

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
NATIONAL DEVELOPMENT PLANNING AGENCY (BAPPENAS)
PROVINCIAL GOVERNMENT OF NANGGROE ACEH DARUSSALAM

THE STUDY
ON
THE URGENT REHABILITATION AND RECONSTRUCTION
SUPPORT PROGRAM
FOR
ACEH PROVINCE AND AFFECTED AREAS
IN NORTH SUMATRA

(URGENT REHABILITATION AND RECONSTRUCTION PLAN
FOR BANDA ACEH CITY)

IN THE REPUBLIC OF INDONESIA

FINAL REPORT (2)
VOLUME I : EXECUTIVE SUMMARY

MARCH 2006

NIPPON KOEI CO., LTD.
YACHIYO ENGINEERING CO., LTD.
PASCO CORPORATION

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LIST OF REPORTS

VOLUME I : EXECUTIVE SUMMARY
VOLUME II : MAIN REPORT
VOLUME III : APPENDICES

PREFACE

In response to a request from the Government of Indonesia, the Government of Japan decided to conduct a “Study on the Urgent Rehabilitation and Reconstruction Plan for Banda Aceh City in the Republic of Indonesia” and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Akira Takahashi of Nippon Koei Co., Ltd. in association with Yachiyo Engineering Co., Ltd., and Pasco Corporation, to Indonesia from March 2005 to March 2006.

The team held discussions with the officials concerned of the Government of Indonesia and conducted field surveys at the study area. Upon returning to Japan, the team prepared this final report.

I hope this report will contribute to the reconstruction and development of Banda Aceh City and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Indonesia for their close cooperation extended to the study.

March 2006

Kazuhisa Matsuoka
Vice President
Japan International Cooperation Agency

Mr. Kazuhisa Matsuoka
Vice President
Japan International Cooperation Agency
Tokyo, Japan

Subject: Letter of Transmittal

Dear Sir,

We are pleased to submit herewith the Final Report (2) of the “Study on the Urgent Rehabilitation and Reconstruction Plan for Banda Aceh City in the Republic of Indonesia”. This Study was conducted by Nippon Koei Co., Ltd., in association with Yachiyo Engineering Co., Ltd., and Pasco Corporation, under a contract to JICA, during the period from March 2005 to March 2006. The report consists of Volume I: Executive Summary, Volume II: Main Report and Volume III: Appendices.

The report presents outputs and recommendations for Quick Impact Projects (QIPs), GIS for Aceh Rehabilitation and Reconstruction Information System (ARRIS) and Community Empowerment Program (CEP).

We would like to take this opportunity to express our sincere gratitude to your Agency, and the Ministry of Foreign Affairs. We are also most grateful for the cooperation and assistance from the officials concerned in the Republic of Indonesia, the JICA Indonesia office, and the Embassy of Japan in Jakarta. The Final Report is a fruit of excellent collaboration of all participants in this Study.

Yours Faithfully

Akira Takahashi
Team Leader, JICA Study Team
The Study on the Urgent Rehabilitation and Reconstruction Plan
for Banda Aceh City
in the Republic of Indonesia



Source : JICA Study Team

Location Map of Banda Aceh City

PHOTOGRAPHS (1/ 2)



Collapsed Building



Collapsed Building



Devastated Village



Devastated Houses and Ship



Inundation in Coastal Area



Collapsed River Dike (Doy River)

PHOTOGRAPHS (2/2)



Damaged Human Septage Treatment Plant



Cleaning of Debris



Temporary Housing for Internally Dislocated
People (IDP)



Emergency Restoration



Construction of Permanent Houses



Public Consultation for Reconstruction Plan

CONCLUSIONS AND RECOMMENDATIONS

BACKGROUND

- (1) The Nanggroe Aceh Darussalam (NAD) and North Sumatra Provinces were struck by a powerful earthquake with magnitude of 9.0 and a huge tsunami after 15 minutes of the earthquake on December 26, 2004. This calamity caused casualties of more than 200,000 people and various damages amounting to approximately US\$ 4,450 million.
- (2) The Government of Indonesia has moved promptly and the President issued a Presidential Decree on December 27, 2004 declaring that the earthquake and tsunami wave are the natural disaster and directed the government agencies and organizations concerned to act immediately and comprehensively in the emergency response handling of the natural disaster through issuing 12 directives.
- (3) BAPPENAS was appointed to prepare “The Master Plan for Rehabilitation and Reconstruction for Aceh Region and Nias” (called “Blueprint”) for the people of Aceh and North Sumatra within three (3) months in coordination among the government line agencies, donors, local governments and NGOs. BAPPENAS published “Blueprint” in March 2005. The Blueprint indeed covers various aspects necessary for rehabilitation and reconstruction of the affected areas, and sets to implement the established plan in integrated approach in three (3) stages: Emergency Relief Stage (initial 3 months), Rehabilitation Stage (after 3 months to 2006), and Reconstruction Stage (2007 to 2009).
- (4) The Japanese Government decided to render various support and assistance to the damaged area. The Japan International Cooperation Agency (JICA) dispatched its Project Formulation Mission in January 2005 to Indonesia in accordance with the request of the GOJ. As a result, JICA decided to implement “The Study on the Urgent Rehabilitation and Reconstruction Plan for Banda Aceh City” (The Study) under the agreement with BAPPENAS.

