

## 2.4.4 Public Emergency Facilities for Disaster Preparedness

Public emergency facilities for disaster preparedness are organized into (i) escape buildings, (ii) escape bridges, (iii) emergency bases and (iv) city parks. Public emergency facilities are provided assuming the following functions and period (Table 2.6).

Table 2.6 Classification of Emergency Facilities and Required Period

	Emergency Facility	Required Period	Function
1.	Escape building	Temporary (a half to whole day)	<ul style="list-style-type: none"> <li>Temporary escape from tsunami inundation to the building, bridge, and tower.</li> </ul>
2.	Public facility for emergency use	Short ( a couple of days)	<ul style="list-style-type: none"> <li>Dislocated families station immediately after tsunami.</li> </ul>
3.	Emergency bases, Park with open space	Long (1 to 2 months)	<ul style="list-style-type: none"> <li>A base for rescue and relief activities conducted by government agencies and NGOs.</li> <li>Shelter tents are provided for refugee.</li> </ul>
4.	Temporary Housing	Rather Long (more than 2 months)	<ul style="list-style-type: none"> <li>Temporary houses are provided in open-space.</li> </ul>

### (1) Escape Building

In an emergency, some citizens failed to get out in time rush into the flat roof with external stairs of escape buildings located along escape roads. The height of flat roof is higher than the tsunami inundation depth on 26 December 2004; namely, it varies for the range from 10-m high near shoreline to at least 2-m high around national road.

The building is tsunami and earthquake proofed. Schools, mosques, markets, rental flats and building of ferry terminal could be good alternatives for the building. Also, the existing private buildings could be utilized as escape building. Escape towers are one of alternatives for fishermen and tourists since there is none of the houses and building with 10-m high in the coastal area (Figure 2.21).

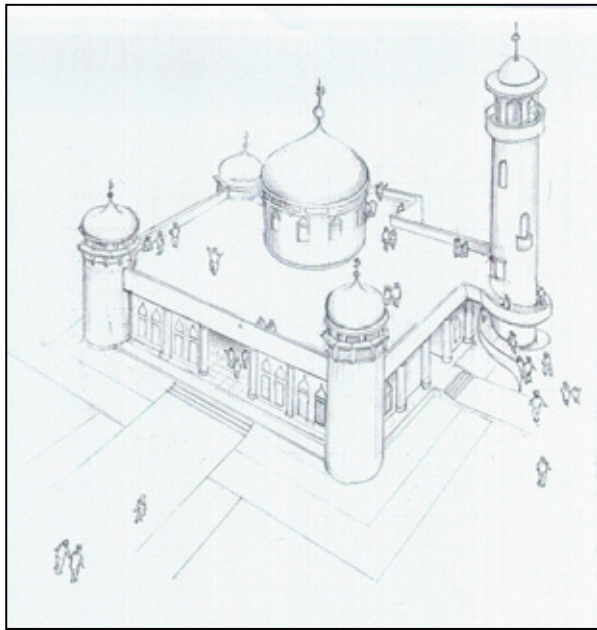


Source : Guidline for tsunami-escape building, 2005

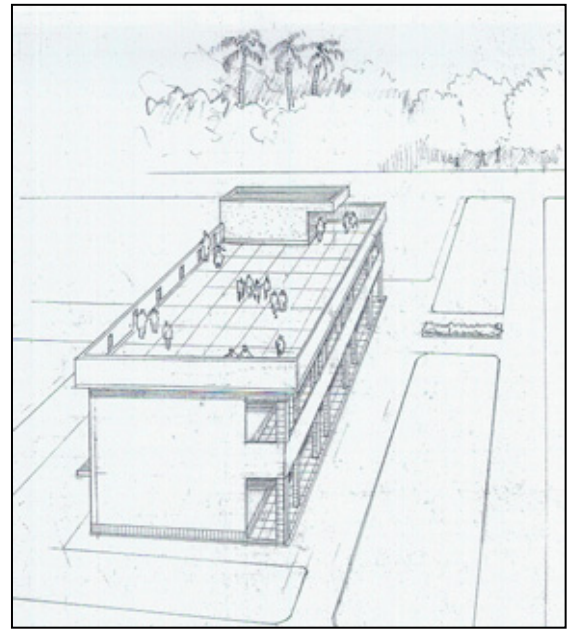
Figure 2.21 Escape Tower

Administrative guidance by the government agencies are necessary to make the existing buildings with flat roof, such as mosques, schools, public buildings and shopping centers, renovated as escape building with external stairs.

General plans for escape building by renovating mosque and school are illustrated in Figure 2.22. In the case of school, the 2<sup>nd</sup> floor can be utilized as storehouses for requisites for use in the event of disaster. The location map of required escape building is shown in Figure 2.23.

