

5.5 EDUCATION

5.5.1 Condition before Disaster

(1) Education System

Education system consists of a formal education and non-formal education. The formal education has two tracks, which are a general school education under the jurisdiction of MONE (Ministry of National Education) and an Islamic school education under MORA (Ministry of Religion Affairs). A compulsory education of nine years is applied to an elementary school (6 years) and a junior high school (3 years).

(2) Organization of Education Administration

Education Department of NAD Province consists of nine Sub-Departments, namely; (i) Program development, (ii) Preschool, elementary school and special school, (iii) Junior high school, (iv) Senior high school, (v) Senior vocational high school, (vi) Boarding school, (vii) Non-formal education, (viii) Coordination and teacher training, and (ix) Research and development of education. The major roles of the Department are; (i) policy making, (ii) quality control, (iii) accreditation and standardization of an education program, and (iv) coordination of all the programs of a national level and a district level.

Education Department of Banda Aceh City carries out the local education administration including implementation of the programs according to the Provincial Department. The City Education Department consists of five Sub-Departments; (i) Preschool and elementary school, (ii) Junior high school, (iii) Senior high school and vocational school, (iv) non-formal education, and (v) Infrastructure.

(3) Budget

The Education budget consists of a routine budget (mainly salary) and development budget. In an emergency an additional budget is disbursed from central government after August. Annual budgets of Education Department of Banda Aceh City are Rp. 64,716 million in 2004 (70 % is salary), and Rp. 71,530 million in 2005 (70 % is salary).

(4) Students and Teachers

The total number of students and teachers excluding Islamic schools in Banda Aceh city before disaster were 50,687 and 3,468 respectively (Table 5.5.1). Students of the national schools were; 21,378 in elementary schools, 11,519 in junior high schools and 11,970 in senior high schools.

In the non-formal education there were 8 boarding schools in Banda Aceh city before disaster. The learners and facilitators of the boarding schools are 2,026 and 165 respectively. Seventy five (75) % of learners are boarders who have lived in the boarding schools.

Table 5.5.1 Number of Students and Teachers in Banda Aceh City before Disaster in 2004

School Level		(a) Number of Students	(b) Number of Teachers	(c) Number of Students per a Teacher	
Elementary School	National Schools	21,378	1,205	17.7	
	Private Schools	2,025	86	23.5	
	Sub-Total	23,403	1,291	18.1	
Junior High School	National Schools	11,519	922	12.4	
	Private Schools	1,308	200	6.5	
	Sub-Total	12,827	1,122	11.4	
Senior High School	National Schools	Ordinary Schools	11,051	703	15.7
		Vocational Schools	919	74	12.4
		Sub-Total	11,970	777	15.4
	Private Schools	2,487	278	8.9	
	Sub-Total	14,457	1,055	13.7	
Total		50,687	3,468	14.6	

Source: Education Department of Banda Aceh City

Note: Islamic schools do not include in the table due to no available data.

(5) Enrollment Rate

Net enrollment rates in Banda Aceh city in 2003 were 94.7 % in elementary schools, 68.9 % in junior high schools, and 66.3 % in senior high schools. The net enrollment rate of junior high schools was still low despite a compulsory education.

(6) Education Level

The education quality of the Province including Banda Aceh city is one of the tenth lowest in Indonesia. It has been degrading during the last six years after a political conflict. For those years, more than 1,000 schools have been burned, more than hundreds of teachers have been wounded and almost 100 teachers have been killed and/or abducted and missing. The education administration was made to strengthen against the conflict in Banda Aceh city; however the negative factor of the disaster forces the local education departments to start from scratch.

(7) School Infrastructure

Banda Aceh city had 131 elementary schools, 40 junior high schools, 34 senior high schools and 7 senior vocational high schools where include Islamic schools before disaster in 2004 (Table 5.5.2).

Table 5.5.2 Number of Schools before Disaster

Area	Elementary School (SD) and Islamic Elementary School (MI)	Junior High School (SMP) and Islamic Junior High School (MT)	Senior High School (SMA) and Islamic Senior High School (MA)	Senior Vocational High School (SMK) and Islamic Vocational Senior High School (SPK)
Banda Aceh City	131	40	34	7
Total of NAD Province	3,241	834	364	58

Source: Education Department of NAD Province

(8) Standard Design of School Infrastructure

Standard components of school facilities are; a classroom, an office, a principal room, a teachers room, a laboratory, a library, an entrance hall, an infirmary, a mosque, a wall in and around a school site, a water and electricity installation, drainage, a parking lot and a canteen.

Standard size of a classroom is 7.0 m x 9.0 m. The classroom accommodates 40 pupils in an elementary school and 36 students in a junior high school and a senior high school. Ceiling height is necessary from 3.5 to 4.0 m. Two-story school buildings are extended in the urban area.

(9) Issues Before Disaster

- a) The education administration and school teaching-learning process are needed to reconstruct.
- b) The net enrollment rate of junior high schools is lower despite the compulsory education.

5.5.2 Condition after Disaster

(1) Loss and Damage Identification

The disaster has claimed the lives of approximately 13,500 students and 820 teachers in Banda Aceh city. They were found dead or missing. There were totally 65,902 students in an elementary and high school level before the disaster in 2004; however the number has dropped sharply by 55 % after disaster (Table 5.5.3 and Table 5.5.4).

Table 5.5.3 Number of Students before and after Disaster

Item	Banda Aceh City				Total of NAD Province			
	(A) Before Disaster	(B) After Disaster	(C) The Killed by Disaster	(D) The Missing by Disaster	(A) Before Disaster	(B) After Disaster	(C) The Killed by Disaster	(D) The Missing by Disaster
1) Elementary School								
a) Elementary School (SD)	24,137	12,015	715	5,070	560,731	416,468	1,791	5,146
b) Islamic Elementary School (MI)	7,633	5,715	858	N.A	31,720	36,418	3,732	5
Sub-total	31,770	17,730	1,573	5,070	592,451	452,886	5,523	5,151
2) Junior High School								
a) Junior High School (SMP)	12,307	7,152	326	2,963	163,764	100,505	5,847	2,996
b) Islamic Junior High School (MT)	3,485	2,946	498	n.a.	18,254	23,133	746	n.a.
Sub-total	15,792	10,098	824	2,963	182,018	123,638	6,593	2,996
3) Senior High School								
a) Senior High School (SMA)	12,905	n.a.	428	1,973	109,667	62,269	569	1,983
b) Islamic Senior High School (MA)	2,502	1,596	492	n.a.	9,856	11,011	699	n.a.
Sub-total	15,407	1,596	920	1,973	119,523	73,280	1,268	1,983
4) Vocational High School (SMK)								
Sub-total	2,933	n.a.	94	45	20,938	11,594	101	50
5) Total of 1) to 4)	65,902	29,424	3,411	10,051	914,930	661,398	13,485	10,180

Source: Education Department of NAD Province

Note: Number of students before disaster in this table is different from the student number in table 5.5.1 due to the different category of schools and different time point of data.

Table 5.5.4 Number of Teachers Affected by Disaster

Item	Banda Aceh City		Total of NAD Province	
	The Killed by Disaster	The Missing by Disaster	The Killed by Disaster	The Missing by Disaster
1) Kindergarten				
a) Kindergarten (TK)	26	6	61	6
b) Islamic Kindergarten (RA)	0	0	3	0
Sub-total	26	6	64	6
1) Elementary School				
a) Elementary School (SD)	80	163	823	174
b) Islamic Elementary School (MI)	70	0	80	90
Sub-total	150	163	903	264
2) Junior High School				
a) Junior High School (SMP)	73	124	320	133
b) Islamic Junior High School (MTs)	38	5	39	5
Sub-total	111	129	359	138
3) Senior High School				
a) Senior High School (SMA)	69	87	370	106
b) Islamic Senior High School (MA)	16	12	16	12
Sub-total	85	99	386	118
4) Vocational High School (SMK)				
Sub-total	33	14	46	14
5) Total of 1) to 4)	405	411	1,758	540

Source: Education Department of NAD Province

Remark: The data is as of 23 April, 2005.

When it comes to school infrastructures in Banda Aceh city, 120 (approximately 61 %) of all schools (197 schools) were damaged. A half of damaged schools was destroyed completely or swept away. The total damage to school infrastructures in the city is estimated at Rp. 68,318 million according to the study of UNICEF and local education departments (Table 5.5.5).

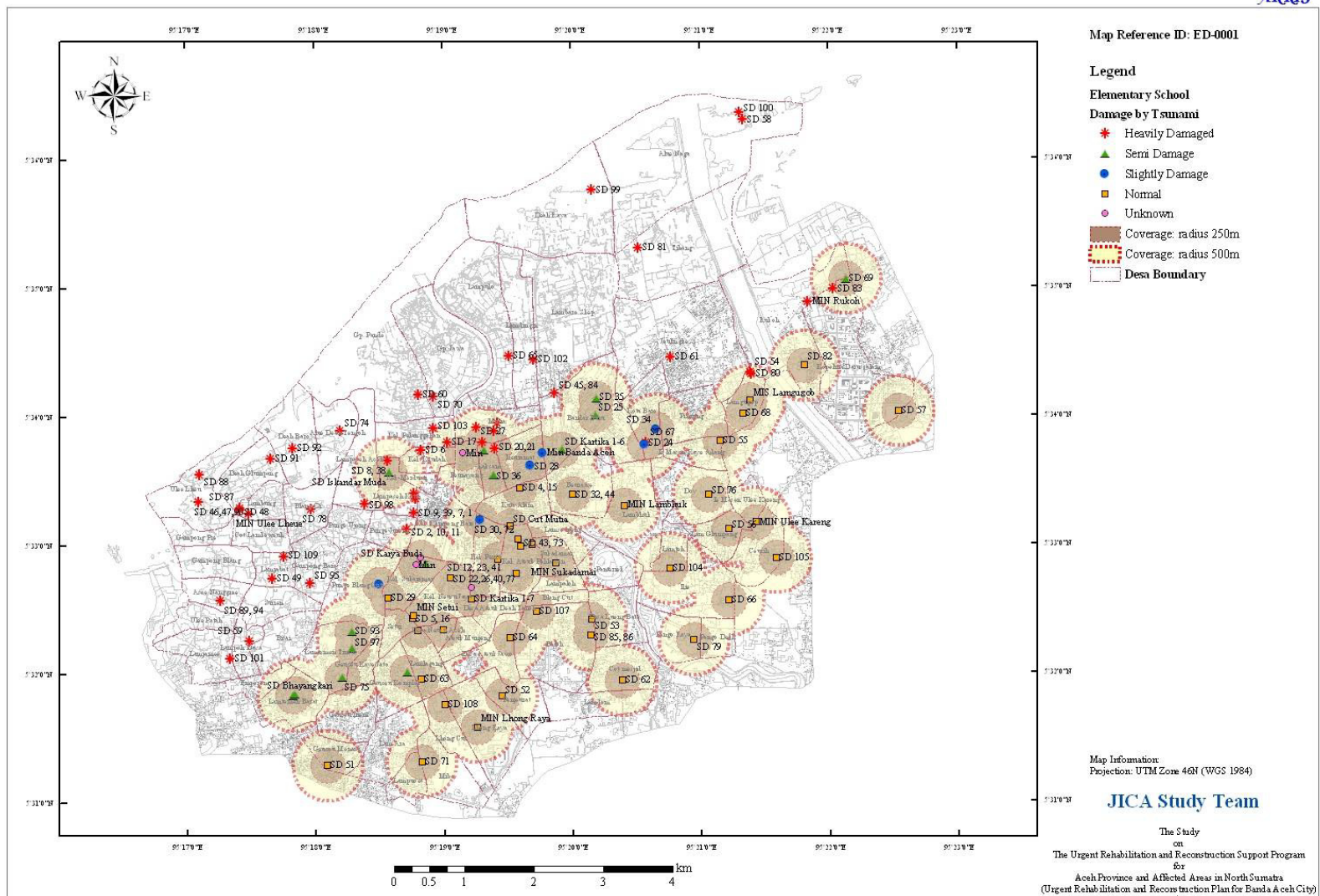
Table 5.5.5 Number of Schools in Banda Aceh City affected by Disaster

School Level		(a) Number of schools before the Tsunami	(b) Damages estimated (million Rp.)	(c) Number of Schools damaged			
				Severely damaged or destroyed	Partially destroyed	Slightly damaged	Sub-Total
Elementary School	General Schools	120	36,274	43	11	16	70
	Islamic Schools	12	766	0	1	3	4
	Sub-Total	132	37,040	43	12	19	74
Junior High School		30	18,431	13	0	9	22
Senior High School		35	12,847	8	7	9	24
Total		197	68,318	64	19	37	120

Source: Education Department of NAD Province

Remark: Junior high schools and senior high schools don't include Islamic schools.

ARRIS presents the locations of schools (elementary schools, junior high schools and senior high schools), the catchment's area and the damage level caused by disaster. A sample of school mapping of elementary schools by disaster damage level is shown below (Figure 5.5.1).



Source: ARRIS (GIS) prepared by JICA Study Team

Figure 5.5.1 School Mapping of Elementary Schools by the Damage Level of the Disaster

(2) Efforts Already Made and in Progress for Emergency Relief Period

MONE in cooperation with UNICEF set up emergency education facilities along with the teaching materials, including approximately 2,400 tents and 2,000 school-in-a-boxes. MONE has made efforts to provide teacher substitutes to teach in emergency classes because 4,800 local teachers have fled NAD province.

Vocational and life skills training on food-handling, clothes-making, automotive, electronics, building and construction, handicraft, forwarding, acupuncture, and computer training have been set up for the victims of the disaster in the Province by instructors from state and private institutions.

There are 70 host schools which have received refugee elementary students and the number of the students is approximately 1,200 in the Banda Aceh city according to UNICEF study. Some host schools have received over 100 refugee students per school. Temporary schools were already set up in some IDPC (internally displaced people camps); namely SD47 (Lhong Raya), SD81 (Tibang), SD96 (Neusu), SD Muhammadiyah 1 and 2 and SD65 (Lampulo) in the city.

(3) Rehabilitation and Reconstruction in Banda Aceh City by Donors

Not only Indonesian government but also international organizations, bi-lateral donor countries, NGOs or private companies have proposed or started to implement the rehabilitation and reconstruction of the education sector in Banda Aceh city (Table 5.5.6).

Two projects by Japan's Non-Project Type Grant Aid is scheduled to implement; Support for Universities (Ar Raniry State Institute of Islamic Studies and Syiah Kuala University), and Support for Madrasah/Pesantren (Islamic school). Support for Universities is to procure a laboratory equipment and education equipment for medical research and agricultural research and to rehabilitate buildings. Support for Islamic school (SMP11, SMA 2, SMA6, and two non formal community learning centers) is to procure education equipment and rehabilitate buildings.

(4) Issues to be Resolved After Disaster

a) Loss of the school infrastructures

The school infrastructures have been lost or damaged twice; the first by the conflict and the second by earthquake/tsunami. The damaged or lost schools are urgently needed to rehabilitate or reconstruct not to discontinue teaching activities.

b) School age orphans and widowed mothers

Many school age children have been orphaned by disaster. The orphans need the place to live in and the persons to support. The disaster has also widowed many mothers, who have been required to learn how to earn their livelihood and take care of their

children. There should be some mechanism for those children to go to school normally despite the difficulties.

