

### **The Need**

An assessment immediately after tsunami<sup>1</sup> had specifically noted the problems with the temporary shelter construction in the tsunami-affected regions.

Problems included:

- Lack of community participation in temporary shelter construction
- Problems with wrong site selection - flood prone areas
- Problems with construction style and materials used
- Problems with flooring
- Problem with ventilation, and
- Problems with toilets and latrines location

Six months after the ambitious plans for reconstruction within a year was heard, little had changed in the lives of the affected. While the fear of the sea and trauma from the disaster were taking their time to heal, people were looking forward to signs of improvement in life. In the peak of the April heat, the communities SSP, CCD and PSI work with were already complaining of the excessive heat in temporary shelters. Children suffered the most with incidences of chicken pox and heat boil hitting the roof. Skin infections spread like fire and people started to spend most of the day outside the shelter, under the shades of trees and buildings. Braving the heat and hardships of the temporary shelters, people waited patiently. They prayed for rain in hopes of relief. However, when it came, it added more chaos to their already complicated lives. It had rained for hardly half a night, and roofs were already leaking, shelter sites were flooded and dry rations were spoiled. Women stood

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<sup>1</sup> 'Lull after the storm' - [www.sspindia.org](http://www.sspindia.org), January 2005

in knee deep water, with kids around their waist, and salvaged dry rations and cloths on their head. While untimely rains were pushing the limits of resilience, along the coast, few fishermen had started to venture into the sea for the first time after the tsunami. This was hailed by the mainstream media as return of normalcy in the region.

While the initial study findings highlights a range of significant, and overlooked, issues in temporary shelter settlements, things have moved ahead since the study was initiated. New water points have been installed and waste collection bins can be seen in all settlements. However, queues at water points never seem to end, and toilets seem like mere decorations, having lived out their usage in four to five months. The study was hence formulated to create a realistic picture of life in temporary shelters and look at immediate areas of actions required to improve the ‘normalcy’ in the life of people living in them.

### **Objectives**

Once the decision to conduct the study was taken, a detailed consultation was taken up with senior staff members of SSP. Aside from identification and enumeration of issues in the community, this study was identified as an opportunity to train a relatively new cohort of local staff on methodologies and strategies of data collection and research. Based on this additional dimension, realistic objectives were drawn at the end of the detailed consultation process and defined to bring the larger issues to the attention of NGO community and the government as well as to develop local staff capacity to implement and manage participatory research and development practices.

Broad objectives include:

1. To assess the liveability of the temporary shelters
2. To assess the water and sanitation situation in the temporary shelters
3. To assess the health services provision in the temporary shelters

4. To come up with practical recommendation to address the problems before the onset of Monsoon

### **Methodology**

As a part of the detailed consultation process, an initial working document was created with broad research questions. The methodology was decided based on the information needs of the managing organisations and the need to document and communicate the results in a simple yet strategic manner. A two day in house workshop was conducted to orient the staff on research objectives and various methodologies for participatory research. Based on the resources and time limitations presented by the exhaustive nature of the relief and recovery work in progress, a methodology was designed and decided upon, with list of tools to be used for the purpose. Three sets of formats to facilitate data collection and compilation, through a participatory process involving staff members were developed:

- A survey questionnaire with an option for data to be filled at the site
- An action research questionnaire aimed at guiding focus group discussions, instigating dialogue and provoking thinking while generating qualitative information
- An ordinal scoring format, with collective agreement over performance indicators in each area of evaluation

It was decided that the ordinal scoring formats would be completed at the end of each field research day, through the challenging process of reaching consensus among the survey team, facilitated by the team leader. The formats were field tested in one village (Poompuhar) and necessary corrections were made.

Two main tools were adopted for data collection:

- *Transect walk* of temporary shelter sites

- *Focus group discussions* with women living in the temporary shelter sites using a guidance questionnaire, registering the names of each member present during the meeting

The universe of the study was decided as the tsunami-affected village of Tharangambadi and Sirkali Talukas of Nagapattinam District. The sample was narrowed down to 11 villages in the SSP working area. The field assessment was carried out on July 13 - 17, 2005. Secondary data were obtained from the District Collectors office and NCRC in Nagapattinam and also from official Tamil Nadu State Government website.

### **Limitations of the Study**

Drawing on qualitative information from a small sample of shelter sites, this study does not claim to accurately represent the condition of shelters in all of the affected regions of Tamil Nadu. Henceforth some specific suggestions and recommendations made in the study are only applicable to the settlements in the sample. The comments on the technical shortcomings of the shelters are based on observations and consultation with experienced field staff. Further technical scrutiny may be required to establish actual cause and solutions.

### **Results and Analysis**

In Nagapattinam District, there are a total of 13,556 temporary shelters<sup>2</sup> spread in over 54 sites in the affected villages of the District. The number of the shelters in the study universe of Tharangambadi and Sirkali Talukas comes to around 6,161 units spread in around 31 sites. This approximately covered half of the temporary shelters in the districts, with major chunk of them concentrated in bigger villages like palaiyar, Poompuhar, Vanagiri, Thirumalaivasal, Thoduvai, Tharangambadi, Keezhemovarkkarai and

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<sup>2</sup> Source: District Collectors Office, Nagapattinam

Melemovarkkarai. Of the 6,161, about 2,067<sup>3</sup> shelters were in the working villages of SSP, which was the sample of the study.

### **Shelters**

As observed from Table 1, there are approximately 2,067 shelters present in the villages covered under the study. Except for a few sites in Puthupettai and Chinnangudi, all shelters are made of asphalted sheets. The same material was used for both roofing as well as walls.

**Table 1: Shelter Details**

#		Results	Details
1	Total Number of Shelters	2,067	Max: 430 (Vanagiri) Min: 44 (Thazhampettai)
2	Total Number of Families in Cluster type settlements	1,599	
3	Total No. of Families in Mass Shelters	717	
4	Total Number of Families in Temporary shelters	2,316	
5	Total Population in Temporary shelters <sup>4</sup>	12,250	
6	Average distance of Relocation from Original Settlement	803.63m say 800 m	Max: 2km (Keezhe Moovarkkarai) Min: 20 m (Thazhampettai & Kuttiyandiyur)