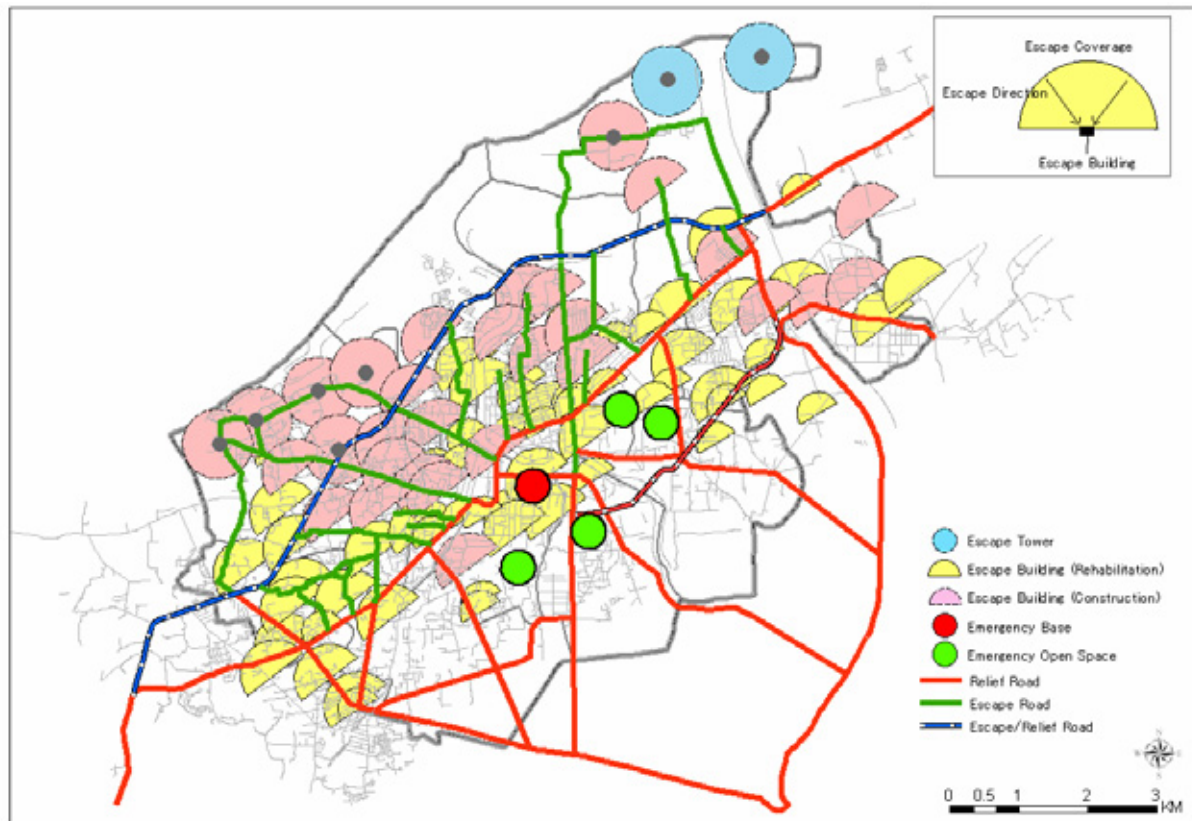


a) Escape Building of Mosque



b) Escape Building of School

Figure 2.22 Escape Building

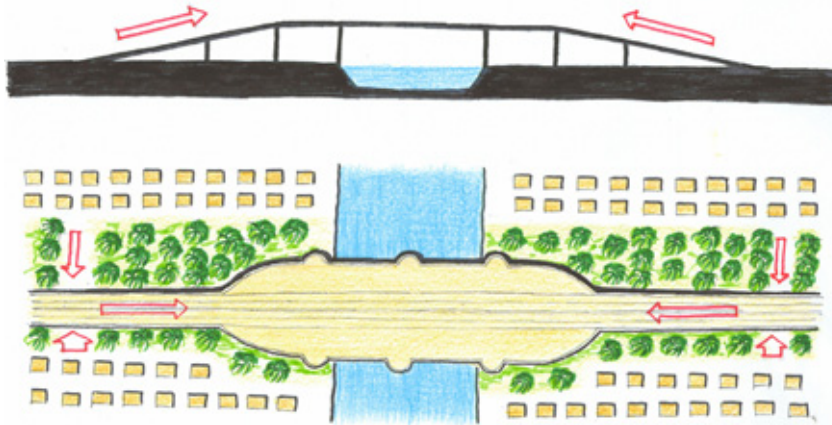


Source: ARRIS (GIS) prepared by JICA Study Team

Figure 2.23 Location of Emergency Public Facilities

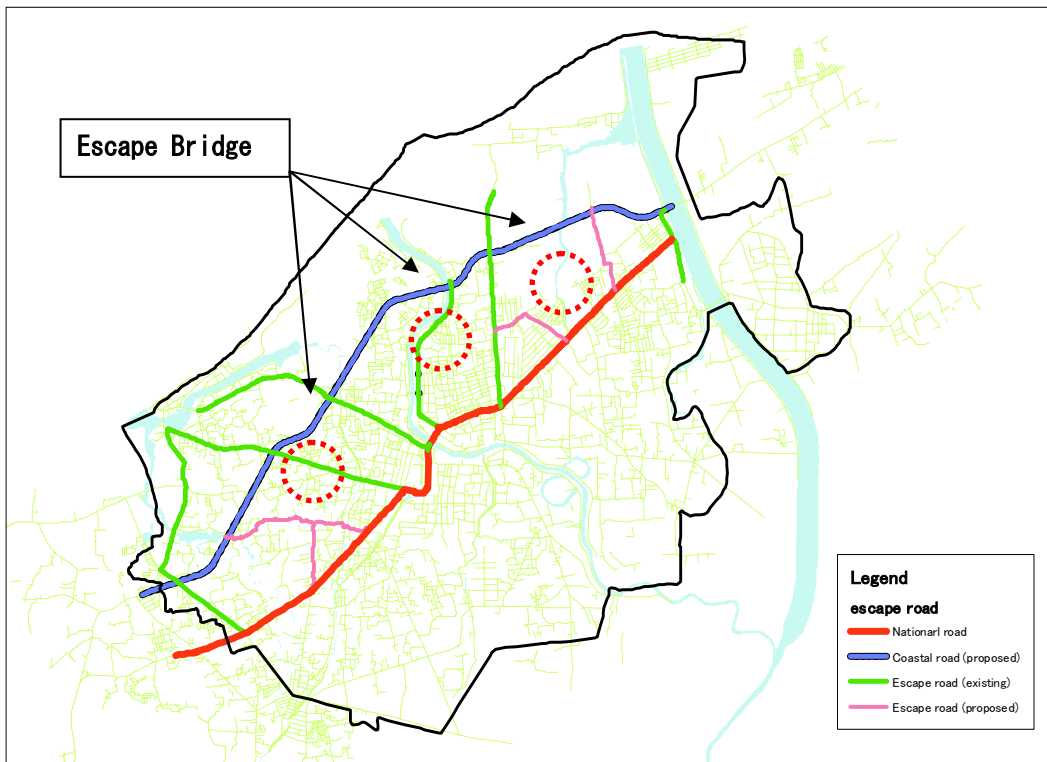
(2) Escape Bridge

Bridges along the relief road are raised above 10-m from the water surface of the river so that the people rushes into the crest of the bridge during tsunami inundation. The enlargement of the bridge crest enables the people to stand temporarily. About 50 to 100 persons working at fishpond could escape to the bridge. The general plan is illustrated as shown in Figure 2.24. The location map is shown in Figure 2.25.



Source: JICA Study Team

Figure 2.24 General Plan of Escape Bridge



Source: JICA Study Team

Figure 2.25 Location of Escape Bridge



(3) Integrated Emergency Base and Open Space for Disaster Preparedness

1. Integrated emergency base and open spaces are utilized for the purpose of not only the destination of escape but also the base for rescue, relief and temporary housing. The location map is shown in Figure 2.26.