THE STUDY

- (5) The objectives of the Study are: (i) Formulation of Urgent Rehabilitation and Reconstruction Plan (URRP) for Banda Aceh City with a target year 2009, including Community Empowerment Program (CEP), (ii) Designing, Cost Estimation and Monitoring of Quick Impact Projects, and (iii) Establishment of Aceh Rehabilitation and Reconstruction Information System (ARRIS).
- (6) The study was commenced from March 2005 and completed in March 2006. Formulation of the URRP was completed in August 2005, and the results and some progress of CEP and ARRIS were presented in the Final Report (1).

- (7) This Report presents the rest of the original Study such as Quick Impact Projects (QIPs), GIS for Aceh Rehabilitation and Reconstruction Information System (ARRIS) and Community Empowerment Program (CEP) as Final Report (2).

THE STUDY AREA

- (8) The Study Area covers the entire administrative area of Banda Aceh City (approximately 61 km²) and its surroundings. The Banda Aceh City is the capital of NAD and is also center of commerce, education and culture of the province. The city comprises 9 kecamatan (districts): Meuraxa, Baiturrahman, Kuta Alam, Ulee Kareng, Jaya Baru, Banda Raya, Leung Bata, Syiah Kuala, and Kuta Raja.
- (9) The city faces to the Strait of Malacca on its north. Its topography is characterized by very flat with average elevation around two (2) meters above sea level.
- (10) The city had population of 263,668 in December 2004, of which nearly 73,400 or 28 % were resided in Meuraxa, Jaya Baru and Kuta Raja kecamatan, most affected areas within the city. These 3 kecamatan are located on the coast. The average population growth rate before disaster was 2.1 % per annum during the period from 1998 and 2004.
- (11) Most predominant land use before disaster was presumed to be residential/commercial area, more than 30 % of the entire city area, followed by swamp/open water, most of which was used to be fish ponds, one of main economic activities.
- (12) GRDP per capita of Banda Aceh City was US \$ 350 approximately in 2002, being about a half of the national average (US\$ 710). Main economic activities are commerce and fish cultivation, but the latter was almost completely destroyed by tsunami.

QUICK IMPACT PROJECT (QIP) BY JICA FUND (SEPTAGE TREATMENT PLANT)

- (13) The purpose of the project is to rehabilitate septage treatment plant (*Instalasi Pengelolaan Lumpur Tinja*, IPLT) which was built in 1995 and was destroyed completely by the Tsunami. It is a matter of importance to implement and complete the project as earlier as possible to preserve the public hygiene.
- (14) Municipal Government of Banda Aceh City through the Government of Indonesia (GOI) requested to the JICA assistance for implementation of the project “Rehabilitation of Septage Treatment Plant” (the Project) in April 12th, 2005. In response to the request, JICA decided to provide technical and financial assistance as Quick Impact Project (QIP).
- (15) The Project aims at rehabilitating IPLT with a daily treatment capacity of 50 m³ in terms of septage in Banda Aceh City and access road for a length of 2 km.
- (16) Tender documents were prepared in May 2005 and tendering was conducted in June 2005. PT. Tenaga Inti Makmu Beusare, Acehnese contractor was selected in tendering.

- (17) Construction works was started on July 5 and completed on December 20, 2005. Hand-over ceremony was undertaken in the same day. The works were successfully completed within the originally planed schedule (one (1) week ahead the schedule) and technical specifications.

QUICK IMPACT PROJECTS (QIPs) UNDER JAPAN'S NON-PROJECT TYPE GRANT AID

- (18) Besides JICA URRP study, GOJ pledged GOI to provide financial assistance of JPY 14.6 billion for rehabilitation and reconstruction works on the disaster affected areas, utilizing Non-project Type Grant Aid Scheme.
- (19) Through the discussions with the related agencies of the Government of Indonesia and JICS, five (5) projects were identified as Quick Impact Projects (QIPs), which require technical assistance on studies/surveys, detailed design and preparation of draft tender documents. The works were conducted from mid. April to early September, 2005.

QIP for Recovery of Water Supply System in Banda Aceh City

- (20) There are two (2) sources of public water supply for Banda Aceh City: one is Lambaro Water Treatment Plant and the other is Siron Water Treatment Plant. Pipe water supply system in Banda Aceh City had a daily water supply capacity of 40,000 m³ before the 2004 disaster and had individual connection of 24,411 and public tap of 100. However, distribution pipelines were destroyed in many locations, especially in the areas along the coast (Kecamatan Meraxa, Kuta Raja, Jaya Baru and Syiah Kuala) where the houses and infrastructure were completely destroyed and/or heavily damaged.
- (21) The Project aims at restoring water distribution network in Banda Aceh City.
- (22) The water demand is forecasted for the respective desa with a target year 2009. The average daily gross water demand including the amount of the un-accounted for water is forecasted at 44,062 m³ in 2009.
- (23) The proposed distribution network is almost identical to the ones existed before the 2004 disaster. But it is more effective and efficient in terms of water distribution and control and stronger against possible disaster. In total 55 drawings were prepared as technical documents.

QIP for Emergency Repair Works of Aceh River and Floodway

- (24) The Project aims at repairing the damaged dykes to their original situation urgently in order to protect the city area from flooding and high tide. With implementation of the Project the present inundation areas will be secured and contribute to return of affected people and other development activities.
- (25) The project component was determined in due consideration of the request of the Indonesian counterpart agency, urgency, condition prevailing at the site and damaged

structures, foreseen rehabilitation works and its volume, required construction period, etc.