Table 5.5.6 Rehabilitation and Reconstruction of Education Sector by Donors

Donor	Components of a Program/Project	Progress of the Program/Project
ADB	Procurement of textbooks for junior and senior high schools and dispatch of 2 trainers for teacher training	MOU
UNICEF	Reconstruction of 300 elementary schools and rehabilitation of 200 elementary schools(SD6, SD30, SD45, SD64, SD89, SD94 and SD95)	MOU, some schools are under construction
AUSAID (Australia)	Equipment of Teacher training	Planning
Chinese Gov.	Reconstruction of elementary schools(SD34), junior high schools, and senior high schools in Lamlagang of Aceh Besar	Planning
CIDA (Canada)	Capacity building of financial system for a local government staff	Planning
French Gov.	Training of all administration sectors for a local government staff	Planning
GTZ and Kfw (German Gov.)	Reconstruction of senior vocational high schools (SMK1,2,3)	Planning
JICS (Japanese Gov.)	Support for University and rehabilitation of SMP11, SMA2, SMA6 and 2 non-formal community learning centers	MOU
Swiss Gov.	Establishing Inshafuddin Boarding Schools in Lamprit	Start on 1 June, 2005
Turkey Gov.	Reconstruction of elementary schools, junior high schools, and senior high schools in Lamlagang in Banda Aceh city	Planning
USAID (USA)	Teacher training	Planning
Yemen Gov.	Reconstruction of junior high schools (SMPN2 and SMPN6)	MOU
Local Government of Banjar Negarain Kalimantan	Reconstruction of a junior high school (SMP9)	MOU
Indonesian Red Cross (PMI)	Reconstruction of elementary school (SD1, SD7, SD9, SD22, SD39 and SD71)	Planning
Local news paper company in Jakarta (Harian Suara Merdeka)	Reconstruction of an elementary school (SD2) to complete by September, 2005	under construction
Local news paper company in Jawa (Suara Merdeka Semerang)	Reconstruction of an elementary school (SD10)	under construction
Local news paper company in Medan (Harian Analisa)	Reconstruction of an elementary school (SD54)	MOU
Local news paper company in Banda Aceh (Forum Bangun Aceh)	Reconstruction of an elementary school (SD81 and SMPN15, and SD101)	MOU, SD101: under
Local cigaret company (Gudeung	Rehabilitation of a junior high school (SMPN1)	Planning
Indonesian Teachers	Rehabilitation of elementary schools (SD24, SD34 and SD38)	Planning
West Jawa Bank	Rehabilitation of SD50	MOU
Lions Club	Rehabilitation of SD61	under construction
Indonesian students in US	Rehabilitation of SD59	Planning
Coca Cola Company	Rehabilitation of SD61	MOU
NGO (IACO Canada)	Rehabilitation and reconstruction of elementary schools (SD17, SD18, SD19, SD31, SD75, SD93 and SD97)	MOU, some schools are under construction
NGO (World Vision International)	Reconstruction of elementary schools (SD20, SD21, SD84, SD95 and SMA2)	MOU
NGO (Total EGU)	Reconstruction of elementary schools (SD27 and SD37)	MOU
NGO (HOPE Internationall)	Rehabilitation of SMP 17	Almost completed
NGO (Turky)	Construction of media center of teacher training	Planning
NGO (Jawa Group)	Reconstruction of an elementary school (SD80)	MOU
NGO (First Qatry)	Rehabilitation of a junior high school (SMPN4)	under construction
NGO (Concern)	Rehabilitation of elementary schools (SD8, SD83, SD102, MIN Rukoh)	Planning
NGO (CARDI/NRC Norway)	Reconstruction of elementary schools (SD68 and SD107)	MOU
NGO (FBA)	Rehabilitation of SD81, SD101 and SMPN15	MOU, some schools are under construction

Source: Education Department of NAD Province, Education Department of Banda Aceh City, Provincial BAPPEDA, UNICEF, etc.

c) Low quality of the school education

Education level has ranked as one of the lowest level in Indonesia due to the disaster and the conflict. Many teachers have been affected by disaster, so that new teachers and in-service teachers training are needed to improve for upgrading the education quality.

d) Level down of the education administration

The Education Department of NAD Province had made efforts to upgrade the capacities of education administrators by overseas training sessions. However, most of trained administrators were killed by the disaster. The well-trained administrators are needed to reconstruct the education administration.

5.5.3 Urgent Rehabilitation and Reconstruction Plan

(1) Mission, Strategies and Goals

Mission:

- ▶ To increase net enrollment at least to the national average
- ▶ To level up educational level of the province to the national level
- ▶ To strengthen education facilities not only in terms of school buildings but also of teaching material and equipment
- ▶ To design and locate the school building safe against disaster and in harmony with disaster mitigation plan

Strategy:

Access to Education

- ▶ To rehabilitate, restore and/or reconstruct damaged school at new location
- ▶ To provide education services to orphans and widowed mothers to make their livelihood easy
- ▶ To reconstruct and improve non-formal education infrastructure
- ▶ To rehabilitate and reconstruct damaged higher education infrastructure and equipment

Quality of Education

- ▶ To produce teachers and improve in-service teachers' capacities
- ▶ To improve teaching and learning for mathematics and science
- ▶ To improve vocational education to contribute to enhancement of local economy
- ▶ To enhance profession of teaching and learning materials

Management of Education

- ▶ To improve education administrative capacity
- ▶ To strengthen community participation in education
- ▶ To modernize non-formal education

Goals:

- ▶ All students can learn with the minimum learning materials at rehabilitated, reconstructed and newly constructed schools and accordingly the enrollment rate will be higher
- ▶ Education level will be higher by increase of trained teachers and development of the teaching-learning process and curriculum
- ▶ An efficient and effective education administration will be carried out by the capacity development of administrators

(2) Criteria for a Success of the Goal

a) Increase of a net enrollment rate

With a study of required compulsory schools in 2009 (Box1), the direction of reconstruction and development of the compulsory schools is shown by kecamatan (Table 5.5.7). ARRIS presents school mapping as a sample of elementary school plan in 2009 (Figure 5.5.2). Box 1 shows the number of required schools in 2009 for promoting the net enrollment rate.

b) Increase of trained teachers

c) Increase of trained administrators

d) Increase of community participation

e) Consideration of orphans and widowed mothers as beneficiaries

Box 1- Required Schools of Nine Years Compulsory Education in 2009-

Number of schools in 2009 is estimated by using the three factors.

(Factor 1) Estimated population by desa in 2009

(Factor 2) Standard for establishment of education facilities shown in City Master Plan 2001-2010

(Factor 3) School catchment's area of existing schools including schools to be rehabilitated and reconstructed

The number of required schools in 2009 is estimated as follows.

a) General rule

All the existing schools will be rehabilitated or reconstructed except the schools to be relocated.

b) Calculation of required schools

The number of required elementary schools by desa = (estimated population by desa in 2009) / (1,600 population)

The number of required junior high schools by desa = (estimated population by desa in 2009) / (6,000 population)

c) Adjustment of the required schools

In case of no existing schools in a target desa, a new school is required in the desa. However in case that a school located at a neighboring desa covers the target desa or an estimated population of the target desa is too small, a new school is not required in the target desa.

On the other hand, in case that a school at a neighboring desa covers the target desa but the number of necessary schools of the target desa is much more than the one of existing schools, a new school is required in the target desa.

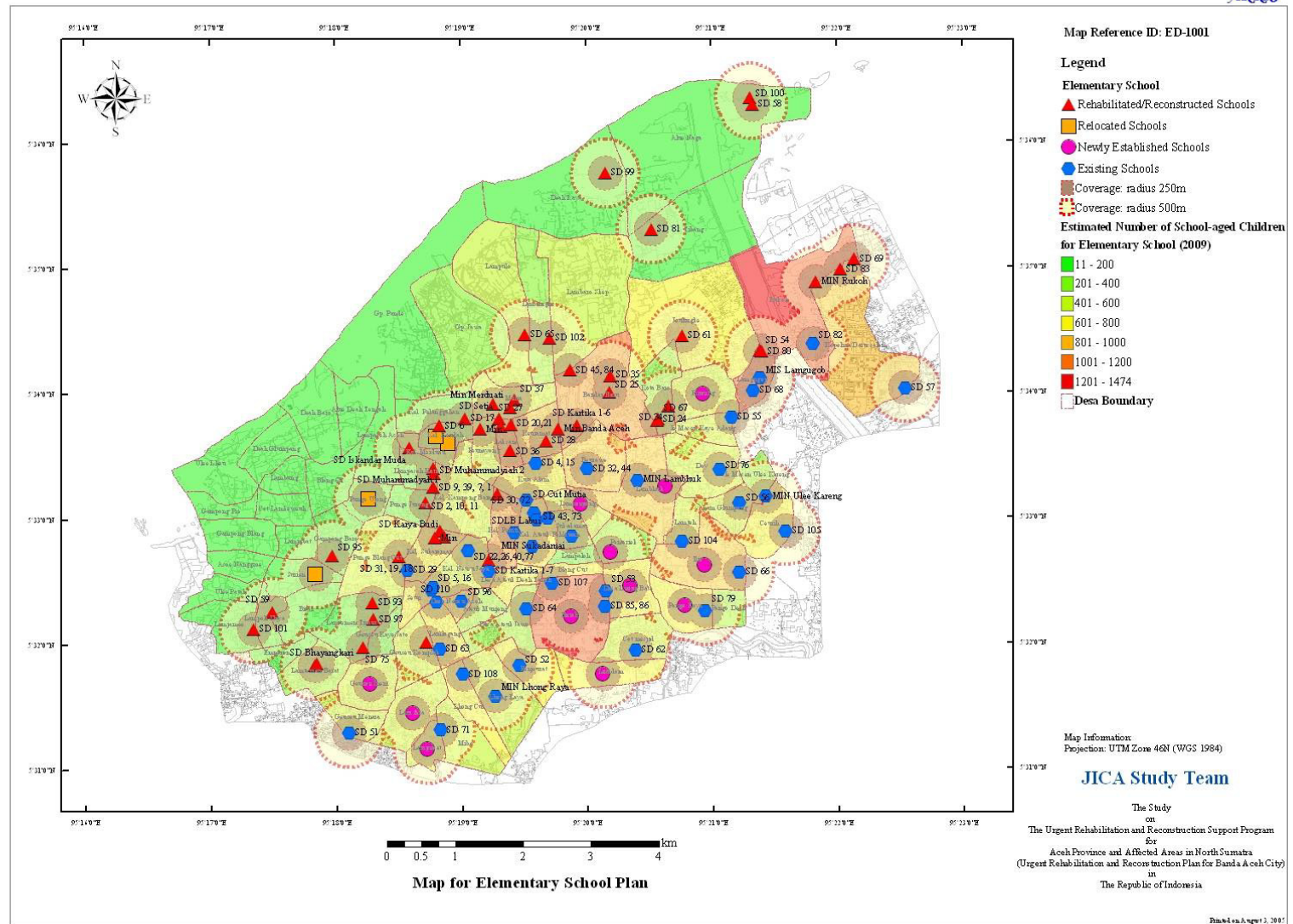
School relocation is planned as follows.
 The number of new elementary schools after the school relocation in the same kecamatan
 = (estimated population of all the desa having relocation schools in 2009) / (1,600 population)
 The number of new junior high schools after the school relocation in same kecamatan
 = (estimated population of all the desa having relocation schools in 2009) / (6,000 population)
 As a result,
 Elementary schools: 128 schools consisting of 112 existing schools including rehabilitated and reconstructed schools and 16 new schools.
 Junior high schools: 40 schools consisting of 35 existing schools including rehabilitated and reconstructed schools and 5 new schools.

Table 5.5.7 Direction of Reconstruction and Development for Compulsory Schools

Areas classified by the tsunami damage	Classification of Kecamatan	Before Disaster	After Disaster	Direction of reconstruction and development of elementary schools	Population before Disaster in 2004	Estimated Population in 2009
Coastal area	Meuraxa	18 SD/MI, 4 SMP/MT	All the schools was damaged severely.	Relocation of heavily damaged 16 SD/MI and 1 MT will be carried out due to the decrease of population. The remaining damaged schools will be reconstructed.	31,218	5,683
	Kuta Raja	14 SD/MI, 2 SMP	Almost all the schools was damaged severely.	Relocation of heavily damaged 4 SD and 1 SMP will be carried out due to the decrease of population. The remaining damaged schools will be reconstructed.	20,217	6,791
	Northern Kuta Alam	20 SD/MI, 8 SMP/MT	All the schools was damaged.	Reconstruction of the damaged schools will be carried out.	44,744	34,964
	Northern Syiah Kuala	11 SD/MI, 3 SMP/MT	9 SD/MI were damaged severely.	Reconstruction of the damaged schools will be carried out .	27,135	22,055
	Jaya Baru	9 SD/MI, 2 SMP	All the schools was damaged severely or partially.	Rehabilitation or reconstruction of the damaged schools will be carried out.	22,005	11,417
Central area	Southern Syiah Kuala	3 SD/MI, 3 SMP/MT	2 SD/MI were damaged.	Rehabilitation or reconstruction of the damaged schools will be carried out and a new school construction will be done due to the population increase.	15,641	16,504
	Southern Kuta Alam	4 SD, 4 SMP	All the schools was in normal.	There are no damaged schools. A new SMP will be established	10,318	10,520
	Northwestern Baiturrahman	11 SD, 4 SMP/MT	7 SD were damaged.	Rehabilitation or reconstruction of the damaged schools will be carried out.	15,560	15,374
	Western Banda Raya	2 SD, 1 SMP	All the schools was damaged partially.	Rehabilitation or reconstruction of the damaged schools will be carried out.	3,358	4,459
Inland area	Ulee Kareng	8 SD/MI, 2 SMP/MT	All the schools was in normal.	There are no damaged schools. 3 new SD and 1 SMP will be established due to the population increase.	17,510	37,658
	Lueng Bata	6 SD/MI, 2 SMP/MT	All the schools was in normal.	There are no damaged schools. 5 new SD and 1 SMP will be established due to the population increase and many desas not covered by the existing schools .	18,360	36,144
	Southeastern Baiturrahman	15 SD/MI, 4 SMP	All the schools was in normal.	There are no damaged schools. New school construction is not necessary.	21,889	22,106
	Eastern Banda Raya	6 SD/MI, 1 SMP	All the schools was in normal.	There are no damaged schools. 3 new SD and 1 SMP will be established due to the population increase.	15,657	30,325

Source: JICA Study Team

Remark: SD (Elementary school), MI (Islamic elementary school), SMP (Junior high school), MT (Islamic junior high school)



Source: ARRIS (GIS) prepared by JICA Study

Figure 5.5.2 School Mapping of Elementary Schools Plan in 2009

(3) Urgent Rehabilitation and Reconstruction Plan

Urgent rehabilitation and reconstruction plan is proposed to be divided into two (2) categories: one is project such as rehabilitation and reconstruction/construction of school building and the other is program such as increasing the number of teachers and teaching capacity. With evaluation of the conditions before and after disaster and in the light of the sector's goal the following project and program are identified to be implemented up to end of reconstruction stage 2009:

Project

- a) Rehabilitation and reconstruction of damaged schools and establishing new schools, and maintaining the improved schools
(It should be noted that actual implementation of this category will be sub-divided into a number of sub-projects to eliminate concentration of funds and facilitate the construction works)

Program

- a) Recruiting temporary educators and permanent teachers and training in-service teachers and administrators
- b) Providing emergency schools and the class lessons
- c) Providing textbooks/learning materials and school furniture
- d) Providing the affected students/teachers with scholarship/subsidy and counseling traumatized students/teachers
- e) Developing teaching-learning process and curricula, and providing developed learning materials
- f) Modernizing non formal education
- g) Developing school management

(4) Preliminary Cost Estimate

The project cost estimate presented herein is derived basically from "Rehabilitation and Reconstruction Budget for Banda Aceh City, MONE". The estimated project cost is as presented in Table 5.5.8

Project cost is estimated preliminarily at Rp. 969 billion based on the following conditions.

- a) An allowance of 20 % is however added on that estimate as the school building would be reinforced for use as an escape building especially in the coastal area in future.

- b) The cost does not include the land acquisition and compensation cost.
- c) The cost includes physical contingency (10 %), price escalation (10 %) and engineering services (10 %). The costs for procurement and other program include only a price escalation.
- d) The direct construction cost is assumed to include the amount of VAT and but not to include import duties.

Table 5.5.8 Preliminary Cost Estimate

(Rp. billion)

Proposed Project/Program	Works	Amount
A. Projects	(1) Rehabilitation and reconstruction of damaged school, Phase I	460.00
	(2) Rehabilitation and reconstruction of damaged school, Phase II	241.00
	(3) Rehabilitation and reconstruction of damaged school, Phase III	25.00
	Sub-total for Project	726.00
B. Programs	(1) Recruitment of temporary educator and permanent teachers, Phase I	33.00
	(2) Recruitment of temporary educator and permanent teachers, Phase II	6.00
	(3) Emergency school and lesson	61.00
	(4) Provision of text books/learning materials	22.00
	(5) Provision of scholarship/subsidy and counseling traumatized students/teachers, Phase I	45.00
	(6) Provision of scholarship/subsidy and counseling traumatized students/teachers, Phase II	14.00
	(7) Developing teaching-learning process and curricula, and providing developed learning materials	17.00
	(8) Modernizing non formal education	3.00
	(9) Developing school management	42.00
	Sub-total for Programs	243.00
	Total	969.00

Source MONE and JICA Study Team

(5) Tentative Implementation Schedule

In the light of the rehabilitation and reconstruction target and urgency in need, tentative implementation schedule is set as follows.

Table 5.5.9 Tentative Implementation Schedule

Projects/Programs	Implementation Schedule				
	Rehabilitation Stage		Reconstruction Stage		
	2005	2006	2007	2008	2009
A. Projects					
(1) Rehabilitation and reconstruction of damaged school, Phase I					
(2) Rehabilitation and reconstruction of damaged school, Phase II					
(3) Rehabilitation and reconstruction of damaged school, Phase III	Beyond 2009				
B. Programs					
(1) Recruitment of temporary educator and permanent teachers, Phase I					
(2) Recruitment of temporary educator and permanent teachers, Phase II					
(3) Emergency school and lesson					
(4) Provision of text books/learning materials					
(5) Provision of scholarship/subsidy and counseling traumatized students/teachers, Phase I					
(6) Provision of scholarship/subsidy and counseling traumatized students/teachers, Phase II					
(7) Developing teaching-learning process and curricula, and providing developed learning materials					
(8) Modernizing non formal education					
(9) Developing school management					

Source: JICA Study Team

(6) Annual Fund Requirement

According to the tentative project implementation schedule, annual fund requirement is estimated until the year 2009 as shown in Table 5.5.10.

