Chapter 6 Field Research on the Social and Physical Impact and Responses in the Affected Areas

6.1 Overview

6.1.1 The Indian Ocean Tsunami Disaster and Social Research

The Sumatra Earthquake and Indian Ocean Tsunamis of December 26th, 2004 have been described as creating one of the "worst disasters" in recent history. Twelve countries around the Indian Ocean were affected. Indonesia, Thailand, India and Sri Lanka had the largest numbers of deaths and displaced people.

The affected areas were quite different demographically, politically, historically, economically, socially and culturally. Social research teams were organized and sent to the devastated areas in Indonesia, India and Sri Lanka to grasp the damage and influence caused by the earthquake and tsunamis, and also to investigate the immediate responses of the local people, visitors and administration offices. This was the first joint field research project supported by the Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan. Natural scientists, engineers and social scientists worked together to analyze the capacities and vulnerabilities of the affected communities.

The research participants, with backgrounds in anthropology, archaeology and area studies, have studied politics, economy and culture both in national and local contexts. With their local language skills, they have been keeping long-term relationships with the societies. In spite of the rather short periods of field research, with their expertise, they conducted productive research at each site. These research trips are only the first steps in long term social monitoring research.

6.1.1 Field Research on Socio-cultural Aspects of Disasters

Disasters cause harm and damage to people, property, infrastructure, economies and the environment. Natural disasters can be easily understood when considered as the subject of scientific and technical research, but there is still a low level of recognition of such disasters as a matter which encompasses the human and social sciences. Although a natural disaster is something that results from a complex interaction of forces generated by the natural world, technologies created by humankind, and society and culture, the fact is that much of the research related to disasters involves little surveillance study of the corresponding social processes.

Disaster researches focusing on socio-cultural aspects encompass a wide range of subjects, including the human perception of risk, social relationships, religion, and ethics which act upon disaster management organizations, the self-implemented disaster prevention/reduction activities of a region's people, the daily lives of disaster victims living in temporary housing or reconstructed

housing, the causes of the disasters, rescue and reconstruction support activities, the processes of remembering and recording the disaster, etc.

In recent years we have been seeing research that approaches the social and cultural aspects of the disaster-related processes of preparation prior to disaster occurrence and preparedness when warnings are issued, emergency response before and after disasters have occurred, and restoration and reconstruction after a disaster. In Japan, the Great Hanshin-Awaji Earthquake Disaster of 1995 served to create a strong awareness of the complex, escalating chain of damage brought about by a disaster due to advancements in scientific technologies and the progression of urbanization. This new awareness led numerous social scientists to launch disaster-related research.

6.1.2 Regional Characteristics and Field Research

When attempting to apply leading technologies and programs related to disaster management (risk reduction, emergency response and restoration/reconstruction) unmodified to a developing country or a developing region, the problem of understanding different cultures surfaces. At present, the development of disaster management systems, relief activities at the time of disaster, and post-disaster support for restoration and reconstruction are being conducted at the international level. Through the establishment of a system for collaborative research by disaster-prevention researchers and researchers specializing in socio-cultural studies, it may well be possible to contribute to future international disaster reduction efforts.

Needless to say, it is necessary to collect and analyze data related to past disasters. This data can come from reports issued by disaster response organizations and government administrations, research results released by various research organizations and activity organizations (including NGOs), mass media reports, historical records and stories about disasters, talks with disaster victims about their experiences, etc.

Furthermore, it is also vital to study the disaster management activities conducted by the members of the affected societies. It is important to conduct field research that goes beyond the introduction of disaster reduction technologies; research must also include the reactions to, opinions of, and implementation of these technologies, the work processes involved in establishing disaster management systems, the reactions and opinions of participants in disaster prevention workshops, relief activities at the time of the disaster and the reactions of the victims to these activities, the restoration and reconstruction processes, and with regard to buildings and structures, not only earthquake-resistant building standards, but also how, within the various social relationships and economic background of the region, residential housing is actually being constructed utilizing the knowledge and skills of local construction workers. Through such research, we can start to identify some specific social or cultural attributes that could be important for disaster reduction research.

Otherwise, it will not be possible to understand the socio-cultural context within which any engineering or any other technological solution might be applied.

6.2 Impact of the Earthquake and Tsunami upon the Society of Aceh, Indonesia

6.2.1 Introduction

The December 2004 Sumatra earthquake led to much devastation in northern Sumatra and the rest of the perimeter of the Indian Ocean. One of the areas most affected by the tsunami was the province of Nanggroe Aceh, Darussalam, Indonesia, which is located to north of Sumatra Island.

Immediately after the tsunami, large volumes of both support personnel and support goods rushed into Aceh. By the time we visited Aceh for the field survey in mid February 2005, six weeks after the tsunami, it seemed that the general situation was gradually shifting from emergency to reconstruction and rehabilitation. Government officials were commanded to report to their offices by 15 February, and relocation of displaced people from field camps to temporary housing was planned to start on the same day. On the other hand, some tsunami victims had already started construction work towards resettling in their original places, without waiting for the government to disclose its master plan for reconstruction.

It is necessary to have a well-considered master plan before reconstruction starts, in order to build disaster-resistant cities and countryside areas in Aceh, and for that purpose it is highly important to investigate the strengths and weaknesses that Aceh society showed in encountering the tragic disaster.

Besides physical reconstruction, attention should also be paid to the recovery of cultural assets, because the recovery of collective memories can play an important a role in the rehabilitation and reconstruction of a community.

The main purpose of our field survey was to investigate the damage to the local society incurred as a result of the December 2004 earthquake and tsunami, particularly in Banda Aceh city and its adjoining areas, and the reactions of the people toward the tragic experience. Interviews with tsunami survivors as well as with government officers and aid workers were undertaken to determine the conditions and manner of their coping mechanisms related to the tragic experience of the tsunami, including the systems that supported the victims. During the field survey, information relating to the damage done to cultural assets was also gathered.

6.2.2 Overview of Damage in Aceh by Region

The province of Aceh is geographically divided into four areas: (1) Banda Aceh and its adjoining district, (2) the southwest coastal region, (3) the north coastal region and (4) the interior region. The details of number of victims by region are shown in the table below.

Table 6.2.1 Number of tsunami victims in Aceh by region

	Aceh Province	Banda Aceh & adjoining	Southwest Coast	North Coast	Interior
Population	4,263,603	550,532	953,377	2,250,017	509,677
Dead	100,258	62,273	29,164	8,596	225
Missing	129,549	123,492	3,858	1,922	277
Displaced	417,124	150,858	120,125	140,932	5,209

(Source: Disaster Countermeasures Provincial Office, 24 January 2005)

(1) Banda Aceh and its Adjoining District

Banda Aceh is the provincial capital and the largest city in Aceh. It is located on the northwest tip of Sumatra Island and is surrounded by the Aceh Besar district. Banda Aceh took a direct hit from the tsunami. The residential zone, spread between the coastline and the city centre, was completely destroyed. The commercial zone and government offices escaped total destruction but were damaged badly by the flood. Most of the dead and missing people in Banda Aceh came from the zones mentioned above.

There was a large portion of land in the hinterland of Banda Aceh city centre which the tsunami did not reach. Iskandar Muda airport, 17km away from the city centre, was located in this zone. Land transportation between Banda Aceh and Medan, the capital of North Sumatra province and the largest city in Sumatra Island, sustained minor damage. Emergency relief, both people and goods, arrived in great volumes into the hinterland of Banda Aceh, and this area became the base for emergency relief activities in the region.

(2) The Southwest Coastal Region

The southwest coastal region, which consists of the districts of Aceh Jaya, Aceh Barat (West Aceh), Nagan Raya, Aceh Barat Daya and the island of Simeulue, was closest to the epicenter of the earthquake which triggered the tsunami. The only road accessible by car ran along the coastline and a number of towns and villages were located along it.

The tsunami not only destroyed towns and villages in the region but also severed the road and destroyed some bridges along it. Towns and villages were totally isolated and accessible only by boat or by helicopter. This caused a great deal of difficulty in correctly ascertaining the damage in the region. It also caused a lot of trouble for aid workers working in the region.

(3) The North Coastal Region

The north coastal region consists of the districts of Pidie, Bireuen, Aceh Utara (North Aceh) and Aceh Timur (East Aceh) and the city of Lhokseumawe. Traditionally a rice-growing

centre, the region had the largest population density in Aceh. Natural gas in Lhokseumawe raised the importance of the region economically and strategically. The region is also important from the viewpoint of land transportation in Aceh. The road connecting Banda Aceh and Medan runs through the northern coastal region. If the road along the southwest coast was destroyed, then towns and villages in the southwest coastal region could only be reached by the road through the North coastal region

Except for several fishing villages in this region, the tsunami did not seem to inflict severe damage, especially in comparison to other regions in Aceh. Nevertheless, the local society was greatly affected by the tsunami because survivors from the southwest coastal flocked into the towns and villages in the north coastal region. Moreover, the perception that the region was less affected by the tsunami discouraged relief aid from reaching the region. It could cause future social uncertainties if relief aid continues to be concentrated only on other regions.

6.2.3 Initial Damage to Buildings and Physical and Social Infrastructure

First of all, it should be emphasized that the scale of the disaster in Aceh was unimaginably large. A vast expanse of territory was affected by the tsunami, though the heavy damage was concentrated in four regions: Banda Aceh, Aceh Besar, Ache Jaya and West Aceh. The total number of dead and missing persons in Aceh exceeded 200,000. Many bodies had to be buried before identities could be confirmed. A large number of victims are still “missing”, as the tsunami had possibly swept away their bodies.

In the initial stage of disaster relief, it is crucial to grasp the overall situation in determining the distribution of emergency relief. Initial damage to the buildings, physical and social infrastructures made it difficult to gather and share such information.

6.2.3.1 Building Damage

(1) Distribution of Building Damage due to Seismic Ground Motion

A field survey was conducted from February 12 to 16, 2005 in mainly Banda Aceh. The method of the survey was to record the locations of damaged buildings using a camera with GPS (Global Positioning System) and a mobile GIS (Geographic Information System).

In Banda Aceh, which is about 250 km way from the epicenter, it was reported to have recorded IX of MMI seismic intensity by USGS[1]. According to interviews with inhabitants, the tsunami that engulfed Banda Aceh reached the urban area about 30 minutes after the earthquake. As for building damage caused by seismic ground motion before the tsunami attack, complete collapse, which is a damage pattern that accompanies loss of surviving space and strongly involves human casualties, was focused on. As a result, the locations and building attributes (usage,

[1] USGS: http://earthquake.usgs.gov/, (2005.4)

structure type and number of stories) of 13 collapsed buildings were recorded. The distribution of completely collapsed buildings and each detailed collapsed pattern are shown in Figure 1. Figure 1 shows both area of influence of the tsunami summarized by OCHA[2]; and a city structure map developed by Nagoya University[3]. Completely collapsed buildings were all of RC frame structure and 11 buildings were three- to five-story structures. According to a researcher of the Syiah Kuala University, with whom this survey was jointly carried out, there was no building higher than six-stories in Banda Aceh. Even though this is a result of a survey in a limited area, the feature of distribution of complete collapse was that it was concentrated in the center of the city and the office area where the Great Mosque is located.