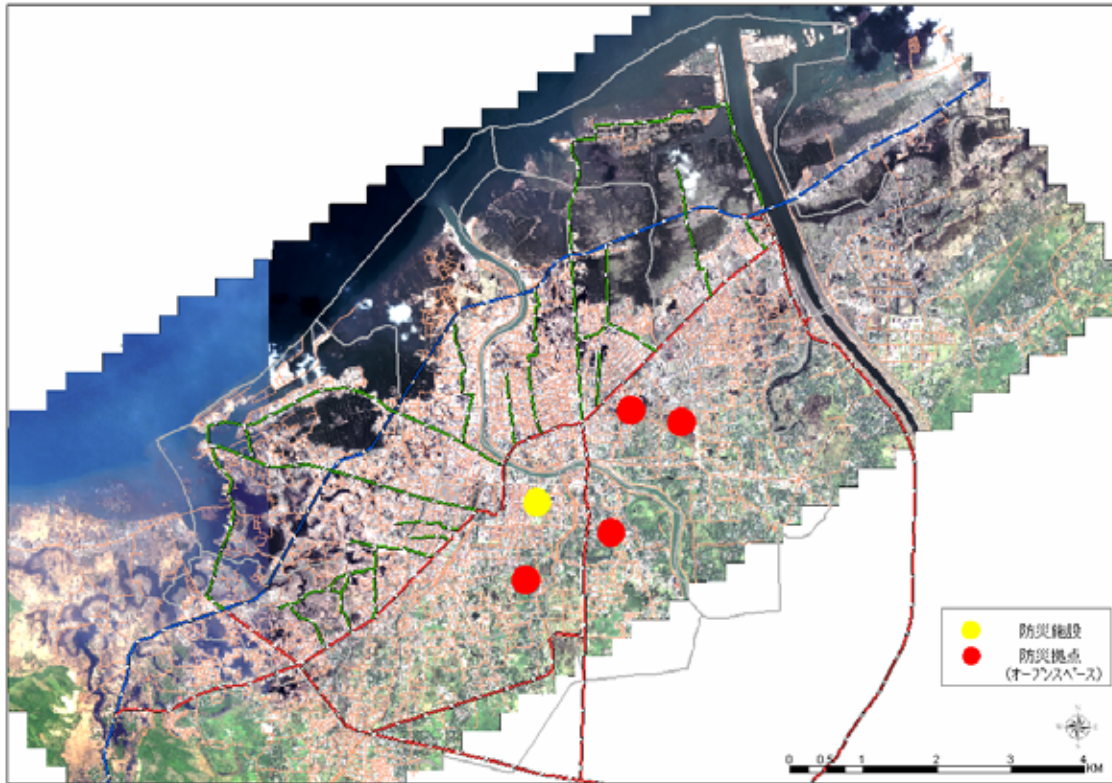


Figure 2.26 Location of Emergency Public Facilities and Open Spaces

2. Integrated emergency base is located under the condition that (i) along main arterial road, (ii) in the vicinity of hazard area, and (iii) nearer to city center and sub-center. The base is operated and maintained under the management of city office and will be a operation and information center for disaster preparedness in an emergency, while the base is utilized for place for a ceremony and/or a event in a normal condition. The building for the base has a flat roof with external stair and its upper floor is equipped with requisites for use in the event of disaster.
3. Open spaces as emergency base are the land for a shelter tent and/or temporary houses for dislocated families. Mosques situated by the Desa is also regarded as open space.
4. Low-lying areas extend southward crossing the proposed alignment of relief road, the area by filing up is available as open space for emergency purposes.

(4) City Park for Disaster Preparedness

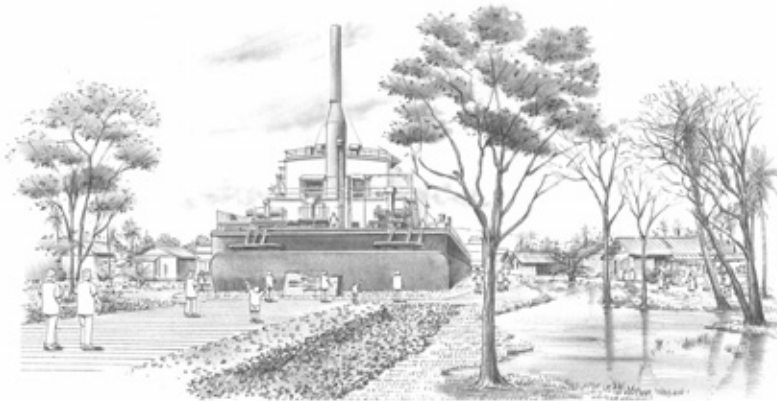
1. Over 70,000 casualties were recorded when the tsunami rampaged on 26 December 2004. One of the most serious reasons for such a calamity is that the people did not aware of tsunami generated by earthquake.
2. City parks are provided as part of public education and disaster awareness. The functions of city parks are:
  - a) Public education : The awareness of tsunami disaster is handed down from generation to generation. A science museum provided with signboard showing earthquake induced tsunami, tsunami disaster in 2004 and system on disaster preparedness is constructed.
  - b) Emergency base : Open-spaced city parks would be one of the emergency bases which is equipped with requisites for use in the event of disaster.
  - c) Recreation : City parks are available for the place of recreation and relaxation of citizens and tourists.
  - d) Memorial Park : City Park mourned over casualties in the vicinity of cemetery.
3. The location map of proposed city parks is given in Figure 2.27. The artistic views are shown in Figure 2.28.



Figure 2.27 Location Map of City Park



a) City Park utilized a Big Tree as a Symbol (Big Tree)



b) City Park utilized PLN barge (Big Ship)



c) City Park located in low-lying Areas(Tsunami Park)

Figure 2.28 Artistic Views of City Park

## **2.5 WARNING AND DISSEMINATION SYSTEM**

Phased development of warning and dissemination systems provides the earliest warning to citizens and more accurate information on the magnitude of disaster.