Table 5.5.10 Annual Fund Requirement

(Rp. billion)

Projects/Programs	Rehabilitation		Reconstruction			Long-term	Total
	2005	2006	2007	2008	2009	2010/15	
Project							
(1) Rehabilitation and reconstruction of damaged school, Phase I	153.00	307.00					460.00
(2) Rehabilitation and reconstruction of damaged school, Phase II			116.00	91.00	34.00		241.00
(3) Rehabilitation and reconstruction of damaged school, Phase III						25.00	25.00
Program							
(1) Recruitment of temporary educator and permanent teachers, Phase I	25.00	8.00					33.00
(2) Recruitment of temporary educator and permanent teachers, Phase II			2.00	2.00	2.00		6.0
(3) Emergency school and lesson	14.00	47.00					61.00
(4) Provision of text books/learning materials	11.00	11.00					22.00
(5) Provision of scholarship/subsidy and counseling traumatized students/teachers, Phase I	36.00	9.00					45.00
(6) Provision of scholarship/subsidy and counseling traumatized students/teachers, Phase II			6.00	4.00	4.00		14.00
(7) Developing teaching-learning process and curricula, and providing developed learning materials			10.00	4.00	3.00		17.00
(8) Modernizing non formal education			1.00	1.00	1.00		3.00
(9) Developing school management			14.00	14.00	14.00		42.00
Total	239.00	382.00	149.00	116.00	58.00	25.00	969.00

Source: JICA Study Team

(7) Priority Projects Identified

The above-noted project/program is aggregate of a number of sub-projects/programs. In terms of degree of damages of existing structures and human resources/education materials, there would be in difference in urgency of implementation. An attempt is made to prioritize such sub-project and program from the viewpoints of (i) increase in net enrollment rate, (ii) increase in trained teachers, (iii) increase in trained administrators, (iv) encourage of community participation and (v) attention to orphans and widowed mothers. As a result the following 8 priority sub-projects/programs are selected. For those further priority ranking is made by marking system as presented in Table 5.5.11.

Table 5.5.11 Priority of 8 Pre-Selected Projects/Program

Priority Projects	Criteria for a success of the goal					Priority
	(a) Increase of a net enrollment rate (Highest weight)	(b) Increase of trained teachers (Second highest weight)	(c) Increase of trained administrators (Low weight)	(d) Increase of community participation (Low weight)	(e) Consideration of orphans and widowed mothers (Low weight)	
Reconstruction and improvement of nucleus school for upgrading science and mathematics education level			×			1
School Relocations in Coastal Areas Heavily Damaged by the Tsunami		×	×			2
REDIP (Regional Education Development and Improvement Program) in Banda Aceh						3
Improvement of Early Age Children Center						4
Reconstruction of a Senior Vocational High School			×		×	5
Reconstruction of In-Service Teacher Training Center				×	×	6
Reconstruction of Boarding Schools						7
Capacity Development of Education Administration				×	×	8

Legend: ⊙: Very applicable, △: Slightly applicable, ×: Not applicable

Note: Item (a) is highest weight, and (b) is second highest weight and the remaining items are low weight.

Details description and cost for implementation is given in Table 5.5.12.

Table 5.5.12 Priority Project (1/3)

Priority	Project Name	Background and Objectives	Component	Target Group/ Beneficiaries	Execution Agency	Project Duration and Cost
1	Reconstruction and improvement of nucleus school for upgrading science and mathematics education level	Indonesia has a unique school management system, namely school cluster system. A nucleus school, which is a core school under the cluster system, has functioned to provide the member cluster schools with the teacher training and the use of laboratories for the lessons. The core schools were damaged by the tsunami. On the other hand, science and mathematics education in Banda Aceh city has been required to upgrade the education level due to the worst level in Indonesia. The objectives of the project are to reconstruct the school infrastructures of the nucleus schools and equipment and improve the capacity of the nucleus school teachers for the upgrade of the science and mathematics education level.	a) Reconstruction of nucleus schools b) Procurement of equipment for science and mathematics education c) Effective in-service teacher training for nucleus school teachers in a science and mathematics, following a small experimental project proposed by nucleus teachers.	Students and teachers of 5 schools: SD87 (Meuraxa), SD47 (Meuraxa), SD16 (Baiturrahman), SMP Percontohan, and SMAN10 (Rueng Bata)	a) Education Department of NAD Province b) Education Department of Banda Aceh city	Year 2006 to 2008, 90 billion Rp.
2	School Relocations in Coastal Areas Heavily Damaged by the Tsunami	The Education department of Banda Aceh City formulated a master plan of rehabilitation, reconstruction and relocation of schools located in coastal areas. Most of rehabilitation and reconstruction of schools are committed to implement by some donors but the relocation is not offered to implement by donors. The objectives of the project are to relocate schools of areas which were the inhabitant population was decreased drastically and to return students to an ordinary study environment in schools.	a) Public Consultation for stakeholders of relocation schools b) New construction of earthquake-resistant school infrastructures c) Preparation of emergency evacuation plans	Students and teachers of 24 schools: a)Meuraxa Kecamatan (16 elementary schools and 3 junior high schools) b)Kuta Raja Kecamatan (4 elementary schools and 1 junior high school)	Education Department of Banda Aceh City	Year 2006 to 2008, 59 billion Rp.
3	REDIP (Regional Education Development and Improvement Program) in Banda Aceh	Aceh PEQIP (Primary education quality improvement project) was conducted in 1996 and 1997. However, the project had discontinued since 1998 due to the conflict. The school based improvement of education quality facilitates community participation to education. REDIP is to reflect real local needs into the school activities in collaboration with local community people. The objectives of the project are to upgrade the capacity of teachers and head masters and make their proposed experimental learning for improvement of junior highschool education quality.	a) Organization of Kecamatan SMP development team b) Workshop c) Socialization d) Implementation of projects by using proposal-based block grant e) Monitoring	Teachers, school masters and community people for the target kecamatan: a) All junior high schools located at kecamatans to have received many displaced students b) All junior high schools located at kecamatans to have been damaged heavily	Education Department of Banda Aceh City	Year 2007 to 2008, 14 billion Rp.

Table 5.5.12 Priority Project (2/3)

Priority	Project Name	Background and Objectives	Component	Target group/ Beneficiaries	Execution Agency	Project Duration and Cost
4	Improvement of Early Age Children Center	An early age children center aims at providing preschool education, practical training to make widowed mothers' livelihood, and counsel of health and bringing up their children. The center, moreover, provides traumatized children and mothers with a mental counsel. The objectives of the project are to provide the widows with self-support means by vocational training of household industry and give their children preschool education and day care, through establishing early age children centers.	a) Construction of the center in place of kindergartens destroyed by the tsunami disaster b) Procurement of equipment for training and nursery c) Preparation and execution of vocational training of the center staff	Children, widowed mothers and nurses and vocational training instructors of 5 kindergartens: 1) TK Negeri (Meuraxi): to be relocated 2) TK Aisyiah B Aceh (Kuta Raja): to be relocated 3) TK Gaseh Poma (Kuta Alam) 4) RA Al Azmi (Jaya Baru) 5) RA Indah Sari (Baiturrahman)	a) Education Department of Banda Aceh city b) Religion Department of Banda Aceh city	Year 2006 to 2007, 8 billion Rp.
5	Reconstruction of a Senior Vocational High School	Fisheries industry is one of the most important industry areas in Banda Aceh City. The Tsunami washed away a senior vocational high school as only one school which gave training lessons for a shipbuilding of fishing vessels, fishing gears and fishing methodology. The objectives of the project are to reconstruct the vocational school to produce technicians for development of the local economy.	a) Reconstruction of the senior vocational high school b) Procurement of training equipment c) Curriculum development and training of the new curriculum	Students and teachers of SMKN 4	Education Department of NAD Province	Year 2006 to 2007, 14 billion Rp.
6	Reconstruction of In-Service Teacher Training Center	The reconstruction of the training center is needed to refresh the in-service teachers including contract teachers because teacher quality in the city is one of the worst levels in Indonesia. Education Department of NAD Province plans to reconstruct the in-service teacher training center after the tsunami. The center consists of 4 buildings. Out of 4 buildings, the media center building and No.1 non formal education facilitator center will be constructed by some donors. The objectives of the project are to construct the No.2 non formal education facilitator center and the vocational teacher training center and to train in-service teachers for upgrading the teachers' quality.	a) Construction of No.2 non formal education facilitator center and the in-service vocational teacher training center b) Procurement of the vocational training equipment c) Standardization of teaching method and improvement of curricula of practical courses	Education administrators of Education Department of NAD Province	Education Department of NAD Province	Year 2007 to 2008, 7 billion Rp.

Table 5.5.12 Priority Project (3/3)

Priority	Project Name	Background and Objectives	Component	Target Group/ Beneficiaries	Execution Agency	Project Duration and Cost
7	Reconstruction of Boarding Schools	A boarding school has provided young generation with non-formal education and lodging. The schools also have an issue to modernize physical conditions and school management. Three (3) boarding schools were heavily damaged by the tsunami. The objectives of the priority project are to foster the school age orphans and give improved non-formal education to the learners by establishing modern boarding schools.	a) Reconstruction of boarding schools destroyed by the tsunami disaster b) Procurement of literacy primers and equipment for non-formal education c) Preparation of a standardization of boarding school management	Learners and facilitators of 3 boarding schools: a) Darul Ulum, Jambo Tape, Kec., Kuta Alam b) Raudhatul Wustha, Bitai, Kec., Jaya Baru c) Ruhul Islam anak Bansa, Gue Gajah,	Education Department of Banda Aceh city	Year 2006 to 2007, 17 billion Rp.
8	Capacity Development of Education Administration	Sixty four members of the education administrators trained overseas were killed by the tsunami disaster. Capacity development for education administrators is urgently needed to cope with the lower quality of education administration. Areas to be strengthened are education planning, a distance education and a public relations. The objectives of the project are to upgrade the capacity of education administration in the above-mentioned areas by training administrators and procuring the necessary equipment.	a) Capacity development for a project formulation, monitoring and evaluation, a distance education, and a public relation b) Overseas training of education administrators for planning and distance education c) Procurement of equipment for a radio broadcasting studio	Education Department of NAD province	Education Department of NAD province	Year 2008, 7 billion Rp.

5.6 ENVIRONMENT

5.6.1 Existing Environmental Legislation and Procedure

(1) Environmental legislation

a) Environmental Related Law

The Government Act No. 23/1997 (amendment of Act No. 4 of 1982) is the basic law for the environmental management of living environment. In compliance to the act, the central government has enacted various regulations and decrees on environment management. This act acts prescribes that the plan and/or project with potential negative impact on the environment shall be subject to the Environmental Impact Assessment (EIA/AMDAL: Analisa Mengenai Dampak Lingkungan), and process of EIA.

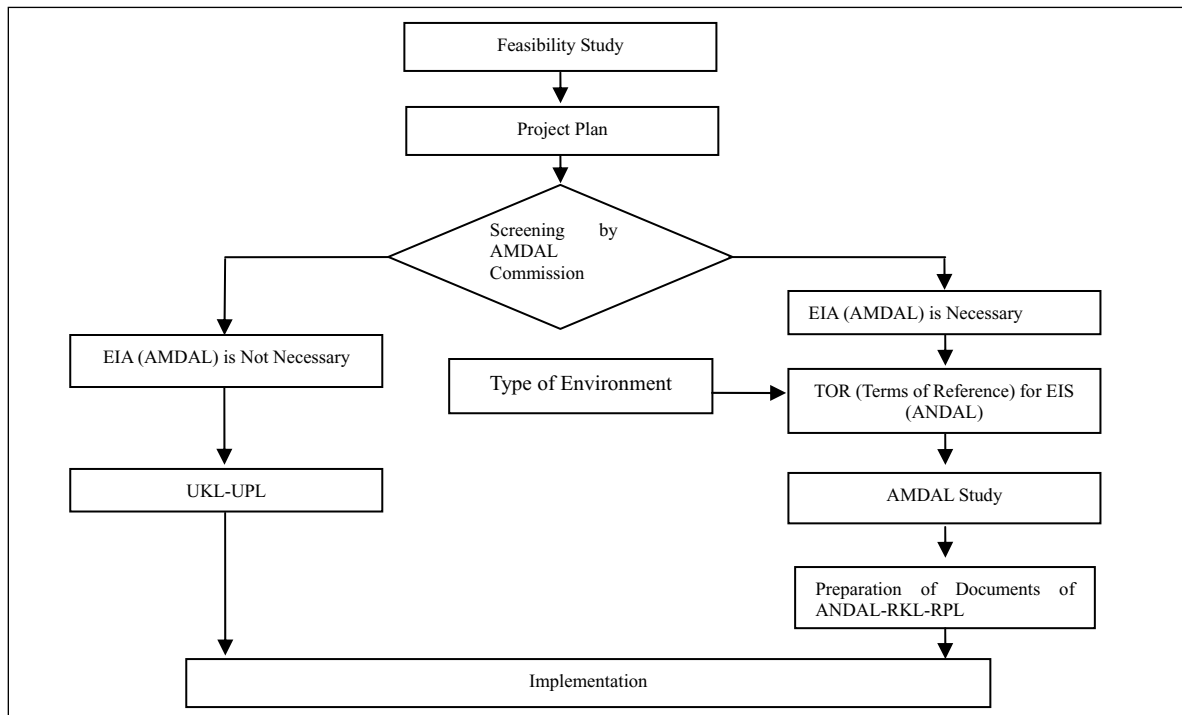
The Government Act No.24 of 1992 is the law on spatial arrangement, and it stipulates the regulation for spatial usage of protection areas such as protected forest, coastal boarder and national parks. State Environment Minister Decree No.17/2001 prescribes the activities which require EIA. State Environment Minister Decree No. KEP-39/MENLH/8/1996 also prescribes types of business and activities subject to EIA.

APPENDIX 9 gives the detail of the laws/regulations relating to environmental management.

b) Screening and EIA Process

The Government Regulation No. 27/1999 provides the screening process and EIA process. Figure 5.6.1 shows such screening process. As a first step, project proponent has to prepare a project plan. Thereafter, the project is screened in its impact level to the environment and its location by an EIA Commission in the department or agency concerned. Where EIA is required by the commission, the project proponent has to prepare TOR (Terms for Reference) for EIS (Environmental Impact Statement: ANDAL), followed by EIA study and preparation of EIS document.

If EIA is not required, the process is to be done through adhering to Environmental Management Plan (UKL) and Environmental Monitoring Plan (UPL) to be specified by the department, agency, or provincial government responsible.



Source: JICA Study Team

Figure 5.6.1 Screening Process based on Government Regulation No.27/1999

c) Environmental Administration

At the national level, the Ministry of Environment is responsible for environmental standards and policies. At the provincial level, Bapedalda Province (Environmental Impact Management Agency, Province) is responsible for the environmental management, reporting to the Governor. Likewise, Bapedalda-*kabupaten* (district level) reports to the *Bupati* (head of district). Bapedaldas submit environmental reports to the Ministry of Environment on a yearly basis.

In case that a project is implemented in Banda Aceh city, Bapedalda Kota Banda Aceh (Banda Aceh Municipality Environmental Impact Management Agency) has the final authority to give environmental impact permission to the project proponent by inquiring to Bapedalda-Aceh as an advisory body.

(2) Other Relevant Legislation

a) Land Issue

The existing land issue is mainly divided into those of legal, procedural coordination framework for land registration, consolidation and land acquisition. These land issue will be crucial and to be coordinated and settled for the smooth implementation of proposed rehabilitation and reconstruction plan.

1) Land Registration

The major laws/regulations relating to land registration are Law No. 5/1960 and Government Regulation No. 24/1997. The former regulates the agrarian principles called *Undang-Undang Pokok Agraria* (Agrarian Principals Regulation), while the later regulates principal of land registration implementation, maintenance of land registration data, publishing the new certificate as substitution of those of broken and missing, etc.

In relation to land registration, the *Ulama* (Muslim Leader) Consultative Council (*MPU: Majelis Permusyawaratan Ulama*) sets forth a binding rule (No.2/2005) stating that “Land owned by a person who has died without leaving heirs will become the property of the Islamic community through the *Baitul Maal* (House of Assets). However, pursuant to the applicable laws and regulations, the *Baitul Maal* cannot yet be categorized as a legal entity. Therefore, the further legal assessment will be necessary to examine the legal status of the *Baitul Maal* as a legal entity that can hold on land, in particular, in the case of “ownerless lands”.

Currently, BPN (*Badan Pertanahan Nasional*) is an administration agency which deals with the land issue.