As for the building collapse process, an interviewed person who stayed inside a collapsed building said: "I was agitated because a slow quake continued for long time. The building collapsed immediately after I ran out of the building". Structures that suffered comparatively large damage other than completely collapsing were towered types such as churches, a tower near the Great Mosque and a water tower. Alternatively it was difficult to identify buildings of lower than two stories that suffered serious damage by seismic ground motion. Therefore it is possible to conceive two influences on the cause of collapse as listed below:

1) Influence of period of seismic motion

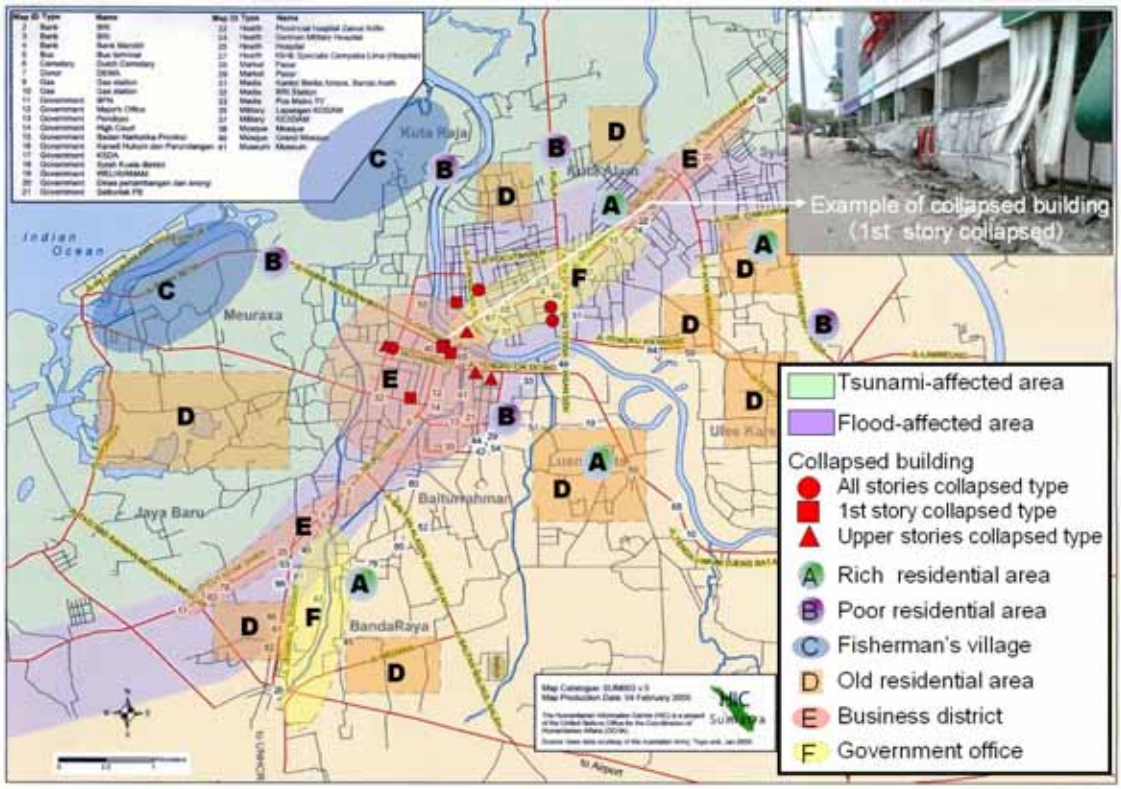
2) Influence of the long duration of the quake

However, there remain many buildings higher than three-stories that look normal in terms of appearance. It is possible that there was a large influence of poor earthquake-proof quality of the collapsed buildings and ground characteristics of the site.

From the result of the above analysis, it was revealed that buildings collapsed due to the earthquake before the arrival of the tsunami. Collapse of buildings may cause failures to escape due to rescue activities for trapped people in the building, and obstacles on the evacuation route. When such buildings are mid- to high-rise, problems of lost evacuation centers may occur. To prepare against tsunami disaster, it is especially important to ensure sufficient seismic performance of buildings and appropriate location for mid- and high-rise buildings which should serve as evacuation centers. In addition, some key issues in the future are to evaluate tsunami force correctly on such important buildings and to establish a design method that takes tsunami load into consideration.

[2] The Human Information Centre, OCHA: Map Catalogue, SUM003 V.5, 2005. 2

[3] Graduate School of Environment Studies, Nagoya University, Investigation Report of 2004 Northern Sumatra Earthquake, pp.39, 2005.3



Source: OCHA (2005), Nagoya University(2005)

Figure 6.2.1 Distribution of completely collapsed buildings due to seismic ground motion

(2) Distribution of Buildings Damaged by Tsunami

As for building damage caused by the tsunami in Banda Aceh, a distribution of building washout ratio were estimated using satellite imagery data before and after the tsunami and photos taken at the time of the field survey. The satellite imagery data was taken by a high performance observation satellite ("QuickBird" Digital Globe, Inc. US) on June 23, 2004 and December 28, 2004. The satellite imagery data from these two periods and ground photos taken at the time of the field survey were superposed on GIS. Then, the distribution of buildings before and after the tsunami by visual observation was identified. The washout ratio was obtained using following formula (1) .

$$WR_B = (NB_b - NB_a) / NB_b \qquad (1)$$

WR_B: Washout ratio of building,

NB_a: Number of buildings that remained after tsunami,

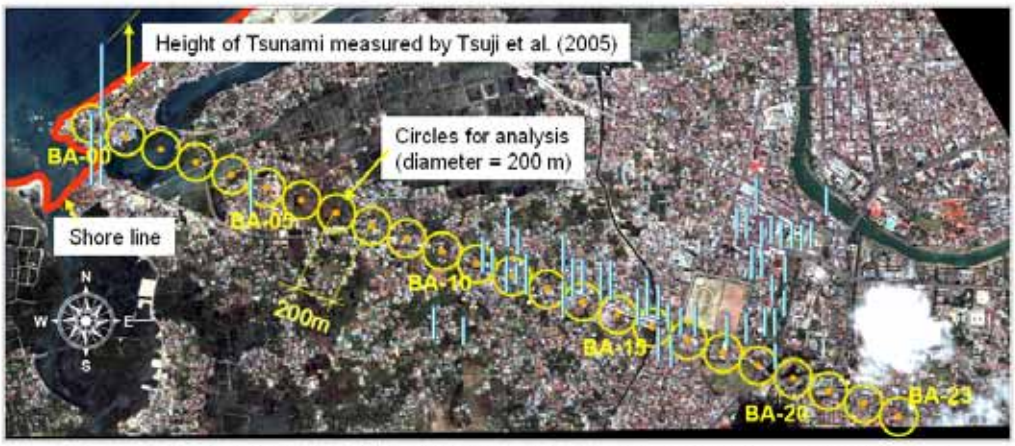
NB_b: Number of buildings before tsunami

Target area for analysis is as shown in Figure 2. An analysis line is set from a survey

point BA-00 (Latitude 5.558858, Longitude 95.283574) in a coastal fishery area called Uleelheue, to a survey point BA-23 (Latitude 5.544728, East longitude 95.322599) located at the center of the urban area. Along the analysis line, the number of buildings was counted before and after the tsunami within a circle of a diameter of 200m at survey points that were set every 200m. Then the washout ratio at each survey point was calculated. Figure 3 shows the result. Within about 2km from the shore, almost 100% of buildings were washed away, and the new urban district that has developed between the coast fishery area and the center of the urban area suffered serious damages. In the area from 2 to 3.5km from the shore, many buildings were swept away. Areas further than this from the shore suffered almost no damage physically, and were in striking contrast with the seriously damaged area. This contrast was one of the features of damage distribution.

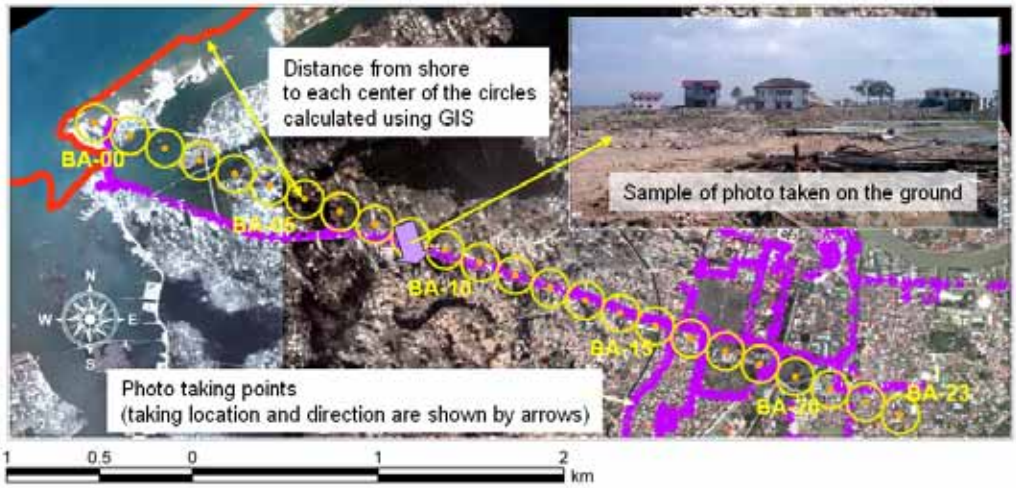
Along the analysis line of this survey, tsunami height measurement was performed by Tsuji *et al.* [4]. In the future, the relationship between the tsunami force and building washout rate will be examined.

Many buildings were swept away, while many mosques maintained their original shapes in spite of the completely devastated situation of the surrounding area. Figure 4 shows distribution of the remaining mosques and a sample photo. The reasons why mosques could survive a tsunami were listed as follows: 1) The floor was elevated from the ground and the foundation works were robust. 2) There were few walls and water ran through the mosque smoothly; especially 3) there was no wall attached to the main column, 4) the shape of columns were round, 5) those buildings were constructed carefully, taking about ten years, based on contributions.



a) Satellite Image by QuickBird (before Earthquake and Tsunami: 06/23/04)

[4] Tsuji, Y., *et al.*: Distribution of the Tsunami Heights of the 2004 Sumatra Tsunami in Banda Aceh measured by the Tsunami Survey Team, http://www.eri.u-tokyo.ac.jp/namegaya/sumatera/surveylog/eindex.htm, (2005.3.)



b) Satellite Image by QuickBird (after Earthquake and Tsunami: 12/28/04)

Figure 6.2.2 Study area for building damage due to the tsunami using imagery data

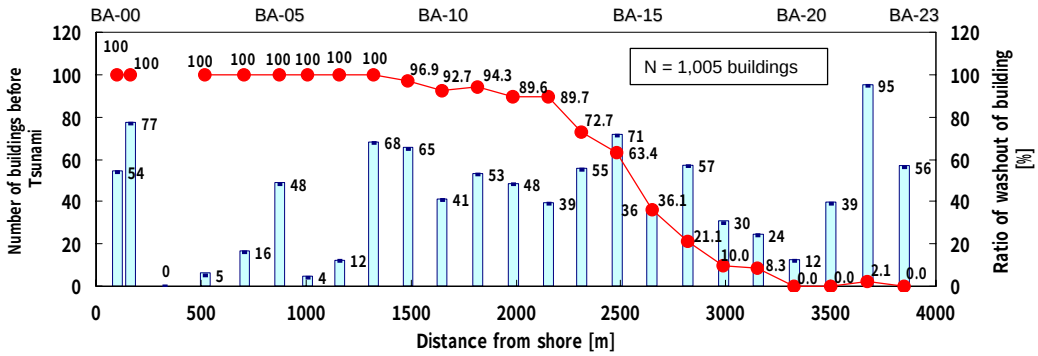


Figure 6.2.3 Relationship between the distance from shore and the washout ratio of buildings due to the tsunami along the analysis line.