### **Cementing the life...**

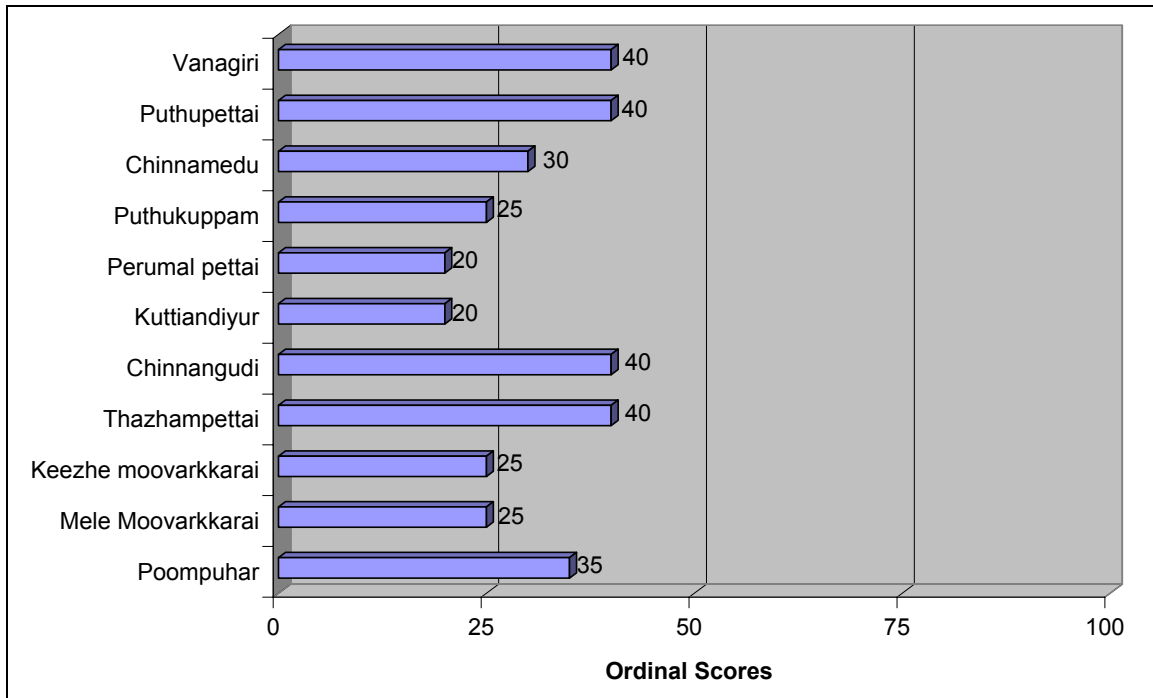
While all shelter sites have shelters with cemented flooring, not all shelters have cemented floors. Shelters were built on private agricultural land which was leased to the government for a certain period. The leading political party forbid the use of cement from entering its fields as cement is expected to have long term impact on the soil quality. Thus, families created their own temporary flooring with mud, which was not suitable to protect their shelters from flooding during the rains.

<sup>3</sup> Some variations were observed in the actual number of shelters against the list provided by the Govt.

<sup>4</sup> In case of 4 villages, where data was not available, population was approximated by assuming a family size of 5

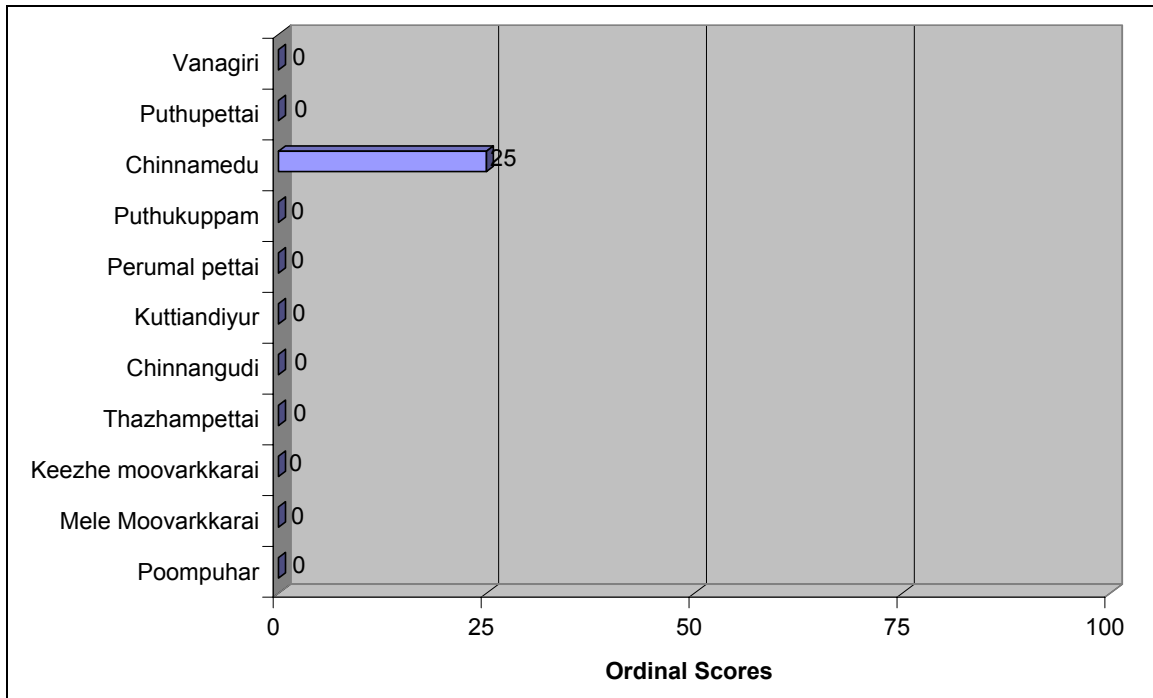
“This is not where we want to live,” makes explicit the fisherwomen of Vanagiri in one voice. It was the same voice coming out from all the temporary shelter sites. They were tired of the heat inside their ‘homes.’ They know thatching could ease things out a bit but didn’t know what affect it would have since it was laid over the asphalted sheets. Communities were demanding fans so that they could deal with the heat. But those who got fans for themselves had another story to tell; that of the hot winds the fan circulated in the steamy shelters. People had tried on their own to make improvements to their living spaces. Some of the most commonly used techniques were use of thatching from inside to reduce the heat, use of tarpaulin sheets over the roofs to prevent leakage after rains, moving the kitchens to the streets or back yards.

Shelter sites in most of the cases are prone to flooding during the rains. This was proved correct in the recent rains where people were left standing in knee deep waters with their children around their waste and other household essentials on their head in many sites. “We are living in the lowest part of the village,” says 25 year old Selvan of Keezhe Moovarkkarai village. The streets are often flat and the water has to seek out the natural slopes and it takes time before they could drain off. Except Puthupettai none of the villages had any kind of drainages mechanism in the temporary shelter sites. Some measures were taken by the government to drain the rain water but its effectiveness is yet to be seen.



**Figure 1: Liveability of Temporary Shelters**

In cases where temporary shelters do not have flooring, the problems are obvious but in cases of shelters with cement flooring, the same problem persists. In many shelter sites, flood water enters even if the water level rises by only half a foot. “Our rations (rice and lentils) were on the floor when the flood water rose in the site at night. There was nothing we could do to save them,” complains 37 year old Marimuthu, a woman from Poompuhar village. In Thalampettai, the temporary shelters do not yet electricity connections. Even though the wiring inside the shelter is complete, the connections to the mains were yet to be made at the time of the study and the community lived in perpetual darkness at night.



**Figure 2: Participation in shelter development**

Ultimately, all problems can, to a certain extent, be attributed to the exclusion of communities in all temporary shelter construction related activities. Communities, perceived to be un-skilled, at the least could have been consulted in the selection of temporary shelter sites. But it was observed that the community participation in the sighting, inception and subsequent allocation of temporary shelters were nil in almost all cases. Only in Chinnamedu were communities were consulted on the allocation of the temporary shelters, which shows up as the token consolation (Figure 2).

