

(as of 15 February 2005)



## **Thailand - Post Rapid Assessment Report: Dec 26<sup>th</sup> 2004 Tsunami**



### **ADPC:**

**Rapid Health Needs Assessment: 28<sup>th</sup> – 29<sup>th</sup> Dec 2004  
(Public Health for Emergencies: PHE)**

**UNDAC Team Support for Rapid Assessment: 5<sup>th</sup> – 12<sup>th</sup> Jan 2005  
(Information and Knowledge Management Unit: IKMU)**

**Rapid Community Needs Assessment: 19<sup>th</sup> – 22<sup>nd</sup> Jan 2005  
(Thailand Urban Disaster Mitigation Project: TUDMP)**

This report compiles the information derived from three assessment missions to the provinces of Krabi, Pang-nga and Phuket. It provides assessment on health needs and implications, national response, institutional capacity arrangement and impact of the tsunami disaster at the community level focusing on socio economic factors giving observations and provides recommendations based on these.

## **Assessment Missions**

### **Needs Assessment**

**Team 1** Rapid Health Needs Assessment, PHE, John Abo  
Pang-nga Province (28<sup>th</sup> – 29<sup>th</sup> Dec 2004)

This assessment was carried out to assess the health needs in the province of Pang-nga. It considers immediate needs as well as health implications for the future.

**Team 2** Information and Knowledge Management Unit, Orawan Yafa  
Provinces: Phuket, Phang-Nga, and Krabi, Thailand (5<sup>th</sup> –12<sup>th</sup> Jan 2005)

The team undertook damage and needs assessment missions to the affected areas. All the affected Provinces (except Satun, because of internal security problems) were visited and in each place, contact was made with District authorities and the affected population. Included in this report is information about the scale of the impact and the National Response.

**Team 3** Community Needs Assessment (TUDMP), Atiwan Kunaphinun,  
Pornphimon Palayotha, Kaylene Williams  
Provinces: Krabi, Phang-Nga and Phuket, (19<sup>th</sup>–22<sup>nd</sup> Jan 2005)

The team visited three provinces concentrating on disaster response assessment and the impact of the tsunami at community level. The team attended a meeting with a Monitoring & Evaluation team from Department of Disaster Prevention and Mitigation and the government official in Krabi province as well as various community leaders.

### **Information Gathering**

Information on damages and relief efforts was gathered from assessment missions, the National Operation Room established by the government, as well as UN agencies and NGOs. Numerous briefings were given to NGOs and representatives from embassies, media etc. Assessment results were shared with new arriving teams. Information was also gathered through interviewing people and attending meetings as well as direct observations in the area.

## **Order of Report**

- 1. Description of the Event and Impact**
- 2. Situation Update**
- 3. Report on National Response and Observations (5<sup>th</sup> –12<sup>th</sup> Jan 2005)**
- 4. PHE Rapid Health Needs Assessment (28 –29 Dec 2004)**
  - Observations
  - Recommendations
- 5. Assessment on Institutional Capacity for Disaster Management**
  - Observations
- 6. Rapid community Needs Assessment**
  - Observations
    - Krabi
    - Pang-nga (includes rapid health assessment)
    - Phuket
- 7. Recommendations**
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## 1. Description of the Event

On 26 December 2004, between 0058 hours GMT and 0738 hours GMT, a series of earthquakes occurred in the area of the western coast of Northern Sumatra, Andaman Islands and Nicobar Islands. The two strongest earthquakes had the magnitude of 9.00 on the Richter Scale (0058 hours GMT, 3.30 North, 95.78 East, off western coast of Northern Sumatra) and 7.3 on the Richter Scale (0421 GMT, 6.90 North, 92.95 East, Nicobar Islands). The earthquakes caused tsunamis varying in heights up to 40 feet, which impacted several countries in the Indian Ocean region.



### Impact

Parts of the 400km western coastline of Thailand has been devastated. The coastal provinces of Ranong, Phang-Nga, Phuket, Krabi, Trang and Satun have been severely affected. The combined population of these provinces is 1.9 million, with many living in coastal areas. Phang-Nga and Krabi are the worst hit areas. These areas are also prime tourist areas with numerous tourist resorts located in close vicinity of the ocean.

The Ministry of Interior reported that 5,395 have died and 8,457 have been injured and 3,001 are reported missing.<sup>1</sup>

A total of 3,307 fishing boats destroyed, 15,534 fish-breeding baskets, and 35,727 items of fishing equipment damaged or swept away by the deadly tidal waves.<sup>2</sup>

The Thai Ministry of Agriculture estimates cost for the fishing industry is about 1,730 million baht, 9,317 Rai of agricultural land affected and 10,821 livestock killed. 490 fishing villages with an estimated population of 100,000 have been affected.



Tourism in six coastal provinces was seriously affected, with losses of income estimated at 60 billion baht, of which 32 billion represented lost income in Phuket alone.<sup>3</sup> The resorts and hotels in Phang Nga, Krabi and Phuket had an estimated damage of 12,121 million baht.