2) Land Consolidation

Land consolidation is prescribed in National Land Agency Regulation No.4/1991, and the details of execution are stated in implementation guideline and technical guidelines. National Land Agency Regulation No.4/1991 regulates land consolidation matters into the public infrastructure projects of road infrastructure, irrigation, environment facilities and other facilities.

According to this regulation, land consolidation work can be practically completed if 85 % of land owners agree with the land consolidation.

3) Land Acquisition

Land acquisition for public benefit development is based on Indonesian Presidential Decree No.36/2005, which was newly enacted on May 2005 and is applicable for infrastructure projects.

The basic process for land acquisition is;

- Formation of land acquisition committee
- Discussing for agreement on compensation amount and other things
- Execution of compensation for land title, building, plant and other things

For the special case like the disaster area in Banda Aceh, new regulation on land acquisition is to be discussed in central national land agency.

b) Stakeholder Meetings / Public Consultations

There have been public consultation meetings over several times among the government authorities (central, provincial and municipal), donors, NGOs and local residents relating to the rehabilitation and reconstruction plan since March 1st, 2005. The discussions in public consultation include various issues and sectors, and the major subjects discussed so far are summarized below.

- Bottom-up or participatory approaches in transparent manners is important
- Regional economic development should be promoted
- The economic recovery is hardly possible without infrastructure development such as road, water, sanitation and telecommunication
- The plan should consider the minimization of the risk for future disaster

5.6.2 Present Social Environment

(1) Fishery / Fishery Right

Fishery played an important part in economy in Banda Aceh city before disaster. It was unfortunately severely damaged by the disaster. Before disaster, there were 5 fish ponds in Jaya Baru, Meuraxa, Kuta Raja, Kuta Alam and Syiah Kuala districts. The fishery right is established only in Syiah Kuala district among the 5 fishponds, while there was no fishery right in rivers, the nearest sea area and other fishponds.

(2) Cultural Assets / Properties

The laws/regulation regarding the protection and conservation of cultural assets are prescribed in Law/Regulation of Republic Indonesia on Cultural Asset which was enacted by Education and Cultural Department in 1997. There is Syiah Kulala Muslim tomb which was built in the mid-nineteenth century and has already been registered by Education and Cultural Department.

5.6.3 Present Natural Environment

(1) Vegetation

Banda Aceh city, has already been urbanized. The species of terrestrial ecosystem in the area commonly identified in other urbanized areas of Indonesia.

The mangrove areas had been cleared and converted into fish/shrimp ponds before disaster, leaving mangrove only in shallow lagoons or near river mouths. But they were almost destructed by the disaster. *Rhizophara muaronata*, is only remaining specy in Banda Aceh City, while there was a diversity of mangrove species in ecosystem.

Forestry Department released the conservation plan for mangrove for area of 3,500 ha and other sea vegetation in Aceh Province.

(2) Pollution

Ministry of Environment conducted a monitoring for water quality and sediment/sludge in Banda Aceh city two weeks after the disaster (see details in Appendix 9).

According to the record for the inland water exceeded to the ammonium and coliform concentration the water quality standard by the Government Regulation of No. 82/2001. Such high concentration of coliforms is presumed to be caused by the post-tsunami decomposition and deterioration process. The concentration of phosphate, sulfide, ammonium, phenol, COD and DO of the sample water from the existing wells also exceeded the water quality standards.

As for the sediment caused by the tsunami inundation, the heavy metal concentration for sediment on the ground is identified in the north part of the city. The concentration of Pb and Cu exceeded the environmental standard.

5.6.4 Screening and Scoping for Proposed Measures

(1) Projects/Measures Subject to Screening and Scoping

The outline of the proposed rehabilitation and reconstruction plan is as summarized in Table 5.6.1. They are subject to screening and scoping under the current study.

Table 5.6.1 Outline of Proposed Rehabilitation and Reconstruction Plan

No.	Sector / Proposed Plan	Outline of Proposed Plan
1	Disaster Prevention Sector	
1-1	Structural Measures	
1-1-1	Detached breakwater	Facility to cut the peak of tsunami wave. Proposed location: From the ferry terminal to the river-mouth of Aceh river.
1-1-2	Seawall	Facility to cut the peak of tsunami wave. Proposed location: Ferry terminal. Minimum crest height: 4m
1-1-3	Coastal Forest	Greenbelt planted with mangrove and palm trees which can grow in coastal areas. Parallel to the coastal line. Greenbelt width: 200 m
1-1-4	Tidal gate	For the prevention of tsunami run-up, to build tide-water control gate at river mouth. Proposed location: At the river-mouth of Aceh river.
1-2	Emergency Facility	
1-2-1	Escape building / Escape tower	The building and/or tower for emergency evacuation with height over 10m where people can be escape by the stairs.
1-2-2	Evacuation Open Space	The open space for evacuation for prevention from earthquake, tsunami and fires.
1-2-3	Tsunami Park	The park for emergency evacuation where a heliport and the storage house equipped with food and tools for overhaul are installed. Two types of tsunami parks, Big Tree and Big Ship.
2	Road / Transportation Sector	
2-1	Rehabilitation of existing arterial roads and bridges (including escape bridge)	The rehabilitation works of the existing roads and/or bridges which were damaged by the earthquakes and tsunami.
2-2	Rehabilitation of signal system	The rehabilitation of the existing signal systems which were damaged by the

		earthquakes and tsunami.
2-3	Construction / Extension of arterial roads & escape roads	The construction and extension of arterial roads and escape roads.
2-4	New construction of ring road	New construction of ring road which is planned as an arterial road connecting the east and west areas in the Banda Aceh City. It also has the function of activating an economic growth and escape road which the rescue supply can be transported in case of emergency.
3	Housing Sector	
3-1	Housing development in south-east part	Housing development in the south-east part of Aceh city for receiving future population increase and the residents in the coastal areas.
4	Water Supply Sector	
4-1	Network development of water supply pipes	Extension of water supply pipe networks. New expansion of water supply pipes: 6.5km
5	Urban Sanitation Sector	
5-1	New septage treatment plant	The expansion of existing septage treatment plant. Project site: Gampong Jawa Treatment capacity: 100 – 150 m ³ /day
5-2	Disposal site for municipal solid waste	Final disposal site for municipal solid waste. The location of final disposal site has not been decided.
6	Urban Drainage Sector	
6-1	River normalization works	Cleaning works of building debris or dredging works of river sediment which was caused by the tsunami.
6-2	Rehabilitation of existing pumping facilities	Rehabilitation of existing pumping facilities
6-3	Installation of new pumping facilities	Installation of new pumping facilities
7	Education Sector	
7-1	Rehabilitation of existing damaged education facilities	The rehabilitation of kindergarten, elementary schools and junior high schools are planned in three districts (<i>Kecamatan</i>) of Jaya Baru, Meuraxa and Kuta Raja.
7-2	Reconstruction of existing education facilities	The reconstruction of kindergarten, elementary schools and junior high schools are planned in three districts (<i>Kecamatan</i>) of Jaya Baru, Meuraxa and Kuta Raja.
7-3	Relocation of existing education facilities	The relocation of kindergarten, elementary schools and junior high schools are planned in three districts (<i>Kecamatan</i>) of Jaya Baru, Meuraxa and Kuta Raja.
8	Health and Medical Sector	
8-1	Rehabilitation / Reconstruction of existing damaged hospitals	The rehabilitation and/or reconstruction of existing damaged hospitals.
8-2	New construction of hospitals	Meuraxa Hospital is planned to be relocated and newly constructed
8-3	New construction of health center	New construction of 3 health centers and 11 sub-health centers.

(2) Screening

The screening was made in accordance with the JICA Guideline for Environmental and Social Consideration (JICA Guideline) on the viewpoints of the following items. APPENDIX 9 gives the possible impacts to be caused by the proposed work including the case of no project (zero option).

- a) Possible negative impact on environment based on the results of the screening checklist
- b) Comments in the stakeholder meetings relating to the proposed project
- c) Legal requirement on EIA based on Indonesian laws/regulation

The following three categories are used for screening based on JICA Guideline;

- a) Category A: The projects which are likely to have significant adverse impacts
- b) Category B: The projects which are likely to have less adverse impacts than those of Category A projects
- c) Category C: The projects which are likely to have minimal or no adverse impacts

The screening result is shown in the Table 5.6.2.

The following projects in road/transportation, housing, urban sanitation sectors can be classified into Category A:

- No.2-3 Construction/Extension of arterial and escape roads
- No.2-4 New construction of Ring Road
- No.3-1 Housing development in southeast area of Banda Aceh City
- No.5-2 Final disposal site for municipal solid waste
- No.8-2 New construction of hospitals

It is necessary to proceed through appropriate coordination with local residents for land acquisition or consolidation and procedure for EIA, especially the project of final disposal site has a wide-ranging environmental impact.

Table 5.6.2 Screening Table for Proposed Project/Measure

No.	Sector / Proposed Project	Major Negative Impacts from Screening Checklist	Relevant Comments in Stakeholder Meetings	Requirement in Indonesian Laws/legislation for EIA	Screening Category	Reasons for Final Screening
1. Disaster Prevention Sector						
1-1 Structural Measures						
1-1-1	Detached Breakwater	Sea traffic, cultural properties, hazard risk during construction, coastal zone, flora and fauna of coastal ecosystem	The reconstruction plan should consider the minimization of the risk of future disasters.	Breakwater over 200 m shall require EIA.	B	Negative impact is expected especially on coastal ecosystem. EIA is required in Indonesian legislation by its scale.
1-1-2	Seawall	Sea traffic, hazard risk during construction, coastal zone, flora and fauna of coastal ecosystem	- ditto-	The coastal disaster prevention facilities (e.g. Sea wall, Tide-water control gate) with the stretch line over 500 m shall require EIA.	B	Negative impact is expected especially on coastal ecosystem. EIA is required in Indonesian legislation by its scale.
1-1-3	Coastal Forest	Cultural properties, fishery right of aquaculture	Mangrove cannot be a good protection for protection from tsunami.	EIA requirement for the greenbelt consisting of mangrove or palm trees is not clear and should require more examinations.	B	The environmental impact is lower than 1-1-1, 1-1-2 and 1-1-4. However, some impact on fishery right in fishpond is expected.
1-1-4	Tidal Gate	Sea traffic, cultural properties, hazard risk during construction, coastal zone, flora and fauna of coastal ecosystem	The reconstruction plan should consider the minimization of the risk of future disasters.	The coastal disaster prevention facilities (e.g. Sea wall, Tide-water control gate) with the stretch line over 500 m shall require EIA.	B	Negative impact is expected especially on coastal ecosystem. EIA is required in Indonesian legislation by its scale.
1-2 Emergency Facility Plan						
1-2-1	Escape Building / Escape Tower	Resettlement/land, traffic, socially vulnerably people (e.g. handicapped persons)	The reconstruction plan should consider the minimization of the risk of future disasters.	Open space over 5 ha or building over 10,000 m ² shall require EIA.	B	Resettlement or land acquisition is necessary in case of new lands. Some care for the use by the socially vulnerable people. EIA is required depending the project scale.
1-2-2	Evacuation Open Space	Resettlement/land, traffic, waste management	- ditto-	Open space over 5 ha or building over 10,000 m ² shall require EIA.	B	Resettlement or land acquisition is necessary in case of new lands. The appropriate waste management is necessary.
1-2-3	Tsunami Park	Resettlement/land, traffic, waste management	- ditto-	Open space over 5 ha or building over 10,000 m ² shall require EIA.	B	Resettlement or land acquisition is necessary in case of new lands. The appropriate waste management is necessary.
2. Road / Transportation Sector						
2-1	Rehabilitation of Existing Arterial Roads and	Traffic, air pollution	The economy cannot revive without infrastructure	EIA is not required, and the rehabilitation over 10 km shall require UKL/UPL.	C	Severe negative impact is not expected. EIA is not required.

	Bridges (including escape building)		development such as roads.			
2-2	Rehabilitation of Signal System	Traffic	- ditto-	EIA is not required.	C	Negative impact is smallest in this sector.
2-3	Construction / Extension of Arterial Roads & Escape Roads	Resettlement/land, traffic, split of local communities, air pollution, waste management	- ditto-	Construction / Extension of roads over 10km shall require EIA* ²	A	Wide-ranging negative impacts are expected. Special care is required for land management. Stakeholder meetings and final agreement with local residents and land owners is essential. EIA is necessary depending on its scale.
2-4	New Construction of Ring Road	Resettlement/land, traffic, split of local communities, fishery right, air pollution, waste management	The development of ring road should need the agreement with the residents.	Construction / Extension of roads over 10km shall require EIA* ²	A	Wide-ranging negative impacts are expected. However, the impact level is severer compared to 2-3. Special care is required for land management. Stakeholder meetings and final agreement with local residents and land owners is essential. EIA is necessary depending on its scale.
3. Housing						
3-1	Housing Development in South-East Part	Resettlement/land, traffic, split of local communities, air pollution, water pollution, waste management	The relocation of communities should be made in democratic process. Environmental infrastructure such as drainage and waste management system is important for housing sector.	New construction of resettlement with removed household over 200 or coverage area over 100 ha shall require EIA.	A	Wide-ranging negative impacts is expected, especially the special care is required for the coordination of local residents and land management. EIA is necessary depending on its scale.
4. Water Supply						
4-1	Network Development of Water Supply Pipes	Traffic, hazard during construction, air pollution during construction	The water quality of shallow well in Ulee Lhee is not healthy for drinking and need more research.	Development of water pipe network over 10 km shall require EIA.	B	Some impact on traffic and the hazard risk during construction are expected.
5 Urban Sanitation						
5-1	New septage treatment plant	Hazard during construction, air pollution during construction, odor	N/A	Septage treatment plant with area over 2 ha shall require EIA.	B	Some negative impact is expected. EIA is required depending on its project scale.
5-2	Disposal Site for Municipal Solid Waste	Resettlement/land, traffic, split of local communities, air pollution, water pollution, waste	The final landfill site should consider the criteria of government decree. The tsunami waste	Sanitary landfill with area over 10 ha shall require EIA. All open dumping landfill shall require EIA.	A	Wide-ranging negative impacts are expected. EIA is required depending on its scale and disposal method.

		management, odor	should be cleaned up.			
6 Urban Drainage						
6-1	River Normalization Works	Ship traffic, waste	The plans should include the issue of floods. The buildings in the drainage areas will block the flow of flood water and wastewater.	River normalization work with length over 10 km or dredging volume over 500,000 m ³ shall require EIA	B	Some negative impact is expected. EIA is required depending on its project scale.
6-2	Rehabilitation of Pumping Facilities	Inland traffic	- ditto-	EIA requirement is not clear and should require more examinations.	C	No major negative impact and no regulation on EIA requirement. However, no severe negative impact is expected.
6-3	Installation of New Pumping Facilities	Resettlement/land, traffic	- ditto-	- ditto-	B	Some negative impact is expected. Legal requirement on EIA should be further examined.
7 Education						
7-1	Rehabilitation of Existing Damaged Education Facilities	Traffic	All schools in Kuta Raja were destroyed. Primary schools should be constructed as soon as possible.	No regulation on rehabilitation.	C	No severe negative impact is expected.
7-2	Reconstruction of Existing Damaged Education Facilities	Traffic	- ditto-	No regulation on reconstruction.	C	No severe negative impact is expected.
7-3	Relocation of Existing Education Facilities	Resettlement, traffic, split of local communities	- ditto-	Education facilities with land are over 5 ha or building coverage over 10,000 m ² shall require EIA	B	Land acquisition is necessary. EIA is required depending on its project scale.
8 Health and Medical						
8-1	Rehabilitation / Reconstruction of Existing Damaged Hospitals	Traffic	N/A	No regulation on rehabilitation/reconstruction of hospitals.	B	Some negative impact is expected.
8-2	New Construction of Hospitals	Resettlement, traffic, air pollution, waste	N/A	Construction of hospital requires EIA.	A	Land acquisition is necessary. EIA is required.
8-3	New Construction of Health Center	Resettlement, traffic, air pollution, waste	N/A	No regulation on health center.	B	Land acquisition is necessary. The requirement on EIA should be examined.

Notes:

*1, *2: For medium-sized of the population of 100,000 to 500,000

(3) Scoping

The scoping was made for the expected impacts to be caused by the proposed projects in order to determine the study/survey method and the mitigation measures including its alternatives. The scoping was made by using checklist method and its result is shown in Table 5.6.3.

It is evaluated that new construction of ring road and the new housing development impose severe impact on the resettlement/land issue such as land acquisition and consolidation. The project of disposal site of municipal garbage would also create the wide-range environmental impact on land and natural environment such as flora and fauna, water pollution and odor.

The project proponents' information disclosures, consultation meetings and agreement with local residents will be necessary to establish appropriate measures for land acquisition. The project of disposal site of municipal garbage is requires the wide-ranging survey / study not only the natural environment (topography, reforestation, flora and fauna) but also wastewater treatment and odor.

