

Japan International Cooperation Agency
Ministry of Marine Affairs and Fisheries
Government of Indonesia
Regional Planning, Research and Development Agency
North Sulawesi Province

The Study on the Integrated Coral Reef Management Plan in North Sulawesi in the Republic of Indonesia

Final Report
Volume IV

Proposed Projects and Programs



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March 2002
Pacific Consultants International

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The following foreign exchange rate is applied in the study :
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PREFACE

In response to a request from the Government of Republic of Indonesia, the Government of Japan decided to conduct the Study on the Integrated Coral Reef Management Plan in North Sulawesi 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 Dr. Akinori Sato of Pacific Consultants International to the Republic of Indonesia, 4 times between March 2000 and March 2002.

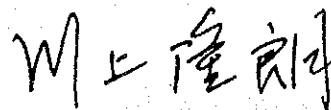
In addition, JICA set up an advisory committee headed by Mr. Masahiro Ohta, Senior Advisor of JICA between March 2000 and March 2002, which examined the study from specialist and technical point of view.

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

I hope that this report will contribute to the promotion of this project 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 Republic of Indonesia for their close cooperation extended to the Team.

March 2002



Kawakami Takao
President
Japan International Cooperation Agency

March 2002

Mr. Takao Kawakami
President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

Dear Sir,

We are pleased to formally submit herewith the Final Report of "The Study on The Integrated Coral Reef Management Plan in North Sulawesi in The Republic of Indonesia".

This report compiles the result of the Study, which was undertaken in the Republic of Indonesia from March 2000 through March 2002 by the Study Team, represented by Pacific Consultants International.

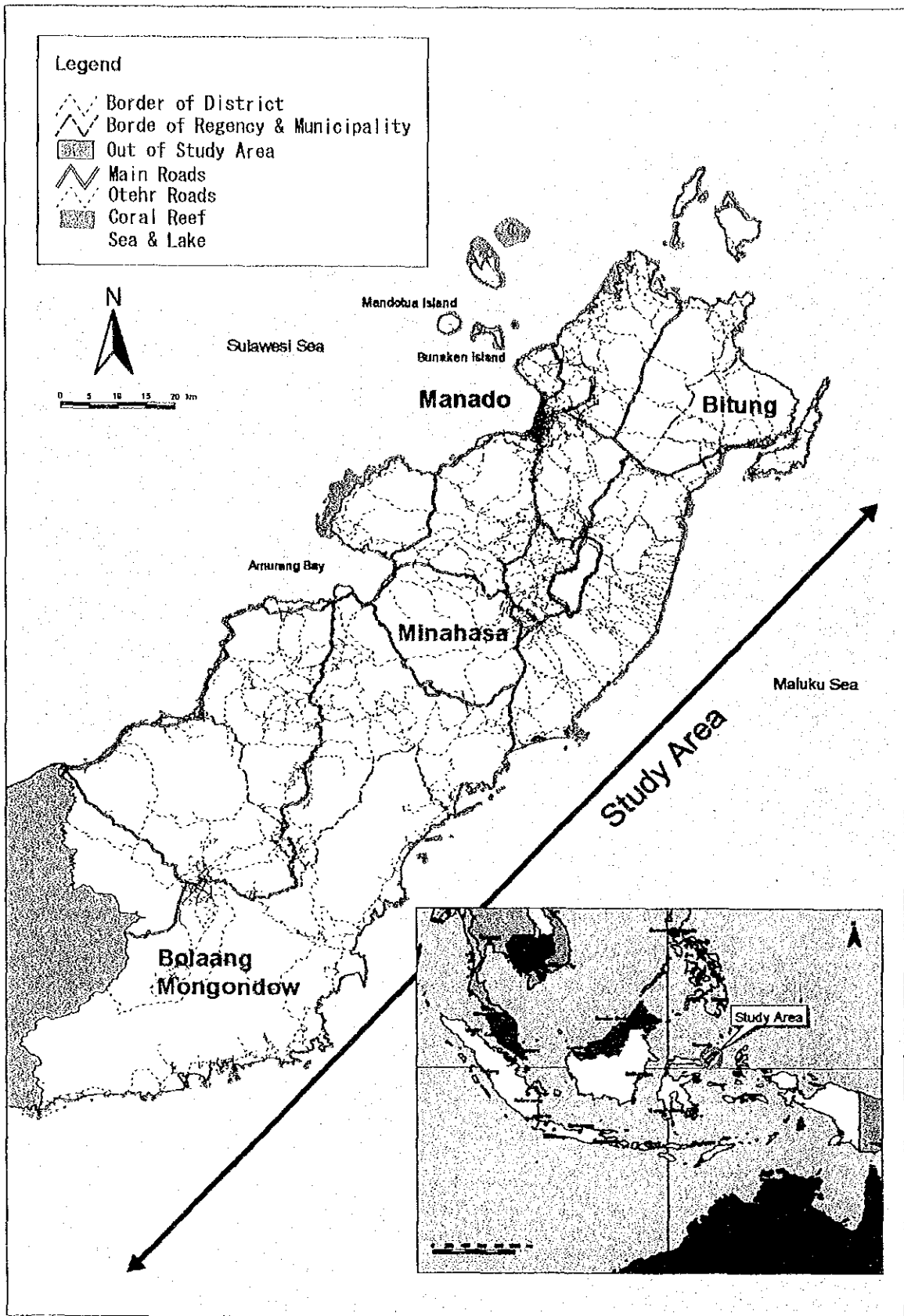
We had been assisted by many people for the accomplishment of the Study, and we would like to express our sincere gratitude and appreciation to all those who extended their kind assistance and cooperation to the Study Team, in particular, Ministry of Marine Affairs and Fisheries who acted as the counterpart agency and Regional planning, Research and Development Agency North Sulawesi Province who acted as the local counterpart agency.