### **2.5.1 Short-term Plan**

- a) Seismometer : A warning message is automatically disseminated by the warning center for any earthquake having a magnitude of 6.0 or larger on the Richter scale and the possibility if a tsunami can be generated. Notification of government agencies begins, followed by public announcements by the local media. At this time the public is informed of the ensuring danger by the emergency broadcast system. Evacuation procedures are implemented, and sea going vessels are advised to head out to sea, where in deep waters they will not be affected by the tsunami.
- b) Warning siren : As soon as the public announcement issued, the warning sirens, which covers the area of the City of Banda Aceh with a radius of 1 km per siren, disseminate the warning to public.
- c) Mobile phone : Mobile phones are in common use in the City of Banda Aceh. As soon as the warning center send a warning message to individuals who are registered in the mailing system maintained by the warning center.

### **2.5.2 Medium-term Plan**

- a) Tsunami Watch : Reports on wave activity from the worldwide tide-gauging stations nearest to the earthquake epicenter is requested by the warning center. If the stations report that there is no observed tsunami activity, the Tsunami Watch is canceled. If these stations report that a tsunami has been generated, inspectors stationed at a ferry terminal and the operation room of tidal gate continues “Tsunami Watch” and tsunami warning is issued to the public at the same time for areas that may be impacted in the next hour.

### **2.5.3 Long-term Plan**

- a) GPS system : Measurement apparatus for real-time tsunami observation equipped with GPS censor located at a distance of about 20 km offshore is installed (Figure 2.29). As soon as sudden and large changes of sea level are recorded by the censor through Ground Positioning System (GPS), the information is sent to warning center about 10 minutes ahead tsunami propagation to shoreline. Lag time of 10 minutes is so valuable for mitigating tsunami disaster that people enables to ran away through escape road or to go up the stairs of escape building/tower.

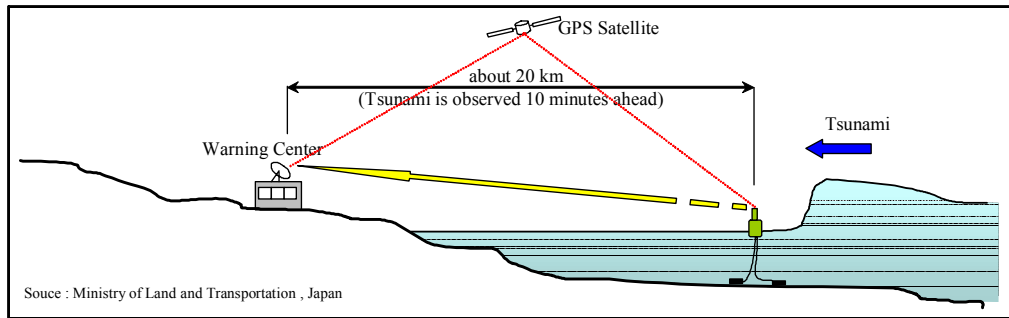


Figure 2.29 Schematic Diagram of GPS Real-time Tsunami Observation System

- b) Integrated Warning System : The lack of a warning during the 1946 tsunami that devastated coastal area in the City of Banda Aceh. It is crucial for scientists and governmental agencies to establish Disaster Mitigation System as shown in Figure 2.30. The main objectives of this system are:
- a) To detect and locate the existence all possible tsunami causing earthquakes by the use of properly monitored seismographs;
  - b) To ensure that a tsunami actually exists by measuring water level changes and tide-gauging stations located throughout the Indian Ocean; and
  - c) To determine the time of arrival of the tsunami and to provide an adequate warning for evacuation procedures.

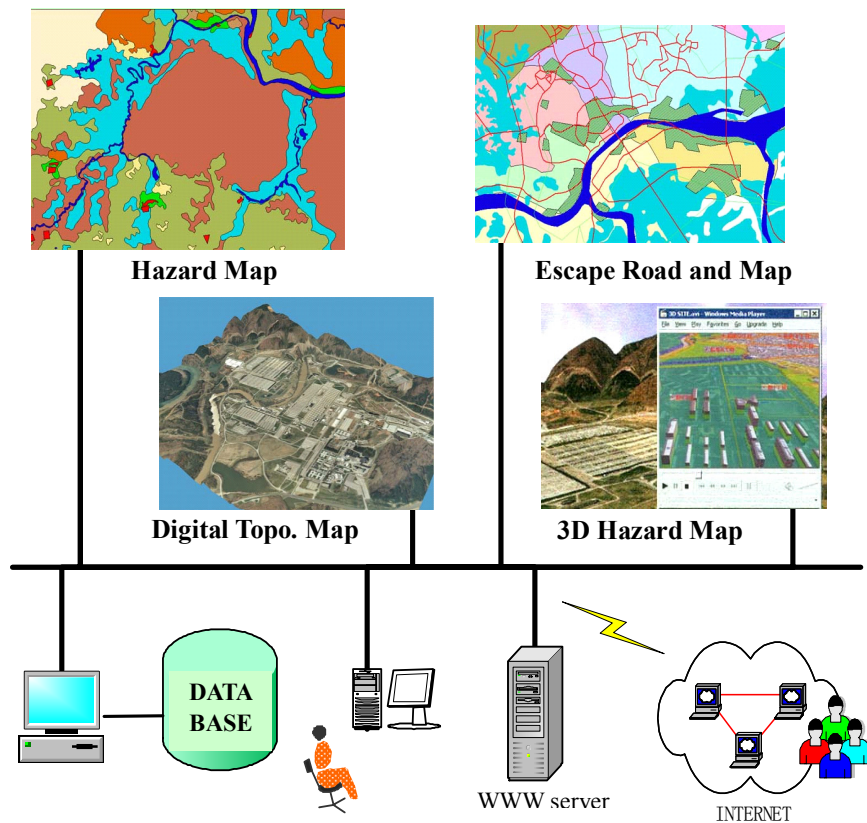


Figure 2.30 Configuration of Disaster Mitigation System



## **2.6 PUBLIC EDUCATION OF DISASTER AWARENESS**

### **2.6.1 Community Involvement**

Community involvement and their active participation should be encouraged in order to gain greater insight into the individual and collective perception of development and risk, and to have a clear understanding of the cultural and organizational characteristics of each society as well as of its behavior and interactions with the physical and natural environment.

This knowledge is of the utmost importance to determine those things which favor and hinder prevention and mitigation or encourage or limit the preservation of the environment from the development of future generations, and in order to find effective and efficient means to reduce the impact of disasters.

Education and training programs and facilities for people professionally involved and the public at large have not been sufficiently developed with a focus on ways and means to reduce disasters. Also the potential of the information media, industry, scientific community and the private sector at large has not been sufficiently mobilized;

### **2.6.2 Mutual Aid Scheme**

For an effective response, identification of resources and development of mutual aid agreements with neighboring resource providers at district, state, country, and international level for the extent and terms for sharing of resources during emergencies.