<sup>1</sup> Department of Disaster Prevention and Mitigation, updated as of 15 February 2005

<sup>2</sup> Bangkok Post, 15 February 2005

<sup>3</sup> Bangkok Post, 3 February 2005

## 2. Situation Update

The casualty as recorded by Department of Disaster Prevention and Mitigation stands at 5,395 dead, 8,457 injured and 3,062 missing/unidentified. The breakdown of foreigners and Thai confirmed dead and reported missing is as follows:



**Table 1: Breakdown of Casualties** (updated as of 15 February 2005)

<i>Confirmed dead</i>				<i>Reported missing</i>		
Foreigner	Thai	Unidentified	<b>Total dead</b>	Foreigner	Thai	<b>Total reported missing</b>
1,953	1,897	1,545	<b>5,395</b>	962	2,039	<b>3,001</b>

The Department of Disaster Prevention and Mitigation (DDPM) submitted the following damage estimates to the Thai Cabinet:

**Total 2: Damage estimates for all affected provinces (million baht)**

Types of businesses	Cost (million baht)
Public property	1,118
Businesses (shops, hotels)	21,751
Agriculture	8,495
Livestock	17
Fisheries	1,730
<b>Total</b>	<b>33,111</b>

**Table 3: Numbers of damaged houses in affected provinces**

<i>Province</i>	<i>Numbers of houses damaged</i>		
	<i>Partly Damaged (Item)</i>	<i>Completely Damaged (Item)</i>	<i>Total (Item)</i>
Phang Nga	2,052	2,563	4,615
Krabi	262	396	658
Phuket	550	402	952
Ranong	130	235	365
Trang	132	33	165
Satun	55	2	57
<b>Total</b>	<b>3,181</b>	<b>3,631</b>	<b>6,812</b>



**Table 4: Losses on Businesses Estimates**

	Province	Losses on businesses				
		Fisheries (Baht)	Livestock (Baht)	Agriculture (Baht)	Small Business (Baht)	Total (Baht)
1	Phang Nga	913,549,111	13,660,585	2,485,294	6,211,253,000	7,140,947,990
2	Krabi	191,696,510	323,800	342,600	2,683,651,780	2,876,014,690
3	Phuket	320,504,169	202,100	300,000	12,852,700,000	13,173,706,269
4	Ranong	170,737,983	3,049,138	658,021	830,000	175,275,142
5	Trang	14,980,000	43,392	3,545,000	2,800,000	21,368,392
6	Satun	119,393,730	243,600	1,165,000	0	120,802,330
Total		1,730,861,458	17,522,615	8,495,915	21,751,234,780	23,508,114,813

The Ministry of Environment and Natural Resources provided the following environmental damage estimates for each affected province (figures are in Thai rai except where stated otherwise: 625 rai = 1sq km):

**Table 5: Environmental Damage Estimates**

Province	Coral Reef	Beaches	Mangroves	Forests	Freshwater Wetlands	Waste Disposal Sites	Salt Affected Soil
<b>Phang-Nga</b>	More than 625 rai	5,000 rai	1,900 rai	3,500 rai severely damaged	Under survey	Under Survey	3,500 rai
<b>Krabi</b>	3,125 rai	17km severely damaged & 12km slightly damaged	No damage	No damage	122 rai severely damaged & 50 rai slightly damaged	No damage	23.5 rai slightly damaged
<b>Phuket</b>	Slight damage	Slight damage	Slight damage	Slight damage	Slight damage	Slight damage	Slight damage
<b>Ranong</b>	21 rai	Slight damage	555 rai severely damaged	No damage	No damage	2 rai	400 rai slightly damaged
<b>Trang</b>	Slight damage	No damage	20 rai damaged	No damage	6 rai damaged	2 rai damaged	412 rai damaged
<b>Satun</b>	550 rai	1,200 rai	10 rai	No damage	90 rai severely damaged	No damage	No damage

Number of districts, tambons (sub-district level of government) and villages reported to be seriously affected by the disaster is: 24 districts, 82 sub-districts (tambons), and 329 villages

The total number of people estimated to be directly affected by the disaster (suffered loss of a family member or home) is 91,638. This figure comprises an estimated 20,537 households. Estimates for Phang-Nga (the worst affected province) are listed below:

**Table 6: Tsunami-affected figures for Phang-Nga Province**

Districts affected	6
Tambons affected	15
Villages affected	69
Families affected	4,394
Total number affected	19,509

### **3. National Response**

The RTG efforts were largely focused on identification of bodies, evacuation of foreign nationals and treating the injured. The Ministry of Health (MoH) mobilized more than 200 doctors who were sent to Phuket immediately after the disaster.

The Director-General of the Department of Disaster Prevention and Mitigation issued a statement regarding the establishment of police teams to facilitate the collection of DNA data to help identify missing Thai people. Discussions have focused on technical issues to ensure a standardized methodology in the forensic work. Key issues were how to sample biological material from the human remains, handling laboratory samples, marking systems, etc. China has pledged to carry out the DNA testing free of costs.

The RTG has mounted an effective response operation; relief supplies appear to be reaching affected communities all along the Thai coast. The Thai Red Cross has played a vital role in coordinating the delivery of public donations to affected communities.