- (26) The Project is proposed to be realized in five (5) separate contract packages in order to expedite and complete the construction works in a period shortest as possible in view of urgency. Rehabilitation of dykes and revetments, normalization, and dredging are the major works.

QIP for Rehabilitation of Lampulo Fish Market

- (27) The Lampulo Fish Market, which is located close to the mouth of the Aceh River (approximately 1 km), suffered major damage in the earthquake and tsunami. Most of the market facilities were destroyed and/or are in a dangerous situation.
- (28) The project component is rehabilitation on building for ice-making machines, freezers and generators, which will be procured separately by the Non-project Type Grant Aid Scheme.

QIP for Rehabilitation of Orphanages (JROH NAGUNA and NIRMALA)

- (29) Jroh Naguna and Nirmala orphanages, located approximately 3 km east of central Banda Aceh City were severely damaged as a result of earthquake and tsunami.
- (30) The goals of the project are to restore their normal function, improve the poor facility environment, employ disaster countermeasures, and expand the capacity of the facilities to meet the increased number of orphans and facility-related personnel.
- (31) The project component is restoration works on building facilities where damaged and new construction works where damages are judged severe resulting that the structural safety cannot be guaranteed.

QIP for RRI (Building), and for RRI and TVRI (Equipment)

- (32) Radio Republic Indonesia (RRI) and Television Republic Indonesia (TVRI), the state-owned broadcast in Indonesia, has suffered from the tremendous damage by the earthquake and tsunami, and has been forced to shorten their broadcasting time.
- (33) The project components for RRI (building) are repair works for some buildings, new construction works for gatehouse (16m²) and drainage works in RRI compound.
- (34) The project component for RRI and TVRI is provision of necessary equipment.
- (35) As for design drawings of RRI (equipment), schematic diagram of signal flow, block diagram of radio OB Van, and other systems, new layout plan, etc. were prepared. As for design drawings of TVRI (equipment), composition of field recording system, outline of systems, block diagram of various systems, etc. were prepared.

Monitoring for above Five (5) QIPs

- (36) The technical reports on the above five (5) QIPs were prepared in September 2005 and finalized by respective implementing agencies. Subsequently, tendering was held, and rehabilitation works have been commenced from late January to early February 2006 by respective implementing agencies.

GIS FOR ARRIS (ACEH REHABILITATION AND RECONSTRUCTION INFORMATION SYSTEM) AND DIGITAL TOPOGRAPHIC MAPS

- (37) The objectives of ARRIS are to build a geographic information system and to prepare relevant topographic maps and data. These maps and data were used efficiently for rehabilitation and reconstruction planning of Banda Aceh City.
- (38) So called ARRIS was established and utilized for various purposes in planning and shared by various groups who were concerned with the activities of rehabilitation and reconstruction of Banda Aceh City.
- (39) Digital topographic maps and related data were prepared and used as base maps with a geographical information system (GIS). The basic GIS data was prepared at a nominal scale of 1:2,000.
- (40) Three (3) governmental institutions are considered to be the most important organizations in formulating the schemes of operation and maintenance of ARRIS, i.e., BAKOSURTANAL, BAPPENAS and BRR.
- (41) BAKOSURTANAL shall be the most important institution as the coordination of the national spatial data infrastructure (NSDI) including ARRIS data (the topographic maps of Banda Aceh City with a nominal scale of 1:2,000 and the thematic GIS layers), the (data) production house, the technical supporter for the central and local governmental institutions, and an ARRIS hub in Jakarta.
- (42) BAPPENAS shall be another important ARRIS hub in Jakarta, especially for the central government institutions (the line ministries).
- (43) BRR shall be the ARRIS hub in Aceh, and the main governmental organization for formulating and executing the operation and maintenance of ARRIS.

COMMUNITY EMPOWERMENT PROGRAM (CEP)

- (44) The program is implemented for 12 project areas, not only for affected areas in Banda Aceh City but also for those in the Province of Aceh and Nias. The program intends to revitalize people's lives and community activities through enhancement of livelihood and welfare, and to directly benefit to the local people/communities and IDPs at the grassroots/village level through collaboration with local/national NGOs.
- (45) The program employs three (3) main approaches, i.e., 1) Support on Livelihood, 2) Support on community-based trauma/PTSD healing, and 3) Support on rehabilitation of communal water supply/sanitation.
- (46) Special attention was paid to the four (4) issues in the Program, such as 1) Reviving livelihood as a core of the program, 2) Respect on religion and culture, 3) Regional balance of project areas, and 4) Gender Issues.

- (47) Role of the JICA Study Team is to advice and give guidance to local/national NGOs who have contract for implementation of 12 CEP with JICA Indonesia office.
- (48) All 12 CEP is scheduled to be completed successfully at the end of February or March 2006.
- (49) In general, activities carried out under livelihood approach were successful for the target groups to re-start their individual economic activities, but had small impact on cooperative works. Cooperative works such as marketing and/or joint procurement of materials can be facilitated in the future. For sustainability of the project, strengthening on micro-finance organizations is recommended. Furthermore assistance by local/national NGOs on these activities is preferable.
- (50) As a result of psychological activities in the program, women appeared to be strengthened. Outputs for targeted children in Projects No. 10 and 11, also had positive impact on psychological aspect of children since they become more cheerful and creative than before.
- (51) Water / Sanitation and Environment Approach basically consists of 3 phases, namely 1) Facility construction, 2) Establishment of community organization for operation and maintenance (O&M), and 3) Sanitation and environment education. Facility construction as well as establishment of community organizations for O&M was successfully undertaken. However, the establishment of O&M system is sill on the early stage. Further improvement is necessary.