Table 5.6.3 Scoping Results for Proposed Project/Measure

No.	Sector / Project	Major Possible Impacts at Each Stage			Study / Survey Method for Possible Impacts	Possible Mitigation Measures
		Pre-construction	Construction	Operation		
1.	Disaster Prevention Sector					
1-1	Structural Measures					
1-1-1	Detached Breakwater		Sea traffic, Hazard risk, Coastal zone, Flora and Fauna	Coastal zone, Flora and Fauna	Navigation survey before construction, Bathymetric survey, Survey for physical and biological marine environment survey such as tidal current, velocity, flora and fauna	Meetings with fishermen, structure design alternatives for conservation of marine ecosystem for prevention closed sea area, Establishment of safety measures for accidents during construction
1-1-2	Seawall		- ditto -	- ditto -	- ditto -	- ditto -
1-1-3	Coastal Forest	Fishery right of aquaculture	Cultural/historical properties, fishery right of aquaculture	Fishery right of aquaculture	Test excavation before construction at project sites near the cultural properties, Interview survey with fishermen	Planting methods by changing its density and type of species, Meetings and agreement regarding compensation with fishermen
1-1-4	Tidal Gate		Sea traffic, cultural properties, hazard risk during construction, coastal zone, flora and fauna of coastal ecosystem	coastal zone, flora and fauna of coastal ecosystem	Navigation survey before construction, Bathymetric survey, Survey for physical and biological marine environment such as tidal current, velocity, flora and fauna	Meetings with fishermen, Structure allotment for prevention closed sea area, Establishment of safety measures for accidents during construction.
1-2	Emergency Facility Plan					
1-2-1	Escape Building / Escape Tower	Resettlement/land , traffic	Traffic	Socially vulnerably people (e.g. handicapped persons)	Land boundary/registration survey, traffic survey, interview survey with handicapped persons	Meetings and agreement with land owners and residents, Facility design alternatives to take care of handicapped persons
1-2-2	Evacuation Open Space	Resettlement/land	- ditto -	Waste management	Land boundary/registration survey, traffic survey, waste generation forecast survey	Meetings and agreement with land owners and residents, Facility plan alternatives to reduce waste quantity
1-2-3	Tsunami Park	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -
2.	Road / Transportation Sector					
2-1	Rehabilitation of Existing Arterial Roads and Bridges (including Escape Bridge)		Traffic, air pollution	Air pollution	Traffic volume survey, traffic volume forecast, monitoring	Alternative road plan for appropriate traffic volume, water spray during construction
2-2	Construction / Extension of Arterial Roads & Escape Roads	Resettlement/land , traffic, air pollution, waste management	Split of local communities, air pollution, waste management	- ditto -	- ditto -	Meetings and agreement with land owners and residents, alternative road plan for appropriate traffic volume, water spray during construction

2-3	New Construction of Ring Road	Resettlement/land	Split of local communities, fishery right for aquaculture fishermen, air pollution, waste management	Air pollution, fishery right for aquaculture fishermen	Land boundary/registration survey, Interview survey with aquaculture fishermen, traffic volume forecast, monitoring	Meetings and agreement with land owners, fishermen and residents. Alternative road plans for appropriate traffic volume. Water spray during construction
3.	Housing					
3-1	Housing Development in South-East Part	Resettlement/land	Split of local communities, air pollution, waste management	Split of local communities, air pollution, water pollution, waste management	Land boundary/registration survey, traffic volume survey and forecast, monitoring	Meetings and agreement with land owners and residents, facility alternatives for appropriate wastewater treatment and waste management. Water spray during construction
4.	Water Supply					
4-1	Network Development of Water Supply Pipes		Traffic, hazard during construction, air pollution during construction		Traffic volume survey and forecast, monitoring	Appropriate traffic control, Water spray during construction
5.	Urban Sanitation					
5-1	New Septage Treatment Plant		Hazard during construction, air pollution during construction	Odor	Monitoring	Establishment of safety measures for accidents, water spray during construction
5-2	Disposal Site for Municipal Garbage	Resettlement/land, traffic	Split of local communities, air pollution	Water pollution, public health, waste management, odor	Land boundary/registration survey, traffic volume survey and forecast, monitoring	Meetings and agreement with land owners and residents, appropriate traffic control, facility alternatives for appropriate waste odor management and pest control
6.	Urban Drainage					
6-1	River Normalization Works		Ship traffic, waste		Navigation survey before construction, monitoring	Traffic control for ship, Recycling or reuse of dredging material
6-2	Rehabilitation of Pumping Facilities		Inland traffic		Traffic volume survey	Traffic control during construction
6-3	Installation of New Pumping Facilities	Resettlement/land	Inland traffic		Land boundary/registration survey, traffic volume survey	Meetings and agreement with land owners and residents
7.	Education					
7-1	Rehabilitation of Existing Damaged Education Facilities		Traffic		Traffic volume survey	Traffic control during construction
7-2	Reconstruction of Existing Damaged Education Facilities		Traffic		Traffic volume survey	Traffic control during construction
7-3	Relocation of Existing Education Facilities	Resettlement/land	Traffic, split of communities		Land boundary/registration survey, traffic volume survey	Meetings and agreement with land owners and residents

8.	Health and Medical					
8-1	Rehabilitation / Reconstruction of Existing Damaged Hospitals		Traffic		Traffic volume survey	Traffic control during construction
8-2	New Construction of Hospitals	Resettlement/land	Traffic, air pollution	waste	Land boundary/registration survey, traffic volume survey	Meetings and agreement with land owners and residents, Traffic control during construction, water sprinkling, appropriate waste management of waste
8-3	New Construction of Health Center		- ditto -	- ditto -	- ditto -	- ditto -

5.6.5 Implementation

The valuable ecosystem such as mangrove was destroyed by the disaster, and the operation of environment-related agencies was also heavily damaged. Considerable number of staffs of the relevant authorities died and the equipment of their operation was damaged or washed away. Two major authorities, Environmental Impact Management Agency in Banda Aceh city (Bapedalda Kota) and Forestry Department (Dinas Kehutanan) in Aceh Province are involved in environmental sector. Bapedalda Kota is responsible for environmental management in Banda Aceh city, and Dinas Kehutanan is responsible for the forest conservation including coastal ecosystem such as mangrove and coral reef in Banda Aceh.

The local environmental management capacity is essential for the rehabilitation and reconstruction program, for data collection, EIA, licensing, environmental monitoring, ecosystem management.

Following future program will be required in environment sector:

- (1) Capacity building of *Bapedalda Kota* and *Dinas Kehutanan* consisting of reinforcement of its staffs, training and procurement of equipment (e.g. computer, printer, car)
- (2) Conservation of coastal ecosystem composing of; (i) macro/micro base plan/study for mangrove ecosystem and other coastal vegetation, and (ii) the implementation of their conservation.

For environmental perspective, Strategic Natural Resources and Environmental Assessment (SNREA) shall be promoted, which is the same concept with the Strategic Environmental Assessment (SEA).

5.7 SOCIAL IMPACT CONSIDERATIONS

5.7.1 Needs Assessments

Various donor agencies conducted relevant needs assessments and collected opinions of the disaster affected people. The following are the summary of these:

(1) Preliminary Damage and Loss Assessment [January 2005]

A technical report was prepared by BAPPENAS and the international donor community for initial assessment of the impact in terms of damages and losses. Undertaking needs assessment immediately after the disaster was difficult due to damaged infrastructure hampering access to affected population, problems with communications, and enormous geographical scale of disaster.

(2) JICA Preparatory Study[February 2005]

The major purpose of the survey was to grasp IDPs' general conditions and what the affected population would like to do in the future to secure their lives. The survey focused on present conditions, the aspirations for the income sources (former jobs), and preferences for settlement. The findings allowed formulating programs and projects appropriate for the peoples' requirements.

(3) Settlement and Livelihood Needs and Aspirations Assessment[March 2005]

Needs and aspiration assessment were conducted by IOM in collaboration with the Ministry of Justice and Human Rights, based on the interviews with 2,111 respondents in 12 districts. The majority of respondents from Banda Aceh city expressed desire to return to their home villages, giving the following reasons: to resume disrupted livelihoods (60 %), to restart normal life in dignity (35 %), because of concern about losing their lands (28 %).

For the permanent relocation, 69 % wanted to be relocated at the same site with their community. 44 % of Banda Aceh citizens stated that the legal land ownership is a vital concern. 30 % said that the settlement site should have basic services and appropriate shelter (with bathroom and toilet) available, 42 % of the respondents preferred settlement locations close to their villages of origin.

Concerning the livelihood issues, habitants of Banda Aceh city stated that their livelihoods were affected by the disaster (78 %) but only 5 % received assistance to activate their livelihoods. 90 % of respondents wanted to be provided access to capital in addition to livelihood materials and vocational training to allow them to pursue income-generating activities. Sewing, vehicle maintenance and carpentry skills training are the preferred vocational courses. 60 % are willing to pursue alternative economic activities if it is not possible to resume their pre-disaster livelihoods.

The NGOs also conducted multiple assessments, often in the same areas with the same populations, but did not publish the results. Gradually, the duplications are avoided thanks to the emphasis on the community planning process and coordination efforts.

5.7.2 Civil Society Consultations

(1) Consultations for Blueprint [March 2005]

BAPPENAS has prepared the final version of the Blueprint by a series of 10 working groups on different areas of policy. BAPPENAS also made effort to properly reflect the priorities of the local population through the process of the consultation with the Acehnese civil society, as summarized in the table below:

Table 5.7.1 Consultations for Blueprint

Initiated by	Input
BAPPENAS	The public consultation for the Blueprint was opened on March 1-9 2005, within 10 working groups, open for the civil society. It was followed by consultations across the province, consulting district-level governments and local village leaders. 30-31 March there was another round of meetings organized in BAPPEDA NAD for the further information and discussion on the Blueprint.
UNSYIAH	Initiated and coordinated by the Syiah Kuala University, which created the UNSYIAH – forum to consult and improve governments’ Blueprint by the universities. The results were transferred to BAPPENAS following the 10 basic chapters included in the original Blueprint and adding 11 th sector: “Islamic Law”.
AFR	Initiated and coordinated by the AFR (Aceh Recovery Forum). The inputs were collected over the meeting 7-9 March 2005 in Medan, from 300 Acehnese stakeholders (district speakers, associations of fishermen, women, students, anti-corruption activists, religious leaders, NGOs, etc.). The results of the consultations were combined in the “policy paper”, submitted to BAPPENAS and were calling for more focus on human development for the 10 working groups.

Source: Compiled from different sources, March 2005

(2) Community Involvement in the Action Plan of Rehabilitation and Reconstruction of Banda Aceh City in the Year of 2005[May 2005]

The Action Plan for the Rehabilitation and Reconstruction of Banda Aceh City in the Year 2005 is being prepared with the intensive participation of the stakeholders and civil society. The stakeholders for each working group were identified (April 20). Since then, a number of meetings for each of 4 working groups (Land and Settlement, Local Economic Development, Health, Education) were held at BAPPEDA Banda Aceh, with the participation of the local stakeholders, NGOs, donors, LGSP consultants, and facilitated by Syiah Kuala University.

Moreover, on May 9, 2005 the Camat Meeting was organized in Banda Aceh city hall, with the participation of Mayor of Banda Aceh and head of BAPPEDA of Banda Aceh. The

Camats (Heads of Kecamatan) had an opportunity to report and discuss present condition and problems faced by the communities, as well as ongoing and planned programs.

(3) Participation in the Revised City Master Plan [July/ August 2005]

Further meetings for public consultation are scheduled to take place in July/August 2005, to be facilitated by the Syiah Kuala University.

5.7.3 Social Impact Considerations

(1) Priorities for Social Impact Considerations

High priorities for social impact considerations have been identified: (i) Job creation, (ii) Vulnerable people, (iii) Participation, and (iv) Community development. These are based on guidelines for social considerations¹ with adjustment to the specific post-disaster conditions in the Study Area².

The following table explains the justification of the priorities:

Table 5.7.2 Priorities for Social Impact Considerations - Justification

Priority	Justification
Job creation	<p>45,000 people in Banda Aceh are unemployed (according to the Labor Force Agency). In the whole NAD about 1.8 million people in NAD lost jobs due to the disaster (30% people in agriculture sector, 130,000 fishermen, and around 170,000 people in the SME (Small and Medium Sized Enterprise) sector.</p> <p>New jobs are essential for rebuilding livelihoods of Aceh people and recovery of the communities.</p> <p>The unemployment could rise from 6.8% to 30%.³ The number of skill professional is not sufficient, business capital is not available, facilities and infrastructure have been destroyed. IDPs have limited opportunities to restart their economic activities because of lost assets, markets, formal and informal chains.</p> <p><u>Labor-based approach reconstruction</u> can generate jobs and income quickly while rebuilding basic infrastructure. It is also an important bridge between the immediate needs, long-term reconstruction and development. Maintenance is easier, cheaper and creates further jobs. Labor-based approach develops a variety of technical and other skills, including planning, negotiation, decision making – which further empowers individuals and communities. Finally, working together to achieve a common goal creates social cohesion, stability and releases trauma after the disasters.</p> <p><u>Recovery of previous economic activities and further development:</u></p> <p>As of June 2005, people in Banda Aceh are generating living through opportunistic business development, since international presence is generating employment opportunities. For the long run, the previous economic activities should be restored and development of new activities facilitated.</p> <p><u>- Trade:</u> Rice, fish and other food items are commonly traded within NAD and North Sumatra. Rice and paddy are transported from surplus areas such as Pidie, Aceh Utara and Aceh Timur in the West Coast to various cities, especially Medan, Banda Aceh, Meulaboh, and Tapak Tuan. In Banda Aceh the damage to main market places (Pasar Aceh and</p>

¹ JICA Guidelines for Environmental and Social Considerations, April 2004; JBIC Guidelines for Confirmation of Environmental and Social Considerations, October 2003

² Based on the information collected by: (i) participation in coordination meetings, (ii) contacts with international organizations, (iii) international NGOs, (iv) local NGOs, (v) universities, and (vi) local administration. List of interviews attached to the sectoral report.

³ Blueprint (based on data from the Ministry of Manpower and Transmigration and the World Bank)

Priority	Justification
	<p>Peunayong) has moved the main trading places to Pasar Lambaro, Ketapang, Neusu, and Ulee Kareng.</p> <p>Markets are working sluggishly because: (i) shrinking market destination (Banda Aceh and kabupaten in the West coast), (ii) decline in number of traders, (iii) most of food aid are in the form of rice. The trade volumes and jobs must be restored through the rehabilitation of transport and market places, provision of capital, etc.</p> <p>- <u>Agriculture</u>: (i) Food agriculture: In 2005, Banda Aceh experiences a deficit of rice production of 18,500 tons.⁴ The Eastern part of NAD will fully recover its rice production after 2008, and Western part is estimated to recover by 2010.⁵ (ii) Aquaculture requires restoring ponds (farmers operate mostly small areas <2ha), but also infrastructure along the production chain, including hatcheries, feed supplies, post harvest operations.</p> <p>Development of food and fishery agriculture is related and will change depending on the urban physical development. Those agriculture areas are located especially in Lamjamee, Ulee Lheu, Kampong Jawa, Kampong Pande, Deah Raya, and Alue Naga.</p> <p>- <u>Tourism</u>: Potential tourism spots for development are: (i) Syiah Kuala Beach, Alue Naga as a center of coastal recreation with development of various supporting facilities; (ii) urban center with more urban parks, plaza, shopping complex, etc., (iii) cultural area (Grand Mosque, State Museum, Pendopo, King Cemetery, kingdom remains and cultural centre), (iv) entertainment facility, art building, cinema, etc.</p> <p>- <u>Small and Medium Enterprises</u>: Small scale industry and handicraft industry can be developed in line with implementation of seaport development, tourism program, etc. SMEs need access to capital (grants, credits, etc.) and training.</p> <p>- <u>Wages</u>: The wages were ranging between Rp. 20,000-30,000/ day in agriculture, Rp. 30,000-40,000/ day for unskilled non-agricultural labor, and Rp. 40,000-50,000/ day for skilled non-agriculture labor. Recovery cash-for-work programs (<i>padat karya</i>) were relatively the same as labor market wage for non-agriculture (Rp. 30,000-40,000/ day), and are probably not causing distortions to the wages.</p>
Vulnerable people	<p>The disaster left over 512,540 internally displaced people (IDP) in Aceh Province (including 49,921 IDP in Banda Aceh city). Those people are staying in camps, host communities, government barracks (temporary location centers – TLCs), coming back to the areas affected by the disaster and rebuild, or staying in damaged houses.</p> <p>Follow to the disaster, the social structure and inequalities (gender, age, income levels) make some groups suffer more than others. Among the IDPs there are new vulnerable groups:</p> <ol style="list-style-type: none"> (1) Youth and children: it is forbidden to employ children below 15 years old⁶; necessary to promote employment of youth with special support to their life-skills and education (2) Women: need to provide with the employment and develop skills, especially of single mothers⁷/ women who lost immediate members of family. In terms of mortality rates, many more women than men lost their lives, because they stayed behind to look for children and relatives; often women are not able to swim, climb trees, etc. (3) Handicapped: after the disaster there is more than the average number of handicapped people; need to consider accessibility⁸ to infrastructure <p>Poor: better-off families were more likely to stay with friends and relatives, whereas poorer families were forced to find shelter in camps. Income gaps can widen. Many families who had marginal livelihoods, few assets, or are unable to make themselves heard are in danger of being excluded from the reconstruction process altogether. Poorest people are most dependent on land title for their livelihoods.</p>
Participation	<p>According to the Blueprint “The survivors should not be treated merely as a source of data and information for planning rehabilitation and reconstruction. Rather, they must also be involved as the main actors of development activities.”⁹</p>

⁴ Food and Labor Market Analysis and Monitoring System in NAD by Indonesian Centre for Agro Socio Economic Research and Development (ICASERD), May-June 2005.