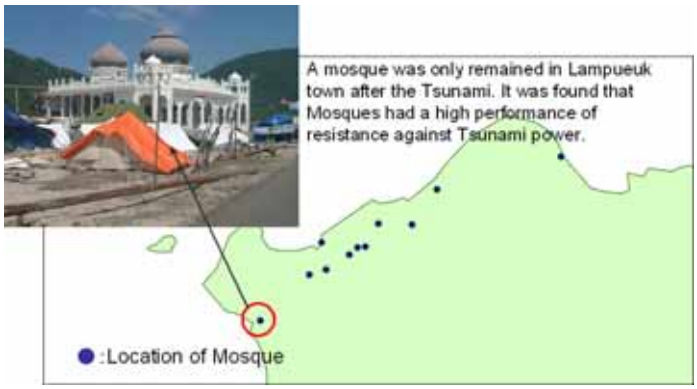


Figure 6.2.4 Distribution of the remaining mosques after the tsunami attack

6.2.3.2 Physical Infrastructure

The physical infrastructure, such as electrical power, the communication network, transport links, etc. – which were indispensable for gathering information – was severely damaged by the earthquake and the tsunami. The power network was cut and generators in private compounds stopped functioning after being affected by the flood. Relatively large towns such as Banda Aceh and Meulaboh experienced massive power blackouts. In turn, power blackouts caused the functional failure of the Automatic Telephone Centre, which resulted in 50,000 telephone lines in Banda Aceh failing. Relay stations for cellular phones were also damaged and this affected the network. As far as transportation was concerned, roads along the coast were cut into pieces by the tsunami, and this made it difficult to grasp the situation in remote areas, especially along the southwest coast.

6.2.3.3 Social Infrastructure

Government departments, supposedly the base for information gathering and distribution, could not function well during and after the tsunami. Relatively large towns, where district-level government functions were concentrated, were struck severely by the earthquake and tsunami. These included Banda Aceh (capital city of Aceh), Calang (principal town of Aceh Jaya), and Meulaboh (principal town of West Aceh). Many government officials, both at provincial and district levels, were killed by the tsunami, including the mayor of Banda Aceh and his deputy. Surviving government officials had been engaged in taking care of their own family matters. It was difficult in each government department to list the surviving officials until all government officials were commanded to report to their offices on 15 February 2005.

The press network was damaged as well. *Serambi Indonesia*, a local newspaper in Aceh, was hit by the tsunami and the company building with printing facilities was annihilated. Many journalists were killed in the disaster.

6.2.4 Activities on the Ground

(1) Group-to-Group Relations

Independent and voluntary activities were undertaken in the disaster area. Communities made up of survivors, whether in government departments or in private companies or in any form of organization, set up *poskos* (coordination posts) to represent and work for the community without direction from the central government or their supervisory authorities. People from non-affected areas served food to tsunami victims through *poskos*. There were also attempts by individuals to offer information on missing persons by placing notices on walls in towns and by advertising in newspapers.

People living outside Aceh were concerned about the situation in Aceh. Some went so far

as to visit the tsunami-affected areas in Aceh to look for their family members, relatives or friends. Information on the situation in Aceh was at first spread via word of mouth, beginning with those who visited Aceh, and soon circulated through cellular phones and the Internet.

Foreign governments as well as international organizations expressed their willingness to help the people of Aceh during the disaster, and volunteers and aid workers of various origins arrived in Aceh in droves. The Indonesian government and the state army, which had been prohibiting foreigners from entering Aceh, allowed foreign aid workers and volunteers to operate there, as they were well aware that the rescue operation could not be undertaken by the government and the state army alone. According to a source in the Indonesian government, there had been 380 registered foreign NGOs in Aceh and an additional 163 NGOs had been in action without registering themselves with the government. This showed the generosity of people around the world to the disaster victims. However, it must also be noted that the rush of aid to Aceh somehow took on the character of a competition. Many of the volunteers and aid workers had to undertake their mission in Aceh without sufficient knowledge of the local society. The local press reported problems between the foreign volunteers and the local communities, which were reported to have originated from misunderstandings on the religious implications of their actions.

(2) Circulation of Information

As there had been no official body to gather and provide information systematically, people tried to gather information by themselves, using various means. Among them, the Internet turned out to be a useful tool for the purpose. Local newspapers featured the tsunami disaster and set up special sections for tsunami-related articles on their websites. Achenese students studying abroad set up websites immediately after the tsunami to share information on their family, relatives, and friends in Aceh.[5]

The circulation of information through the Internet was well received by volunteers and aid workers. The aid workers were in need of information on Aceh – including maps, demographic statistics, and the current situation – in order to implement their activities effectively. The websites of Aceh Media Center[6] and the Humanitarian Information Center for Sumatra[7] were examples. Government agencies in Indonesia provided basic information including maps and statistics to these web sites. Similar attempts can be seen on some Japanese websites.[8]

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[5] http://groups.yahoo.com/group/gempaaceh/
[6] http://www.acehmediacenter.or.id/
[7] http://www.humanitarianinfo.org/sumatra
[8] http://www.drs.dpri.kyoto-u.ac.jp/sumatra/index-e.html; http://homepage2.nifty.com/jams/aceh01.html (in Japanese).

(3) The Role of the Mosques

Mosques turned out to have great potential for preventing and reducing tsunami damage. Mosques, as the centre of each village in Islamic society, are located throughout the region. Mosques are places where people gather daily for worshipping and for other purposes. It is a common practice for Muslims to take shelter in their mosque when confronting hardship, especially in Aceh where there have long been armed conflicts. Moreover, mosques in Aceh noticeably survived the earthquake and the tsunami with only minor damage.

Mosques became the base for Islamic organizations both from within and outside of Aceh to help tsunami victims. During the field survey we encountered two groups of Islamic organizations at a mosque in Aceh Besar. One group came from Java and the other from Singapore. Each group consisted of five to seven people and visited as many mosques as possible in the region by using a van. Islamic organizations gave relief aid as well as religious services through mosques, and such religious services were able to help people to confront post-disaster impacts.

There is also the potential for mosques to become the basis for a tsunami warning system. Information or early warning of tsunamis can be given to villagers by using the speaker which every mosque is equipped with in order to broadcast the timing of worship to local Muslims. During the field survey, we experienced aftershocks in Banda Aceh. People panicked as they were afraid of another tsunami, and became calm after announcements were made over the mosques' PA systems saying that there was no possibility of a tsunami.

6.2.5 Damage to Cultural Assets

(1) Library of Ar-Raniry State Institute of Islamic Studies

Ar-Raniry State Institute of Islamic Studies (Institute Agama Islam Negeri Ar-Raniry) took its name from a famous Muslim *Ulama* (religious leader) and is located in the northeast of Banda Aceh. There seemed to be no serious physical damage to the three-story building of the library after the earthquake and the tsunami, except for a crack along the joint part of the two adjoining buildings of the library, which was caused by the earthquake.

The ground floor of the library was affected badly by the tsunami. Of the total of 288,600 books stored in the library, some 7,000 were damaged. Those books were newly accepted to the library and were temporarily put in rooms on the ground floor for classifying procedures. According to a library staff member, about a half of the damaged books seemed likely to be reusable after the necessary processing, though the library had no appropriate equipment.

(2) Library of Syiah Kuala University

Syiah Kuala University (Universitas Syiah Kuala) is located next to the ar-Raniry State

Institute of Islamic Studies, but the university sustained little damage from the tsunami as the partition line between affected and non-affected areas ran between the university and the institute.

The university had a library in an independent three-story building. Damage to the building was mainly caused by the earthquake. Floor tiles were cracked, bookshelves fell, and a part of the ceiling dropped to the floor. However, there was no damage to the collection of books due to the earthquake.

(3) Aceh Regional Branch of the National Archive

Aceh Regional Branch of the National Archive (Perwakilan Wilayah Aceh Arsip Nasional) is located in the northeast of Banda Aceh. The ground floor of its two-story building was flooded and severely damaged by the tsunami. A motorcycle and a car were washed onto the ground floor with a large amount of mud through the broken windows of the building.

There was a workroom on the ground floor of the archive. Before the tsunami hit, copies of official documents printed by each department of the provincial government in Aceh were collected and temporarily put in the room, before either being stored permanently in the upper floors or being disposed of according to their importance. A small number of documents were on display on the ground floor. The tsunami flooded the workroom with muddy water and the documents in the room were damaged irreparably.

Important documents were kept in the locked rooms on upper floors and there was no direct damage to these documents by the tsunami. However, it might be a problem that the surviving documents on the upper floors have been left in the same condition, without air-conditioning or other equipment, since the tsunami.

Apart from the physical damage to the building and the documents, the archive suffered the deaths of 11 staff members.

(4) The State Library of Nanggroe Aceh Darussalam

The State Library of Nanggroe Aceh Darussalam (Perpustakaan Wilayah Nanggroe Aceh Darussalam) is located in the government office quarter, one of the tsunami-affected areas in Banda Aceh. The ground floor of its two-story building was piled up with mud, and literally everything on the floor, including furniture, was disposed of as rubble. Seventeen people were employed for the clearance of the rubble and mud, and it took some weeks to clear up the ground floor.

There were about 200,000 titles in the library. Ninety percent of the books put on the first floor were damaged by the flood, of which two percent were newly arrived. Books on the ground floor were mainly either reference books or books for children.

Some 12,000 titles in the Aceh collection were placed in a room on the second floor and were not damaged by the tsunami. The collection contained academic exercises by Syiah Kuala

University students, and back issues of *Serambi Indonesia*, a local newspaper in Aceh. Part-time workers as well as volunteers helped the library to remove mud and re-arrange books, though the library was upset by some volunteers who had taken the library books as souvenirs.

There was also a loss of staff, including the director who was killed by the tsunami.

(5) Aceh Documentation and Information Center

Aceh Documentation and Information Center (Pusat Dokumentasi dan Informasi Aceh) was located in front of Blan Padang Square near the Grand Mosque. The one-story building collapsed and there was almost nothing left but the foundation stones, as the rubble had been removed.

Before the tsunami came, the centre stored books and documents related to Aceh's history, mostly Indonesian translations of Dutch official documents, translated and printed by the centre in 1970s. It seemed that almost all the books and documents in the centre were totally lost, except for a few copies of books scattered around the site.

(6) Library of Ali Hasjmy Foundation for Education

Ali Hasjmy Foundation for Education (Yayasan Pendidikan Ali Hasjmy) is located in the area in Banda Aceh where the tsunami caused little damage. At the time of our field survey, many houses in the area were rented to international/foreign organizations and became their headquarters.

This library was founded privately by Ali Hasjmy, the first Governor of Aceh. The library has some 1,500 titles including books and documents written in Acehnese, Indonesian, English and Dutch. The collection of the library also includes documents compiled by Ali Hasjmy, copies of old and rare versions of the Quran collected by Ali Hasjmy, old manuscripts and photo albums.

The tsunami reached less than 30cm in height in the building and had little effect on it. However, local press reported that some books in the library were soaked with water because the books had dropped from the bookshelves to the floor during the earthquake.

(7) Syiah Kuala Grave

Syiah Kuala Grave (Mahkam Syiah Kuala) is located at the northern tip of Banda Aceh, about 50 meters from the coastline. Syiah Kuala was one of Aceh's great Muslim *Ulama* of the 16th century. He spent more than 15 years in Mecca for religious learning before he dedicated most of his life to science and society. He wrote many books on Islam, social studies, and science. He also had a lot of students from Malaysia, West Sumatra and Java.

In Syiah Kuala Grave, Syiah Kuala and his 48 students lay under their tombstones. The grave had been taken care of very well by the local community. Places for rest and worship were

prepared around the grave, and people often visited the grave for these purposes. When the tsunami came, nearly everything in the grave was washed away. In the neighbouring village, only 300 villagers out of 2,000 survived. However, the tombstone of Syiah Kuala remained almost unaffected by the tsunami; only the surrounding steel fences were bent by waves. It is now known as the tombstone that withstood the tsunami, and many people are attracted by the supernatural powers of the grave.

(8) Aceh Museum

Aceh Museum (Museum Negeri Banda Aceh) is located near the governor's residence. The main building of the museum is a house built in a traditional style by the Dutch Governor Van Swart in 1914. The museum is filled with antiques, and among the exhibits is a big bell, Cakra Donya – a gift from the Emperor of China conveyed by Admiral Cheng Ho in 1414.

The museum was not affected by the tsunami, though the local press reported that some exhibits had fallen to the floor and been damaged due to the earthquake.

(9) Land Certificates

Land certificates kept in the National Land Agency (Badan Pertahanan Nasional) were also damaged by the tsunami. According to a government announcement, about three to five percent of the land certificates kept in Banda Aceh were damaged by the tsunami. The government put forward the view that land ownership in Banda Aceh could be restored by using maps and satellite photographs.