### ***Water Supply and Sanitation***

All sites have some kind of arrangement for ensuring water supply. During the study implementation, residents complained of an insufficient amount of supply, in almost all the cases. In at least 6 villages provisions are made through tankers. All the sites received potable water at the rate of at least 2 pots per day (20 litres) per family for drinking purposes, except in one. In Keezhe Moovarkkarai the water contained insects and was yellowish in colour and they received water once in two days. Women complained about problems with timing of supply in many villages. The timing of tanker supply and supply

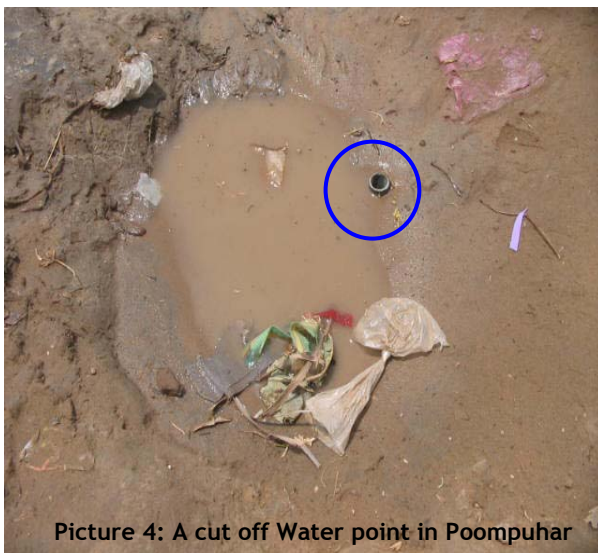
in the regional water supply water schemes are quite erratic according to the residents. Long queues of plastic and steel pots are often sitting in front of the water points.

**Table 2: Water and Sanitation details**

Name of Village	Population	Water Points	Toilets	Bathroom
Vanagiri	1500	14	28	10
Pudupettai	2000	28	26	20
Chinnamedu	350	3	10	3
Pudhukuppam	700	14	36	6
Perumalpettai	800	6	15	9
Kuttiandiyur	800	10	4	3
Chinnangudi	2330	24	28	20
Thalampettai	870	18	5	5
Keezhe moovarkkarai	1025	16	22	6
Mela Moovarkkarai	50	3	6	6
Poompuhar	1825	12	20	20
<b>Total</b>	<b>12250</b>	<b>148</b>	<b>200</b>	<b>108</b>

An informal order is present in all villages to ensure water supply to all in every villages. In the system people are allotted their respective water points from which they are to fetch water. The pressure of supply in villages

like Poompuhar and Vanagiri varied at different points due to technical reasons. Due to pressure differences, as the water flow is less, people (women) have resorted to damaging the taps to fetch water. Often the taps were cut off and closed with wooden stoppers. At times of supply after everybody fetched water, it is a common sight that these leaked and water was

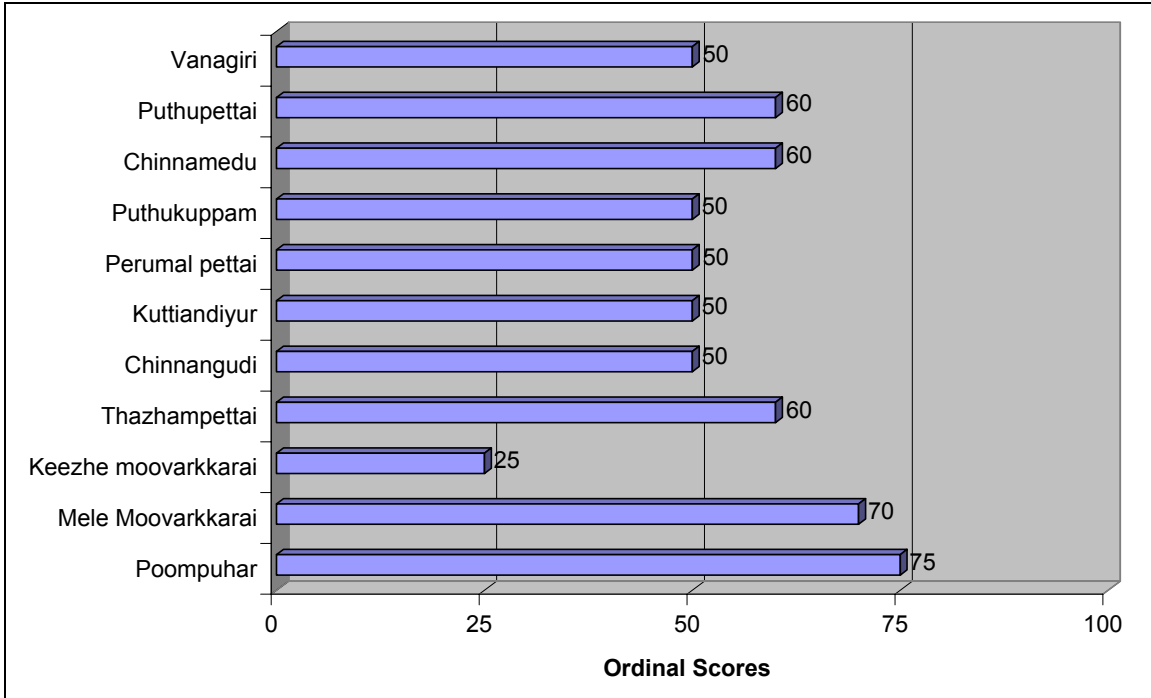


**Picture 4: A cut off Water point in Poompuhar**

wasted. In many cases women complained of not being able to get water since their allotted water points are defunct and they were not supposed to go to other water points to get water.

Figure 3 depicts the status of water supply in the villages under the assessment. All the villages scored more than the benchmark score except Keezhe Moovarkkarai where the water contained insects and the quality of water was well below potable standards. It is to be understood that intra village variations in distribution exist in almost all villages, especially in large villages, which the results do not reflect. Another interesting point to be observed is that none of the villages scored more than 75 because the maintenance of the water points was almost absent in all cases.

Communities in almost all the villages had stopped using hand pumped water after tsunami. Some said that the public health department had issued a warning about using hand pumped water for drinking. But in a few villages it was being used for other household purposes like bathing and washing. Many NGOs had installed hand pumps in many parts of the temporary shelter sites, most of which remain unused and abandoned. Beautiful hand pumps with well built drainage and a silvery shine could be seen all around the temporary shelter sites. Though standard models of soak pit based drainages are provided, they are overflowing and water stagnation could be seen in and around working hand pumps.



**Figure 3: Water Supply in the shelters**

“We are providing water for drinking purposes, not to wash mats and their clothes,” says Manimekhalai, president of the Kaveripoompattinam (Poompuhar) panchayat. “They have damaged all the water points, and water is being wasted, nobody cares, where am I to bring extra water from?” she continues.