For the health sector, Ministry of Public Health has set up a Command Center for the South in Phuket. The Center is led by a Deputy Permanent Secretary and is responsible for coordinating health services and epidemic surveillance and response for the six affected provinces. No outbreaks of epidemics have been reported. The Ministry of Social Affairs and Human Security is offering psychosocial support to children in some areas of temporary shelter.

The removal of debris and restoration of electricity and amenities is on-going.

There has been an extensive response of national Thai volunteers in helping in search and rescue, working in the mortuary, and distributing food, bottled water and clothes. The Thai general public has also contributed generously with donating clothing, blood, bottled water and providing meals at crisis centers.



### Compensation update

- RTG Cabinet also approved the payment of 653 million baht to Thai Airways, the Ministry of Health and the Ministry of Defence to reimburse these organisations for expenses incurred during immediate relief operations.
- Compensation payments will also be made to RTG officials (or their families) affected by the disaster. Families of officials killed in this disaster will receive a payment of 30,000 baht in addition to standard compensation payments. Those officials who survived the disaster will receive a hardship allowance of between 1,000 – 3,000 baht for 3 months. The families of those officials still missing will also receive a 30,000 baht compensation payment when the body is either found/identified or within the next 3 months. Officials who were stationed elsewhere but assisted with relief efforts will get 10 days additional annual leave and receive a certificate from RTG in recognition of their work.
- To date 1,200 migrant labourers (200 from Ranong and 1,000 from Phang-Nga) have received 20,000 baht each in compensation. Seven registration centers have been established to reissue registration cards for migrant labourers who lost their registration cards. These centers are at Aow Nang and Koh Lanta in Krabi Province; Bang Muang and Nam Kem in Phang-Nga Province; Kamala Beach and Pa Tong in Phuket Province; and Suksamran in Ranong Province.



Table 7: Compensation Scheme by Department of Disaster Prevention and Mitigation (DDPM)

<b>Damages</b>	<b>Compensation (Baht)</b>	<b>Note</b>
Meals	50/day/person	
Kitchen Utensils	3,500/family	
Slightly damaged house	20,000/item	
Completely damaged house	30,000/item	
Completely damaged livestock/household	8,000/item	
Slightly damaged livestock/rice storage house	3,000/family	
Electrical Lighting	200/family	
Rental accommodation	100/day/person	Not more than 7 days
Rental house	1,500/month	Not more that 2 months
Modified temporary shelter	2,000/family	
Building temporary shelter	4,000/family	
Bathroom	1,500/room	Available for 10 people
Toilet	1,500/room	Available for 10 people
Clothes	1,000/person	2 sets per person
Uniform	1,000/person	2 sets per person
Instruments for occupation/Capital	10,000/family	
Funeral	15,000	
Funeral/ Head of the family	25,000	
Medicine	200/family	
Hospital fee	2,000/3 days/month	until discharged from the hospital
Consolation	2,000/person	
Injured/crippled	10,000/person	Not Being able to work at the first stage
	Plus 2,000/person/month	Not more than 2 years
Scholarship	1,000/month	Primary level
Scholarship	1,500/month	High School Level

Source: <http://www.phangnga.go.th/news/new15> - 1/19/2005

## Body recovery and forensics

The RTG Cabinet confirmed on 11 January 2004 that the government would continue to support efforts to recover the estimated 1,000 bodies still missing. It was also reported that forensic teams are now able to conduct DNA tests on 90 – 150 bodies per day, substantially speeding up the identification process. At this rate, the RTG expects the forensic process to be completed within a month. Relatives of those missing can now have DNA samples taken in their home provinces – they do not need to travel to the mortuary sites. Thai families can also receive compensation payments in their home provinces once a death certificate has been issued.

The Cabinet also announced that the National Operation Centre in Phuket will remain open until 22 February. The Thai Prime Minister also urged foreign embassies to ensure that emergency arrangements are in place to assist with the coordination of any future disasters.

The disaster victim identification was primarily operated by the Central Institute of Forensic Science and Thai forensics specialists. Subsequently, the forensic operation was taken over by the Thai Tsunami Victim Identification (TTVI) centre in Phuket led by the Royal Thai Police. In order to bring the operation in line with international standards, an entirely new round of identification would be operated. It turned out that coordination shortfalls on database availability between these two teams impeded body recovery progress.



## Temporary Shelter and Reconstruction

Temporary shelter was provided for tsunami-affected victims with support from government, local authorities, and NGOs. Temporary shelters have been built on vacant pieces of land, schoolyards or areas of other public buildings. The shelters are built with corrugated iron sheets or plywood. The authorities believe people have to live in these shelters for about 6 months.

The military is the key agency to help in building permanent new houses project for villagers. The military has begun reconstruction of homes, and already over 100 have been completed. A two-storey house is worth about 140,000 Baht with two bedrooms, a kitchen and a toilet. The project was funded by several state and private agencies and cash donations.