Another source revealed that thousands of land certificates affected by the tsunami in Banda Aceh were in a critical condition and in need of emergency treatment. Efforts to preserve and restore the certificates were undertaken with the support of Japanese experts.

(10) Judicial Records

The State Court (Pengadilan Negeri) of Aceh is located next to the Aceh police headquarters in Banda Aceh. The court was affected by the tsunami and a great number of judicial records were damaged. The government announced its stance that the court should re-conduct the trials if the related records were lost.

6.2.6 Remarks

The December 2004 Sumatra earthquake and tsunami caused extremely serious harm to the society of Aceh. Apart from the magnitude of the damage, the relatively slow development of physical and social infrastructures in the region before the tsunami caused difficulties in gathering information on damages during the crisis.

Under such conditions, people eagerly gathered and circulated information. In the process of restructuring the society, the use of the Internet and mosques turned out to be effective. The remaining issue is networking between the aid workers/volunteers and such websites.

Acknowledgements

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6.3 Socio-cultural Impacts and Responses in Southeast India

6.3.1 Introduction

Field research was conducted from February 20th to March 5th, 2005. The purposes of the research were as follows:

(i) To find out the details of relief and rehabilitation works and the behavior of the affected people after the tsunami disaster.

(ii) To understand whether local people had general knowledge of tsunami beforehand or not, and how the information of tsunami spread among the people just after the incident.

(iii) Y. Sugimoto also focused on the role of religious organizations on the relief and rehabilitation works.

(iv) S. Sugimoto also aimed at finding out how the fishermen society and their network worked for the relief and rehabilitation of fishing villages.

(v) As an archaeologist, Fukao's personal research interest is the extent of the damage on tsunami affected cultural monuments located along the east coast of Tamilnadu.

6.3.2 Outline of Damages

In the morning of Dec. 26th, 2004, the tsunami traveling across the Bay of Bengal arrived at the coast line of south India, and brought massive damage to the people, infrastructure and utilities located along the coastal areas in Tamil Nadu, Kerala, Andhra Pradesh, Pondicherry and Orissa on the Indian subcontinent (see Figure 6.3.1). Among them, Tamilnadu is the most severely affected state. The total number of the death caused by this tsunami in India, including Andaman & Nicobar Islands, amounted to more than 10,000 (see Table 6.3.1).

(1) The worst affected area in Tamilnadu was Nagapattinam District (for the details of the death, see Table 6.3.2), which is known for its religious harmony with the well-known church of Velankanni and the mosque of Nagore. Nagapattinam is a chief port town for anchoring large fishing trawlers, and ships and fishermen's settlements were badly damaged there (Photo 6.3.1).

In Velankanni, there was a good crowd in the famous Christian basilica (Photo 6.3.2) on the day, being the day after Christmas Day. Most of the pilgrims and tourists assembled on the beach side were carried away by the tsunami.

(2) Cuddalore District, near Pondicherry, known for its fishing harbor and fishing settlements on the numerous sandbars, was another area extensively affected by the tsunami (see Table 6.3.3.) Devanampattinam and Pudukuppam off the Cuddalore coast were the centre of the attack.

(3) Kanyakumari, the southernmost town of Tamilnadu, is one of the famous tourist spots in India. The district of the same name was the second worst affected area in Tamilnadu (see Table

6.3.4), and fishing villages, like Colachel, Kottilpadu, Melamanakudi, etc., located west of Kanyakumari town, were badly damaged. The real picture of the attack of the tsunami is recorded on a video CD which we obtained there.

(4) In the city of Chennai, Marina beach was inundated and a large number of people, including children gathering for their morning walk and play, were affected. Fishing hamlets in Kasimedu and Srinivasapuram, north and south of Chennai respectively, incurred a heavy loss in terms of life and property. Besant Nagar, a new residential colony in the southern side of Chennai, was also badly damaged.

We should note that we cannot definitely say that the statistical data shown in the tables here really represents the exact status of the damage because there are still a number of missing persons taken by the tsunami, some of whom may have not been included in the record. Further, we do not know if the damage in some inaccessible areas, like Andaman & Nicobar Islands, etc., was reported correctly.

6.3.3 Overview of the Relief and Rehabilitation Works

Eyewitnesses accounts allow us to have a vivid impression of what took place.

After the tsunami on Dec. 26th, things like food supplies, water, electricity, and telephone connections were discontinued immediately. Though in some parts of the town, the power supply was recovered by the next day, in many areas the non-availability of water, power and telephone connections continued for three to seven days.

In Nagapattinam, many of the residents in the damaged areas left for shelters in nearby inland towns, like Thiruvarur, Thiruthuraipoondi, etc. Public facilities in the town, like schools, community halls, etc. were also used as temporary shelters. Local people generously helped the affected people. For example, in Thiruvarur, local people gave shelter to the displaced people from Nagapattinam area for nearly one week. Dargahs (mausoleums of Islam saints) in Nagore and Christian churches in Nagapattinam and Velankanni helped people irrespective of their religion and caste. Their activities in some sense contributed to lessening religious tensions in the area.

Local NGOs started emergency relief work earlier than governmental bodies by supplying basic needs to the displaced people, like food, water, and medicine, etc. The recovery of dead bodies was a very difficult task, and continued for more than a few days. Many unidentified bodies were buried collectively after taking photos for future identification. Many volunteers worked collecting dead bodies.

Under such circumstances, the relief and rehabilitation work was carried out in the affected areas.

6.3.3.1 Relief Works of Christian and Communist Related Organizations

Christian and communist related organizations, like TMSSS, DMI, CPI(M), Tamilnadu Science Forum, etc. played a very important role in the relief and rehabilitation work in the area.

We do not intend to say that only those organizations were actively engaged in relief and rehabilitation activities. However, as far as our research areas were concerned, Christian and communist related organizations occupied very important positions in the daily life of the people in the area, and of course, in relief and rehabilitation work on this occasion.

(1) Quick Response for Initial Relief Activity

Christian and communist organizations started the initial relief operations at a very early stage after the disaster.

Thanjavur Multipurpose Social Service Society (TMSSS), a Christian voluntary organization stationed in Velankanni Basilica, responded to this sudden disaster very quickly. Father Adaikkalaraj told us that they arrived in the affected area within about two hours of hearing the news of the tsunami on the television. At 4:00 p.m. on the day, a meeting to discuss relief measures was held by the bishop and parish priests of the area, and it was decided to send 400 volunteers to recover the corpses, and supply food to displaced people.

In Cuddalore, members of the Tamilnadu Science Forum, a communist oriented NGO, visited the worst affected village, Devanamppattinam, at 9:45 a.m. after receiving the first information over the phone at 8:45 a.m.

Sisters of the Presentation Convent, Colachel, Kanyakumari Dt., heard the news of the tsunami around 10:20 a.m. when they had breakfast after Sunday mass, and rushed to the Nagle Health Center maintained by them for helping the injured.

In Kanyakumari Dt., the Communist Party of India (Marxist) (CPI(M)) also moved very quickly. Receiving information over the phone within 30 minutes of the tsunami hitting, the District Secretary and two other chief members of the Nagercoil CPI(M) office visited the worst affected areas at around 11:20 a.m. At 12:30p.m., they had a meeting with the District Collector along with church representatives to discuss relief measures. At 3:00 p.m. on the same day, a central committee member was sent by the state party office in Chennai to see the situation on site.

(2) Extensive National/International Network

Utilizing their national/international networks, Christian and communist organizations could smoothly gather the human power and the materials to conduct relief measures.

Christian youth volunteers from the inland parishes near the affected areas, and from other districts, like Thanjavur, Madurai, Trichy, etc., used their human resources to recover dead bodies, and support the displaced people. From Chennai, nearly 200 sisters belonging to the Daughters of Mary Immaculate (DMI), brothers and novices took 7 school vans to go to the affected villages in

Kanyakumari area to supply food, clothes, and medicines on the day of the disaster itself.

The Communist Party also had an extensive network around the country. Kunyakumari District office in Nagercoil, where the Communist Party has a strong existence, contacted the State CPI(M) office in Chennai, and the Centrail office in Delhi on the day of the disaster itself to discuss the relief measures. Youth organization affiliated to the Communist Party, like DYFI (Democratic Youth Federation of India), and SFI (Student Federation of India), effectively worked to gather human power. Relief materials arrived from Kerala and West Bengal too, where the Communist Party is a leading political party.

Those organizations utilized their international networks to gather relief funds and materials too, as in the case of the international network of the Presentation Sisters of the Blessed Virgin Mary (PBVM).

(3) Deep Relationship with Affected Communities & Coordination with Other Organizations

One of the reasons why Christian and communist organizations could effectively provide relief and rehabilitation was because they already had a close relationship with the local people through their daily activities.

We heard at the CPI(M) Nagapattinam office that they could distribute relief materials to each affected family because they were already familiar with them, and they could give the goods to the people face to face.

Particularly in Kanyakumari Dt. where the affected fishing community was mostly Roman Catholic, Christian organizations were already closely related to their daily lives. People in this area are organized into Basic Christian Communities (BCC), which is a local autonomous group of lay Christians, and local parish priests have a deep connection with the local people through the BCC. BCC is an organization which originally came from the idea of the Theology of Liberation. Local people easily conveyed their requests regarding tsunami relief to local parish priests through the BCC. High literacy rates and their strong right consciousness also contributed to the smooth flow of information between local people and higher authorities.

Most schools maintained by churches were used for supplying relief materials and sheltering the affected people. Loud speakers set up at churches were also effectively used to deliver information related to relief, etc. Local people generally believed that the church authorities would distribute relief goods fairly and impartially.

The Bishop of the Kottar Diocese, who supervised this area, also took an important role in relief activities. He sailed around the affected coastal regions in order to cheer up the discouraged fishermen. He also took efforts to contact other relief organizations in order to coordinate their activities.

Through this close relationship with local people, they also actively worked as

coordinators connecting with other relief organizations and governmental bodies.

We were told in Cuddalore that the communist affiliated Tamilnadu Science Forum was actively involved with Tsunami Rehabilitation Coordination, which is an NGO working for the adjustment of the activities of various NGOs. It is interesting to note that in Kanyakumari Dt., the CPI(M) district office, and the Bishop of the Kottar Diocese jointly met the Collector and Health Minister to discuss the coordination of the relief and rehabilitation works, and the CPI(M) also talked with local parish priests to coordinate the actual supplying of relief materials.

6.3.3.2. Preconception of 'Poor' Fishing Communities

It is said that nearly 90% of the affected people in India are fishermen. There is a general conception that fishing communities are poor and uneducated, and most of the relief and rehabilitation works were conducted with this precept in mind. It is true that in respect of higher population density, lower literacy rates, and uneven sex ratios in their population, fishing villages in Tamilnadu as a whole show a sort of marginality compared with other communities (see Table 6.3.5). However, it does not necessarily mean that entire fishing communities in tsunami affected areas were socially weak and deprived.

(1) Fishing communities mostly consist of various castes of people. In fact, for example, the fishing community in Nagapattinam area was not represented by a single community, but it includes various kinds of people, like Kallar, Chettiyar, etc.

(2) It is not correct to say that all the fishermen in the affected area were poor. In Akkaraipettai, Nagapattinam District, 80% of the fishermen owned their own boats, and many of them had large trawlers which operated far off shore. In the high season they can sometimes earn as much as ten thousand rupees only in three days fishing off shore, if they are very lucky. Women can also earn a decent wage by selling fish in the market, and paddling.

(3) The social stratification of the people employed in fishing is also evident from the research. As was said before, some of the fishermen were very rich, on the other hand, people belonging to Dalit, the outcaste community, that engage in a hard manual work related to fishing, are in fact poor and socially neglected.