***Wastewater and Night Soil disposal***

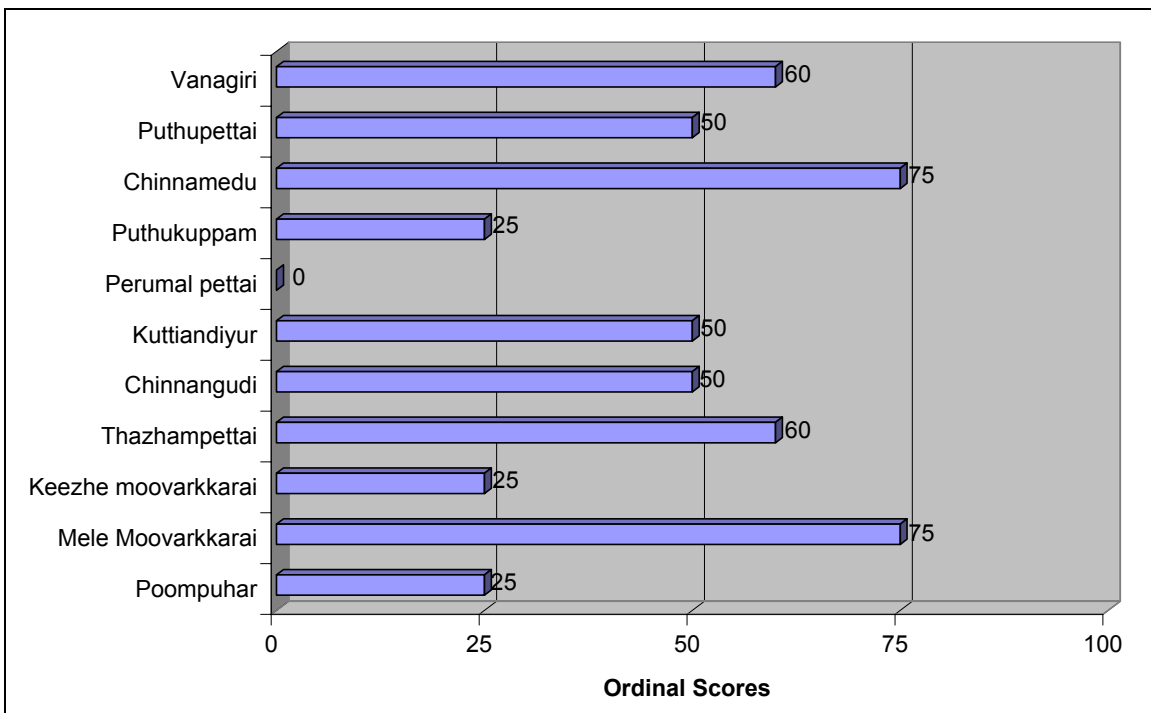


**Picture 6: A stagnant pool seen at a Water point Poompuhar temporary shelter site**

As observed above, the waste water disposal from the water points is very inefficiently managed in many of the sites. No temporary shelter site has drainage except Puthupettai, where they have a small earthen drainage running in front of the shelters,

disposing the water away from the shelter site. This drainage also acts as a saver, to a limited extent, as the rains water runoff could be drain off more easily from the site in relation to other sites.

People are not using soak pits in the region in the belief that it could damage their ground water. Sweet (not salty, good) water is available up to a depth of 25 to 30 ft beyond which the water turns salty. Since the water tables are quite high, people are worried of the infiltrating grey water could spoil it. Figure 4 draws out an approximate picture of cleanliness in the temporary shelter sites. In this case all except three villages scored benchmark or higher scores.



**Figure 4: Cleanliness in shelters**

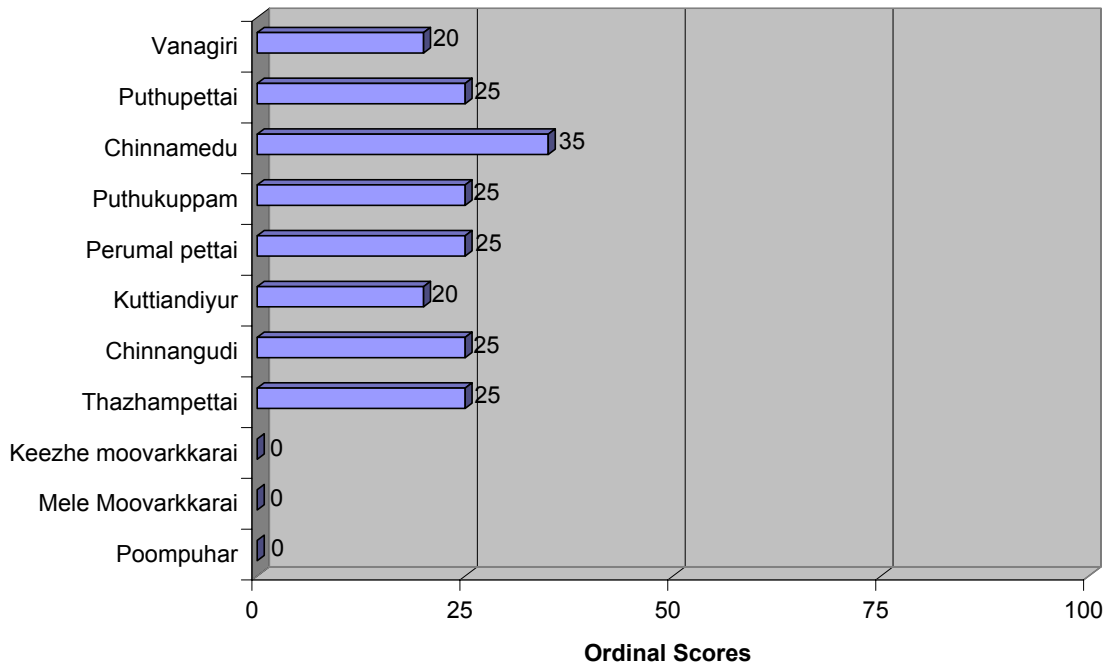
Usually the cooking wastewater and wastewater from cutting and cleaning of fish, which are of smaller quantity, are thrown on the street, which dries up immediately. But the fish and food waste which are present in the water created fly and odour problems in the shelters sites.



**Picture 7: An Unused latrine Unit in Poompuhar**

Toilet units are present in all the temporary shelter sites. All communities admitted using them for some time immediately after inception. But soon they stopped as there was nobody to maintain them. The toilets now lay in a pathetic condition, with night soil remains seen up to the

entrance. Community sited lack of water and privacy as reasons for not using it. When probed further, they agreed that the main reason had been lack of maintenance and monitoring. In most cases, small children dirtied the toilet seats and pans and came out and nobody cared to clean them and slowly each unit became obsolete. Child friendly toilets and toilet education programs were completely absent from the sanitation plans of the sites.



**Figure 5: Status of Toilets in Shelters**

The status of latrines in the temporary shelters is depicted in figure 5. It's observed that none of the villages achieved the benchmark. The location of toilets was also sited as reason for not using them. For example, in case of Puthukuppam, the toilets are located near the community meeting place, where the village elders often meet. Women felt ashamed of passing them with water in their hands and hence stopped using the toilets.