Ban Bang Ben is Kapoe district, Ranong province is the first village in the six tsunami-hit provinces where permanent new houses were constructed and ready for hand over. The first batch of 42 houses were handed over to villagers on 2 February 2005. More 500 houses will be completed within February and another 2,000 units by May 2005. However, the reconstruction in improper land title deeds area was put on hold.<sup>4</sup>

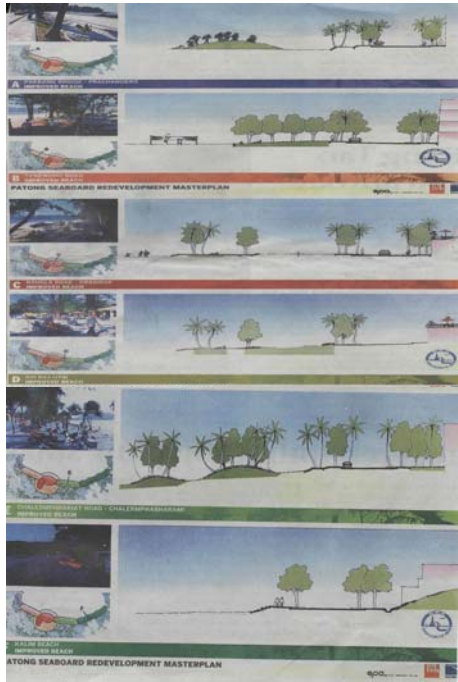
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<sup>4</sup> Bangkok Post, 3 February 2005

The Thai government endeavors to rebuild houses at the shortest possible time for people to return to their lives. However, it seems that mitigation measures are not included in rebuilding housing stock for risk reduction.

### Land Use Planning

The Thai Government will enforce zoning of land use at the coastal areas as a measure for disaster reduction.



For major tourism spots in Phuket the Thai Government by the Tourism Authority of Thailand (TAT) hired an architecture firm to design the post-Tsunami free city plan covering Patong, Kamala and Rawai beaches.

The design aims to mitigate natural disasters including sand dunes, attractive landscaping, plant intervals along the beach, road and traffic layout, and watch towers.<sup>5</sup>

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<sup>5</sup> The Nation, 13 January 2005

## Recovery Program

The National Tsunami Disaster Relief Committee was set up to mechanism that will respond to the needs of the survivors. The three-billion-baht Tsunami recovery fund was set up.

The budget for RTG's tsunami response of 5,252 million baht (as of 12/01/05) was approved. This includes funding for the following special assistance programs, which will be overseen by nine RTG sub-committees as listed below. Deputy Prime Minister Suwat Liptaphanlop will coordinate the work of these sub-committees.

1. Tourism – The Tourism Authority of Thailand will be responsible for facilitating the recovery of Thailand's tourism industry. The Authority reported that they directly assisted 799 foreign tourists to return home immediately after the disaster and also assisted another 1,425 injured foreign tourists. The Authority paid 10,000 baht on average to assist each of these tourists. The RTG will reimburse the Authority 238 million baht for assistance provided to foreign tourists.
2. Compensation to families – The Ministry of Finance reported that 154 million baht had now been paid in compensation to families that have lost a family member or their home.
3. Fisheries – The Fisheries Department had approved 1,343 million baht to assist 27,828 fishermen. This includes the repair small and big fishing boats and fishing equipment.
4. Employment – The Ministry of Labor estimates 56,960 people have lost their means of income as a result of the tsunami. An employment program will be established to provide temporary employment for 30,000 people to work in local government agencies for one month at a cost of 211 million baht; occupational training will be arranged for 10,000 people at a cost of 45 million baht; and 28,340 people will receive a daily stipend payment to support them for an indefinite period.
5. Small Business – The Department of Local Administration will be responsible for compensating the estimated 4,085 small businesses directly affected. Small business owners will each receive an initial compensation payment of 20,000 baht. A budget of 80 million baht has been approved for this compensation scheme.
6. Companies – The Ministry of Finance had assisted larger businesses, mainly in the form of low-interest loans. A budget of 54,500 million baht has been approved for this assistance scheme.
7. Housing – The Ministry of Social Development and Human Security had approved the budget of 506 million baht to build 2,886 permanent houses, costing approximately 141,000 baht for each house.
8. Orphans – The Ministry of Education had an approved budget of 92.5 million baht had been paid to assist the 1,375 children registered as orphaned by the disaster. The Department will provide education, educational equipment and clothing for each child.
9. Government Offices – The Ministry of Finance has an approved budget of 1,725 million baht for the reconstruction and refurbishment of government facilities

damaged by the disaster. Each Department will receive the following the following amounts for facility rehabilitation and refurbishment:

- 824 million baht for the Ministry of Defence
- 47 million baht for Ministry of Health
- 280 million baht for Ministry of Natural Resources
- 35 million baht for Ministry of Agriculture
- 445 million baht for Ministry of Education
- 90.7 million baht for National Police Office
- 1.9 million baht for Ministry of Science

Cabinet announced 11 January 2004 that the RTG had received 606 million baht in public donations to assist with the Government's relief efforts. Of this, 322 million baht will be directed to assist with the recovery efforts listed above. The remainder will be held in trust for affected communities.