Periodical mock drills to test and update the plan are of importance. Since a community is a dynamic entity, no plan can be static document.

### **2.6.3 Geographic Information System (GIS)**

Disaster planning involves predicting the risk of natural hazard and possible impact. The use of GIS can be made successfully in communication, risk and vulnerability assessment and study of loss pattern, search etc.

Hazard maps could be created for cities and districts. They prove helpful for analysis and determination of hazard zones and likely affects during disasters. The maps can be successfully used in establishing response priorities, developing actions plans, quick disaster location assessment, for carrying out search and rescue operations effectively, zoning them accordingly to risk magnitudes, population details and assets at risk.

GIS and Remote Sensing facilitate record keeping and obtain status or on going works which are the most critical task disaster management.

## 2.6.4 Program for Public Education and Disaster Awareness

Various methods are applied for the purpose of public education of disaster awareness. The immediate actions are:

- a) Cooperation with mass media for public awareness on disaster management;
- b) Preparation of topographic map for disaster preparedness (Hazard map, etc);
- c) Construction of public facilities for Disaster preparedness for tsunami awareness;
- d) Installation of monument of tsunami inundation and run-up
- e) Drill for escape from disaster

The following items are crucial to implement for the achievement of disaster preparedness.

Table 2.7 Proposed Methods for Public Education and Disaster Awareness

Item	Contents	Action/Proposal
(1) Mass media	Radio, TV, newspaper, and so on	<ul style="list-style-type: none"> <li>• <u>The rehabilitation works are on-going. Radio program for interactive dialogue between specialist and citizens will be broadcasted.</u></li> <li>• After rehabilitation of TV and radio stations, the messages for disaster preparedness are broadcasted periodically.</li> <li>• Basic information such as hazard map and escape plan are opened to the public on newspaper.</li> </ul>
(2) GIS	GIS, Website, Brochure etc.	<ul style="list-style-type: none"> <li>• <u>ARRIS(GIS for disaster preparedness) will be opened to public and be maintained by Syiah Kuala University. The GIS data belong to among government agencies, international donors and NGOs.</u></li> <li>• Brochure for disaster preparedness and earthquake induced tsunami is prepared by the office of city of Banda Ache. The brochure is distributed to citizens.</li> </ul>
(3) Public facilities	Tsunami memorial park, Lessons in school	<ul style="list-style-type: none"> <li>• Tsunami House is built as part of Tsunami memorial park. Data on tsunami are stored in the house.</li> <li>• Lessons for pupils and students are done in the school.</li> </ul>
(4) Monument	Tsunami memorial pole, Tsunami Line	<ul style="list-style-type: none"> <li>• 「Tsunami Pole」 : a stones pole showing the tsunami inundation depth.</li> <li>• 「Tsunami Line」 : a board showing tsunami inundated area.</li> <li>• 「Tsunami Park」 : Monuments (Big Tree, Big Barge, and so on) are installed.</li> </ul>
(5) Drill for escape	Experience in evacuation tents and/or resettlement houses	<ul style="list-style-type: none"> <li>• <u>Based on the analyses for citizens' behavior when large-scale earthquake occurred on March 2005, site and area of escape road, escape building and emergency base are evaluated and modified</u></li> <li>• Tsunami Memorial Day on 26 December is established as a Disaster Drill Day. Drills for disaster preparedness are done among citizens.</li> </ul>

Note: Underlined Items and/or Activities show the actions being carried out under this Study.

## **2.7 TENTATIVE IMPLEMENTATION PLAN AND SCHEDULE**

### **(1) Necessity of Effective Road Network**

To ensure the activities for escaping, evacuation and relief is the only effective methods to cope with a huge-scale natural disaster. Also, the structural measures against the other disasters, such as flooding, earthquake and fire spreading, requires the ordinary operation and maintenance works passing through road network. The implementation of disaster mitigation plan depends largely on the accomplishment of rehabilitation of both damaged artery road network and improvement of sub-artery road network. Without the effective road network, the investment to public facilities as a refuge will be of no use since no one can access to those facilities. Thus, the priority for implementation program is given to the implementation of rehabilitation road network for the rehabilitation period (2005-2006).

### **(2) Necessity of Early Implementation of Non-structural Measure**

Public education and disaster awareness is regarded as one of the long-term efforts to achieve disaster preparedness and the people are able to understand well the importance of disaster preparedness immediately after the disaster. It might be high time to start public education and disaster awareness. According to the interview survey to 1,000 citizens in the Banda Aceh City as given in ATTACHMENT 1, almost all of the citizens felt the menace against tsunami when the powerful aftershock occurred on 28 March 2005 and ran away helter-skelter on foot or by motor car to the place or building where they could imagine promptly as a safer place such as open spaces, mosque, higher place, public building and so on. This fact shows that the experiences of huge-scale disaster will be handed down from generation to generation by conducting public education.

The early implementation of non-structural measure is favorable for disaster preparedness taking into account the lesser and long-range acquired of disaster mitigation effects, as well as administrative guidance for the installation of external stairs to existing buildings and newly-built public facilities as escape building.

As for structural measure, coastal forest, which utilizes natural force of vegetation and environmental friendly, will be raised with priority, while the reinforced-concreted structures such as seawall and detached breakwater will be part of reconstruction plan after the completion of effective road network.

### **(3) Implementation schedule**

Based on the foregoing discussion, the implementation plan and schedule as shown in Figure 2.31 is formulated. The annual construction cost is also broken down.

Preliminary project cost for the urgent rehabilitation and reconstruction works proposed in this study is estimated based on the following conditions and assumptions, however, these are subject to change due to finalization on the Indonesian authorities.

- (1) Physical contingency and price escalation are assumed to be 10% each of the direct construction cost.
- (2) Engineering services is assumed to be 10% of the direct construction cost for detailed study & design and construction supervision.
- (3) If project is purely program type and/or procurement, only price contingency is considered.
- (4) VAT is included in the cost, however, import duties are not included in the cost.
- (5) Land acquisition and compensation costs are not included in the Project cost due to difficulty of estimation at this time.



(Unit: billion Rp.)