### ***Solid Waste Management***

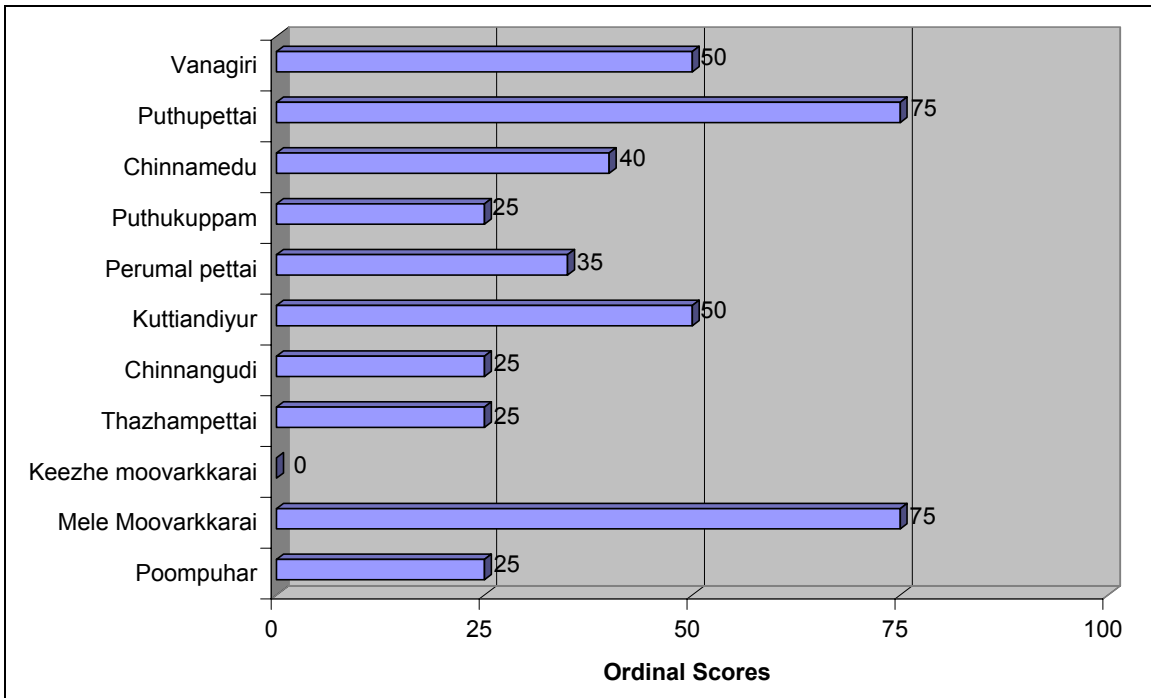
The basic solid waste in the temporary shelters constituted of waste generated from households constituting of putrifiable matter. Also the plastic



**Picture 8: Waste Collection site in Poompuhar**

and paper waste generated from the households. The communities are well aware of the problems caused by the waste. Several NGO's for that case, had installed garbage bins in the temporary shelter sites in close proximity with the temporary shelters, which was often in the form of concrete rings, two or three in number, placed one over the other.

The panchayat and talukas authorities were seen as incompetent or lacked resources to remove the accumulated waste in regular intervals and the dustbins played out as a reason for community conflicts. The following figure (figure 6) depicts the scores of different villages for solid waste management, based on infrastructure, institutions and status of solid waste management systems. It observed that only four out of the 11 villages in the study attained a benchmark score, implying a requirement for more focussed actions to improve the situation.



**Figure 6: Solid Waste Management in Shelters**



**Picture 9: An over flowing Dust bin in Poompuhar**

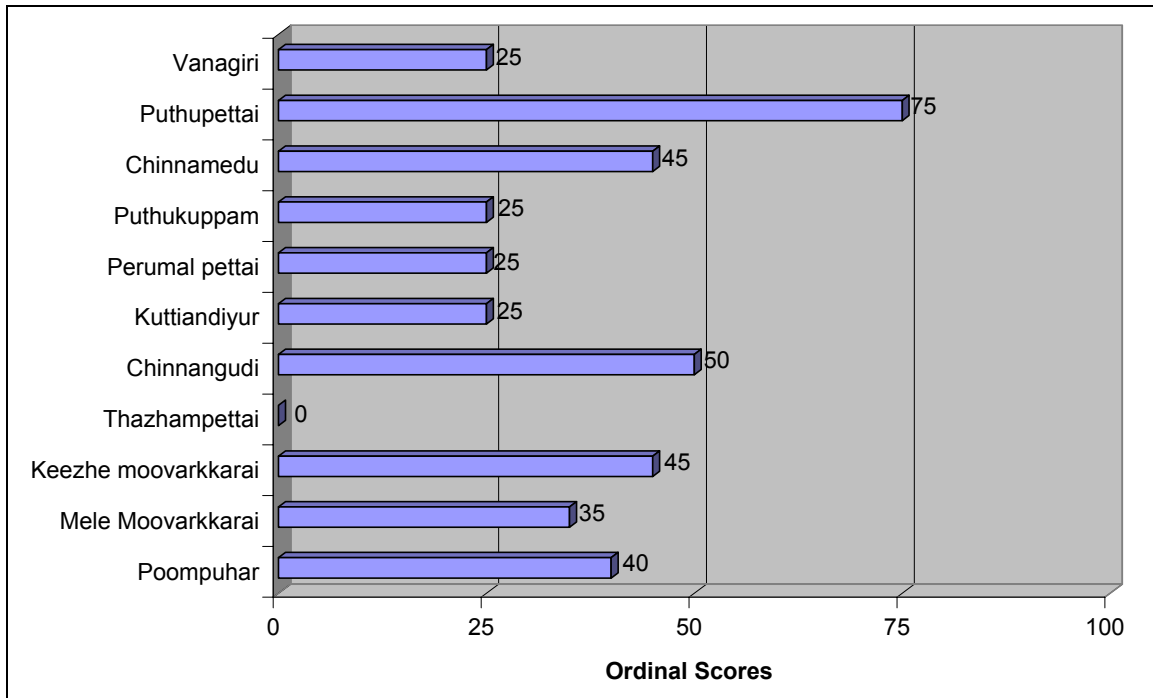
Communities who lived next to the dumpsters had issues with accumulating waste in the waste bins. They often objected others from depositing waste in these, because it generated unhygienic conditions near to their residence. It was also observed that the garbage bins

were used initially for some time and then taken out of use. Still in some locations, people throw their waste in the garbage bins or near them in case they are over flowing. In some villages they said they burn the waste once the bins are full. But as of now, almost all of the dust bins remained filled and overflowing, with over a month of waste accumulated in them

### ***Health***

The assessment also looked at the status of health service delivery in the temporary shelters. According to the residents, nurses from the Primary Health Department do come regularly to the temporary shelters. The health workers attend to the pregnant women and often guidance on preventing diseases. However, since the winding up of the emergency health program in March, there haven't been any camps or any other emergency medical support of that sort provided to the communities

People suffered from chicken pox and skin infections, which they attributed to the excessive heat in the temporary shelters. Isolated cases of Jaundice were also reported by the people. Though the people are referred to Primary Health Centres, they prefer to go to private doctors and hospitals over the government health centres. Other ailments like diarrhoea, vomiting and fever etc. were also reported to be common in the shelters especially in children, which could be directly attributed to the prevailing unsafe water and in-sanitary conditions. Figure 7 depicts the status of health service delivery based on the services provided by the health department in the temporary shelters. Thalampettai, scored nil since the village was not being visited by health workers according to the residents. People attributed the lack of attention to the lack of proper transport and accessibility to the village.