FINAL REPORT (2)
VOLUME I: EXECUTIVE SUMMARY
FOR
THE STUDY
ON
THE URGENT REHABILITATION AND RECONSTRUCTION PLAN
FOR
BANDA ACEH CITY

LIST OF REPORTS
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ABBREVIATIONS

ADB	Asian Development Bank
AIPRD	Australia-Indonesia Partnership for Reconstruction and Development
AMDAL	Environmental Impact Assessment <i>Analisis Mengenai Dampak Lingkungan</i>
ANDAL	Environmental Impact Statement <i>Dokumen Analisis Dampak Lingkungan</i>
ARF	Aceh Recovery Forum
ARI	Acute Respiratory Infection
ARRIS	Aceh Rehabilitation and Reconstruction Information System
AusAID	The Australian Agency for International Development
BAC	Banda Aceh City
BAPEL	Rehabilitation and Reconstruction Executing Agency <i>Badan Pelaksana Rehabilitasi dan Rekonstruksi</i>
BAPPENAS	National Development Planning Agency <i>Badan Perencanaan dan Pembangunan Nasional</i>
BAPPEDA	Regional Development Planning Agency <i>Badan Perencanaan Pembangunan Daerah</i>
BAPEDALDA	Regional Environmental Impact Management Agency <i>Badan Pengendalian Dampak Lingkungan Daerah</i>
BPOM	Drug and Food Control Center <i>Badan Pengawasan Obat dan Makanan</i>
BCPR	Bureau for Crisis Prevention and Recovery
BPN	National Land Agency <i>Badan Pertanahan Nasional</i>
BPS	National Statistics Bureau <i>Badan Pusat Statistik</i>
BRR	Rehabilitation and Reconstruction Agency for Aceh and Nias <i>Badan Rehabilitasi dan Rekonstruksi NAD-Nias</i>
CBD	Central Business District
CEIC	Center for the Study of Education in an International Context
CEP	Community Empowerment Program
CHO	City Health Office
CGI	Consultative Group on Indonesia
Desa	Village
DFID	The United Kingdom Department for International Development
DKP	Department of Sanitary and Park <i>Dinas Kebersihan dan Pertamanan</i>
DOTS	Direct Observation and Treatment, Short Term
DPU	Department of Public Works <i>Dinas Pekerjaan Umum</i>
DTM	Digital Topographic Map
EDB	Education Department of Banda Aceh City
EDNP	Education Department of NAD Province
EIA	Environmental Impact Assessment (AMDAL)
EIS	Environmental Impact Statement (ANDAL)
EOJ	Embassy of Japan

EPI	Expanded Immunization Program
ERTR	Emergency Response and Transitional Recovery
ETESP	Earthquake and Tsunami Emergency Support Project
GIS	Geographical Information System
GNI	Gross National Income
GOI	Government of Indonesia
GOJ	Government of Japan
GTZ	German Technical Cooperation Agency <i>Deutsche Gesellschaft für Technische Zusammenarbeit</i>
GRDP	Gross Regional Domestic Product
HIC	UN Human Information Centre
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
IATPI	Indonesian Society of Sanitary and Environmental Engineers <i>Ikatan Ahli Teknik Penyehatan dan Teknik Lingkungan Indonesia</i>
IDPs	Internal Displaced Peoples
IDPC	Internal Displaced Peoples' Camps
IFRC	International Federation of Red Cross and Red Crescent Societies
INGO	International Non Governmental Organization
ILO	International Labor Organization
IMR	Infant Mortality Rate
IPLT	Human Excrement Treatment Plant
IOM	International Organization for Migration
IRD	International Relief and Development
JICA	Japan International Cooperation Agency
JICS	Japan International Cooperation System
Kabupaten	District
Kecamatan	Sub-district
Kota	City/ Municipality
LGSP	Local Government Support Project
LGU	Local Government Unit
LPMP	Quality Assurance in Education Institution <i>Lembaga Penjamin Mutu Pendidikan</i>
LSM	Non Governmental Organization <i>Lembaga Swadaya Masyarakat</i>
MA	Islamic Senior High School <i>Madrasah Aliyah</i>
MOC	Ministry of Communication
MCK	Communal toilet/ bath facility <i>Mandi Cuci Kakus</i>
MDGs	Millennium Development Goals
MI	Islamic elementary school <i>Madrasah Ibtidaiyah</i>
MMR	Maternal Mortality Rate
MOH	Ministry of Health
MONE	Ministry of National Education
MORA	Ministry of Religion Affairs
MOU	Memorandum of Understanding