	Rehabilitation		Reconstruction			Long-term		TOTAL DIRECT COST	TOTAL PROJECT COST	
	2005	2006	2007	2008	2009	2010 and later				
<b>A. STRUCTURAL MEASURE</b>										
A.1 Detached Breakwater (20 @ 4 m wide x 200 m long x 6 m high)						35.84	25.60	40.97	102.41	133.14
A.2 Seawall (4 m high x 4,920 m long)			11.25	11.25	11.25	11.25	11.25		56.23	73.10
A.3 Coastal Forest (200 m wide x 4,800 m long)	2.29	2.29	2.29	2.29	2.29				11.43	14.86
A.4 Tidal Gate (300 m wide for Floodway and 100 m wide for the Aceh River)								47.62	47.62	61.90
<b>B. EMERGENCY FACILITIES</b>										
B.1 Emergency Road Network (included in Road Sector)										
B.2 Public Emergency Facilities										
(1) Escape building (Installation of 10 external stairs/year)	1.98	1.98	1.98	1.98	1.98	9.92	9.92		29.76	38.69
(2) Escape towers (2@10 m high)			0.48						0.48	0.62
(3) Emergency Base and Open Spaces						9.92	13.89	3.97	35.71	46.43
<b>C. NON-STRUCTURAL MEASURE</b>										
C.1 Warning and Dissemination System										
(1) Seismometer(2 pcs.)/Warning siren (60 pcs.)/ Mobile Phone System	2.38	2.38	4.76	4.76	1.59				15.87	20.63
(2) Tsunami Watch					2.38				2.38	3.10
(3) GPS System/Disaster Mitigation Database						5.95	5.95		11.90	15.48
C.2 Public Education and Disaster Awareness										
(1) Mass Media	0.71	0.71	0.71	0.71	0.71	0.71	0.71		5.00	6.50
(2) GIS	1.62	1.62	1.62	1.62	1.62	1.62	1.62		11.33	14.73
(3) Public Facilities	0.48	0.48	0.48	0.48	0.48	16.35	0.48		19.21	24.97
(4) Monument including City Parks						24.70	24.70		49.40	64.23
(5) Drill for escape	0.16	0.16	0.16	0.16	0.16	0.16	0.16		1.11	1.44
TOTAL DIRECT COST	9.62	9.62	33.64	37.13	62.26	100.23	147.34		399.86	519.81
TOTAL PROJECT COST	12.50	12.50	43.74	48.27	80.94	130.30	191.54		519.81	

Source: JICA Study Team

Figure 2.31 Tentative Implementation Schedule and Cost Estimate

## **ATTACHEMENT**

### **Survey on People Evacuation Behavior on 28<sup>th</sup> March 2005 Earthquake**

#### **Summary**

An interview survey for one thousand (1,000) respondents in Banda Aceh City was conducted at all Kecamatans. The Kecamatans were divided into three (3) zones due to the level of disaster potential; namely, (i) coastal zone, (ii) central zone affected by tsunami inundation and (iii) safer zone not affected by tsunami. The survey revealed clearly the evacuation behavior done by the communities. As the results, the communities are afraid of earthquake and next tsunami disaster.

It is recommended further investigation on tsunami and early warning system to prevent the communities from the next disaster. Furthermore, it is suggested to hold a public seminar for disseminating knowledge and information regarding earthquake and tsunami disaster as well as its prevention and evacuation procedures. The seminar will also get public opinion about their needs.

The Report describes the concept of survey with its sampling methodology and the fact finding on the field.

#### **1. People Behavior**

The earthquake on 26 December 2004 generated a huge tsunami wave. Especially, people in Banda Aceh city are aware of earthquake and the next tsunami disaster. Traumatic experience made the people nervous; especially those are the victims from the disaster.

People behavior when they found the big earthquake quickly response to escape from this phenomenon and sometimes to they forget the good procedures for evacuation. It is very important to study about people behavior to anticipate for the tsunami disaster as well as how to evacuate to the safety place with the best way.

#### **2. Survey Methods**

The survey were conducted by field survey to collect the real data and information about people evacuation and behavior on March 28th, 2005 earthquake in Banda Aceh City. The study area consists of 9 sub-districts or 87 villages covering the whole Banda Aceh City. The Study Team consists of 20 field surveyors, and every surveyor was cover 4-5 villages or 50 respondents.

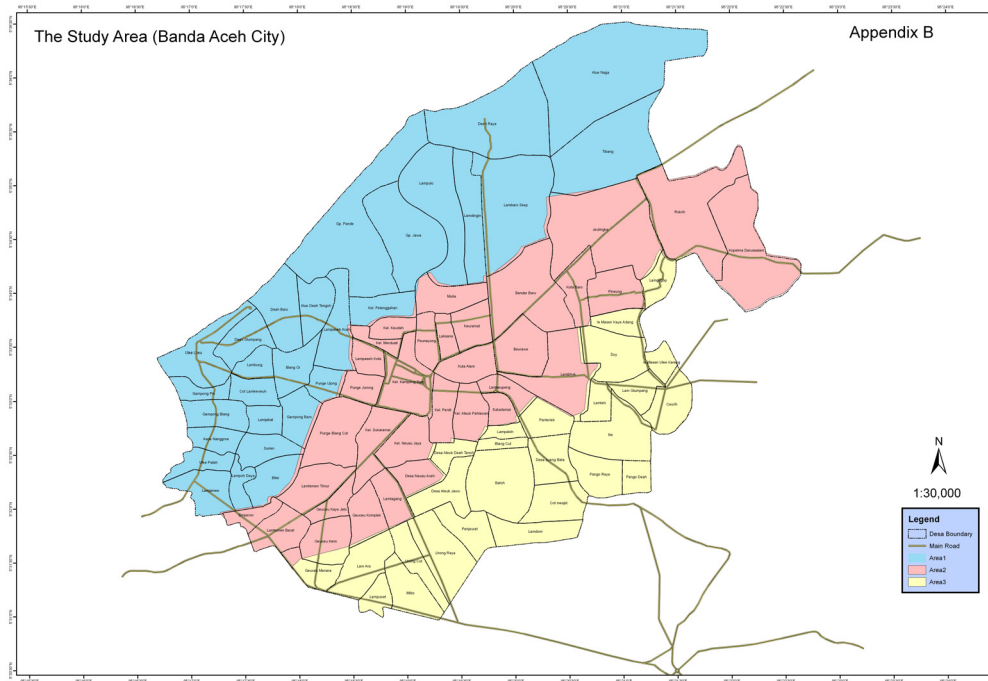
Table 1 shows that the detail distribution of samples for each sub-districts. The survey area covers 87 villages in 9 sub-districts located in Banda Aceh City, It was divided into 3 (three) study area; the Map of location is as in Figure 1.