⁵ According to the estimation by the Dinas Pertanian of NAD

⁶ Based on the convention no.138, ratified by Indonesia by UU Perlindungan dari Bentuk-Bentuk Pekerjaan Terburuk Anak/ UU No 1 tahun 2000

⁷ Even before tsunami there were 148,000 single mothers in Aceh, due to the conflict

⁸ Very often minor injuries resulted in major amputations because of limited access to proper medical care soon after disaster.

⁹ Blueprint, Main Book, Chapter 7

Priority	Justification
	<p>Participation ensures proper representation of the aspirations, religious and socio-cultural values of the communities in the rehabilitation and reconstruction process; necessary for enforcement of the Special Autonomy in the NAD Province (Law No 18, 2001) to give freedom to the region in the governance, development and social aspects in line with the local values and cultures that are based on Islamic law.</p> <p>The result of people participation and the bottom-up approach should be demand driven programs that assist communities to rehabilitate basic social and economic infrastructures (schools, clinics, markets, irrigation canals, rice fields), building foundation for sustainable recovery and development, and moving from dependency on relief to self-reliance through viable and sustainable economic activity.</p>
Community development	<p>Community development through: (i) Recovering community income (jobs related to rehabilitation and reconstruction and training for various lost jobs); (ii) recovering community service facilities (related to community economic activities – such as fishery & agriculture activities, recovery of fishing harbor and fish auction place, recovery of irrigation facilities, sale centers); (iii) banking services, (iv) assistance to communities (housing/ grants), and (v) support to communities (access to productive resources, credit and technical assistance; support to community groups through grants to recover public facilities).</p>

Source: JICA Study Team

(2) Key Issues for Social Considerations

The following Table 5.7.3 summarizes key issues within each priority for social considerations.

Table 5.7.3 Key Issues for Social Impact Considerations

Priority	Key Issues
Job creation	<ul style="list-style-type: none"> ⇒ Labor intensive technologies ⇒ Labor intensive maintenance systems ⇒ Based on local workers and local resources ⇒ Based on selected target group (sustainable job creation) ⇒ Recovery of former economic activities and facilitation of further development
Vulnerable people	<p>Respond to needs, create skills and employment for IDPs, especially:</p> <ul style="list-style-type: none"> ⇒ Children & youth ⇒ Women/ single mothers ⇒ Handicapped ⇒ Poor
Participation	<ul style="list-style-type: none"> ⇒ Public consultation (required commitment of central/ local administration to apply legal regulations) ⇒ Participation of local stakeholders in rehabilitation reconstruction projects: formulation, implementation and monitoring & evaluation ⇒ Socialization process ⇒ Creating participation through labor intensive approach
Community development	<ul style="list-style-type: none"> ⇒ Community planning and prioritizing of works ⇒ Based on locally available labor, services and construction materials ⇒ Community-based skills training ⇒ Community-based training in planning operation and maintenance of essential utilities ⇒ Post-training services ⇒ Support for entrepreneurship ⇒ Local capacity building: community based organizations, business associations, NGOs, etc.

Source: JICA Study Team

(3) Social Impact Considerations by Sector

Table 5.7.4 Social Impact Considerations by Sector

Priority/ Phase	Social considerations		
	Rehabilitation 2005 - 2006	Reconstruction 2007-2009	Further development 2010-2015
1. Water supply			
Job creation	⇒ Cash-for-work programs to clean water facilities	⇒ Labor-intensive reconstruction of water facilities ⇒ Support development of economic activities	⇒ Employment in operation and maintenance of water facilities ⇒ Support development of economic activities
Vulnerable people	⇒ Clean water for IDPs and host communities, including water purification tablets, etc.	⇒ Clean water availability at TLCs, barracks ⇒ Affordability of PDAM water; development of water from wells	⇒ Clean water availability (quality, quantity) ⇒ Affordability of water fee
Participation	⇒ Public consultations and socialization of City Master Plan	⇒ n.a.	⇒ n.a.
Community development	⇒ n.a.	⇒ n.a.	⇒ n.a.
2. Urban Sanitation and Drainage			
Job creation	⇒ Cash-for-work programs: managing tsunami-generated waste and waste recycling facilities (scavengers) ⇒ Labor-intensive rubble clearance; recycling ⇒ Labor-intensive restoration of local infrastructure	⇒ Labor-intensive rehabilitation ⇒ Recycling ⇒ Support development of economic activities	⇒ Operation and maintenance of facilities ⇒ Support development of economic activities
Vulnerable people	⇒ Sanitation facilities and hygiene supplies to displaced communities (flash toilets, solid waste management compliant with the Humanitarian Charter and Minimum Standards in Disaster Response (SPHERE) standards)	⇒ Sanitation facilities at TLCs, barracks ⇒ Construction of water and sanitation facilities in new/ rehabilitated schools ⇒ Integrated support for water supply, sanitation and hygiene promotion	⇒ Access to sanitation facilities ⇒ Sanitation and hygiene promotion
Participation	⇒ Public consultations and socialization of City Master Plan	⇒ n.a.	⇒ n.a.
Community development	⇒ Drainage rehabilitation and construction by communities	⇒ Community waste management ⇒ Drainage maintenance by communities	⇒ Community waste management ⇒ Drainage maintenance by communities

3. Road & transportation network			
Job creation	⇒ Cash-for-work programs: cleaning of rubbles on roads, drainage digging, etc.	⇒ Labor-intensive road rehabilitation	⇒ Operation and maintenance
Vulnerable people	<ul style="list-style-type: none"> ⇒ “Vulnerable road users” (children, elders, handicapped) have chance to access public facilities and social life ⇒ “Captive class” (poor – who cannot afford motorbike or car) have access to work 	<ul style="list-style-type: none"> ⇒ “Vulnerable road users” (children, elders, handicapped) have chance to access public facilities and social life ⇒ “Captive class” (poor – who cannot afford motorbike or car) have access to work 	<ul style="list-style-type: none"> ⇒ Car oriented society causes the increase of traffic accidents and environmental destruction; the government has to aim at public transportation oriented society. ⇒ All people have opportunity to access easily to the working place, shopping place and public facilities (hospital, school, city office, etc.); if possible – access time within 30 minutes)
Participation	<ul style="list-style-type: none"> ⇒ Public consultations and socialization of City Master Plan ⇒ Planning for the access allowing future economic development: industries, avoiding congestion, plan for the increased road activity and intensity – with participation of all stakeholders 	⇒ n.a.	⇒ n.a.
Community development	⇒ Community managed rehabilitation of feeder roads	⇒ Community managed rehabilitation and maintenance of feeder roads	⇒ Community managed maintenance of feeder roads
4. Health & medical cares			
Job creation	<ul style="list-style-type: none"> ⇒ Trained health professionals ⇒ Cash-for-work for rehabilitation of medical facilities 	<ul style="list-style-type: none"> ⇒ Trained health professionals ⇒ Labor-intensive reconstruction of medical facilities 	⇒ Trained health professionals
Vulnerable people	<ul style="list-style-type: none"> ⇒ Children and women, especially in difficult situation such as orphans and widows, should be enabled to receive basic and emergency health services ⇒ Health measures for needs of IDPs and less-affected population ⇒ Youth in IDP camps receiving psychological services 	<ul style="list-style-type: none"> ⇒ Children and women, especially in difficult situation such as orphans and widows, should be enabled to receive basic health services, including maternal and child health, nutrition improvement and primary health care ⇒ Disabled people as results of the disaster should be enabled to receive medical care and rehabilitation services to recover their basic social lives ⇒ Maintaining low health risks 	<ul style="list-style-type: none"> ⇒ Children and women, especially in difficult situation such as orphans and widows, should be enabled to receive basic health services, including maternal and child health, nutrition improvement and primary health care ⇒ Vulnerable groups to Sexually Transmitted Infections (STI) should be protected by STI prevention programs such as sensitization

Participation	⇒ n.a.	⇒ Community people can be mobilized to primary health care activities such as Posyandu and community referral systems.	⇒ Community people can be mobilized to primary health care activities such as Posyandu and community referral systems.
Community development	⇒ n.a.	⇒ n.a.	⇒ n.a.
5. Education			
Job creation	⇒ Teachers and education professionals ⇒ Cash-for-work for rehabilitation of education facilities	⇒ Sufficient number of trained teachers and education professionals ⇒ Labor-intensive reconstruction of education facilities	⇒
Vulnerable people	⇒ Getting children back to school ⇒ Support/ recovery of mental condition of teachers suffering from trauma and teachers' professional qualifications ⇒ Scholarships for poor students ⇒ Youth and adults participating in community education and livelihoods skills training programs	⇒ Education for all children ⇒ Scholarships for poor students ⇒ Proper vocational training for women (especially single mothers, in need of source of income) ⇒ Emphasize land/ property rights of women; support women groups (provide child care, transportation, compensate gaining skills) ⇒ Educating women on their property rights	⇒ Education for all children ⇒ Development of vocational training
Participation	⇒ Formulation of City Master Plan focusing on disaster mitigation	⇒ n.a.	⇒ n.a.
Community development	⇒ Community initiative for education ⇒ Community education facilitators trained and deployed to IDP communities ⇒ Community education in IDP camps – as a bridge into the formal education system for children and out-of-school youth	⇒ Community increasing quality of education	⇒ Community increasing quality of education

Source: JICA Study Team based on available information.

CHAPTER 6 IMPLEMENTATION PLAN AND SCHEDULE

6.1 PROJECT LIST (2005-2015)

6.1.1 Overall Program

The implementation schedule are mainly divided into three (3) phases; namely,

(1) Rehabilitation phase (2005-2006)

(2) Reconstruction phase (2007-2009)

(3) Long-term phase (2010-2015)

The rehabilitation and reconstruction phases are presumed as the period for restoration of pre-disaster social and environmental conditions, while long-term phase is the development period to accomplish city planning with disaster preparedness.

6.1.2 Preliminary Project Cost

Project cost is broken down in accordance with the implementation plan and schedule. Preliminary project cost and tentative implementation plan for rehabilitation and reconstruction are subject to change by the related Indonesian authorities.

Preliminary project cost includes 10 % physical contingency, 10 % price escalation and 10 % engineering services fee of the direct cost, and Value Added Tax (VAT). Import duty, land acquisition cost and compensation fee are not included in the cost.

Total project cost is estimated at 6,618 billion Rp. for rehabilitation and reconstruction programs and 9,292 billion Rp. including Long-term programs as summarized below in Table 6.1.1 and shown in detail in Table 6.1.2 overleaf.

Table 6.1.1 Summary of Project Cost

SECTOR	(Rp. billion)			
	Rehabilitation (2005 – 2006)	Reconstruction (2007 – 2009)	Long-term (2010 – 2015)	TOTAL
A. Housing	780.0	524.9	588.9	1,893.8
B. Electricity & Communication	651.3	1,281.2	780.0	2,712.5
C. Water Supply	115.9	8.2	21.7	145.8
D. Drainage and Sanitation	324.2	357.9	176.7	858.8
E. Road and Transport	619.2	154.9	593.5	1,367.6
F. Health	324.6	84.9	88.3	497.8
G. Education	621.0	323.0	25.0	969.0
H. Disaster Preparedness	25.0	172.9	321.8	519.7
J. Public Market etc.	112.1	136.5	78.0	326.6
TOTAL	3,573.3	3,044.4	2,673.9	9,291.6

Source : JICA Study Team

6.1.3 Program by Sector

(1) Housing Program

Housing program formulated in the Blueprint considered 16,000 houses for rehabilitation phase and 4,000 houses for reconstruction phase. The construction cost for 20,000 houses in total was estimated. Those numbers are updated based on the survey data prepared by this Study. The direct cost for rehabilitation/reconstruction of housing was recalculated according to the number of damaged house units by the survey carried out by IOM on March 2005 as shown in the following Table 6.1.3.

Table 6.1.3 Estimation of Rehabilitation/Reconstruction Cost for Housing (Direct Cost)

Degree of Damage	Minor	Medium	Destroyed	Total
Housing (unit)	2,924	3,124	15,583	21,631
Unit cost for rehabilitation/reconstruction(million Rp.)	7	25	42	
Estimated rehabilitation/reconstruction cost (million Rp.)	20,468	76,538	654,486	751,492

Source: Number of units: IOM; Estimated cost: JICA Study Team

However, many Village Plans by Desa are being formulated with assistance of donors and NGOs and the concept on formulating Village Plan would be totally different from that in Blueprint because of the difference on land use in coastal area. In Blueprint, the coastal area was presumed as buffer zone with scattered houses for fishermen, while the Village Plan is being prepared under the concept that all dislocated families who lost their houses and want to return their homeland would re-build houses in coastal area.

Although the reconstruction of new houses is on-going in accordance with the Village Plan with funding of donors and NGOs, the number of reconstructed houses as of July 2005 is less than far behind the schedule from the proposed numbers in the Village Plan. The difficulties of reconstruction of houses by dislocated families are mainly insufficient fund; namely, the loss of opportunity of income generation, unemployment due to closed-down of private industries, and the loss of fishing boat and apparatus for fishermen.

The following countermeasures are considered for resolving the issue related housing program:

- a) The preparation of the Micro Plan adjusting top-down approach with bottom-up approach for finalizing the preparation of Village Plan and the realization of the number of dislocated families who want to return their homeland.
- b) Housing loan procedure with less interest or no-interest for dislocated families.
- c) Employment of the dislocated families for the construction work of basic infrastructures including the coastal forest for the purpose of their income generation.

- d) Loan procedure for re-establishment of private industries which were closed down due to tsunami disaster for getting the opportunities of employment of women.
- e) Employment of the dislocated families for small-scale manufacturing maintained by NGOs.

The number of IDP was estimated at 65,500 or about 13,100 household. The population increase by 2009 was projected at 54,000 or about 10,800 household. Total 23,900 houses will be necessary to be constructed by 2009. Assuming the average cost per house is Rp.42 million, the total construction direct cost is estimated as Rp.1,003.8 billion.

(2) Electricity and Communication

Electricity and communication facilities are being rehabilitated by the electricity corporation and telecommunication company, respectively. The cost is based on their program.

(3) Water Supply System

Among the basic infrastructures, the water supply system is being rehabilitated urgently as part of Quick Impact Projects under Japanese aid program. After the implementation of the urgent rehabilitation of water supply system which is being conducted, the capacity of water supply system covering the Banda Aceh City would be equivalent or slightly more than that of pre-disaster condition. Then, the operation and maintenance of water supply system would be scheduled.

(4) Necessity of Restoration of Road Network

The most serious concern of this Study is to restore the social and economical activities under pre-disaster condition. Among the proposed programs, the priority is given to the restoration of road construction, since the programs proposed in the other sectors depend largely on the access to the communities. The on-going village planning, which is people-centered attempt to restore pre-disaster condition and preparing a village map by desa, could not be completed successfully without the accurate information of the alignment of artery and sub-artery road network. It is noted that the alignment of the road is sometime different among village maps and it would be conflicts among desa. Thus the top priority is given to the implementation of rehabilitation of devastated road network.

(5) Improvement of Drainage System

Land subsidence due to earthquake is the most serious issue for formulating people-centered housing plan, so-called a Village Plan, especially in the coastal area where many dislocated families want to return their homeland. Land area for their house lots was reduced and the land surface is frequently submerged into sea water during high tide. However, the dislocated families have neither fund for housing nor technical knowledge. Most of them in

the low-lying area are waiting for the urgent establishment of drainage system implemented by the local government unit.

(6) Health and Medical Cares

As well as the rehabilitation of basic infrastructures the priority programs for health and medical cares focus on the rehabilitation of damaged health care centers and to resume regular health services in rehabilitation stage by 2006. Revitalization and strengthen of the services including establishment of emergency health system to prepare against extreme cases are to be implemented in reconstruction stage. The routine maintenance of regular health services is required for successive years.