MPU	Muslim Leader Consultative Council <i>Majelis Permusyawaratan Ulama</i>
MT	Islamic Junior High School <i>Madrasah Tsanawiyah</i>
NAD	Nanggroe Aceh Darussalam
NGO	Non Governmental Organizations (LSM)
O&M	Operation and Maintenance
PALYJA	Water Company of Jakarta City <i>PT PAM Lyonnaise Jaya</i>
PAUD	Early Age Children Education Institution <i>Pendidikan Anak Usia Dini</i>
PDAM	Water Supply Authority <i>Perusahaan Daerah Air Minum</i>
PEQIP	Primary Education Quality Improvement Project
PHO	Provincial Health Office
PKBI	Indonesia Planned Parenthood Association (NGO) <i>Perkumpulan Keluarga Berencana Indonesia</i>
PKBM	Community Learning Center <i>Pusat Kegiatan Belajar Masyarakat</i>
PMI	Red Cross Indonesia <i>Palang Merah Indonesia</i>
Propinsi	Province
Posyandu	Integrated Health Service Post <i>Pos Pelayanan Terpadu</i>
PSDAK	Road and Water Resources Department, Banda Aceh City <i>Dinas Prasarana Jalan dan Sumber Daya Air Kota Banda Aceh</i>
PTSD	Post Traumatic Stress Disorder
PU	Ministry of Public Works <i>Departemen Pekerjaan Umum</i>
PVC	Polyvinyl chloride
QIP	Quick Impact Project
RA	Islamic kindergarten <i>Raudatul Athfal</i>
RDB	Religion Department of Banda Aceh City
RDNP	Religion Department of NAD Province
REDIP	Regional Education Development and Improvement Program
RRI	The State Radio of Indonesia <i>Radio Republik Indonesia</i>
RTRW	Revised Plan of Regional Space Layout <i>Rencana Tata Ruang dan Wilayah</i>
R3MAS	Rehabilitation and Reconstruction Plan for the People of Aceh & North Sumatra <i>Rencana Rehabilitasi dan Rekonstruksi Masyarakat Aceh & Sumatra Utara</i>
SD	Elementary school <i>Sekolah Menengah</i>
SDC	Swiss Agency for Development and Cooperation
SETNEG	National Secretariat <i>Sekretariat Negara</i>
SMA	Senior High School <i>Sekolah Menengah Atas</i>

SMK	Senior Vocational High School <i>Sekolah Menengah Kejuruan</i>
SMP	Junior High School <i>Sekolah Menengah Pertama</i>
SPK	District Nursing School <i>Sekolah Perawat Kesehatan</i>
STI	Sexually Transmitted Infections
THW	German Federal Agency for Technical Relief <i>Technisches Hilfswerk</i>
TK	Kindergarten <i>Taman Kanak-kanak</i>
TLC	Temporary Location Center
TOR	Terms of Reference
TOT	Training of Trainers
TPA	Reading Al Qur'an Institution <i>Taman Pengaiaan Al-Qur'an</i>
TVRI	National Broadcast of Indonesia <i>Televisi Republik Indonesia</i>
UFW	Unaccounted for Water
UKL	Environmental Management Plan <i>Upaya Pengelolaan Lingkungan</i>
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UPL	Environmental Monitoring Plan <i>Upaya Pemantauan Lingkungan</i>
USACE	The United States Army Corps of Engineers
USAID	The US Agency for International Development
URRP	Urgent Rehabilitation and Reconstruction Plan
VCT	Volunteer Testing and Counseling
WB	World Bank
WHO	World Health Organization
WTP	Water Treatment Plant
YAB	(Acehnese NGO) <i>Yayasan Anak Bangsa</i>
YADESA	(NGO) <i>Yayasan Desa</i>
YASINDO	(NGO) <i>Yayasan Sinar Desa Indonesia</i>
YCDI	(Acehnese NGO) <i>Yayasan Citra Desa Indonesia</i>
YIPD	(Acehnese NGO) <i>Yayasan Inovasi Pemerintahan Daerah</i>
YNDN	(Acehnese NGO) <i>Yayasan Nandra Dian Nusantara</i>

CHAPTER 1 THE STUDY

1.1 OBJECTIVES OF THE STUDY

The objectives of the Study are:

- (1) Formulation of Urgent Rehabilitation and Reconstruction Plan
To formulate an Urgent Rehabilitation and Reconstruction Plan (the Plan) for Banda Aceh City with a target year of 2009.
- (2) Carry out Designing, Cost Estimation and Monitoring of Quick Impact Projects (QIPs)
To provide a technical assistance including designing, cost estimation and monitoring of Quick Impact Projects (QIPs) which will be brought into realization by the Government of Indonesia.
- (3) Establishment of Aceh Rehabilitation & Reconstruction Information System (ARRIS)
To prepare Digital Topographic Maps (DTM) with a scale of 1/2,000, necessary for formulation of an Urgent Rehabilitation and Reconstruction Plan (the Plan) for Banda Aceh City, and to establish an information system for rehabilitation and reconstruction of Banda Aceh City, which can be shared among stakeholders.

1.2 STUDY AREA

The Study Area covers the Banda Aceh City with an area of 61 km² (See figure at frontispiece of the report) and its vicinity.

1.3 SCOPE OF THE STUDY

The Urgent Rehabilitation and Reconstruction Plan (URRP) aims to reconstruct the city to the pre-disaster condition, which is to be achieved in five (5) years from the incident of the disaster, and will be formulated urgently with an initiative of the people of Aceh.

For the URRP, it is important to incorporate a concept of “Disaster Mitigation”, that is, urban spatial plan and strengthening of institutional arrangement to mitigate potential damages in the future.

Aside from the reconstruction of infrastructure, the integration of Community Empowerment Program (CEP) is prerequisite for the accommodation of the Internal Displaced People (IDP).

In addition to the formulation of the URRP, the scope of the Study also covers technical and financial assistance for the implementation of Quick Impact Project for septage treatment plant financed by JICA and technical assistance for other five (5) Quick Impact Projects (QIPs) financed

under the Non-project Type Grant Aid Scheme, which includes confirmation of the scope of work, designing, cost estimate and monitoring of project implementation during the Study period.