**Figure 7: Health Services Delivery in Shelters**

### **Risks and Vulnerabilities**

The study did not go into individual or gender differentiated vulnerability analysis as it was seen as an exercise beyond the scope of the study, involving lot more time and resources. The risks and vulnerabilities identification is made in a more observational manner and brought up and discussed in focus groups to understand community perceptions of these risks. All temporary shelter sites had some level of vulnerability to hazards, rain being the primary concern in view of the on coming concerns, due to their location, use of type of materials in construction and peoples behaviours and practices. Some of obvious risks which emerged out of observations and discussions discussed here.

As discussed extensively in the section on liveability, all shelters were seen as vulnerable to flooding, due to their elevation and drainage patterns. This posed serious threat to community property and wellbeing of the communities. Though levels of threat differed across the board, based on

factors like elevation of floors, type of floors, condition of the super structure, individual improvements made by the communities to these shelters etc.

The recent process of upgrading the temporary shelters with thatch (weaved coconut leaves) has created a high risk of fire in almost all the villages. The thatching of the roofs was undertaken after the recent rains to cut the leakages in the asphalted sheet roofs as well as to provide some kind of thermal comfort in the hot summer. The asphalted sheets themselves being not fire proof, contrary to the popular belief, for which they are fire resistant for definite. This means to say that the material takes extended time, under exposed flame to catch fire. But once caught fire, it's very hard to stop the fire. The asphalt or tar, which is a petrochemical by product, flames with vigour once it melts in the heat of the flame. However, the story of over 2,000 temporary shelters gutted in by fire in Chennai and about 500 in Akkarapettai of Nagapattinam district made merely low profile news and risk of fire is still an underlying concern of living in these shelters.



The thatching program, undertaken through tendering process through the Panchayat unions, in the region has covered almost all the shelters in the region. Exposed thatch is very easy to catch fire and they can spread in no time to other shelters as in most cases the shelters were located so close by. In many cases the thatches on two structures meet each other at the end of slopes on both sides. Since most sites don't have continuous supply of water, it will be hard for the residents to control the fire.

Two definite sources of risk were, open choolah's, and exposed electrical connections. Leaving the open flames unattended while cooking and not extinguishing the fire after cooking can prove to be costly mistakes in the given conditions. The over loading of the electrical supply lines with the use of appliances ranging from radio's to music systems to grinders to



**Picture 11: An Open Flame Chulha in Poompohar**

televisions and fans could lead to overloading and short circuits, which is a most common reason for all kinds of fire accidents.

The width of lanes, knowledge of escape roots, preparedness of the locals etc. could be other factors that contribute to either aggravating or reducing the risk from the fire to human lives and property. Cases like use of cement coated jute bags, which were seen as the only safe alternative technology to thatching for improvement, seen being used in shelter improvement, in the villages included in the study. About 200 houses in the Poompohar village are to be covered under the program, in an effort taken up some NGOs.

In case of villages like Keezhe Moovarkkarai and Poompohar, residents complained of continued disturbance from bugs and insects in the temporary shelters. They attributed it to the presence of so called 'karuvakad' or thorny bush forests near the shelters and aggravated by the dumping of waste and other materials near the temporary shelters itself. Presence of rodents and snakes were also confirmed by many. These bushes are being used as open defecation sites, where the location from beach was farthest, and women and children especially faced elevated risks in these conditions.

The risk of a health hazard in the temporary shelters can be observed in varying degrees in all the shelter sites. The major threats are child feces and overflowing garbage bins. The child feces is not seen as a problem among the communities and as a result could be seen all around, in spaces between shelters, in front and the end of a lane of shelters, near the latrine sites and everywhere. These breed flies that could infect them through food. Other risk is from open defecation. Traditionally fishermen communities used the beaches for open defecation, which was washed off by the sea creating no direct health hazards. But as communities were moved inland, new open defecation sites have been created near their dwelling places, which pose a definite threat not only to the displaced community but as well as other populations living in the area, once the rain sets in.

The un-sanitary conditions near the water points are another concern. The removal of taps and unhygienic ways of water collection and storage is also of concern. Though the public health department worker is doing rounds in the villages encouraging people to use chlorine tablets etc to disinfect, people are reluctant to use them because of the taste it imparts to the water. “We don’t drink water with chlorine,” says 35-year-old Murugan of Keezhe Moovarkkarai, where the water is coloured and has insects in them.

## **Recommendations**

Based on the visits and discussions with the communities in temporary shelters and the research teams' observations and discussions on the shortcomings and positives of lives in the temporary shelters, we put forward the following recommendations for immediate action to bring positive change to the lives of those living in the temporary shelters.

- The thermal comfort of the temporary shelter needs to be addressed using viable as well as safe alternatives. The use of thatching, though effective, considerably raises the risk to life and property from fire hazard
- Immediate attention has to be given to the flooding issues in the temporary shelters. Solutions has to developed in consultation with the communities living in the shelters and they be given resource support for implementing the same.
- Measures have to be taken to protect the property in the temporary shelters during flooding.
- Participatory actions for improving the water supply system have to be under taken on an immediate basis. The technical short comings need to be corrected immediately to ensure equity and quality in supply to all sections in the shelters.
- Education programs have to be designed to promote safe collection, handling and storage of drinking water. The use of effective disinfection mechanisms needs to be emphasised. Household level or community level disinfections need to be ensured and monitored.
- To improve sanitation situation in the temporary shelters, focus has to be given on behavioural changes and participatory actions rather than on infrastructure building. Focus should be on utilising the available infrastructures.
- Solid waste management needs to be improved. Safe and timely transport and disposal of waste has to be ensured. Cleanliness drives or

campaigns based on the concept of 'Sramdhan' needs to be organised on a regular basis to give community the responsibility of maintaining the cleanliness of the shelter sites.

- Safe technologies for wastewater disposal need to be demonstrated. The myth of ground water contaminations needs to be clarified scientifically and community educated on need for safe disposal of wastewater. Alternative systems like Decentralised Waste Water Systems (DeWatS) need to be transferred to action if are seen as viable choices.
- Attention has to be given to the shelter specific diseases seen in the communities including skin diseases, chicken poxes etc. Medical assistance has to be brought to the temporary shelter sites, rather than mere referral services.
- Participatory mapping of risks has to be under taken in the temporary shelter sites, in the current scenario to try and address risks and vulnerabilities of specific habitats.

## **Conclusion**

This study, conducted in the eleven temporary shelter sites in Nagapattinam District, publishes previously undocumented insights into the life of people in temporary shelters. It attempted to capture and conceptualise what communities felt were the most important issues concerning life in temporary shelters, including access to basic service.