Also, we acknowledge the effective assistance by all the officials of your Agency and the Embassy of Japan in the Republic of Indonesia.

We hope that the report will be able to contribute to formulate appropriate policies and measures for the future prosperity of Indonesia and North Sulawesi Province.

佐藤 彰 祝

Akinori Sato
Team Leader,
The Study on The Integrated Coral Reef
Management Plan in North Sulawesi in
The Republic of Indonesia



Study Area

INTEGRATED CORAL REEF MANAGEMENT PLAN IN NORTH SULAWESI

FINAL REPORT

VOLUME IV PROPOSED PROJECTS AND PROGRAMS

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FORMATION OF THE REPORTS

This Report consists of 5 volumes as follows ;

- Volume I** : **Summary**
- Volume II** : **Master Plan**
- Volume III** : **Coastal Environmental Conditions and Coastal Management System**
- Volume IV** : **Proposed Projects and Programs**
- Volume V** : **Project Activities**

Volume I, Summary Report, contains the outline of the results of the study including identification of coastal problems and the Master Plan.

Volume II, Master Plan Report, is a main report which contains the existing conditions, identification of coastal problems, detail contents of the Master Plan and recommendations.

Volume III, Coastal Environmental Conditions and Coastal Management System, contains the existing environmental conditions and Indonesian and North Sulawesi coastal management system. This volume was edited aiming to be utilized for administrative work such as coastal management, development permit, Environmental Impact Assessment, etc.

Volume IV, Proposed Projects and Programs, contains a list of proposed projects and programs based on the Master Plan.

Volume V, Project Activities, contains the activities implemented by the Study Team through two years. This volume explains the reason why the Study Team conducted a lot of activities and how reflect the result of the activities into the Master Plan.

GLOSSARY

<u>Abbreviation</u>	<u>Indonesian</u>	<u>English</u>
ADB	Bank Pembangunan Asia	Asian Development Bank
AMDAL	Jenis Usaha atau Kegiatan Yang Wajib Dilengkapi Dengan Analisis Mengenai Dampak Lingkungan	Environmental Impact Assessment
APBD	Anggaran Pendapatan dan Belanja Daerah	Provincial Budget of GOI
APBN	Anggaran Pendapatan dan Belanja Negara	National Budget of GOI
APPKD	Anggaran Pendapatan dan Perbelanjaan Keuangan Desa	-
a.s.l.	-	above sea level
ASPISIA	Asosiasi Penyelam Ilmiah Indonesia	Indonesian Scientific Divers Association (name of NGO)
AusAID	-	Australian Agency for International Development
B/C	-	Benefit - Cost Ratio
BAKOSURTANAL	Badan Koodinasi Survei Dan Pemetaan Nasional	-
BAPEDAL	Badan Pengendalian Dampak Lingkungan	Environmental Impact Management Agency
BAPPEDA	(Old) Badan Perencanaan Pembangunan Daerah (New) Badan Perencanaan Pembangunan Daerah Kota/ Daerah Kabupaten	Regional Development Planning Board
BAPPEDALDA	Badan Pengendalian Dampak Lingkungan Daerah	Local Environmental Impact Management Agency
BAPELITBANG	Badan Perencanaan, Penelitian dan Pengembangan (Propinsi Sulawesi Utara)	Regional Planning, Research, and Development Agency (North Sulawesi Province)
BAPPENAS	Badan Perencanaan Pembangunan Nasional	National Planning and Development Agency
BIPHUT	Balai Informasi dan Penyuluhan Pertanian	Forest Inventory and Mapping Office
BKB	Balai Kesehatan Balita	-
BKIA	Balai Kesehatan Ibu and Anak	-
BKPRS	-	-
BKSDA	Balai Konservasi Sumberdaya Alam	Natural Resources Conservation Agency
BLK	Bali Latihan Kerja	-