The Thai Government also set up a two-billion-baht Tsunami SME Fund to provide assistance for business operators. In addition, the Finance Ministry will establish a 10-billion-baht trust fund to help finance reconstruction and repair efforts for Tsunami victims.

#### **4. Rapid Health Needs Assessment Phang-nga Province (PHE, 28 – 29 Dec 2004)**

##### **Health Impact**

Main causes of Mortality and Morbidity

- The main cause of death is drowning due to the strong current caused by the tidal waves and multiple trauma because of the enormous impact of the waves.
- Being in the convergent period of the emergency phase, malnutrition is not yet evident

##### **Health Response Capacity**

Activities

- No significant long-term health measures are available (immunization, control of mosquitoes/flies/rodents) only the immediate health needs are being dealt with at present such as treatment of trauma and other life saving activities.

Operational Support

- Pang-nga Province has both provincial and district hospitals. The district hospital were initially overwhelmed but coped through proper triaging and



- patient referrals to the provincial hospitals. Patients were managed accordingly.
- Patients are slowly being transferred to Phuket Province where both private and government health care facilities can accommodate a bigger volume of patients and at the same time nearer to the international airport for transfer to Bangkok for tertiary care.
  - In the evacuation centers located at the provincial government house, lack of proper storage areas can be seen, evident in which all relief supplies are inside tents.
  - Relief supplies (food and non food items) from both the government and private sector are in abundance and continues to pour from the international community.

**a. Other Vital Needs: Present availability (28/29 Dec 2004)**

- Clean drinking water is available at the evacuation sites but is limited in quantity in the disaster area.
- There are limited numbers of toilets available for excreta disposal.
- Because of the outpouring support from the private sector, supply food items both packed and cooked food are available for everyone including the operational and support people helping in the disaster area.
- The people who lost their homes are located at the provincial evacuation sites housed on temporary shelters or open tents.
- Limited supply of water buckets and soap.
- Limited supply of cooking utensils and fuel to victims are limited to those who are preparing the food in the evacuation site.
- Clothing and blankets for the victims are readily available and in many quantities.

**b. Critical Constraints**

- Security is very evident and not a problem in the evacuation sites. Looting in the disaster area has been reported and perpetrators have been apprehended.
- Logistic transport has no problem and its available through land, air and sea.

**c. Recommendations**

Immediate public health action

- Multiple trauma is the main problem of surviving victims, continuous supply of medicines (antibiotics, anti tetanus, etc.) should be maintained especially to the district hospitals where majority of the Thai victims are located. Also surgeons to manage the trauma victims when needed.
- Being in the emergency phase of the disaster, public health problems are not yet significant but they are a potential problem. Public health workers must

start putting into place all necessary activities to prevent a public health disaster. Activities like:

- Construction of portable toilets for proper excreta disposal
- Supply of clean water for hygiene purposes (taking a bath, hand washing, washing food utensils, washing clothes) especially where majority of the displaced people are located not only limited to the evacuation sites
- Construction of proper camps for the displaced population
- Immunization coverage
- Proper disposal of solid waste in the camps and in the disaster area to prevent vector borne and water borne diseases
- Consider mental health first aid (Critical Incident Stress Debriefing) for both survivors and rescue workers who might be suffering from Post Traumatic Stress Disorder (PTSD)
- Mobilize health care workers for health seminars and awareness.

#### **d. Monitoring**

- Monitor hygiene practices in the camps and correct accordingly.
- Set up a camp clinic with surveillance functions to monitor the existing and potential disease in the camp.
- Monitor supply of clean drinking water.
- Monitor proper solid waste and excreta disposal.

## **5. Assessment on Institutional Capacity in Disaster Management**

### **Emergency Response Management**

1) The local government authorities in 6 provinces have set up tsunami relief centers at provincial-level and supporting units in affected districts. There has been very good coordination and cooperation among local district offices. However, current practice means that governmental departments within a district stand alone so there is no internally coordinated response.

2) Coordination shortfalls seem to be one of the key issues. Various ministries and private agencies directly delivered relief operation without coordination and channel through CEO Governor. This caused duplication and/or complication in the relief provided for Tsunami victims. The mechanism for better coordination and cooperation in crisis management, therefore, required for synergy in disaster management.

3) Relief supplies distribution was an issue of concern and the following problems were encountered:

- Relief supplies distribution managed by some local level bodies was not transparent, there was no registration or record system in place for receiving supplies which caused the problems of oversupplying some families and un-needy groups.
- Although there were established village / community committees who were supposed to play a key role in assisting their communities, they were unable to manage in the crisis.

4) Thailand still needs technical support on search and rescue system.

### **Communications**

For a number of days after the tsunami impact mobile phone systems were not operational. Landlines and radio networks were still operating and provided adequate communication support for the relief effort. Also telecommunication companies set up their mobile systems around the province and offered free service for the public.

### **Public Awareness**

1) People had no idea about tsunamis. They generally are not aware about natural hazards in the area.