(4) In addition to that, we should also note that the affected communities were not only the people directly related to the fishing industry, but also other communities were directly/indirectly affected. Agricultural communities suffered a large loss in their rice harvest and other commercial crops like tobacco, jasmine, mango, cashew nuts, etc. A large decrease in the supply of fish and a harmful rumor that fish were poisonous because they had eaten human corpses damaged the people engaging in commercial activities. A decrease in tourists in some tourist spots like Velankanni, and Mamallapuram, etc. affected the tourist industries.

This gap of the notion and reality hindered the effective relief and rehabilitation activities.

(1) The relief materials were concentrated on the fishermen. Other affected communities could not get sufficient relief. (2) The effective distribution of the relief materials was hindered. For example, old clothes supplied for the tsunami affected people were discarded and heaped unused because they usually dislike old clothes. Relief food was brought to the market from the hands of the affected people in order to earn cash. At the time of supplying relief goods, rich fishermen did not like standing in the same queue with poor people.

6.3.4 Information about Tsunamis and the Revival of Mythology

Local people affected by the tsunami here in Tamilnadu did not have any fore knowledge about what a tsunami was. This was clear from the fact that many people went down to the shore when the water receded before the tsunami hit, and were carried away to the sea.

If the information about the arrival of the tsunami had been properly conveyed to the people in the affected areas, there would have been much less damage than actually occurred. An effective way of information transmission can be considered from an important role taken on by radio stations and PAS.

The tsunami brought not only huge damage to this region, but also contributed to creating/reviving some legends.

6.3.4.1 Role of Radio Broadcasting and PAS

(1) Example of All India Radio Karaikkal Station

All India Radio Karaikkal FM Station is located about 1.5km from the shore. Around 9:00 a.m. people living in the staff quarters adjacent to the station noticed the coming of the tsunami, and the information went directly to the station. At 9:48 the first announcement was made breaking into the regular film song program. Program officers immediately went to the field on the sea side, and made live broadcasts using cell phones. At 10:45 Kodaikkanal station relayed the program of Karaikkal station and the program was broadcast to a wider audience in the state.

Live broadcasts from damaged places were able to give a correct picture of the damage. Information about the destroyed bridge and the safety of roads helped in the smooth transportation to and from the town. The station continued broadcasting overnight until 10 p.m. of the next day, even though it usually finishes at 10 p.m. every night.

From the next day onward, there were many programs related to the tsunami, like information about missing persons, information from governmental organizations, arrangement of relief materials, knowledge to maintain hygiene, needs of the people in relief camps, etc.

A week later, there was a scientific program with a geologist about the mechanism of tsunamis which was carried out as a live phone-in question and answer session.

Karaikkal radio station contributed to conveying information from the public to

governmental & non-governmental organizations and vice versa.

(2) Importance of Public Address Systems

Near Pondicherry, lives of the residents of two villages were saved owing to public address systems (PAS).

At Nallavadu village, a resident of this village living in Singapore heard about the tsunami warning, and phoned the village. The village elders asked the villagers to vacate houses by PAS, and the entire population of 3,600 people survived the tsunami.

At Veerampattinam, a fisherman repairing the engine of his boat on the beach noticed the unusual rise of the sea level, and warned the women working there. The warning reached the panchayat leaders, and they announced over the PAS about the attack of the waves. Only one person died among 6,200 villagers.

PAS was set up by the M.S. Swaminathan Research Foundation, Chennai, as an equipment in rural knowledge centers.

6.3.4.2 Reinterpretation of Traditions

(1) Poompuhar

The ancient Tamil epic 'Silappadikaram' depicted the present small town as a beautiful, big city with a flourishing international trade with the Roman world during the reign of the Chola kingdom in the early Christian centuries. Archaeological finds, such as Roman and Greek coins, semiprecious stone beads for export, the remnants of a boat jetty, etc., all attest to the past glory of this town. It is said in literature that Poompuhar 'was taken by the sea.' After the present tsunami, people now say that it might have been another tsunami that vanished the once busy city of Poompuhar.

(2) Mamallapuram

Mamallapuram, also called Mahabalipuram, is situated about 50km from Chennai. This is a well-known tourist spot in Tamilnadu known for its famous Shore Temple, a World Heritage monument built in 7th century (Photo 6.3.3). There is a beautiful rock relief from the 7th century called 'Descent of the Ganga' (or 'Arjuna's Penance') (Photo 6.3.4). Usually it is said that it depicts the mythological scene of the Goddess Ganga's falling down to the earth accepting the prayer of King Bhagirata, who did a penance for this purpose. Now some people say it depicts the attack of tsunami.

There is another legend here in Mamallapuram that the famous Shore Temple was one of the 'seven Pagodas' built in the same period. A recently revealed new temple structure, as explained below, and some kind of structure found by underwater research off shore rekindled this legend. Some people even said that they saw some temple structures when the sea receded before

the tsunami.

(3) Velankanni

The Church of Our Lady of Health, situated in Velankanni, attracts a number of Christian and even Hindu pilgrims and tourists from all around India. The legend related to this basilica says that Mary and the Infant Jesus saved a wrecked Portuguese ship. At this time a tsunami left immense damage in this area too. People who experienced this disaster in Velankanni interpreted it in two different ways: (a) For the people who have a firm belief in the church, the fact that the water could not enter into the church building at all meant that the God saved them this time again like the Portuguese fishermen. (b) On the other hand, people who cast a doubt on their belief consider that God could not stop this tragic incident happening. A new legend may be created from somewhere between those two opposite views.

6.3.5 Cultural Properties and the Tsunami

There are some places of archaeological importance on the east coast of Tamilnadu. Fukao did some preliminary surveys regarding the effect of the tsunami on these important cultural monuments.

(1) Tarangambadi

Tarangambadi, also called Tranquebar, is situated about 25km north of Nagapattinam. There is a well-known 'Dansborg Fort' built as a trading post for the Danish government in 1620 (Photo 6.3.5). Although the waves reached the main road and heavily damaged the fishing settlement nearby, the fort was not affected at all by the waves hitting the door of the fort which is situated just 100 meters inland.

Besides the fort, the stone memorial commemorating the second centenary of the arrival of the first Lutheran missionaries to India in 1706 was not much affected, but the surrounding stones were disturbed by the tsunami.

The 14th century Masilamaninathar Temple (built by Maravarma Kulasekara Pandiyan in 1305) just north of the fort had been already substantially destroyed by seasonal cyclones, but the damage done by this tsunami was less than estimated (Photo 6.3.6).

The off-shore bastion of the fort was also not greatly affected, though it was disturbed by the seasonal cyclones.

(2) Arikamedu

Arikamedu is a famous archaeological site located 4km south of Pondicherry on the right bank of the Ariyankuppam River. It was an important port flourishing because of its trade with Rome in the first two centuries of the Christian era.

Virampattinam, a fishing village adjacent to Arikamedu, was devastated by the tsunami though only one person died (see above). From the site, some fishing vessels brought from the village by the waves were seen in the river.

The tsunami is said to have come about 1.5km inland at this point. However since the site itself does not directly face the sea, and is situated on a high mound, it seems that the site was only slightly affected.

We do not know how much the lower portion of the site was affected, so further research will be required.

(3) Mamallapuram

The Shore Temple, a World Heritage monument built by the Pallava King Narasimhavarman II (ca. 690-715), is located just in front of the sea shore here (Photo 6.3.3). The tsunami destroyed a portion of a block wall and a fence protecting the temple, and flooded the premises. Though a few boulders from the outer wall of the temple and a part of bali peetha were dislocated by the water, the main structure of the temple did not sustain much damage.

While the newly prepared lawn garden and several shops near the temple were also submerged, the tsunami revealed some new monuments on the sea shore.

One of them is the so-called 'Durga Rock' situated south of the Shore Temple. A miniature cut-in shrine carved on this rock, which was probably built at about the same time as the Shore Temple, was already known before the tsunami, and was worshipped by fishermen. The tsunami waves washed away the sand hiding the lower portion of the rock, and revealed the sculptures of lions, an elephant, a horse, and warriors, etc. (Photo 6.3.7)

The Underwater Archaeology Wing of Archaeological Survey of India has conducted excavations here since 2001. 'Durga Rock' was one of the targets to be excavated this year, according to the original plan made before the tsunami, along with other two rocks having cuttings presumed to be chiseled out in the same period as other monuments on the shore. However after the tsunami a new structure was clearly seen between 'Durga Rock' and the 'Shore Temple', and the excavation team selected it instead of 'Durga Rock.' The excavation started on Feb. 17th and revealed the square structure of sanctum sanctorum, a shikara stone, and part of an outer wall, etc. These were remains of an old temple structure, though it has not been dated yet.

6.3.6. Conclusion

(1) Locally active organizations which have a national/international scale of well-organized systematic structure play a very important role in relief and rehabilitation after sudden, large scale disasters, like this tsunami. In this survey the organizations were Christian and communist related organizations. It is not such a difficult task for them to absorb the

opinions and feelings of local people because they regularly have contact with them through their daily activities, and their systematic organization helps them to conduct national/international scale relief and rehabilitation activities.

(2) Stereotypical notions that poor fishermen were affected by the tsunami hampered effective relief and rehabilitation work.

(3) In India, radio broadcasts can play a very important role by quickly responding to this kind of sudden large scale disaster by conveying an exact picture of the damage. PAS also proved to be very useful for issuing urgent warnings of this kind of disaster.(4) It seems that most of the cultural monuments located on the eastern coast of Tamilnadu escaped damage by the tsunami. Further researches will be required to determine the whole picture of the damage and the reason why many monuments escaped damage.

It was observed that the reports of the tsunami made by Japanese and western mass media did not put equal weight on all the affected countries. Thailand, where many foreign tourists were affected in resort towns, was most frequently reported, as well as Sri Lanka where Japanese tourists were affected. The damages of Indonesia, though it was the most affected country, were not reported sufficiently until a serious situation of the Aceh region became clear. It clearly shows that India did not draw much attention from the mass media of the developed countries compared with the amount of damage it suffered. One of the reasons may be the fact that the Indian government rejected aid from developed countries. The reason why the Indian government took such a position should be studied separately. On the other hand, it can be also said that this imbalanced flow of information reflects the uneven structure of the world. This kind of large, sudden disaster will create an unexpectedly chaotic situation, something known in anthropology as 'liminality', and it will often reveal any usually hidden unequal structures in a society, a country and even the world.