The scope of the Study also includes establishment of Aceh Rehabilitation & Reconstruction Information System (ARRIS), including preparation of digital topographic maps (1/2,000), which will be required for formulation of the URRP and the information system that can be shared among the stakeholders.

1.4 OVERALL WORK SCHEDULE

Overall work schedule for the Study is shown below.

Year-month Work Item	2005											2006		
	3	4	5	6	7	8	9	10	11	12	1	2	3	
URRP														
•Formulation of URRP		█	█	█	█	█	█							
•Community Empowerment Program (CEP)		█	█	█	█	█	█	█	█	█	█	█		
ARRIS														
•ARRIS (Basic version)		█	█	█	█									
•Preparation of Digital Map		█	█	█	█	█								
•ARRIS (Complete version)			█	█	█	█	█	█	█	█	█	█		
QIP														
•Plan• Design• Cost Estimation		█	█	█	█	█								
•Project Monitoring								█	█	█	█	█		

Figure 1.1.1 Overall Work Schedule

1.5 SUBMISSION OF FINAL REPORT (1)

Of the scope of work abovementioned, formulation of the URRP was completed in August 2005, and the results and some progress of CEP and ARRIS were presented in the Final Report (1).

On August 13, 2005, meeting on the Final Report (1) (Draft) was held at Banda Aceh City among BAPPENAS, PU Jakarta, BRR, BAPPEDA Province, BAPPEDA City, Dinas Tata Kota, Mayor of Kota Banda Aceh, PU Dinas, other agencies concerned, JICA Indonesia office and the JICA Study Team. During the meeting, the URRP proposed in the above-said report was accepted by all the Indonesian organizations and agencies concerned, subject to incorporation of their comments into final report and the Final Report was submitted accordingly to BAPPENAS in September 2005.

1.6 ADDITIONAL STUDY

During the meeting on the Final Report (1) (Draft) on August 13, 2005 at Banda Aceh City among all the Indonesian organizations and agencies concerned, the Mayor and BRR expressed their opinions that there is a need of elaborating a long-term vision, a definite spatial plan and a sector development plan of Kota Banda Aceh with more community-oriented strategies, and therefore requested to the Japan International Cooperation Agency (JICA) to continue technical assistance to achieve the above objectives.

JICA agreed to conduct an additional study on URRP in accordance with the amendment for the Scope of Work, which took effect on the 3rd of March.

The report for the Additional Study on URRP was prepared and submitted separately in March 2006.

1.7 FINAL REPORT (2)

Final Report (2) covers the rest of the scope of works for the original Study excluding those of Final Report (1), such as Quick Impact Projects (QIPs), GIS for Aceh Rehabilitation and Reconstruction Information System (ARRIS) and Community Empowerment Program (CEP).

CHAPTER 2 QUICK IMPACT PROJECTS (QIPs)

2.1 QUICK IMPACT PROJECT (QIP) BY JICA FUND (SEPTAGE TREATMENT PLANT)

2.1.1 Design Works and Cost Estimate

(1) Background of the Project

The purpose of the project is to rehabilitate septage treatment plant (*Instalasi Pengelolaan Lumpur Tinja*, IPLT) which was built in 1995 and was destroyed completely by the Tsunami. It is a matter of importance to implement and complete the project as earlier as possible to preserve the public hygiene. After the Tsunami, the septage which are regularly collected from septic tanks of houses and buildings in BAC, are disposed of to the sea directly without any treatment, resulting in environmental problems. Under the above situation, the Municipal Government of Banda Aceh City through the Government of Indonesia (GOI) requested to the JICA assistance for implementation of the project “Rehabilitation of Septage Treatment Plant” (the Project) in April 12th, 2005. In response to the request, JICA decided to provide technical and financial assistance as Quick Impact Project (QIP).