2) The Thai government needs to focus the public awareness program for people living along the coastal areas. Training should be imparted as a capacity building in disaster management.

### **Media**

Thai media played a very active role in providing news to public. The media felt that Government was slow in giving information, however, at times they reported sensitive information based on their own judgment without getting verified information from the government (local or national). This could lead to misunderstanding of the situation, the release of unsuitable images and inaccurate information being disseminated.

### **Legislation of Disaster Insurance**

There is currently no private insurance available against damages due to natural hazards, however the Thai Government may look into the issue of insurance to determine how people can be financially protected in the future.

## **6. Rapid Community Needs Assessment**

### **Areas Visited**

The TUDMP team visited areas in 3 provinces, Krabi, Pang-nga and Phuket as listed below:

Krabi, 20 January 2005

1. Provincial Hall, Krabi Province
2. Nong Hin Mosque – a temporary shelter for evacuees from Phi Phi Island
3. Tourism businesses in Ao Pranang (Pranang Bay)

Pang-nga, 21 January 2005

1. Ban Bang-Muang – A camp for evacuees from Ban Nam Khem Fishing village
2. Devastated areas in Ban Nam Khem, Khao Lak, Ban Bang Sak and Ban Bang Nieng

Phuket, 22 January 2005

1. Ban Bang Tao, Bang Tao beach
2. Ban Kamala, Kamala beach

## a) Krabi Province

### 1) Phi Phi Island

- The community on Phi Phi Island is comprised of over 500 local Muslims and about 3,000 migrant people who run medium and small businesses on the island.
- From a total number of 1,100 families on Phi Phi Island, about 600 families have house/land registration while another 500 families have no house/land registration. Most of those without registration run small to medium businesses on the island.

### Relief Capacity;

- A Task Force for the Tsunami Victims Center, Phi Phi Island was set up to assist in relief and rehabilitation support for the Phi Phi community. The task force committee included community leaders, village heads and volunteers.
- Klong Hin Mosque was used as a working center to help tsunami victims and provide temporary shelter.
- There was a plan to build temporary shelters at Nong Kok, approximately 10 minutes from the Klong Hin Mosque. But people complained that it was too far. The task force is now looking for a more suitable location.
- According to the compensation regulations, compensation was primarily provided to people who have land title deeds. This leaves 500 families with difficulty in receiving compensation from the government. A majority of people spent over one week waiting for compensation at the center.
- As the response given to migrants was very slow because they had to undertake seemingly redundant procedures, some people felt that the committee was being unfair and non-transparent in the allocation of compensation.



## Socio-economic & Livelihood Recovery

- It was noticed that business and tourist areas are recovering quickly. It appears that the Government has prioritized tourism and economics rather than social recovery/ investment.
- The Department of Labour has provided some jobs for the Tsunami victims as a temporary measure for a livelihood recovery program.
- City planning is now taking place, however there appears to be no or little community involvement
- It seems that most people would like to return to Phi Phi Island to continue their businesses and as they can receive good earnings from tourism. Some people were uncertain and have decided to go to their hometown in other provinces.
- There are a number of NGOs providing relief assistance to Tsunami victims.

## Awareness and Disaster Management:

- Most of the community people on Phi Phi Island did not realize the importance of knowledge and awareness as there was no occurrence of disaster before. In the past, the activity in the community had not covered disaster preparedness or emergency response except on the environment.
- Most people had no knowledge or awareness about the risk of Tsunamis as well as no concept of risk at all from other natural hazards like earthquakes or cyclones.
- Many people now would like to learn more information about tsunamis and other hazards they may be at risk from. They are interested in forming community preparedness and emergency response groups so they have better knowledge about the risks they face and how to respond in an emergency.
- People were not aware of the tsunami signs as the sea receded, however, it was mentioned that on Koh Lanta, some Japanese tourists identified the sea receding as a tsunami warning and raised the alarm. This demonstrates the benefits and awareness.
- Many people escaped the destruction of the tsunami when they noticed the wave crashing over a small island in front of Koh Lanta. They were able to escape to safety.

## **2). Ao Pranang (Pranang Bay) – Tourism business**

### Structural Damages

Structural damages at Ao Pranang appear very minor. This is most likely due to the 1.5 – 2 meter high sea wall that stands between the beach and road. This took most of the wave impact resulting in damage to some parts of the wall.





## Socio-economic & livelihood recovery

- Tourist business has been greatly affected. Only 10% of the normal tourists numbers are currently in the area. Some shops have been forced to close as a result. However, people are positive and believe that the tourist industry in the area will bloom again.
- There was a suggestion from the owner of a tourism business for the local government to organize seminars on recovering tourist business in Krabi.
- Fishermen were the most directly affected group. As well as fishing they are boat drivers for tourist services and tourism-related businesses.
- Because of the damage to their boats they are unable to fish; those with boats are affected by the low amount of tourists.
- The fishermen report that no-one wants to buy the fish they catch as there is fear of contamination due to the tsunami and debris in the sea.
- Many boats were damaged or lost. Fishermen must request compensation from the Department of Fisheries.



assistance from the municipality and some minor materials for fixing their boat, they still require compensation package for their daily living costs during this period of no income until they could restart their lives.