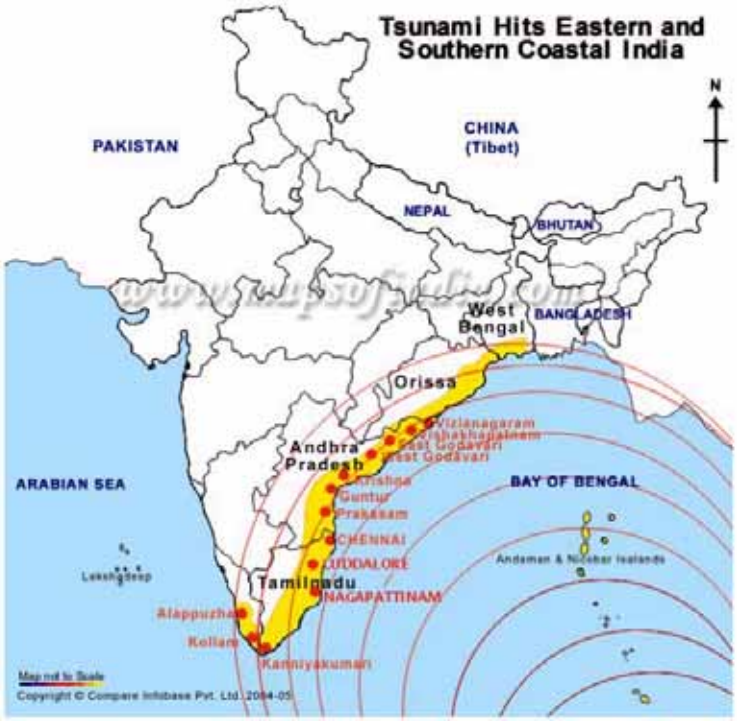

Figure 6.3.1 Tsunami Affected Areas in southeast India

Table 6.3.1 Deaths caused by the Indian Ocean Tsunami on Dec. 26th, 2004

STATEWISE (AS OF JAN. 18th , '05)		
Name of the State	Population (Lakh)	Total No. Of Deaths
TAMILNADU	624.0	7983
ANDRA PRADESH	762.0	105
KERALA	318.4	171
ANDAMAN & NICOBAR ISLANDS	3.5	1899
PONDICHERRY	9.7	591
INDIA TOTAL	-	10749

TAMILNADU, DISTRICT WISE	
Name of the District	Total No. Of Deaths
NAGAPATTINAM Dt.	6060
KANYAKUMARI Dt.	824
CUDDALORE Dt.	615
CHENNAI CITY	206
KANCHIPURAM Dt.	128
TOTAL	7833

Photo 6.3.1 Damaged Trawlers in Nagapattinam

Table 6.3.2 Deaths in Nagapattinam Dt. As 0f Jan. 29, 2005

SL. No.	Village Name & Taluk Name	Total Nos. Of Bodies				
		Adult		Children		TOTAL
		Male	Female	Male	Female	
Nagapattinam Taluk						
	Nagore Village					
1	Pattinacherry	30	97	21	17	165
2	Palpannaicherry	6	34	8	4	52
3	Samanthappettai	14	33	8	14	69
4	Silladi Theru	17	34	12	13	76
5	Pandagasalai Street	14	26	10	4	54
6	Beerodum Street	3	9	3	3	18
7	Ariyanattu Street	8	11	4	7	30
	Vadakupoigainallur Village					
8	Vadakku Poigainallur	7	12	12	8	39
9	Akkaraipettai	377	286	64	54	781
10	Keechankuppam	229	479	106	92	906
10	Theederkuppam	32	126	12	10	180
11	Kallar	50	40	18	15	123
	Nagapattinam Village					
12	Nambiyarnagar	43	23	14	12	92
13	Velipalayam Beach	39	31	7	3	80
14	Velipalayam	9	8	14	17	48
15	Ariyanattu Street	163	165	43	32	403
16	Nalliyanthoppu	62	40	30	19	151
17	Therku Poigainallur	39	41	18	11	109
18	Gooks Road	1	0	0	1	2
		1143	1495	404	336	3378
Keevelur Taluk						
1	Velankanni	216	188	96	114	614
2	Prathamaramapuram	1	0	0	0	1
3	Seruthur	243	191	124	114	672
4	Kameswaram	22	22	11	6	61
5	Keezhapidagai	2	2	1	1	6
6	Karaunkanni	1	0	0	0	1
7	Chinnathubur	6	4	0	0	10
8	Pudupalli (Vettaikaraniruppu)	19	17	9	10	55
9	Vairavankadu	27	24	12	15	78
		537	448	253	260	1498
Vedaraniyam Taluk						
1	Pudupalli	0	0	0	0	0
2	Vettaikkaraniruppu	0	0	0	0	0
3	Vanavanmadevi	0	0	0	0	0
4	Vellapallam	19	8	9	8	44

5	Naluvedapathy	3	3	0	1	7
6	Kovilpathu	11	4	3	6	24
7	Pushpavanam	9	4	5	1	19
8	Pariyakuthagai	2	2	3	0	7
9	Arkattuthurai	8	2	5	0	15
10	Kollitheevu	0	0	0	0	0
11	Maniyantheevu	0	0	0	0	0
12	Mottandithoppu	0	0	0	0	0
13	Agasthiyampalli	6	2	0	0	8
14	Kodiyakkadu	0	0	0	0	0
15	Kodiyakkarai	4	4	0	2	10
16	G.H. Vedaraniyam	5	5	1	3	14
		67	34	26	21	148
Tarangambadi Taluk						
1	Chandrapadi	4	42	9	22	77
2	Chinnoorpettai	1	3	2	5	11
3	Sathangudi	37	121	56	70	284
4	Kuttiyandiyur	6	0	2	2	10
5	Puduppettai	5	16	0	11	32
6	Perumalpettai	2	8	8	6	24
7	Kuttiyandiyur	7	6	0	2	15
8	Vellakoil	1	4	10	4	19
9	Talampettai	4	11	3	0	18
10	Chinnangudi	3	12	3	11	29
11	Chinnanmedu	1	2	0	1	4
12	Keelaperumpallam	0	0	0	1	1
13	Erukkattancheeri	0	0	0	1	1
		71	225	93	136	525
Sirkali Taluk						
1	Thirumulaivasal (Thodduvai)	21	45	17	14	97
2	Puduppattinam	5	19	18	12	54
3	Thandavankulam (Madavakudi)	4	7	8	11	30
4	Thennampattinam	8	37	16	29	90
5	Thirunagari	0	1	0	0	1
6	76/1 Perunthottam	3	4	5	3	15
7	76/2 Perunthottam	4	13	3	1	21
8	Keezhaiyur	15	61	36	53	165
9	Vanagiri	5	14	8	9	36
10	Keelamoovarkkarai	0	3	0	4	7
		65	204	111	136	516
	TOTAL	1883	2406	887	889	6065

Table 6.3.3 Deaths in Cuddalore Dt.

SL. No.	Village Name & Taluk Name	Total Nos. Of Bodies				
		Adult		Children		TOTAL
		Male	Famale	Male	Female	
Cuddalore Taluk						
1	Devanamppattinam	21	42	23	14	100
2	Thazhanguda	6	14	5	10	35
3	Sonankuppam	3	19	8	13	43
4	Singarathoppu	1	15	0	4	20
5	Chithiraipettai	0	0	0	3	3
6	Rasapettai	0	0	0	2	2
7	Suba Uppalavadi	0	1	0	2	3
8	Pachayankuppam	0	4	0	0	4
9	Sothikuppam	1	3	12	6	22
10	Sonagan Chavadi	0	1	0	0	1
10	Akkarai Gori	4	9	1	0	14
		36	108	49	54	247
Chidambaram Taluk						
1	Samiyarpettai	2	19	2	1	24
2	Mudasal Odai	1	5	2	2	10
3	Muzhukkuthurai	2	4	1	1	8
4	MGR Thittu	15	19	14	6	54
5	MGR Nagar Irular Habitation	0	2	1	1	4
6	Chinnavoikkal	1	5	2	5	13
7	Pillumedu	2	5	11	9	27
8	Killai North	0	2	1	2	5
9	Parangipettai	13	21	2	3	39
10	Chinnoor	10	17	1	2	30
11	Pudupettai	8	26	5	4	43
12	Velangirayanapettai	2	3	0	0	5
13	Chinnadikuzhi	0	2	0	0	2
14	Pudukuppam	15	43	19	19	96
15	Thandavarayan Sholaganaapettai	2	1	0	2	5
16	Kumarapettai	0	3	1	0	4
17	C.Manampadi	1	0	0	0	1
		74	177	62	57	370
	TOTAL	110	285	111	111	617

Table 6.3.4 Deaths & Unidentified Persons in Kanyakumari Dt

SL. No.	Name of the Village	Total Number Of Deaths				
		Adult		Children		TOTAL
		Male	Famale	Male	Female	
1	Keelamanakudi	10	16	4	5	35
2	Melamanakudi	49	43	20	25	137
3	Kesavanputhanthurai	0	1	0	0	1
4	Azhikkal	16	25	6	10	57
5	Rajakkamangalam	2	0	0	0	2
6	Pallam	4	1	1	0	6
7	Vaniyakudi	0	1	0	4	5
8	Kadiapattinam	6	2	15	8	31
9	Muttom	6	9	10	24	49
10	Chinnavilai	3	0	0	0	3
11	Periyavilai	1	2	1	0	4
12	Puthoor	13	4	4	3	24
13	Colachel	37	70	51	49	207
14	Kottilpadu	28	49	60	73	210
15	Kurumbanai	1	0	0	0	1
16	Ramanthurai	0	1	0	0	1
17	Enayam	0	1	1	0	2
18	Enayamputhanthurai	1	0	1	0	2
19	From Other Districts	3	1	1	4	9
20	From Other States	2	2	2	0	6
21	Unidentified	14	10	5	3	32
	TOTAL	196	238	182	208	824

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Table 6.3.5 Social Status in Fishing Villages in Tamilnadu

Name of the District (City)	Population Density in District	Population Density in Fishing Villages	Literacy Rates in District	Literacy Rates in Fishing Villages	Sex Ratio in District	Sex Ratio in Fishing Villages
Chennai City	-	-	80	68	951	944
Cuddalore	626	1412	72	59	985	946
Nagapattinam	548	849	77	57	1014	955
Kanyakumari	992	3858	88	78	1013	942

*Sex ratio shows number of women per thousand of the population.

(From: Frontline, Feb. 11, 2005)

Photo 6.3.2 Church of our Lady of Health, Velankanni

Photo 6.3.3 Shore Temple, Mamallapuram

Photo 6.3.4 'Descent of the Ganga', Mamallapuram

Photo 6.3.5 Dansborg Fort, Tarangambadi

Photo 6.3.6 Masilamaninathar Temple, Tarangambadi

Photo 6.3.7 'Durga Rock', Mamallapuram

Acknowledgements

Field research was carried out in the tsunami affected areas of Tamilnadu, India, from Feb. 20th, 2005 to Feb. 28th, 2005 [for Y. & S. Sugimoto] / Mar. 5th, 2005 [for Fukao]. In India, we are indebted to Dr. S. Subbiah, Retired Professor, Dept. of Geography, Madras University, Chennai (Former Visiting Professor, National Museum of Ethnology, Japan), and to Mr. A. Sagayaraj, Ph.D. Scholar, University of Delhi, Delhi. We highly appreciate their valuable assistance and support for our research work.

Jun'ichi Fukao, Seiko Sugimoto, Yoshio Sugimoto

Appendixes:

(1) Field Research Schedule:

Feb. 20th: Arrived at Chennai via Singapore

Feb. 21st: Visited (1) Consulate General of Japan, Chennai, & (2)Elliot Beach

Feb. 22nd: Arrived at Thanjavur via Trichy, visited (1) Dept. of Disaster Management, Shanmuga Arts, Science, Technology & Research Academy (SASTRA) Deemed University, Thanjavur, & (2) Spatial Information Technology for Disaster Management Course, Post Graduate and Research Dept. of Geography, Government College, Kumbakonam

Feb. 23rd.: Arrived at Nagapattinam, visited (1) Communist Party of India (Maxist) (CPI(M)), Nagapattinam Office, (2) Ariyanattu Teru, (3) Keechankuppam, (4) Akkaraipettai in Nagapattinam, & (5) Velankanni

Feb. 24th: *After Feb. 24th, we worked in two groups.