(7) Education

The education quality of the Aceh Province was reported as one of the 10th lowest in Indonesia. It has been degrading for the last six (6) years due to a political conflict. For those years, more than 1,000 schools have been burned, more than hundreds of teachers have been wounded, and about 100 teachers have been killed or missing.

Furthermore, the tsunami on 26 December 2004 caused casualties of 13,500 students and 820 teachers in Banda Aceh City. Although there were 66,000 students in an elementary and high school in 2004, the number of students has dropped suddenly by 55 %. Also, about 60 % of schools were damaged, in which a half of damaged schools was collapsed completely or washed away.

As remarkable population increase is projected at the growth rate of 6 % per annum by 2009, the rehabilitation and reconstruction of schools and the strengthening of education administration has to be commenced soon as the baby-boomers are expected to enter elementary schools after 2012. The reconstruction period is drawing to an end.

Among the education sector programs, the priority project is mainly divided into four (4) categories; namely, (i) restoration of school infrastructures, (ii) teacher production and training for in-service teachers, (iii) scholarship to orphans who lost parents by disaster, and (iv) upgrading the capacity of education administrators.

(8) Disaster Preparedness

The most effective method against a huge-scale natural disaster is to ensure escaping, evacuation and relief activities through well-arranged road network. Even the structural measures against the other small-scale and medium-scale natural disasters, such as flooding, earthquake and fire spreading, require 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 shelter will be of no use since no one can access to those facilities immediately after the disaster. Thus, the implementation of disaster mitigation would be subsequent programs after the implementation of rehabilitation road network for the rehabilitation period.

However, 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, almost all of the citizens felt the menace against disaster when the powerful aftershock occurred on 28 March 2005 and they ran away helter-skelter on foot or by motor car to the open place or building as a safer place which they could imagine promptly. This fact shows that the experiences of huge-scale disaster will be handed down from generation to generation by conducting continuous public education.

The early implementation of non-structural measure is favorable for disaster preparedness taking into account the lesser investment cost 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 buildings.

Among the structural measures proposed in this Study, coastal forest utilizing natural force of vegetation would be raised with priority, while the reinforced-concreted structures such as seawall and detached breakwater would be part of reconstruction plan after the completion of effective road network.

(9) Public Market, etc.

The direct cost for rehabilitation/reconstruction of public markets, government buildings and religious buildings was calculated according to the number of damaged building units by the survey carried out by IOM on March 2005 as shown in the following table.

Table 6.1.4 Estimation of Direct Rehabilitation/Reconstruction Cost for Public Markets, Government Buildings and Religious Buildings

Facility / Degree of Damage	Unit	Minor	Medium	Destroyed	Total
Public Market	unit	3	-	3	6
Unit cost for rehabilitation/reconstruction	million Rp.	900	3,000	6,000	
Estimated rehabilitation/reconstruction cost	million Rp.	2,700	-	18,000	20,700
Government Building	unit	3	2	28	33
Unit cost for rehabilitation/reconstruction	million Rp.	800	1,680	2,560	
Estimated rehabilitation/reconstruction cost	million Rp.	2,400	3,360	71,680	77,440
Religious Building	unit	29	12	31	72
Unit cost for rehabilitation/reconstruction	million Rp.	420	1,320	2,100	
Estimated rehabilitation/reconstruction cost	million Rp.	12,180	15,840	65,100	93,120
Grand Total	million Rp.	17,280	19,200	154,780	191,260

Source: Number of units: IOM; Estimated cost: JICA Study Team

6.2 PRIORITY PROJECT (2005-2009)

A matrix for the relation of the sectors, their action, goal, outcome/benefit and the mission was summarized in Table 6.2.1. All projects were examined in environmental point of view and no serious negative impact was found. However as each design goes into detail and community consultation proceeds, the propriety shall be re-checked. Community's input such as preparation of minor access roads, micro drainage and recycling of solid waste is also considered.

The priority projects were selected basically from those in the rehabilitation and reconstruction stage (2005-2009). The projects cover all sectors. The implementation schedule was adjusted to average the total cost by year.

(1) Road and Transportation

Rehabilitation of the damaged road and bridges are selected. The rehabilitation of arterial roads will have more priority than other minor roads. Reconstruction of traffic management system and reconstruction of transport facilities including the bus (labi-labi) terminal and ferry terminal.

(2) Urban Sanitation and Drainage

Urban drainage rehabilitation in the devastated area and city center is prioritized including rehabilitation of pump facilities, primary channels and water gates, construction of retarding ponds and dredging of channels. Recovery and expansion of human excrement treatment plant (IPLT) is indispensable from environmental point of view. As the existing dumping site will be filled up in about two years, new site for sanitary landfill should be secured as soon as possible, and the construction should be expedited.

(3) Health and Medical Cares

Items of priority should be done in rehabilitation and reconstruction phase are classified into 8 categories. However, the implementation should be done as a package of the specific project which contains a few prioritized categories. Thus, the following 7 packages of specific projects are identified.

1. Rehabilitation/ Reconstruction of Damaged/ Destroyed Health Centers and Sub Health Centers
2. Rehabilitation/ Reconstruction of Damaged/ Destroyed Public Hospitals
3. Rehabilitation of Drug and Medical Supply System
4. Maternal and Child Health System Improvement Project
5. Mental Health Care System Improvement Project

6. Communicable Diseases Control Enhancement Project
7. Capacity Building for Drug and Food Control

(4) Education

Rehabilitation of damaged schools is prioritized. Although it will be in reconstruction stage, reconstruction of school buildings in the coastal area as escape building should be important. As well as the specific projects introduced in Health and Medical Cares Sector, the implementation also should be done as a package of the specific project which contains a few prioritized categories. Thus, the following specific project package in the education sector is identified.

1. Reconstruction and improvement of nucleus school for upgrading science and mathematics education level
2. School Relocations in Coastal Areas Heavily Damaged by the Tsunami in disaster preparedness
3. REDIP (Regional Education Development and Improvement Program) in Banda Aceh
4. Improvement of Early Age Children Center
5. Reconstruction of a Senior Vocational High School
6. Reconstruction of In-Service Teacher Training Center
7. Reconstruction of Boarding Schools
8. Capacity Development of Education Administration

(5) Disaster Mitigation

Priority is given to the implementation of non-structural measure; especially warning system and disaster awareness, taking into account the lesser cost and long range acquired of disaster mitigation effects. Furthermore, the administrative guidance for the installation of external stairs to existing buildings and newly-built public facilities as escape building is necessary.

Coastal forest will be raised as part of structural measure, while the reinforced-concreted structures such as seawall and detached breakwater will be later part of reconstruction plan.

Table 6.2.1 Relation of Sectors, Missions, Goals and Outcomes

Mission	Sector	Action: Recover, Improve and Reconstruct:	Goal in 2009	Input of Community/NGO	Outcome/Benefit	Cross Sector
Livelihood of Acehnese will be recovered. (Better living environment will be made and foundation for future growth will be secured.)	Water Supply	Water supply facilities	Water supply system is provided in all urban area.	Connection to each house level; Communal water supply until system	Service population for safe water access	Education, Cooperation and Capacity Development
	Sanitation and Drainage	Sanitation and Drainage facilities	Urban area is Flood free (return period 5 years); All solid waste and sludge will be managed.	Micro drainage, micro embankment, recycling of solid waste	Reduction of flood risk, Expected saved property, Population in sanitary condition	
	Road and Transport	Road and transport facilities	All arterial and sub-arterial roads will be recovered. Transport will be secured in all modes (land, sea,	Micro access road, community road	Smooth traffic flow, reduction of transport time and cost	
	Health	Health facilities, Capacity development	Health center and clinic will be accessible to all people.	Community health and sanitation activities	No. of healthy people, reduction of sick people	
	Education	Educational, cultural and vocational facilities, Capacity development	All school age children will have education in good environment. High education and training will be accessible.	Non-formal education and training, Cooperation with school	No. of students in decent educational environment	
	Disaster Preparedness	Structural and Non-structural measures	Victim will be minimum in calamity. Assets will be saved from minor disaster.	Education, Conversion to escape building	Expected saved life and property, Increased preparedness and sense of relief	
	Housing	Houses	All citizens will live in decent houses. Building material will be supplied. Low interest rate loan will be provided.	Construction of private houses	No. of houses, No. of people in decent houses	
	Other Public Facilities	Market, park, etc.	Necessary facilities for economic and cultural activities will be prepared.		Service population	
Disaster risk will be reduced to the level of people's relief.	Water Supply	Strong structure, Redundancy	Victims will be minimum in calamity. Assets will be saved from minor disaster.	Provision of emergency water	Expected saved life and property, Increased preparedness and sense of relief	
	Sanitation and Drainage	Strong structure, Redundancy (multi-access)		Maintenance of micro drainage		
	Road and Transport	Escape road, Relief road		Maintenance of escape road		
	Health	Escape building, First aid training		Individual health care		
	Education	Escape building, Disaster awareness education		Disaster awareness education		
	Disaster Preparedness	Coastal Disaster Risk Mitigation Facilities, Warning system, Education		Community efforts		
	Housing	Strong structure		Construction of strong house		
	Other Public Facilities	Emergency bases, Parks on disaster preparedness, Strong structure		Construction of strong structure against disaster		

Source: JICA Study Team

6.3 ORGANIZATION

Banda Aceh City and NAD Province are the implementing bodies for the rehabilitation and reconstruction projects for the city, while BRR plays an important role as a coordinating agency to ensure transparency, accountability and speed in the reconstruction of Aceh and Nias.

BRR was set up for a four-year period by the President on April 16, 2005 through Regulation in Lieu of a Law (*Perpu*) No. 2/2005. As part of the BRR's commitment to abide by stringent guidelines and the highest professional standards, the *Perpu* specifies that rehabilitation and reconstruction activities will be implemented based on the principles of transparency, accountability, participation and responsibility by prioritizing public interest and remaining free of corruption, collusion, and nepotism.

BRR has been granted an unprecedented level of authority and responsibility to enable it to rapidly address the needs of the affected regions. The establishment of two (2) independent oversight boards, made up of a number of national and regional officials, civil society representatives, and reconstruction and technical experts, have been providing the highest level of civilian supervision and accountability in order to ensure full transparency and oversee governance, operations and fund disbursement.

Dr. Kuntoro Mangkusubroto was appointed on April 29, 2005 as a Director of the Rehabilitation and Reconstruction Executing Agency (*Badan Pelaksana Rehabilitasi dan Rekonstruksi*) for Aceh and Nias. He is a man of high integrity with a proven track record of effective management.

There are eight (8) departments in the BRR. They are; (i) Planning and Programming, (ii) Institutional Development & Empowerment, (iii) Housing, Infrastructure & Land Use, (iv) Economic & Business Development, (v) Religion, Social & Culture, (vi) Education & Health, (vii) Finance & Funding, and (viii) Communications, Information & Inst. Relation.

Operation principles and roles of the BRR are:

1. To act as a “market place”, bringing together project proposals that address important needs with available funds,
2. To facilitate local government and civil society bodies in implementation of projects, capacity building where needed,
3. To lever stakeholders resources (e.g., donors) , external agencies and existing mechanism wherever possible,
4. To monitor progress of on-budget and off-budget projects, conducting spot-checks and full audits where necessary, and
5. To focus on agency capacity-building, and fast tracking suitable projects.

CHAPTER 7 COMMUNITY EMPOWERMENT PROGRAM (CEP)

7.1 BASIC APPROACH

7.1.1 Objectives

The objective of Community Empowerment Program (CEP) for Rehabilitation/Reconstruction of Aceh and North Sumatra is to revive the community's lives for the improvement of their livelihood and welfare in the affected areas by the earthquake and tsunami that occurred on December 26, 2004, with integrated approach, including social and cultural aspects of the community.

7.1.2 Key Concepts

Key concepts adopted CEP for Rehabilitation/Reconstruction of Aceh and North Sumatra are as follows.

(1) Direct Benefits to the Communities through Local NGOs

The program intends to directly benefit the local people/community at the grassroots/village level through collaboration with local NGOs.

(2) Integrated Approach

The program employs multi-sectoral approach to solve various types of problems of the victims with components for recovery/promotion of economic activities, for psychological approach, rehabilitation/improvement of health and environment conditions (water supply and sanitation facilities and capacity building of management organization, etc), and for capacity development of communities. Particular emphases are given to the following activities.

- a) Reviving people's livelihood
- b) Community-based trauma/PTSD support
- c) Rehabilitation of communal water supply/sanitation system
- d) Strengthening communities' planning/implementation
- e) Implementing Partners

Local NGOs from Aceh, which have been working in the respective areas before the earthquake and tsunami, with experiences in the activities are selected as implementing partners after approval of Sekretariat Negara (SETNEG).

For specific types of projects, such as those for reconstruction of communal water/sanitation and for trauma/PTSD¹ healing, Indonesian NGOs with expertise and

¹ Post-traumatic Stress Disorder

experience are assigned with partnership of local NGOs from Aceh.

Local government agencies also sign memorandum for approval as well as recommendations or supports when necessary.

7.1.3 Strategies

Strategies applied for the CEP Projects are as follows.

(1) Reviving People's Livelihood as the Core

The program aims not only for rehabilitating the community, but also for rebuilding more equitable and transparent community.

(2) Special Attention to Acehnese Religion and Culture

Role of religion (or religious leaders) and Acehnese culture is incorporated in the program, such as in trauma/PTSD activities or social activities.

(3) Ensuring Regional Balance

Main target areas are Banda Aceh and Aceh Besar, while others include west coastal areas as well as northern coastal areas.

(4) Gender Issue by Locality

Many of the beneficiaries are fishermen in coastal area damaged by the tsunami. The emphases of activities in the northern coastal areas, where people have been suffering from the conflict, are placed on those for female family heads.

7.1.4 Components of the CEP Projects

The CEP Projects contain some of the following four components.

(1) Reviving People's Livelihood

- * Providing equipment and material
- * Training for skills development and business management for;
 - fishery, fish processing,
 - poultry, livestock breeding,
 - agriculture (horticulture, cash crops),
 - household industry (dress making, traditional cake making, etc.),
 - trading, and etc.
- * Institutional development for micro-financing

(2) Supports for Trauma/PTSD Healing

- * Healing through combination of psychological, social, and religious approaches
- * Training of community leaders on the aforementioned approaches

(3) Support for Water Supply/Sanitation and Environment Restoration

- * Rehabilitating facility and training for operation/maintenance
- * Education on sanitation and environment
- * Mangrove plantation

(4) Supports for Capacity Development of Communities

- * Participatory approach for planning and implementation of village development and the projects
- * Approaches to enhance collective and cooperative activities of the community
- * Approaches to enhance role of women in community development

7.2 CEP PROJECTS

7.2.1 Project List

CEP for Rehabilitation/Reconstruction of Aceh and North Sumatra are comprised of the following twelve projects. Project Summaries of the twelve CEP Projects are attached in Appendix-1.