- However, compensation for the group of boat owners for tourist services is unclear. They could not request compensation from Department of Fisheries. And they encountered with extremely long and difficult process for submitting requests, i.e. there are a number of requirements in place such as getting signatures before submitting request and submitting a series of papers/documents. They complained that since the tsunami, 1 month ago, they had only received Baht 2,000.
- Although boat owners for tourist services in Ao Nang receive technical

## Awareness and Disaster Management:

- Some tourism businesses plan to take action on disaster preparedness. They would like to form an emergency management team and are keen to gain knowledge on early warning and disaster management.

## b) Pang Nga province

### Structural Damages



The whole village of Ban Nam Khem was badly damaged with only a few buildings left standing. At present the military unit is helping to rebuild houses for people who have land title deeds. This process will take about 6 months.

The Thai government endeavors to rebuild houses at the shortest possible time for people to return to their lives. However, structural safety measures should be considered as well as zoning as they are integral aspects of risk reduction.



Hotels and resorts along Khao Lak National Park were badly damaged. Vast areas were devastated including Ban Bang Sak and Ban Bang Nieng village.



### Socio-economic & livelihood recovery

- People from Ban Nam Khem fishermen village would like to go back to their community and continue in the same occupation.
- The relief effort where a number of NGOs are operating, has provided people with wooden/plywood temporary shelters, clothing, kitchen wares and all necessities, however people are unsure about the future and rebuilding their lives.
- Everyone we spoke to lost family members and friends in the tsunami, whilst there was no explicit signs of post trauma stress, this should be monitored.
- Most of them have not received clear information from the government on what assistance they will receive.
- The government will set up houses for the victims in 4 areas: Kutiang, Tab-tawan, Tung Wa and Keuk Kak. However, people mentioned that these places were not suitable for earning an income and were not pleased with the plans.



- Relocation of fishermen village is a critical issue. There are rumors that the government plans to renovate the fishing village Ban Nam Khem to become area for tourism, and move the fishing village 5 kilometers back from the sea. This is unconfirmed, but demonstrates the need for clear communication between the government and villages and for their inclusion in the planning process.



Temporary Shelter at Bang Muang



Interviewed villagers from Ban Nam Khem village

### Environmental Impact

- Salt water has contaminated ground water sources causing problems to agriculture and livelihood.

### Awareness and Disaster Management:

- Community people are keen to increase their knowledge and awareness about disasters and preparedness.

## c) Phuket Province

### Structural Damages

Hotels and Resorts along Patong Beach and Kamala beach were badly damaged. However, these are two popular beaches in Phuket and rehabilitation is taking place very quickly.



Ban Kamala School on Kamala beach was affected but some parts of the school are currently being repaired.

About 40-50 houses of Bang Tao Village on Bang Tao Beach were extremely damaged. Unfortunately, very little governmental and non-governmental support has been provided to the villagers as most of the assistance focused on other greater devastation areas.



Neglected villagers at Bang Tao rebuild houses themselves.

### Socio-economic & livelihood recovery

- Most of people from Bang Tao Village are fishermen and they will continue working in the same occupation.
- Most of them have not received clear information from the government regarding the assistance they will receive. Since the tsunami happened they have only received Baht 2,000 as compensation.
- People are rebuilding their houses themselves. During this time they are temporarily renting houses or staying with relatives.



- The people in Bang Tao Village were informed by the Local Administrative Office that they needed to rebuild their house at least 100 metres from the sea. If they do not heed the announcement, the Local Administrative Office will not be responsible for what may potentially happen in the future.
- A hotel on Kamala Beach provided some rooms for use as temporary classrooms for 3 weeks after the tsunami. Ban Kamala School has now reopened and classes have returned to normal.

Awareness and Disaster Management:

- Detailed knowledge multiple types of hazards and disaster management will be included in school subjects in the coming year.
- The schools' principals on Kamala and Surin beaches will try to conduct a meeting/training on disaster management for people.
- People are keen to gain knowledge about disasters and preparedness.

## 7. Recommendations

The following recommendations are those suggested by a number of people at local government level, tourism and businesses, fishermen and community members as well as the team's recommendations based on their observations.

Improvement and change in the following areas have been highlighted:

1. Public Awareness
2. Disaster Management and Operations
3. Planning and Implementing a Rehabilitation Program

### **Public Awareness**

- Multi-hazard public awareness, disaster preparedness and response will be beneficial for the future of people living in the disaster prone areas.
- Businesses in the tourist industry are interested in disaster preparedness and response as well as increasing their awareness about the risks they face and the measures they can take to protect their businesses. Different stakeholders face different levels of risk and have different needs, therefore should undergo training specific to their sector. For example, fishermen, hotel owners, the media and police.
- Radio and television should be used as the key media in delivering public awareness messages as well as utilizing other resources such as newspapers, community structures and institutions.
- Awareness should be carried out within the most vulnerable communities and should be risk reduction should be integrated into development planning.