[Y. & S. Sugimoto] Interview with (1) Father V. Adaikkalaraj, Thanjavur Multipurpose Social Service Society (TMSSS), Church of Our Lady of Health, Velankanni, (2) Mr. M. Das, CPI(M), Velankanni, (3) Mr. Rajendra, Shipyard Owner, Seruthur, (4) Mr. Swaminathan, Fisherman, Seruthur, (5) Mr. Marimuttu, STD Booth Owner, Seruthur, (6) Mr. C. Rajachandra Mohan, Indian Overseas Bank, Nagapattinam, & (7) Sister Shanti, St. Anthony School, Nagapattinam

[Fukao] Visited (1) All India Radio, Karaikkal, (2) Tarangambadi (Tranquebar), & (3) Poompuhar on the way from Nagapattinam to Cuddalore

Feb. 25th: [Y. & S. Sugimoto] Visited (1) Nagore, & (2) Nagapattinam, interview with (1) Mr. S. Selvaraj, Auto Rickshaw Driver, Nagapattinam, & (2) Sister S.R. Viji, Daughters of Mary Immaculate (DMI), Nagapattinam

[Fukao] Interview with (1) Mr. M. Maruthavanan, Indian Overseas Bank, Cuddalore, (2) Mr. Balki, Tamilnadu Science Forum, Cuddalore, (3) Mr. M. Nizamudeen, Federation of Consumer Organizations-Tamilnadu and Pondicherry (FEDCOT), Cuddalore, & (4) Mr. K. Thirunavukkarasu, FEDCOT, Cuddalore, visited (1) Thazhanguda, (2) Arikamedu, (3) Samiyarpettai, (4) Pudukuppam, & (5) Devanamppattinam

Feb. 26th: [Y. & S. Sugimoto] Arrived at Chennai, summarized collected information

[Fukao] Arrived at Thanjavur, summarized collected information

Feb. 27th: [Y. & S. Sugimoto] Meeting with Dr. Subbiah, left Chennai for Japan via Singapore

[Fukao] Contacted relevant persons, left for Kanyakumari via Trichy

Feb. 28th: [Y. & S. Sugimoto] Arrived at Kansai Airport, Japan

[Fukao] Arrived at Kanyakumari, visited (1) Melamanakudi, (2) Chothavilai, (3) Muttom, & (4) DMI, Rajakkamangalamthurai

Mar. 1st: [Fukao] Visited (1) CPI(M), Nagercoil Office, (2) Kottilpadu, (3) Colachel, & (4) Presentation Convent, Colachel

Mar. 2nd: [Fukao] Left for Chennai via Thiruvananthapuram

Mar. 3rd: [Fukao] Visited (1) Srinivasapuram, Chennai, & (2) Mamallapuram

Mar. 4th: [Fukao] Summarized collected information, left Chennai for Japan via Singapore

Mar. 5th: [Fukao] Arrived at Narita, Japan

(2) Informants:

(i) Dr. G. Victor Rajamanickam, Dept. of Disaster Management, SASTRA Deemed University, Thanjavur

(ii) Prof. R.H. Anand, Post Graduate and Research Dept. of Geography, Government College, Kumbakonam

(iii) Mr. M. Veeramani, Reporter, CPI(M), Nagapattinam

(iv) Father V. Adaikkalaraj, TMSSS, Velankanni

(v) Mr. M. Das, Secretary, CPI(M), Velankanni

(vi) Mr. Rajendra, Shipyard Owner, Seruthur

(vii) Mr. Swaminathan, Fisherman, Seruthur

(viii) Mr. Marimuttu, STD Booth Owner, Seruthur

(ix) Mr. C. Rajachandra Mohan, Branch Manager, Indian Overseas Bank, Nagapattinam

(x) Sister Shanti, St. Anthony School, Nagapattinam

(xi) Mr. S. Selvaraj, Auto Rickshaw Driver, Nagapattinam

(xii) Sister S.R. Viji, DMI, Nagapattinam

(xiii) Mr. M. Maruthavanan, Indian Overseas Bank, Cuddalore

(xiv) Mr. Balki, Tamilnadu Science Forum, Cuddalore

(xv) Mr. M. Nizamudeen, General Secretary & Chief Executive, FEDCOT, Cuddalore

(xvi) Mr. K. Thirunavukkarasu, Director, Local-Self Governance, FEDCOT, Cuddalore

(xvii) Mr. P. Navamani, Reporter of Theekadir, Thiruthuraipoondi

(xviii) Sister Diana, DMI, Rajakkamangalamthurai

(xix) Mr. S. Nurmohammadu, District Secretary, CPI(M), Nagercoil

(xx) Sister Savior, Presentation Convent, Colachel

(xxi) Mr. Kazumasa Wada, Ph. D. Scholar, Anna University, Chennai (residing at Mamallapuram)

(xxii) Dr. Alok Tripathi, Dupety Superintending Archaeologist, Underwater Archaeology Wing, Archaeological Survey of India, New Delhi

(3) Materials obtained:

(i) Cunami: or ariviyal parvai, Tamilnatu Ariviyal Iyakkam, Maturai 2005 (Tsunami: a scientific view, written in Tamil)

(ii) Jan Kennati, S.M. & A. Celva; Cunami: or eccarikkai, Vaikaraip Patippakam, Tintukkal 2005 (Tsunami: a warning, written in Tamil)

(iii) Cunamiyal patikkappatta makkalukkaka veliyitappattulla aracanaikalin tokuppu, Cakaya Pilomin Raj, A. & Ku. Na. Pakatcin eds., A. Cakaya Pilomin Raj, Nagappattinam [2005] (Compilation of Government Orders for the people affected by tsunami, written in Tamil)

(iv) The First Tsunami in Kanyakumari, Uma Studio, Kanyakumari [2005] (Video CD)

6.4 Socio-Cultural Impacts and Responses in the Sri Lanka Southern Coastal Area

6.4.1. Tsunami Disasters in Sri Lanka

The tsunami struck a relatively thin but extremely long coastal area stretching over 1,000 kilometers, or two thirds of the country's coastline. The damage stretched from Jaffna in the north down the entire eastern and southern coast, and affected the west coast as far north of Colombo as Chilaw. It did serious damage to not only the coastal belt but also inland areas. The deadly tsunami killed not only people in the fishing industry, but also people who lived or were staying along the beach line or happened to be passing along the coastal road. The huge wave caused damage to fishing and tourism. It also damaged other industries such as coconut coiling and salt manufacturing as well as commercial businesses. It will take many years to reconstruct the entire economy and infrastructure of Sri Lanka. This means the country will have another serious problem forced upon it, even though the first problem, namely the peace process, has not been solved. Now in Sri Lanka there are two rehabilitation programs: one from man-made disasters and one from natural disasters.

The Tsunami hit on a Sunday, *POYA* (a full-moon day when Buddhist refrain from fishing) and the day after Christmas. On Sunday people enjoy shopping at a Sunday *POLA* (Market or Bazaar). In Matara Town, Hambantota Town and other big towns, people gathering at or going to a *POLA* near the beach were carried away by the huge wave. People staying at beach resorts and refreshing themselves in the beautiful Indian Sea breeze, taking trips bound for the sacred temples and churches by trains, buses or their own cars were all affected by killing Tsunami.

In northern and north-eastern Sri Lanka, fishing families had started a new life after a long period of refuge because of the civil war in the region. They came back from shattered places and started fishing again. Not only fishing families, but also people engaged in other occupations had peace after more than 20 years of war. In these areas the tsunami shattered their lives. Most of the buildings and houses which were damaged were built or renovated very recently after the peace process started.

Photo 6.4.1 A place of national collective tragic memory is now becoming a pilgrimage spot (an eight-car train, full of passengers bound for Matara was hit by the tsunami and hundreds of passengers were killed), near Induruwa in Galle District

6.4.2. Outline of impact and damage in Sri Lanka

Sri Lanka has population of more than 19,000,000. According to government and other official reports, it is recorded that more than 30,000 people were killed, 23,176 were injured and 4,698 went missing. Almost 100,000 houses were completely destroyed and about 50,000 were partially damaged. 834,849 people were displaced (5th January, 2005 report) and about 500,000 persons are still in welfare centers or in the houses of relatives and friends. The tsunami also killed a lot of fishermen who were staying on the beach or on board for landing. According to the Ministry of Fisheries and Aquatic Resources and the FAO, more than 7500 people connected with the fishing industry (fishermen including their family members) were killed. 80% of coastal fishing vessels were completely or very seriously damaged. 10 harbors with modern facilities out of 12 were affected. There were almost 110,000 marine fishermen in total, so nearly 1% of all fishermen lost their lives.

Table 6.4.1 shows the numbers of affected families, people injured and missing. and the number of deaths of people and fishermen. Obviously people in the East (Hmbamtota, Ampara, Batticaloa and Trincomalee) were terribly affected.

Table 6.4.1 Affected families and people, death total of fishermen*as of 23rd January 2005

District	affected families	displaced families	injured	missing	death total	deaths of fishermen
Jaffna	13,652	12,631	1,647	540	2,640	926
Kilinochchi	2,295	318	670	1	560	11
Mulaittivu	n.a.	6,007	2,590	552	3,000	2,524
Mannar	0	0	0	0	0	0
Puttalam	232	18	1	3	4	0
Gampaha	6,827	52,58	3	5	4	3
Colombo	9,647	5,290	64	12	79	1
Kalutara	6,064	6,105	400	148	256	17
Galle	23,174	1,562	313	554	4,214	64
Matara	20,675	3,268	6,652	613	1,342	331
Hambantota	16,944	3,334	361	963	4,500	365
Ampara	38,624	n.a.	120	876	10,436	1,025
Batticaloa	63,717	12,494	2,375	1033	2,840	1,229
Trincomalee	30,102	27,746	n.a.	337	1,078	725
Total	232,677	84,031	15,196	5,637	30,957	7,222

＊ The numbers are constantly being updated and vary from different Ministries and Organizations. Two sources have been used with reference to the Ministry of Fishery and Aquatic Resources and the National Disaster Management Center. Data was collected by each District so it cannot be assumed all data is completely accurate.
n.a.: No Answers

The tsunami affected areas were famous beach resorts, so tourists and surfers from all over the world enjoyed staying, swimming, surfing or just relaxing in everything from a luxury hotel to a neat and cheap guesthouse. The wave destroyed accommodation without any distinction. Table 6.4.2 shows the hotels affected by the tsunami. Reports on damage to guesthouses are not available, however, it is certain that many such guesthouses and rooms were heavily damaged because I saw, for example, in Unawatuna in Galle District, rubble and debris along the shore line where comfortable guesthouses and sea-food restaurants used to stand before the tsunami hit.

After the tsunami, accommodation, restaurants and souvenir shops which had survived severe destructive started business again, but they were confronted with another disaster: namely a fall in the numbers of tourists. When I walked along the main street in Hikkaduwa where hotels, guesthouses, restaurants and souvenir shops once lined the street without a break before the tsunami, I saw only a few tourists and employees. This area used be one of most energetic spots, full of international tourists

Table 6.4.2 Status Report of Tourist Hotels as of 13th January 2005**

District	Hotels Total	Rooms Total	Closed Hotels	Closed Rooms
Jaffna	no data			
Kilinochchi	no data			
Mulaittivu	no data			
Mannar	no data			
Puttalam	no data			
Gampaha	32	1,735	0	0
Colombo	37	3,295	0	0
Kalutara	26	1,745	9	714
Galle	49	2,446	22	1,536
Matara	7	253	6	193
Hambantota	16	573	5	233
Ampara	2	32	2	32
Batticaloa	no data			
Trincomalee	7	260	5	227
	176	10,339	49	2,935

Source: Tsunami Information Management Center

** North and North-East originally had no data as all the hotels were closed because of the civil war. Hotels located in Up-countries where no tsunami wave affected the buildings are omitted.

Photo 6.4.2 Wholesale market and a small Stupa under a huge tree in 1985

Photo 6.4.3 The same place after the tsunami, March 2005

6.4.3. Fishing in modern Sri Lanka

People living along the coastal belt have long been engaged in fishing. When we discuss the tsunami damage to fisheries and fishermen, several distinctive features can be pointed out.

(1) Since the 1970s', due to the fishery progressive plan, the supply of mechanized boats with in-board engines started and a fishery harbour construction program at several places around Sri Lankan Shore Line also started. Besides, since the 1980s', bigger sized multi-day boats (they are called ice tank boats) have been provided. This meant mechanized boats were harbour based and no longer beach based near the fishermen's homes.

(2) Most fishermen have no fishing gear, so they go to sea in someone else's boat or become crew members of modern boats.

(3) Development policy towards fishing communities was planned and carried into effect through fishery co-operative societies organized in each administrative village.

(4) Most boat owners borrow money from fish merchants or wholesalers and pay back the debt with their catch. They are paid after deducting debt.