It was an eye opener even to the field staff understand the visualise range of the problems communities faced in the temporary shelters. In all the cases the temporary shelters came nowhere near the standard for a liveable space. The community concerns for the rainy days ahead revolved around leakages and flooding of temporary shelters, which they had experienced already once. The need for availing good quality potable water in sufficient amounts was also high on priority. The problems with unsanitary conditions are being evidenced through widespread cases of water born diseases. The effort by the government as well as NGOs to improve the temporary shelters using thatch has increased the risk of fire hazard by many a times.

The need is not of quick fix solutions which are proving to be wrong time and again. Starting from the decision to put in place the temporary shelters at a pace nobody could imagine, completely eliminating any chance to voice concerns of the communities, who were to live in them, it proved to be mistake just after inception. It was proven and reinforced when some showers lashed the region. Forced to stay in these ‘cattlesheds,’ as called by many, they continue to suffer from mistakes that were seldom theirs to begin with. The NGOs who built the temporary shelters were never seen asking, “How do you feel in the ‘home’ we built for you?” The question of moral responsibility and accountability to the community still remains a mirage.

It is urgent that communities have immediate access to educational and disaster preparedness programs in the temporary shelters, before a fire proves

this quick fix solution also to be a mistake. The need is to try and address all risks, which organisations and government conveniently forget, as they are not community priorities for now. But once a major break out of disease occurs, once the people come on to the roads because their homes are flooded, the same issues will become community issues, and we will be again forced to find new solutions to older problems which could have been solved then and there itself. The need is for participatory action in the temporary shelter sites, to collectively address the problems faced by the affected community. The sooner the effort the easier it is going to be. The more we delay, we are going to push the lives of people who have suffered enough already, into deeper suffering. Let's make it a point that we, the humanitarian community will not let it happen.

## Appendix 1

### List of Villages and Temporary shelter details in Nagapattinam District

#	Name of the Location	Constructed By		Total
		Govt.	NGO	
1	Akkarapettai	0	768	768
2	Keechankuppam	0	960	960
3	North Poigainallur	44	0	44
4	Nambiar Nagar	0	630	630
5	Ariyanattu Street	0	800	800
6	Vedanayagam chetty street	0	400	400
7	Nagathoppu Ware house Area	0	50	50
8	Palapanaicherry MGR NagarNalliyanthottum	0	200	200
9	Nagathoppu, cooks road	0	220	220
10	Keelapattinachery	0	100	100
11	Manalmedu	0	62	62
12	Silladi Nagar, Keelapattincher, Railway Backyard, Melepattinacherry, Pandagasalai	214	410	624
13	Samanthanpettai	0	340	340
14	Melepattinacherry Pandagasalai	200	0	200
15	Keelapattancherry & Vadagudy road & others	0	500	500
16	Vailankanni Konar thottam	72	592	664
17	Ariyanattu street	0	23	23
18	Mahzichi Matha koil Street	0	137	137
19	Kallar meenavar St. and Uavar St.	80	92	172
20	Seruthur	12	260	272
21	Kameshwaram	72	0	72
22	Vilunthamvadi South	101	26	127
23	Vilunthamvadi North	0	30	30
24	Vellapallam	50	212	262
25	Vanavan Mahadevi	60	203	263
26	Pushpavanam	50	225	275
27	Periyakuthagai	0	52	52
28	Arcottuthurai	0	183	183
29	Thirumaaivasal	0	575	575
30	Thoduvai	0	305	305
31	Koolaiyar	0	120	120
32	Poompuhar	0	365	365
33	Pudukuppam	0	143	143
34	Vanagiri	0	430	430
35	Melemoovarkkarai	0	64	64
36	Keezhe moovarkkarai	0	155	155

37	Paliyaru	0	621	621
38	Madavamedu	0	95	95
39	Kottaimedu	0	100	100
40	Olakottaimedu	0	60	60
41	Chinnakudi	100	60	160
42	Chinnamedu	60	10	70
43	Thalam pettai	44	0	44
44	Puthupettai	100	140	240
45	Perumal Pettai	100	81	181
46	Pillai street	7	0	7
47	Chinnamanikapangu	23	0	23
48	Chinnurpettai	0	40	40
49	Chandapadi	90	131	221
50	Tharangambadi	276	432	708
51	Kariyan Street	0	20	20
52	Kesavan Palayam	20	60	80
53	Kuttiandiyur	80	135	215
54	Velakkoil	40	44	84
	<b>Total</b>	<b>1895</b>	<b>11661</b>	<b>13556</b>

Source: District Collectorate, Nagapattinam

## Appendix 2

### List of Assessment Villages

#	Name of the Village	Taluka	Number of Shelters
1	Poompuhar	Sirkazhi	365
2	Vanagiri	Sirkazhi	430
3	Puthukuppam	Sirkazhi	143
4	Keezhe Moovarkkarai	Sirkazhi	155
5	Mele Moovarkkarai	Sirkazhi	64
6	Chinnamedu	Tharangambadi	70
7	Chinnangudi	Tharangambadi	160
8	Thazhampettai	Tharangambadi	44
9	Perumal pettai	Tharangambadi	181
10	Puthupettai	Tharangambadi	240
11	Kuttiandiyur	Tharangambadi	215
<b>Total</b>			<b>2067</b>

### Appendix 3: Formats for Assessment

#### Formats for Assessment of Temporary Shelters Tamil Nadu, India - July 2005

**1. General Village Information**

Name of the district	Nagapattinam
Name of the gram panchayat	
Name of the village	
Dates of assessment	
Name of Team Leader	
Name of Field Investigator 1	
Name of Field Investigator 2	

**2. General Village Information**

Total number of households	
Number of SC households	
Number of ST households	
Number of Other households	

**3. General Temporary Shelter Details**

#	Type	Tick Appropriate (√)	Built by					Others (Specify)
			Community	National NGO	Int. NGO	Govt.	Private	
1	In-situ (On the earlier Housing Sites its self)							
2	Cluster (In a Different location- Cluster of Individual Houses)							
3	Mass Shelter (In a Different location- Large Structure with Partitions)							
			Construction Material					

#	Type	Tick (√)	Asphalted Sheets	Hard Boards	Tin Sheets	Thatch	Tiled	Any other
1	In-situ (On the earlier Housing Sites its self)							
2	Cluster (In a Different location- Cluster of Individual Houses)							
3	Mass Shelter (In a Different location- Large Structure with Partitions)							

**4. Temporary Shelter Details - (Cluster Houses/ Community Shelters)**

Site No.	Site Name	Number Of Shelters	Number of Families	Population	Distance from Original Habitat	Number of Toilet units	Number of Bathing Units	Number of Water Points
1								
2								
3								