- Public awareness should be increased in communities to enable them to be better prepared.
- The Ministry of Education should put the course on disasters and disaster preparedness in the school curriculum as a measure for disaster risk reduction in future.

## **Disaster Management and Operations**

### Response

- Include a relief distribution system in emergency plans. Ensure its suitability and flexibility to cope with different scales of disasters.
- It is necessary to develop and improve a system for coordination that includes organizational arrangements, government responsibilities and legislations. Emergency response management should be operated under the supervision of one central body. Practically, CEO Governors at provincial level should get the authority and take the key role in managing and coordinating along with a support team that includes an experienced disaster manager, or disaster management training should be provided to key people involved in coordinating the response. There needs to be clear channels for command and a central body for co-ordination.
- To put in place a search and rescue network that can deploy trained search and rescue workers and make use of necessary technology.
- Emergency response and management should be taken as a priority issue at national level. Guidance and training for disaster management should be provided for provincial and local levels.
- Emergency planning at provincial level should be mandatory. Plans should be comprehensive, integrated and multi-hazard. They should include an outline of the actions to take in the event of an emergency, give information on roles and responsibilities, resources available, logistics and contact lists. Emergency planning should eventually be extended to local level.
- In Phuket, the international DVI teams are coordinated by joint command of the Thai and Australian Police under the Interpol guidelines. UNDAC was an observer in this coordination effort. It was clear that more focused coordination and established guidelines are needed – e.g. using the system of INSARAG: establishing reception centre, using established protocols, and established administration and logistics guidelines. Also, it is recommended that a neutral coordination body is created (Team 2).

### Media

- Address the role of the media in disasters by recognizing the important part they play and to support them by providing seminars on responsible reporting and good practice in disaster situations.
- Improve relations between the media and the government to work as a partnership in disseminating information.

- Government to set up a Public Relations committee or a trained media relations officer at regional and municipal levels with the aim of gathering information and disseminating it through regular press conferences. This may incorporate the private sector as support.

### Communications

- Radios should be more widely utilized during the response phase and early warning communication. The use of radio communications was promoted at the level of provincial to district office while the levels of district to sub-district and community seem too limited. The in-charge authorities might seriously consider using radio networks at every functioning level for timely early warning and efficient response communications.

### **Planning and Implementing a Rehabilitation Program**

- It is recommended that the rebuilding of towns and villages is done with disaster risk reduction and sustainable development in mind. It is essential to consider the long term and potential risk. An integrated approach to risk reduction is vital and the planning and rebuilding of towns is an important place to start. It is an opportunity to improve villages both structurally and institutionally.
- City planning is requisite for Phi Phi and many other villages and towns during this reconstruction and recovery phase. Key members of the community should be invited to participate in the planning process, especially for rebuilding and relocation as they are the key stakeholders and beneficiaries.
- The sea wall at Ao Pranang proved effective in providing some protection against the tsunami waves. This should perhaps be replicated in suitable areas and considered in the rehabilitation and development of new sites along with other structural and non-structural mitigation measures. Other methods should also be considered such as encouraging mangrove and coral growth to serve as natural protection from the sea.
- The processes for issuing compensation should be revised in order to encourage a speedier transition to the recovery of livelihoods. There is a great need for this particularly regarding fishing and housing compensation. Besides, it appears that small-scale business operators and vendors are the group which received late assistance and encounter long process in getting relief compensation. Mechanism in relief operations should be reconsidered.
- TAT campaign to encourage tourists to return to unaffected areas in the region to help maintain livelihoods
- Employment schemes perhaps in rebuilding or debris clearing.

- Legislation of disaster insurance and law enforcement on zoning and building codes are the key measures which the Thai Government shall implement for disaster reduction.

### **Other observations**

National capacity building in disaster management should be integrated. Disaster preparedness and planning would greatly improve the disaster response and recovery in the case of future events. Particularly in the following areas:

- Strategic Crisis Management and Response Coordination
- Compensation processes, concessions, incentives and the allocation of funds
- Debris Management
- Community-based participation approaches for the planning of rebuilding their communities
- Strategic Planning for the transition from relief to recovery
- Communications system with the public to make plans known
- Emergency/ Operational Response Plans
- Managing an Emergency Operation Centre with Information Management
- Hospital Emergency Preparedness and Response
- Mass Casualty Management
- Managing Mental Health Consequences of Disasters
- Disaster Victim Identification (DVI) and Management of the Deceased

## **8. Report Summary**

It has been identified that in general, relief supplies and medical care are more than adequate in Thailand. One constraint has been the enormous pressure on the RTG in coping with the largest ever forensic operation. The assessment of needs in the most severely affected areas also needs to be improved. There are a significant number of migrant workers in the affected provinces--many of them unregistered, who may not qualify for the national compensation package, and will require assistance.

It appears that people's main concerns were their loss of homes and livelihoods and the compensation they would receive to enable them to support their families until they can resume work. Many were interested in risk awareness and disaster preparedness. The information derived shows that now is an ideal time to plan and implement risk reduction strategies to improve resilience for the future.

This report can be used to determine the need and nature for interventions both immediately and for the future.

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