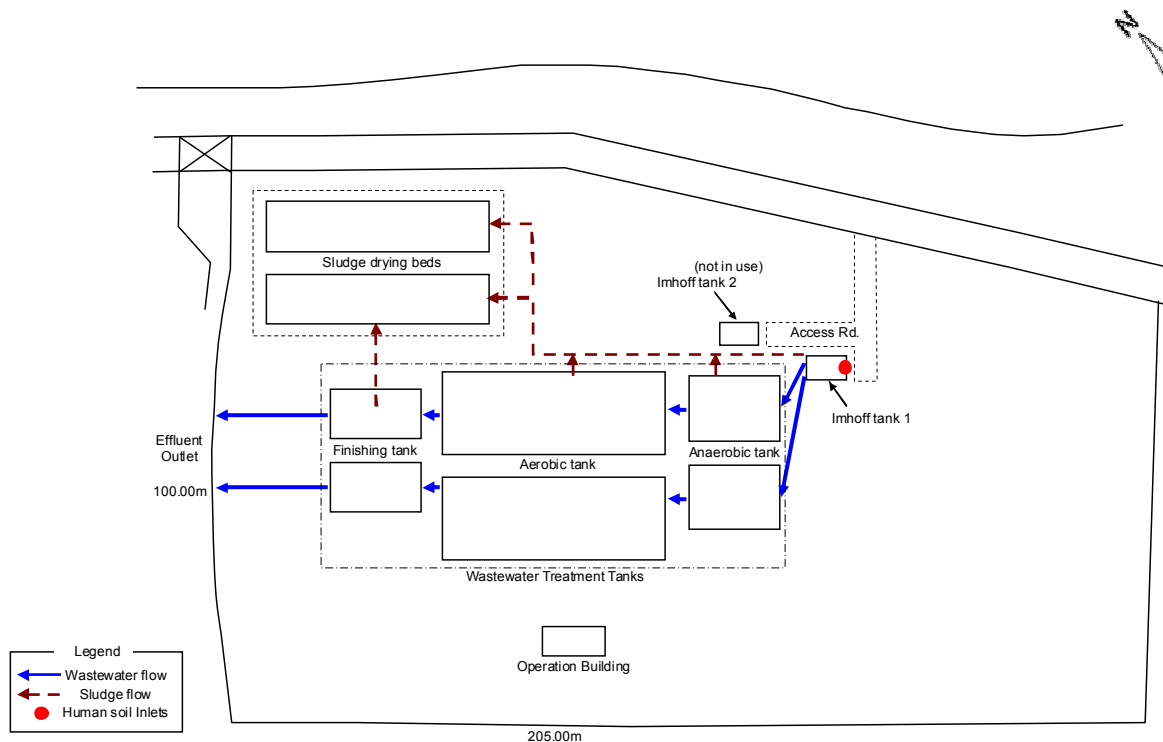


Figure 2.1.1 Schematic Layout of IPLT before Disaster

(2) Rehabilitation Design

Prior to commencement of the rehabilitation design, the JICA Study Team made technical discussion with DKP to define the rehabilitation requirements and to find better operation practice than before the disaster. The rehabilitation design presented herein is therefore joint output of the DKP and the JICA Study Team.

As the same as the existing facilities, the whole treatment process shall be achieved by gravity flow, and no mechanical equipment will be used for any part of treatment process, excepting for lighting and deep well pump for a control house.

Rehabilitation design was undertaken for the following major facilities:

- ① Imhoff Tanks
- ② Anaerobic, Aerobic and Finishing Ponds
- ③ Interconnection Conduits
- ④ Sludge Drying Beds
- ⑤ Outlet Work
- ⑥ Surrounding Dyke and Landscaping
- ⑦ Control House
- ⑧ Access Road

In total 38 drawings are prepared as Tender Drawing. Construction cost of the restoration works is estimated at about US\$ 900 ,000 at the price level of July 2005. Details are presented in Appendix.

2.1.2 Preparation of Tender Documents

(1) Tender Conditions

1) Pre-Construction Schedule

The Project is implemented in accordance with the following pre-construction schedule:

- | | | |
|--------------------------|--|-------------------------------|
| <input type="checkbox"/> | Request of Banda Aceh Municipality to JICA | April 12 th , 2005 |
| <input type="checkbox"/> | Submission of Draft Tender Documents to JICA | May 23 rd , 2005 |
| <input type="checkbox"/> | Approval of Draft Tender Documents (JICA) | May 31 st , 2005 |
| <input type="checkbox"/> | Distribution of Tender Documents | June 01 st , 2005 |
| <input type="checkbox"/> | Tender Opening | June 16 th , 2005 |

2) Eligibility of Contractor and Required Documents to be submitted with Tender

The Tender is determined to be evaluated in Point System, in which the Tender is divided into two

categories: the first category is Tenderer’s qualification including their financial status, construction experience and technical proposal for the contemplated contract works and the second category is tender price. Both the categories are evaluated by means of a numerical rating system respectively in addition to their formality and completeness and the tenderer is determined to be the one who gained the highest aggregate point of the both categories.

(2) Tender Documents

The Tender Documents will comprise three (3) volumes as listed up here under:

- VOLUME I
 - Section 1 Invitation for Tenders
 - Section 2 Instructions to Tenderers
 - Section 3 Tender Data
 - Section 4 Bill of Quantities
 - Section 5 Forms, Annexes and Enclosures
 - Section 6 Conditions of Contract
 - Part I: General Conditions of Contract
 - Part II: Conditions of Particular Application
 - Part III: Appendix to Tender
- VOLUME II
 - Section 7 Technical Specifications
- VOLUME III
 - Section 8 Drawings

2.1.3 Tender Results

The Tender submitted was evaluated by 2 stages. Allocation of points between the Stage 1: Tenderer’s Qualification and Stage 2: Tender Price was determined as follows:

		<u>Weighting</u>
Stage 1	: Tenderer’s Qualification	80 Points
Stage 2	: Tender Price	20 Points
		Full mark 100 Points

It was pre-determined that the Stage 2 evaluation was conducted only for such Tenderers that gained the score 50 or more at the Stage 1 evaluation.

As a result, Tender submitted by PT. Tenaga Inti Makmu Beusare was concluded to be the responsive tender among three (3) Tenders received and is therefore recommended for award of the contract. Contract cost is about US\$ 866,000.

2.1.4 Construction Supervision Works

Scope of construction supervision works is mainly categorized into: 1) Progress Control, 2) Quality Control, 3) Cost Control and 4) Safety Control during the course of the following major activities on supervision works:

- Review and approval of construction drawings, methods, schedule and proposals submitted by the Contractor
- Modification of construction drawings, as required
- Review and approval of manufacturer's design and drawings, if necessary
- Inspection of the completed works
- Inspection and witness of final acceptance tests
- Certification of completed works
- Review and certification of statement of progress and final payments
- Preparation of monthly progress report, completion report and compilation of As-built Drawings.

The Project was completed with sufficient control on progress, quality, cost and safety on December 20, 2005, 8 days before the contacted completion date on December 28, 2005. Handover ceremony was conducted on the same day with the presence of Minister of Embassy of Japan, JICA Resident Representative, Mayor of Banda Aceh City, BRR and other related agencies.