The sampling method used is the stratified random sampling technique, where the village that has more population will be taken more samples. The survey was conducted by interviewing to the respondents to get more specific information related to evacuation behavior. The total numbers of samples are 1,000 respondents.

Table 1 List of Kecamatan in Banda Aceh City with number of samples

No.	Sub-districts Name	Number of Villages	Number of Samples
1	BAITURRAHMAN	8	115
2	BANDA RAYA	10	120
3	JAYA BARU	9	125
4	KUTA ALAM	11	167
5	KUTA RAJA	6	70
6	LUENG BATA	9	100
7	MEURAXA	16	105
8	SYIAH KUALA	9	103
9	ULEE KARENG	9	95
TOTAL		87	1,000

The survey area is divided into three different zones. Zone 1 is along the coastal line where devastated by tsunami. Zone 2 is the high-risk area affected by tsunami inundation located in the middle of Banda Aceh City. Zone 2 is also considered as the critical area where the community living in the same condition with pre-tsunami tsunami. This zone is located along the major artery road of Banda Aceh city. The Zone 3 is located on the southern part of the city and considered as more safely area compared two other zones.



Source: ARRIS (GIS)

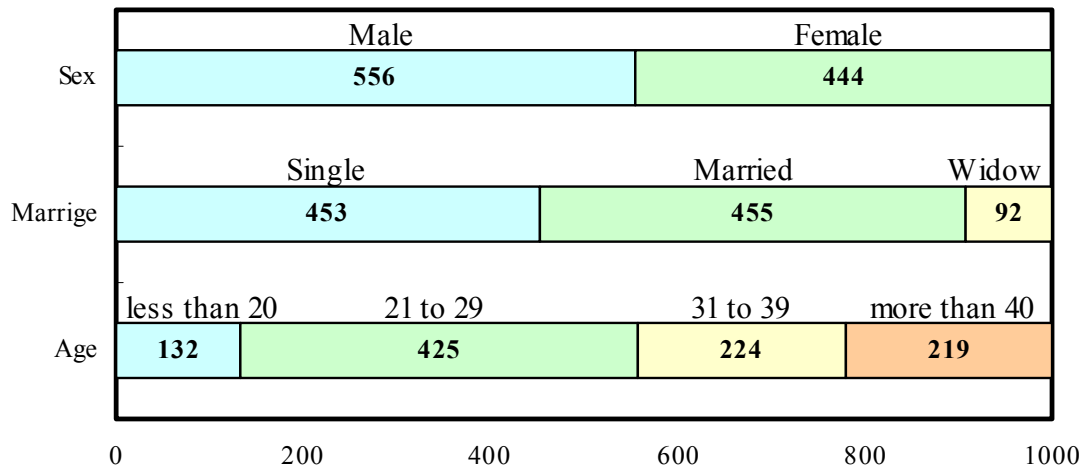
Figure 1 The Survey Area with Three Zone

### 3. Breakdown of Respondent

The one thousand respondents were chosen to represent all community in Banda Aceh city. All of them are lived in Banda Aceh city, and are mostly from the area around the main street and near the border of affected and non-affected area.

The total samples are 1000, and their gender ratio is 556 male: 445 female. Among the respondents, 453 are singles, 455 are married, and 94 are widows or widower mainly due to the tsunami.

The highest age group (42.5%) are, for both male and female, between 21s and 30s, followed by 22.2% are age between 31s and 41s, 22.4% are more than 41s and 13,2% are less than 21s.



Source: Escape Behavior Survey (JICA Study team)

Figure 2 Breakdown of Respondents for Interview Survey



**4. Detailed explanation of each question:**

Q1. As you probably know, there was an earthquake in Banda Aceh area on March 28, 2005. Did you yourself feel the earthquake on March 28, 2005 ?

Almost all of the respondents feel the earthquake, 99.7% of them said that they felt the earthquake, while only two (2) respondents denied because they were on the motorbike. It is concluded that such a big earthquake will be felt by everyone, except those who are driving motorbike or cars.

Q2. Where were you when the earthquake struck ?

- |            |     |
|------------|-----|
| 1) Indoor  | 881 |
| 2) Outdoor | 117 |

Most of the people (88.1%), were indoor when the earthquake struck , while 11.7% of them stayed outdoor. Most of the people were at home with their family because that the earthquake occurred at 11 p.m. in the midnight on 28 March 2005.

Q3. Where were you when the earthquake struck ?

- |   |     |
|---|-----|
| 1) Your own home                              | 775 |
| 2) Someone else's home                        | 64  |
| 3) Work                                       | 26  |
| 4) School                                     | 3   |
| 5) Traveling on a road                        | 16  |
| 6) In a public place like a building or store | 68  |
| 7) Or some where else                         | 46  |

Most of people were at home when the earthquake happened at 11 p.m.

Q4. What were you doing ?

Most of the respondents said that they were with family and watching TV at home.

Q5. What was your very first action when you felt the earthquake ?

- |                                  |     |
|----------------------------------|-----|
| 1) Got under doorway/table/cover | 7   |
| 2) Caught falling objects        | 10  |
| 3) Ran outside                   | 906 |
| 4) Continued driving             | 24  |
| 5) Others (specify)              | 51  |

People were expecting damage of their house. Most of them (90%) ran outside to the open space, such as front yard of their houses or the street nearby. Other respondents were driving and continued driving to safety place.

Q6. When the earthquake struck, were you ?

- |                |     |
|----------------|-----|
| 1) Alone       | 47  |
| 2) With others | 949 |

Most of respondents (95%) were with family or friends because the earthquake happened at 11pm. Some of respondents (4.7%) were alone as they are on driving the vehicles or living alone.

Q7. Who were you with ?

- |                   |     |
|-------------------|-----|
| 1) Husband/wife   | 283 |
| 2) Child/Children | 334 |
| 3) Others         | 653 |

The people were mostly with family or friends when the earthquake happened.

Q8. When the earthquake struck, did you have the radio or television on ?