(5) Fishermen migrated during the monsoon period, for example, those who lived along the south or south-western coast moved to the eastern coast during the south-western monsoon season. Since new fishery harbours have been developed, they go to these harbors all year round. As the numbers of multi-day boats (ice tank boats) have increased, fishery harbours have become better equipped with boat yards, ice-factories and repair shops, so fishing harbours located on the eastern coast, for example, Trincomalee and Kirinada, are easy to anchor in even during the north-east monsoon season. Now boat owners prefer anchoring their boats in these harbors, so many fishermen and fish merchants came to these harbors to search for a good business chance.

(6) Migratory harbors and traditional migration beaches are usually located in Tamil speaking areas. During the civil war south and south-western fishermen were affected by ethnic problems. Some areas along the east coast are still a high security zone, so fishing activities are very much restricted.

The fact that, in Sri Lanka, fishing activities are related to migration, makes their situation more complicated. December is the north-western monsoon season, so a lot of fishermen from the south stay at newly constructed fishery harbours like Galle, Beruwara, Hikkaduwa where better equipment is provided. Also some of them anchor their boats at Torincomalee or Kirinda, where even during the north-east monsoon season, mechanized boats can be operated.

Usually boats are registered at the District Fishery Office where they live, but they are mostly operated on a different sea and anchored at the port where registration has not been done. And it is very normal for boat owners to prefer their relatives to operate their boats in the name of the owners. So the damaged boats were operating from or moored in different ports or landing centers from where they were registered.

For migratory fishermen who were killed by the tsunami while away from home, the issuing of a death certificate took time and was a complicated procedure.

Photo 6.4.4 Galle Road near Hikkaduwa

Photo 6.4.5 A beach near Hikkaduwa

Photo 6.4.6 A wreck of a motor boat on a residential street in Ambalangoda

Photo 6.4.7 Wrecks of houses and temporary housing on a residential street in Ambalangoda

People living along the coastal belt were damaged by the tsunami in the following three ways:

(1) Damage to production facilities: they lost their boats, fishing equipment and landing places. Also fishermen lost the chance to be crew members.

(2) Damage to living conditions: many houses were damaged completely or partly, so residents are now in refugee camps or relative's houses. After the tsunami, new building structures will not be permitted within 100 meters of the sea (200meters on the eastern coast). People can not make decision to start building new houses, and it will be difficult to find new land to build houses for refugees. So they will be compelled to stay in uncomfortable refugee camps or relative's houses for an indefinite period.

(3) Damage by rumor: after the tsunami some went to sea to earn money, but the amount of fish consumption decreased because consumers hesitated to eat fish. There was a groundless rumor that fish eat dead bodies. There was dead stock for 2 to 3 weeks after the tsunami even in the Central Fish Market in Colombo, although many fish were brought from non-tsunami affected fish landing centers such as Negombo. This rumor discouraged fishermen from starting their daily activities.

6.4.4. Aid for the Tsunami affected Fishing Families in the case of a Southern Coastal Village

The degree of damage and influence is somehow different depending on the location. Now I will consider one village which is located on the southern coast. This village named T(anonymous) was affected rather less than other marine villages, that means the number of destroyed houses, displaced families and dead persons was rather small compared with other villages. If you visited T village after visiting other totally damaged villages, you would find a very different scene, even though some houses near the beach were washed away. But this fact doesn't mean the villagers escaped the tsunami disaster unscathed. There is some invisible damage in such a village.

The plan for the aid for the affected families which live in maritime areas operated under the premise that all the fishing families living along the coastal zone suffered damage. So all the fishing families received 5000Rs per month (4500Rs cash, 500Rs deposit), with everyone in a fishing family being provided with 375Rs per week(200Rs cash ,175Rs for food – rice or flour, Dahl and sugar).

Administratively the restoration and support plan was carried out via the GS (Grama Sewaka which means village-level administrative office) to the AGA (Assistant Government Agent, recently renamed DS = Divisional Secretariat).

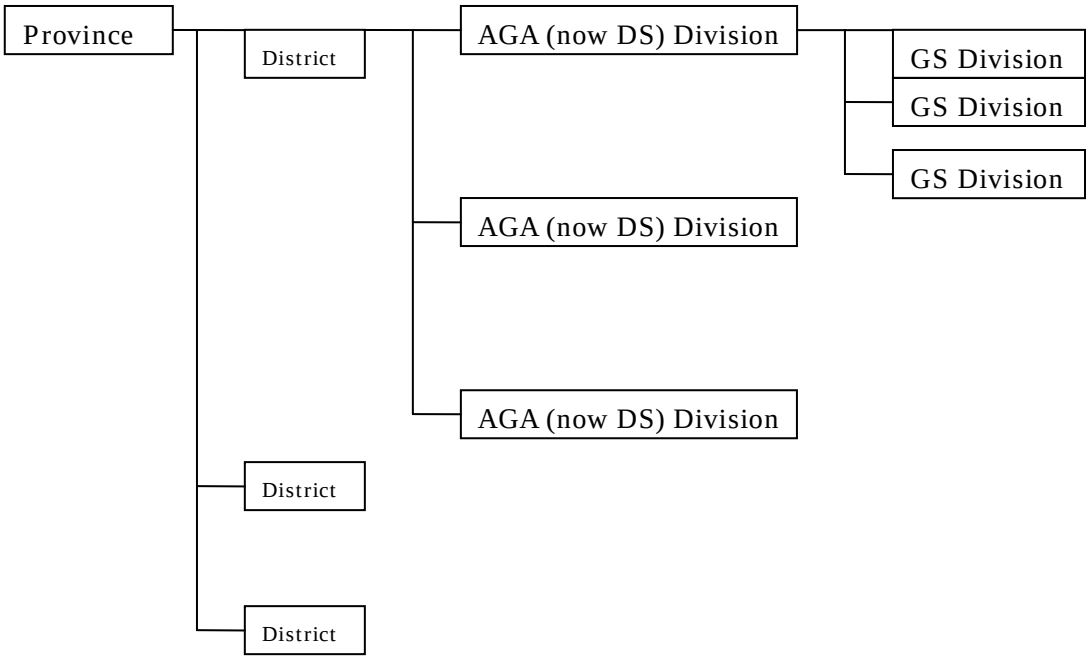

Figure 6.4.1 Local Administrative Formation in Sri Lanka

The Aid was done according to following process:

(1) AGA Office specified the numbers of families which needed aid in each village (GS Division). In the case of 'T' GS Division (anonymous Village name) where I did village level research, the AGA office designated the number at 250 households

(2) Excluded households from financial support -

1) non-fishing family households
2) households whose members were engaged in public or civil service
3) household whose members were working in a foreign country

(3) Inspectors appointed by the AGA office carried out a survey of the whole village and found that more than 250 households had suffered disasters, they found that type 2 and type 3 households were also affected by the tsunami disaster.

(4) AGA made a decision according to the report of inspectors that the number of households which needed aid was increased to 340 to include family types 2 and 3 so they could be provided with financial support.

(5) Inspectors identified and reported the affected families to the GS officer, however, he ignored the report, and what is worse the GS officer made a false statement to the AGA office.

This happens very often in Sri Lanka: administrative plans are not operated reliably at local level offices or by officers.

(6) Most T villagers distrusted the GS officer, so he was removed from the position and a new officer was appointed.

(7) Because of the confusion, the next donation was delayed. They could not get any support services for more than two months.

This confusion is mainly in the coastal communities related to the kind of chaos after the tsunami but partly on their perception about their daily economic activities. Firstly, it is difficult to identify fishing families. When the fishery co-operative society plan was set about in the 1970s, the urgent purpose was to organize society as soon as possible along the coastal zones and to increase the number of members to as many as possible. However, after 30 years, the society was re-organized several times, fictitious members or those who lost membership increased since there was hardly any advantage and benefit of being a member.

Not all the inspectors as well as GS officers were familiar with the villagers, and not all the fishermen were members of the co-op society. So the AGA decided to give financial support to fishing families whether they were a member of a co-op society or not. After the tsunami, villagers say, the numbers of fishing families increased rapidly. They proved they were fishing families by showing old broken fishing gear or big pans for making processed fish.

If they had fishing boats or if they were fish-merchants, they were definitely a fishing

family, but in Sri Lanka, most people whose income is from the sea do not have a boat or fishing gear. They go to sea in someone' else's boat or by being a crew member of someone's boat because they cannot get another job, so if they are lucky enough to find another job, they soon stop going to sea.

Aid was provided through fishery sectors, so they had to be fishermen or a member of a fishing family because of the urgent demand to survive after the natural disaster. Not like the rich or middle-class families, people in a bad economic condition had to find the chance to get financial support as non-fishing families without any occupations were ignored.

Other confusion was related to the migratory custom of their fishing activities. Many owners lost or had damaged boats outside where they were registered, as well as many who were killed outside the village where they lived. Also the complicated procedure to get financial aid discouraged them. They had to go far away from their home to another district office in order to get certification to prove the damage to their boat, so they had spend time and money. Compensation is provided only if the boat was completely destroyed, so a half-destroyed boat was excluded from compensation, at the same time the parts like an out-board engine or fishing net were also excluded from the aid objectives. Some boat owners repaired their boats or found parts washed up, spending a lot of money because they needed to start fishing again. These cases meant they could not get any compensation since it was difficult to prove the degree of damage.

A widow is the same, if her husband was killed in a harbor away from home, it takes time to get a death certificate. She has to go far away by bus to get certification in order to receive the allowance provided for a family whose householder dies.

Many families living in temporary houses cannot see their future living conditions since the government restricted house rebuilding to be at least 100metres (200 meters on the eastern coast) from the sea (except commercial and fishing harbors and religious structures). New land to build houses for the families whose houses were damaged or lost by the tsunami has not been found yet. They may still have to continue living in the deadly hot and stuffy tents provided by NGOs.

6.4.5. Conclusion

Sri Lankan people had never considered a terrible natural disaster like a tsunami might hit their land until it actually happened. But they had already suffered many man-made disasters. The worst natural disaster in Sri Lankan history cannot be compared with these man-made disasters, but they are trying to overcome this unexpected cruel fact as they have already done. The difference from other disasters which they have already experienced is that this disaster is very much related to the Sri Lankan political and social situations. The most severely affected areas are in the middle of a brutal civil war between the government and anti-government militant groups between two political sects of an anti-government group involved with other religious ethnic groups. In the

south, people were not involved in this type of disaster entirely; however, their migration to the east coast was much restricted during war time and the Indian Peace Pact stayed in place around 1987. Southern people suffered a tragic JVP insurgency in the latter half of the 1980's.

After the Peace Process started a lot of NGOs came to Sri Lanka, besides that after the tsunami more and more NGOs started aid services. Some groups and organizations started activities without any knowledge of the culture, history or political situation. So there is a dangerous possibility that some NGO activities will reinforce the tension among these political groups or break the balance kept among them.

People had already started reconstruction and rehabilitation of life by themselves since there were intimate human networks spread over almost the whole country. So the most important thing was to prevent any intervention by political groups whose desire was to expand and increase their political power. In Sri Lanka, normally religious organizations are rather neutral though some Buddhist monks are political with Sinhala ethno-centric Nationalism, so temples, churches , mosques can be the regional centers of integration. At least they have already played roles in mental healing. In many places, village level or local level NGOs have been acting and a kind of patron-client relationship is functioning to support the families which need any help. Huge sums of money granted to Sri Lanka must be used for developing the mechanism of these local activities. There are big NGOs like SARVODAYA, SEWALANKA and TECH etc., so some organizations have to connect with these NGOs, as well as local-level detailed research.

Sri Lankan rehabilitation plan is carried out by bureaucratically, though many people included public services are disappointed with present Government which has given up Peace Talk with anti-Government Tamil political group(LTTE). So the political situation will be worse if foreign peace missions stop acting as mediators. Again the Sinhala ethno-centered political party has begun its political campaign against the Peace Process taking advantage of this confusion. So not only Tsunami rehabilitation but also the future of the Peace Process must be paid careful attention. Otherwise regional or ethnic gaps will become more and more spread, and what is worse, the cease-fire might be broken again.

Photo 6.4.8 Temporary repairs in a temple located along the beach in Kottegoda

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