Signing on handover agreement and signing on agreement on transfer of the Project were also undertaken in the ceremony.

2.2 QUICK IMPACT PROJECTS (QIPS) UNDER JAPAN'S NON-PROJECT TYPE GRANT AID

2.2.1 QIPs Selected

Besides JICA URRP study, GOJ pledged GOI to provide financial assistance of JPY 14.6 billion for rehabilitation and reconstruction works on the disaster affected areas, utilizing Non-project Type Grant Aid Scheme. On this scheme, National Development Planning Agency (BAPPENAS) of GOI proposed GOJ to implement following thirteen (13) projects/programs as follows:

- (1) Emergency Relief Goods (Medicine)
- (2) Urgent Recovery of the West Coast Road between Banda Aceh and Meulaboh
- (3) Recovery of Water Supply and Sanitation System at Affected Areas in Aceh Province
- (4) Rebuild or Rehabilitate Health Centers (*Puskesmas*)
- (5) Rehabilitate, Rebuild or Expand Orphanages (*Panti Asuhan*)
- (6) Support for Universities *IAIN Ar Raniry & Univ. Syiah Kuala*
- (7) Selected Emergency Repair Work of the floodway dyke in Aceh
- (8) Rehabilitation of Fishing Activities
- (9) Rehabilitation of Local Market Places
- (10) Support for Vocational Training
- (11) Support for Islamic School (*Madrasah / Pesantren*)
- (12) Support for Radio/TV Broadcasting Activities
- (13) Procurement of Vacuum Freeze Dry Chamber

Through the discussions with the related agencies of the Government of Indonesia and JICS, the Projects No. 3, 5, 7, 9 marked by frame and 12 were identified as Quick Impact Projects (QIPs), which require technical assistance on studies/surveys, detailed design and preparation of draft tender documents. The works were undertaken from mid. of April to beginning of September, 2005. Outline of the QIPs selected are presented as follows:



Figure 2.2.1 Location Map of QIPs

2.2.2 QIP for Recovery of Water Supply System in Banda Aceh City

(1) Design Condition

Pipe water supply system in Banda Aceh City had a daily water supply capacity of 40,000 m³ before the 2004 disaster and had individual connection of 24,411 and public tap of 100. However, distribution pipelines were destroyed in many locations and areas especially in the areas along the coast where the houses and infrastructure were completely destroyed and/or heavily damaged by the earthquake and tsunami. The scope of work comprises (1) design works and cost estimate, and (2) preparation of technical report for restoration of water distribution network in Banda Aceh City.

It should also be noted that quantity of design discharge shall be forecasted based on the water demand for the year 2009, which is the end of rehabilitation and reconstruction program of Banda Aceh City as set forth by GOI.

(2) Detail Design

1) Design Criteria

In July 6, 2005 there was a meeting at Meeting Room of Urban and Rural Development, Western Region, DG of Human Resettlement, MPW in Jakarta to discuss about restoration works of the distribution system among the representatives of JICA Study Team, Ciptakarya, BRR and other parties concerned and the following are mutually agreed among the attendants:

- Service population should be 80% of population in Banda Aceh City in 2009.
- Elevated tank should not be reconstructed, since it is observed that it does not function in many areas in Indonesia as wells as Banda Aceh City.
- Minimum water pressure and other design criteria/condition should follow PU Guidelines.

Based on the above the following design criteria are determined to be adopted:

- Design discharge : Maximum hourly, to be 1.5 times of the average daily demand
- Required minimum pressure : 5 m
- Hydraulic analysis : EPANET-2
- Boosting capacity of Transmission pumps : 6 bars (to be same as existing at Lambaro WTP)
- Standards for pipe : BS, AWWA, JIS and their equivalent

2) Design Drawings

In total 55 drawings are prepared as Technical Documents.

3) Cost Estimate

Direct construction cost of the restoration works is estimated at Rp 44.6 billion at the price level of July 2005. It should be noted that the cost does not include general expenses such as cost for performance and bid securities, insurance, mobilization and demobilization, etc.

(3) Preparation of Technical Report

1) Source of Funds

The Government of Indonesia has received from the Government of Japan a Grant Aid amounting to Fourteen Billion Six Hundred Million Japanese Yen (Yen 14,600,000,000) as per Exchanged Note dated on January 17, 2005, for the purchase of products and services necessary for the execution of Program by the Government of Indonesia for Efforts to cope with the Damages caused by the Great Earthquake of the Coast of Sumatra, and by the Indian Ocean Tsunami Disaster which includes the Project. Under this program, the Japan International Cooperation System (JICS) acts as an implementing agency for and on behalf of the Government of Indonesia in accordance with the Exchange of Notes.

2) Mode of Tender

The Contractor for construction will be procured through international competitive bidding which will be executed by JICS.

The contract is presumed to be a unit price contract with bill of quantities.

3) Technical Report

The tender documents will comprise three (3) volumes as listed up hereunder:

- VOLUME I	Section 1	Invitation for Bids
	Section 2	Instructions to Bidders
	Section 3	Bid Data
	Section 4	Bill of Quantities
	Section 5	Forms, Annexes and Enclosures
	Section 6	Conditions of Contract
- VOLUME II	Part I:	General Conditions of Contract
	Part II:	Conditions of Particular Application
	Part III:	Appendix to Bid
- VOLUME III	Section 7	Technical Specifications
	Section 8	Drawings

JICA Study Team has produced Volumes II: Technical Specifications and III: Drawings as Technical Report.