**5. Temporary Shelter site- Sanitation Details**

#	Site Name	Distance meter	Lighting	Cleanliness	Water	Status
1	Toilet for Men		Good/ Poor	Clean/ Dirty	Yes/ No	Working/ Not working
2	Toilet for Men		Good/ Poor	Clean/ Dirty	Yes/ No	Working/ Not working
3	Bathroom For Women		Good/ Poor	Clean/ Dirty	Yes/ No	Working/ Not

						working
4	Bathroom For Men		Good/ Poor	Clean/ Dirty	Yes/ No	Working/ Not working

6. Are there garbage disposal bins/ pits present at the sites?  
Yes/ No

If Yes,

#	Site Name	Approx. Distance	Number	Condition
1	Garbage bins			Good/ Over flowing/ Stinking
2	Garbage Pits			Good/ Over flowing/ Stinking

7. Has any NGO / Community taken any initiative to improve the shelters?  
Yes/ No

If yes, what improvement steps has been undertaken in these villages and in how many shelters

#	Improvement details	Numbers	Initiated by
1	Thatching over the roof		
2	Thatch after removing roof		
3	Tarpaulin over the roof		
4	Any other specify		

### Focus group discussion

#### Community Meeting

	Men	Wome n	Tota l
Community members present			

## Guidance questionnaire

### General

1. Are earlier neighbours living together? Do you have problems since the earlier acquaintances are not living near by? If yes, what?
2. Who owns the temporary shelter sites?
3. Is there enough privacy in the temporary shelters?
4. Can all essential household activities take place inside the temporary shelters? If not, what all?
5. Is the temporary shelter thermally comfortable?
6. Is there enough bedding and covers available for each household?

### Participation

7. Were you consulted on the design and location of the shelters?
8. Have you participated in the construction of the temporary shelters?
9. Has any body been *hit by tsunami* not allotted a temporary shelter site in your village?
10. Has anybody from the agency who had constructed the shelter contacted you on suggestions to improve the temporary shelters?
11. Was ever a meeting held in temporary shelter beneficiaries to inform them or to collect feed back from them at any stage after the tsunami? If yes, who conducted it? When?

### Water supply

12. How much amount of good quality drinking water do you receive every day? How much does it vary and Why?
13. How often is the taps in the temporary shelter sites damaged/ repaired?
14. How many containers do you have to collect and store water?

### Sanitation and hygiene promotion

15. Do you have separate bathing and toilet facilities for men and women?
16. Were you consulted on the sighting and design of the toilets?
17. Do you use them? If No, Why?
18. Can you access the toilets at night?

### Solid waste management

19. How is the household waste disposed?
20. How often are the garbage pits in the shelter region emptied? Who does that?
21. Are you facing some problem due to the non-removal of the waste? If yes what?
22. Were the shelters flooded in the last rains?

### Health

23. How often does the ANM visit the temporary shelters?
24. How many health camps have been conducted in the temporary shelter region since its inception?
25. How far is the nearest PHC? DO you visit PHC?
26. Are there lady doctors present in the PHC?
27. Are the needs of pregnant women met? What are the problems they are facing?

28. Do you have information about the latest that is happening in the shelters? If yes, who informs you and how?

**Suggestions**

What are the three things that need to be improved in the temporary shelter to make it liveable?

1. - Reason
2. - Reason
3. - Reason

**Ordinal Scoring Formats**

**a) Cleanliness at the Temporary shelters sites**

#	Options	Scores	Score
1	There is stagnant water, Waste lying around all over the place, Mosquitoes and Flies etc., odorous and There is child feces lying around temporary shelters	0	
2	There is no stagnant water, But there is waste lying around mosquitoes and flies and there is odour around the temporary shelters	25	
3	<b>Bench mark:</b> There is no stagnant water, no waste lying around the temporary shelters	50	
4	<b>In Addition;</b> There is no Child feces around the temporary shelters	75	
5	<b>In addition;</b> There is no Mosquitoes and Flies	100	
	<b>Reason for core:</b>		

**b) Liveability of the temporary shelters**

#	Options	Scores	Score
1	Nobody is living in the temporary shelters	0	
2	People are living in the temporary shelters; but are unable spend the whole time in the shelters	25	
3	<b>Bench mark:</b> People live in the temporary shelters the whole day	50	
4	<b>In Addition;</b> People carry out all essential house hold activities in the temporary shelters viz., (cooking, sleeping, eating, etc)	75	
5	<b>In addition;</b> The temporary shelters are safe from all kind of hazards; fire, flooding, snakes, insects; winds etc	100	
	<b>Reason for core:</b>		

c) Participation in Temporary Shelter Construction/ Repair

#	Options	Scores	Score
1	Community was not consulted on the design or location or allocation of the temporary shelters	0	
2	Community was consulted at least on the allocation of the temporary shelters	25	
3	<b>Bench mark:</b> Community was consulted on the location and allocation of the temporary shelters	50	
4	<b>In Addition;</b> The community was consulted on the design of the temporary shelters and they were involved in the construction of the same	75	
5	<b>In addition;</b> There had been continuous interactions between the agency and the community to improve the temporary shelters over the period	100	
<b>Reason for core:</b>			

d) Water Supply

#	Options	Scores	Score
1	There is no arrangement for water supply in the temporary shelters	0	
2	Some measures have been taken to avail water to the residents of the temporary shelters	25	
3	<b>Bench mark:</b> There is at least 1 pots of good quality water available per day per person at less than 500 m distance from the residence	50	
4	<b>In Addition;</b> The water supply is regular i.e. daily <b>OR</b> weekly but people have enough containers to store water	75	
5	<b>In addition;</b> The water points are maintained regularly on breakdown	100	
<b>Reason for core:</b>			

e) Status of Latrines?

#	Options	Scores	Score
1	There are no toilets; Toilets are there but are not working	0	
2	There are toilets and are working	25	
3	<b>Bench mark:</b> There are Toilets, and are working; There is enough water available for washing and flushing and there are accessories like Bucket Mug etc.	50	
4	<b>In Addition;</b> somebody (Panchayat / community) has taken the responsibility and is maintaining the same	75	
5	<b>In addition;</b> Some additional measures like posters or drawings etc are there to promote the latrine usage etc.	100	
<b>Reason For Score:</b>			

**f) Solid Waste Management**

#	Options	Scores	Score
1	There is no arrangement for collecting and disposing solid waste: waste lying on the streets; backyards etc.	0	
2	Some arrangement were at least installed to collect and dispose off solid waste	25	
3	<b>Bench mark:</b> There is formal or informal mechanism for safe collection and disposal of different kind of solid wastes generated in the temporary shelters	50	
4	<b>In Addition;</b> Community is actively involved in the process and people are aware of the needs for safe disposal	75	
5	<b>In addition;</b> Some efforts are have been made to improve the mechanisms; like vermin composts; traditional composting	100	
<b>Reason For Score:</b>			

**g) Health services**

#	Options	Scores	Score
1	There is no health service program being delivered to the temporary shelters	0	
2	The shelters are at least serviced by a health worker from the PHC on a regular basis	25	
3	<b>Benchmark:</b> Health worker services the shelters; Curative as well as referral services are provided regularly	50	
4	<b>In Addition;</b> There is focus of disease prevention (chlorine tablets, Vector control etc)	75	
5	<b>In addition;</b> Ned based camps have been organized in the camps in the village	100	
<b>Reason For Score:</b>			