- |               |     |     |    |     |
|---------------|-----|-----|----|-----|
| a. Radio      | Yes | 494 | No | 481 |
| b. Television | Yes | 528 | No | 444 |

The respondent mostly turned on the television or radio, 52.7% and 49% respectively.

Q9. Did you turn on a TV or radio to get more information about the earthquake ?

- |     |     |    |     |
|-----|-----|----|-----|
| Yes | 296 | No | 695 |
|-----|-----|----|-----|

The results show that 69% of the people did not turn on the TV or radio after the earthquake. This is because they were thinking to run to the safety places in order to anticipate to the next tsunami. They were too nervous to stay at home after receiving information from their neighbor or friends that the tsunami wave would come triggered by the big earthquake.

Q10. During the first 2 hours after the earthquake struck, did you or anyone else in your household check on or turn off the gas/stove, electricity or water of your residence?

- |     |     |    |     |
|-----|-----|----|-----|
| Yes | 272 | No | 714 |
|-----|-----|----|-----|

From the result, it is concluded that most of the people did not check or turn off the gas or electricity. They left their houses to shut all doors and did not turn off the electricity because that they were also aware of the possibility of their homes to be come by thieves.

Q11. After the earthquake, did you leave your home for any period of time because of damage, possible damage, or how you were feeling?

- |     |     |    |     |
|-----|-----|----|-----|
| Yes | 583 | No | 265 |
|-----|-----|----|-----|

Most of respondents (58.3%) said yes they left their homes for short period until they were sure of the non-possibility of next coming tsunami.

Q12. After the earthquake, How many minutes later did you leave your home?

- |                         |     |
|-------------------------|-----|
| 1) Soon                 | 616 |
| 2) 20 minutes           | 185 |
| 3) More than 20 minutes | 110 |

It can be concluded that most of people (61.6%) left their homes quickly, this is because they were very afraid of last tsunami disaster which struck the city and caused hundred thousands of people dead. They had to escape as soon as possible, and to the safety area.

Q14. How did you reach the destination ?

- |              |     |
|--------------|-----|
| 1) on foot   | 493 |
| 2) bicycle   | 41  |
| 3) motor car | 315 |
| 4) vehicle   | 50  |

Most of respondents used a car or on foot to reach the destination. They had the difficulties to use car because they have bad experience during last disaster when they found the traffic jam along the road. They also knew that most of the roads in Banda Aceh are narrow and winding. To use motor bike was easier and faster to reach the destination. If they used a car, the problem also happens that the car would not flexible when they got the traffic jam. For the respondent living quite far from the coastal line, they prefer to run to the nearest mosque of higher places.

Q15. Did you remember the route to destination from your home ?

Yes	772	No	75
-----	-----	----	----

Most of the respondent answered yes for the question, 77% of them had imagined promptly the destination and its nearest route to reach. They did not have any problem to find the route to escape, because they had already have in their mind where to go and how to reach there.

For some respondents they did know the route because they couldn't figure out the route very well and most of these respondents were women and the age over 40 years old. They usually just follow her husband or her son or even their neighbor for the widow living with her daughters.

Q16. Was there any accident on the way to the destination or did you heard about the accident ?

- |                                 |     |
|---------------------------------|-----|
| 1) Yes, there was some accident | 154 |
| 2) Yes, I heard about accident  | 345 |
| 3) No, there was not accident   | 451 |

There were some accidents, mostly on the street. About 50% of the respondents knew and heard about the accidents. Most of the accidents were happened because of the traffic jams and

some places were not equipped with street lights, so the places were dark. The accidents were also happened because that the people drove their vehicles carelessly.

Q17. Where did you stay while you were away from home ?

1) Open area	424
2) High place	139
3) Relatives	113
4) Mosque	142
5) School	3
6) other public building	91

The result shows that the large numbers of respondents (42%) were at the open space and waited and watched either the tsunami happened or not before they could returned to their homes.

Q18. How long did you stay there ?

1) 1-2 hours	455
2) 2-4 hours	173
3) More than 4 hours	259

Most of the respondents (45%) stayed for 1 to 2 hours, but some of them stayed until more than 4 hours in order to confirm that the tsunami did not happened.

Q19. What did you bring with you when you leave home ?

1) Valuables	112
2) Documents	102
3) Only family/self	663
4) Others (Specify)	74

Most of respondents (66%) did not bring their valuables or documents; they just run to the safety area quickly after the earthquake. They were in panic and couldn't clearly make decisions on what should they have to take together. They had just run together with their family or run alone in order to reach the safety places as soon as possible.

Q20. In this earthquake was anyone you know injured?

Yes	271	No	612
-----	-----	----	-----

The results shows that mostly they didn't know anyone injured in the earthquake.

Q21. Did you receive any information on tsunami?

Yes	628	No	344	Other	15
-----	-----	----	-----	-------	----

Many people of Banda Aceh city (62.8%) know the tsunami disaster, but some of them still did not receive any information about tsunami.



Q22. If yes Q21, What media did you get?

- |          |     |
|----------|-----|
| 1) TV    | 23  |
| 2) Radio | 19  |
| 3) Other | 644 |

64% of respondents got information about tsunami from the other sources rather than from TV or radio. People who got information from TV or radio are very limited, 23% and 19% respectively. They got information mostly from words and from newspaper. Based on this survey result, it is also recommend to deliver information about tsunami on radio or TV.

Q23. Did you evacuate into somewhere after the earthquake to escape from Tsunami?

- |          |     |
|----------|-----|
| 1) Yes   | 571 |
| 2) No    | 364 |
| 3) Other | 14  |

As for evacuation, most of the respondents (57%) were evacuate to some safer places.

Q24. If yes Q23, where did you go?

Most of the people go to the nearest mosques and public facility such as banks, government offices buildings, and schools. For the people from zone 1 they mostly go to the higher and safer places, such as Mataie hill, Airport and Lambaro sub-district. For respondents from zone 2, most of them prefer to go to the safer places. Some who have motorbike and cars they go to Ulee Kareng sub-district, Lambaro and airport, others who ran on foot evacuate to nearest mosques and public buildings.

Q25 What kind of Information do you need now?

- |               |     |
|---------------|-----|
| 1) Earthquake | 131 |
| 2) Aftershock | 54  |
| 3) Tsunami    | 207 |
| 4) Recovery   | 607 |
| 5) Others     | 69  |

Most of them (53%) need information about recovery. Some need information about tsunami and earthquake, 24% and 12% respectively while the others want to know the information about aftershock.