Table 7.2.1 List of CEP Projects

No. 1	Title: Rehabilitation, Economic Development and Sanitation Development for Tsunami Victims in Kemkiman Lampageu	
Location: Desa; Lam Pageue, Lam Baro Nijid, Lam Badeuk, Lam Guron (Kem.; Lampageu) Kec.; Pekan Bada Kab.; Aceh Besar		
Implementing NGO: YADESA (Acehnese NGO)		Duration: Mar. 2005 – Feb. 2006
Activities: <ul style="list-style-type: none">* Boat building by IDP* Development of productive activities (Household industry – cake making and dress making, agriculture/ livestock breeding, fishery and small business/trading)* Trauma counseling* Construction of public toilet, wells, bathing and washing places		
No. 2	Title: Provision of Communal Waster and Sanitation in Nueheun	
Location: Desa; Neunheun, Durug, Ladong, Ruyun Kec.; Mesjid Raya Kab.; Aceh Besar		
Implementing NGO: Yayasan Dian Desa (Indonesian NGO) with Acehnese partner of LSM Forum Aceh		Duration: Mar. 2005 – Feb. 2006
Activities: <ul style="list-style-type: none">* Reconstruction of facilities for clean water supply and sanitation* Training the community on operation and maintenance		
No. 3	Title: Provision of Communal Waster and Sanitation in Lhoong	
Location: Kec.; Lhoong Kab.; Aceh Besar		
Implementing NGO: Yayasan Dian Desa (Indonesian NGO) with Acehnese partner of LSM Forum Aceh		Duration: Mar. 2005 – Feb. 2006
Activities: <ul style="list-style-type: none">* Reconstruction of facilities for clean water supply and sanitation* Training the community on operation and maintenance		

No. 4	Title: Rehabilitation of People Community after Earthquake and Tsunami in Kec. Peukan Bada	
Location: Desa; Lam Teungoh, Lamtutui Kec.; Peukan Bada Kab.; Aceh Besar		
Implementing NGO: Yayasan PUGAR (Acehnese NGO)		Duration: Mar. 2005 – Feb. 2006
Activities:		
* Village planning facilitation	* Training on health and environment	
* Repairing or purchasing small boats and fishing nets	* Reconstruction of facility for fish landing and sales	
* Support for income generation activities	* Reconstruction of a shop for fishermen	
* Conducting social events	* Mangrove plantation	

No. 5	Title: Rehabilitation of People Community after Earthquake and Tsunami in Kec. Baitussalam	
Location: Desa; Lambada Lhok, Lampineung Kec.; Baitussalam Kab.; Aceh Besar		
Implementing NGO: Yayasan PUGAR (Acehnese NGO)		Duration: Mar. 2005 – Feb. 2006
Activities:		
* Village planning facilitation	* Training on health and environment	
* Repairing and purchasing boats and fishing nets	* Rehabilitation of Panglima Laot's Office	
* Support income generating activities	* Reconstruction of a shop for fishermen	
* Conducting social events	* Mangrove replanting	

No. 6	Title: Recovery of Economic Capability of Fishermen and Women of Tsunami Victims in Costal Area	
Location: Desa; Jeumerang, Pasi Lhok, Pusong, Lancang, Pasi Ie Leubeue Kec.; Kembang Tanjong Kab.; Pidie		
Implementing NGO: Yayasan Citra Desa Indonesia (YCDI, Acehnese NGO)		Duration: Jun. 2005 – Mar. 2006
Activities:		
* Provision of fishing and transportation boats	* Provision of equipment for production of dry fish	
* Provision of equipment for salt making	* Reinforcement of capability of the communities	
* Supports for community-level problem solutions	* Opening broader market network	

No. 7	Title: Starting Recovery of Family Economy after Tsunami focusing on Women	
Location: Desa; Lancok, Lincarh, Anking Kec.; Samalanga Kab.; Bireuen		
Implementing NGO: Yayasan Sinar Desa Indonesia (YASINDO, Acehnese NGO)		Duration: Jun. 2005 – Mar. 2006
Activities:		
* Socialization	* Support for establishing system for soft loan, community joint business, business group monthly meeting, supports for equipment/production	
* Skills development and economic empowerment		

No. 8	Title: Economic Empowerment of the Victims of the Earthquake and Tsunami in Kampung Jawa through Participatory Development of Fishing Boats	
Location: Kel.; Kampung Jawa Kec.; Kuta Raja Kota; Banda Aceh		
Implementing NGO: Yayasan Nurani Dunia (NGO from Jakarta) with Acehnese partner of Yayasan Komunitas Partisipatif		Duration: Jun. 2005 – Mar. 2006
Activities:		
* Establishment of the community organization	* Workshop on boat building and small-scale business	
* Building warehouse for boat building	* Management of the workshop, machinery and tools	
* Purchase of machinery and tools	* Operation and management of fishing boats	

No. 9	Title: Community-based Psychological Program Focusing Women Living in IDP's Camps	
Location: Lambaro Camp, Neuhun Camp, Kampung Mulia Camp, Kandan Camp Kota; Banda Aceh, and Kab.; Aceh Besar		
Implementing NGO: Yayasan Pulih (NGO from Jakarta) with Acehnese partner of Sanggar Cuex and RTA		Duration: Jun. 2005 – Mar. 2006
<p>Activities:</p> <p>Phase-1: Identification of specific issues and strategies and initial approaches to facilitate recovery</p> <p>Phase-2: Conducting psychological intervention for recovery with gender sensitive approaches</p> <p>Phase-3: Ensuring capacity building of women in the community for sustainability of community empowerment</p>		
No. 10	Title: Psychosocial Assistance and Recovery Program for Children of Specific Circumstances in Banda Ache	
Location: Kec.; Kuta Raja Kota; Banda Aceh		
Implementing NGO: Yayasan Anak Bangsa (YAB, Acehnese NGO)		Duration: Jun. 2005 – Mar. 2006
<p>Activities:</p> <ul style="list-style-type: none"> * Provision of a mobile library * Provision of nutritious food for children in camps or schools * Establishment of Children Recovery and Creativity Center and psychological structured activities (PSSA) 		
No. 11	Title: Children Trauma Healing Center (Fun House)	
Location: Meulaboh Kab.; Aceh Barat		
Implementing NGO: Yayasan Nandra Dian Nusantara (YNDN, NGO from Jakarta) with Acehnese partner of MUI		Duration: Jun. 2005 – Mar. 2006
<p>Activities:</p> <ul style="list-style-type: none"> * Training of trainers for potential local mentors * Provision of playing facilities/equipment/materials * Mother-children sharing game and other activities * Short course for the youth * Healing through painting, dancing, etc. * Additional nutrition, vitamins and medical services 		
No. 12	Title: Supporting Program for Fishery Community by Providing Boats and Training for Productivity Improvement in Kec. Afulu and Lahewa	
Location: Kec.; Afulu, Lahewa Kab.; Nias, Province; North Sumatra		
Implementing NGO: PKBI (Local NGO in Medan), BPWN (Local partner in Nias)		Duration: Jun. 2005 – Mar. 2006
<p>Activities:</p> <ul style="list-style-type: none"> * Distribution of boats and fish processing machines * Training 		

7.2.2 Location of the CEP Projects

The location of the CEP projects are shown in Figure 7.2.1.

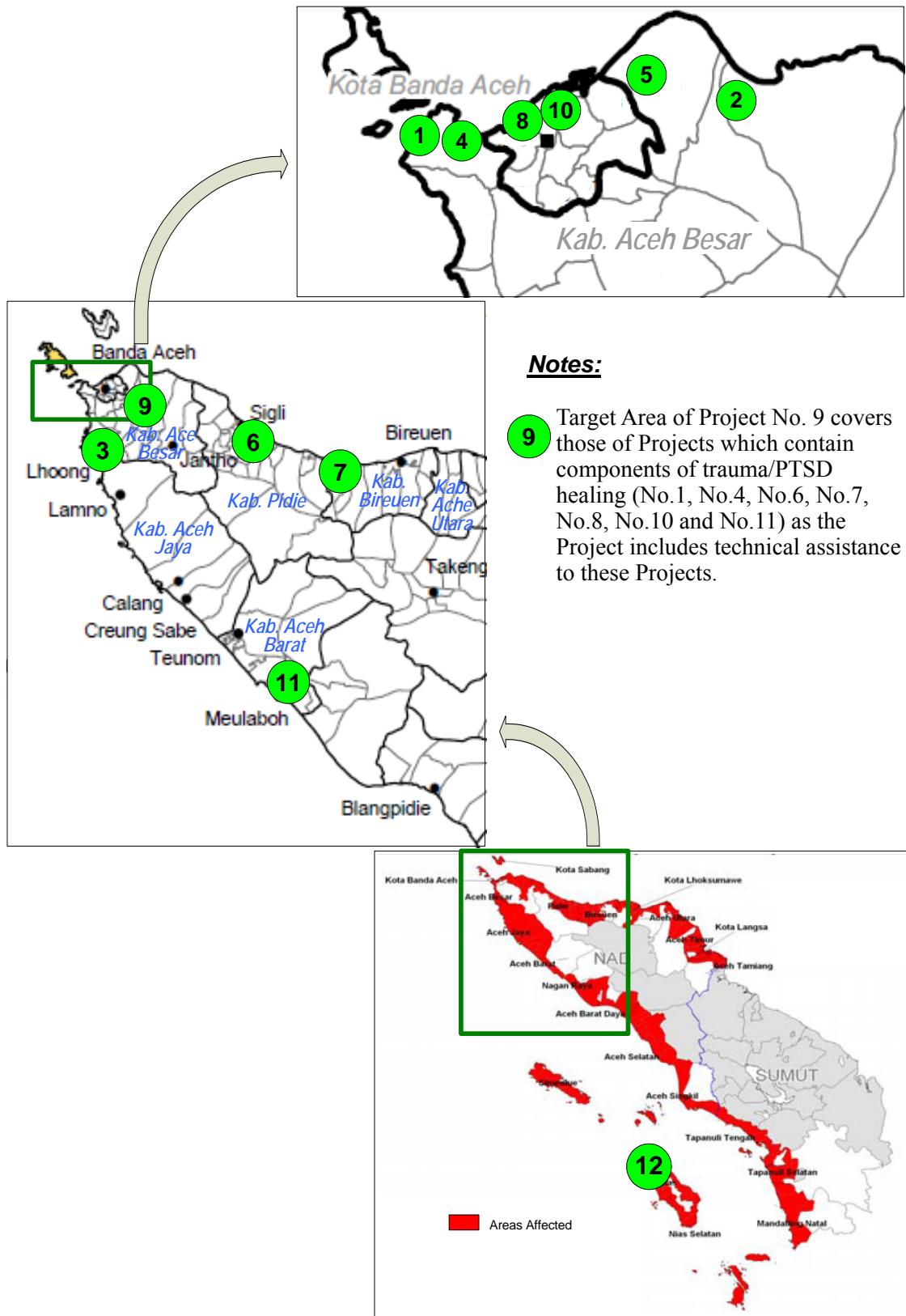


Figure 7.2.1 Location of CEP Project Sites

7.2.3 Results of Baseline Surveys

For the effective detail work planning, implementation, monitoring and evaluation, baseline surveys were conducted, except those projects destined for trauma/PTSD healing.

Items for baseline surveys are listed in the following Table 7.2.2.

Baseline surveys started with interviews to Implementing NGOs on information collected by themselves, followed by field reconnaissance by the Study Team. The results of the baseline surveys are summarized in Appendix-1.

Table 7.2.2 Items for Baseline Surveys

Component	Survey Item
For all Projects	<ul style="list-style-type: none"> a. Population and number of families before and after earthquake and tsunami (E/T) b. Number of female headed families
Income recovery and development	<ul style="list-style-type: none"> a. Occupation (income source) and income level of villagers before E/T b. Intended occupation for future c. Knowledge and skills of the villagers for future occupation d. Loss/damage of personal and communal assets for economic activities and dwelling e. Current income, including those from cash for work and in-kind income granted by relief assistance
Healing of PTSD and trauma	Results of diagnostic questionnaire (In case the Implementing NGOs do not conduct the survey, JICA Study Team will not conduct the survey separately)
Water supply and sanitation facilities and environmental preservation	<ul style="list-style-type: none"> a. Availability of water and sanitation facilities (type, coverage, capacity, management organization) before E/T b. Damages to the facilities and management organizations caused by E/T c. Damages to environment caused by E/T
Community reconstruction and capacity development	<ul style="list-style-type: none"> a. Existence of Desa Office before and after E/T b. Existence of Keuchik (village head) and other village leaders (Tuha Peuet; Imam, Ulama, and other prominent figures) before and after E/T c. Existence of community organization (women's association, youth group, fishermen association, agricultural cooperative, etc) and their activities (participants, type of activities and intensiveness of the activities) before and after E/T d. Activities by village communities (neighboring families, village, Kemukiman – group of neighboring villages) before and after E/T e. Participation to, benefits/services from, and reliance to community organization or community activities before and after E/T [interviews with around 10 family heads]

7.2.4 Results of Monitoring

(1) Process of Monitoring

As main objective of monitoring is to feed-back the monitoring results to project

implementation (activities) and original work plan submitted from Implementing NGOs are not sufficiently in detail due to short time of proposal preparation, JICA Study Team discussed with the NGOs on detail work plans with target indicators for each broken down activities prior to the monitoring with the NGOs.

Since achievement of Project Purpose or Outputs during the project implementation will be quite limited, monitoring will focus on attainment of planned Targets of Activities and Broken-down Activities as well as comparison of inputs/costs and schedule of activities.

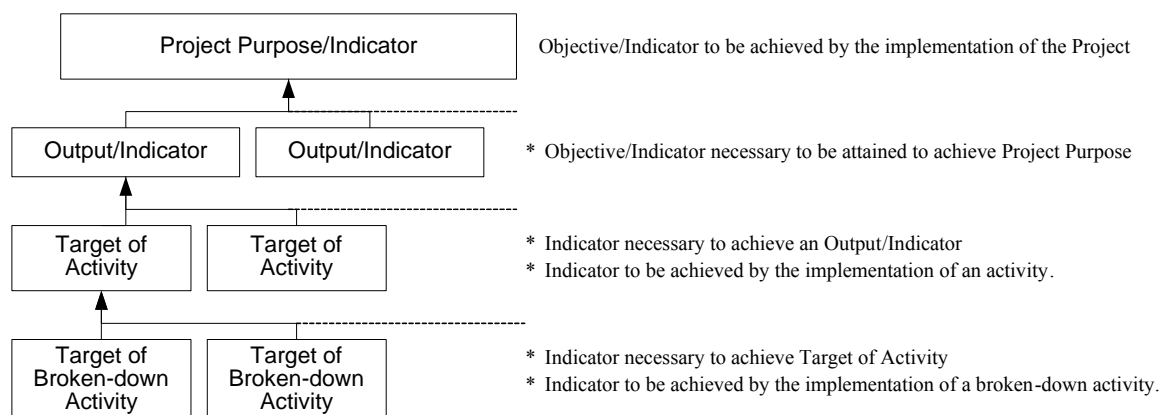


Figure 7.2.2 Hierarchy of Objectives/Indicators

The detail work plans, whose format are shown in the below table, were discussed with Implementing NGOs. Based on the detail work plan, monitoring was conducted by comparison between planned targets and actual attainment, schedule, costs, etc. For the activities before July 2005, planned target of each detail actual activity was set through interviews with the implementer/ responsible persons on the intention at the times of implementation.

Table 7.2.3 Form of Detail Work Plan and Monitoring

Activities	Target (indicator of expected results)	Responsible Person/ Implementer	Required Inputs/ Costs	Schedule	Issues
1. Activities described in Project Documents 1-1. Broken down activities 1-1-1. Further broken down activities	(Planned Target, Staffing, Input/Cost and Schedule) (Actual Achievement, Staffing, Input/Cost and Schedule)				Important things to be noted and reported.

(2) Summary of Monitoring Results

CEP Projects contain the four components as shown in the following Table 7.2.4. Progress of the CEP Projects (Monitoring Results) is summarized by components below, while

monitoring results by Project is described in Appendix-1.

Table 7.2.4 List of Projects and Components

Project No.	Livelihood	Water/Sanitation/ Environment	Trauma/PTSD	Capacity Development
1.	•	•	•	•
2.		•		•
3.		•		•
4.	•	•	•	•
5.	•	•	•	•
6.	•			•
7.	•			•
8.	•			•
9.			•	•
10.			•	•
11.			•	•
12.	•			•

a) Component of Reviving People's Livelihood

As for Projects that contain this component and started in March 2005 (Project No. 1, No. 4, and No. 5), distribution of equipment, tools, materials or capital to restart or start business, such as boats, cooking appliances or working capital, as well as rehabilitation of facilities have been made as planned and scheduled or with delay of one month in general, and productive activities have started. Skill and knowledge training as well as training and workshops for establishing organization for group cooperative economic activities were also conducted prior to the delivery of boats, equipment/materials or working capital. For Projects No. 5, delivery of a boat and facility rehabilitation were delayed since coordination took longer time than expected due to loss of a Keuchik (head of the village) in a target village by tsunami.

Implementing NGOs for Project No. 1, No. 4 and No. 5 are now preparing to establish community financing system (micro-finance).

As for the Projects (No. 6, No. 7, No.8, and No. 12) that started in June 2005, socialization, implementation planning and mobilization have been conducted.

b) Components of Water/Sanitation and Environment Rehabilitation

Due to the policy of the Implementing NGO (Yayasan Dian Desa), i.e., i) to reduce operation and maintenance cost and ii) to respond to dynamically changing conditions of villagers' returning or resettlement, water supply system in Project (No. 2 and No. 3) has totally modified from original plan which included well drilling to gravity transmission system exploiting spring water at high places. Design, cost estimate and construction works have been implemented according to the revised work plan.

For the Project No. 1, construction of MCK (communal facility with combination of toilets, bathing and washing place) will be made according to the timing of the villagers' return to their original villages.

As for mangrove re-plantation in Project No. 4 and No. 5, activities have proceeded as planned and scheduled.

c) Component of Trauma/PTSD Healing

In Project No. 1 activities, such as diagnostic questionnaire survey, training on counseling to field workers, day-to-day counseling by field workers, referral to experts, have been implemented as planned. According to the person in charge, percentage of the family heads with psychological problems has already substantially decreased.

In Project No. 4 and No. 5 religious and social events have been held in every month as planned.

For the Projects with this component and agreed in June 2005 (Project No.9, No.10, and No. 11), socialization, mobilization and other preparation has been implemented. Project No. 9 already achieved the target of initial stage, i.e., "to develop rapport, networks and trust with women groups at four camps" though agreement for the Project was concluded in June 2005.

d) Components of Capacity Development of Communities

Most of activities for this component are combined and implemented with activities for other components. In Project No. 4 and No. 5 village development plans were formulated with facilitation by implementing NGOs. Villagers and the Implementing NGO are seeking funds for implementation of the development plan.