BMG	Badan Meteorologi dan Geofisika	Meteorological and Geophysical Agency
BNI	Bank Negara Indonesia	Indonesian State Bank
BOD	-	Biological Oxygen Demands
BPD	Badan Perwakilan Desa (berdasarkan UU. No.22 Tahun 1999)	Village Parliament
BPD	Bank Pembangunan Daerah	Regional Development Bank
BPN	Badan Pertanahan Nasional	National Landuse Board
BPPT	Badan Pengkajian dan Penerapan Teknologi	Analysis and Applied Technology Board
BPS	Biro Pusat Statistik	Central Bureau of Statistics
BRLKT	Balai Rehabilitasi Lahan dan Konservasi Tanah	Office of Land Rehabilitation and Soil Conservation
BSP Kemala	-	Biodiversity Support Program (RP3 of NRM II Program)
C/N Ratio	-	Carbon / Nitrogen Ration
CCMRS	-	Center for Coastal and Marine Resources Studies of the Bogor Agricultural University (known locally as PKSPL)
CIDA	-	Canadian International Development Agency
COD	-	Chemical Oxygen Demands
COREMAP	-	Coral Reef Rehabilitation and Management Project - a multilateral initiative to formally commence in 1999
CRC	-	Coastal Resources Center
CRITC	-	Coral Reef Information and Training Center (COREMAP initiatives that also partner CRMP)
CRMP	Proyek Pesisir	Coastal Resources Management Project
CV	Comanditer Venopscap	Limited Company
DAK	Dana Alokasi Khusus	Special Allocation Fund
DAS	Daerah Aliran Sungai	Watershed
DAU	Dana Alokasi Umum	General Allocation Fund
DEPDAGRI	Departemen Dalam Negeri	Ministry of Home Affairs
DEPDIKNAS	Departemen Pendidikan Nasional (sebelumnya disebut Depdikbud)	-
DEPHUB	Departemen Perhubungan dan Telekomunikasi	Ministry of Transportation and Telecommunication
DEPHUTBUN	Departemen Kehutanan dan Perkebunan	Ministry of Forestry and Plantation Estate
Desa	Desa	Village

Ditjen BANGDA	Direktorat Jenderal Pengembangan Daerah	Directorate General for Local Development, Ministry of Home Affairs
Ditjen Pariwisata	Direktorat Jenderal Pariwisata	Directorate General for Tourism
DKP	Departmen Kelautan dan Perikanan	Ministry of Marine Affairs and Fisheries
DPB	Daerah Perlindungan Bakau	Mangrove Sanctuary
DPL	Daerah Perlindungan Laut	Marine Sanctuary
Dusun	Dusun	Hamlet
EIRR	-	Economic Internal Rate of Return
EPIQ/IRG	-	Environmental Policy Indefinite Quality/International Resources Group (PRs 1 and 4 of NRM II Program)
FADs	-	Fish Aggregating Devices
FIRR	-	Financial Internal Rate of Return
GABATA	Gangga Banka dan Talise	-
GBHN	Garis-garis Besar Haluan Negara	National Development Guidelines
GDP	-	Gross Domestic Product
GIS	-	Geographical Information System
GOI	Pemerintah Indonesia	Government of Indonesia
GOJ	-	Government of Japan
GPS	-	Global Positioning System
GRDP	-	Gross Regional Domestic Product
HKM	Hutan kemasyarakatan	Community Forest
HPH	Hak Pengusahaan Hutan	Companies holding a forest concession
HPHTI	Hak Pengusahaan Hutan Tanaman Industri	Concession Rights for Industrial Tree Forest
IDT	Impres Desa Tertinggal	Poor or Non-poor Villages
IKIP	Institut Keguruan dan Ilmu Pendidikan	-
IMA	-	International Marin-life Alliance
IPB	Institut Pertanian Bogor	Bogor Agricultural University
ITB	-	Institute of Technology at Bandung
JARI	Juang Laut Lastari	-
JBIC (ex OECF)	-	Japan Bank for International Cooperation
JICA	-	Japan International Cooperation Agency
JPS	Jaring Pengamanan Social	-
Jubi	Alat menangkap ikan berbentuk panah atau tombak yang biasanya digunakan oleh nelayan tradisional	-
Kab.	Kabupaten	Regency

KANDEP P dan K	Kantor Departemen Pendidikan dan Kebudayaan	-
Kanwil	kantor Wilayah	Local Office
Kec.	Kecamatan	District
Kelola	Yayasan Kelola	Kelola (name of NGO)
KM	Keputusan Menteri	Minister Decree
Kota	Kota	Municipality
KP	Keputusan Presiden	Presidential Decree
LIPI	Lembaga Ilmu Pengetahuan Indonesia	Indonesian Institute of Science
LKMD	Lembaga Ketahanan Masyarakat Desa	Institute for Village Community Resilience
LMD	Lembaga Musyawarah Desa	Village Council
LP3M	Lembaga Pengkajian Pedesaan, Pantai dan Masyarakat	-
LREP	-	Land Resources Evaluation and Planning Project (ADB supported)
LSM	Lembaga Swadaya Masyarakat	Non Governmental Organization
MCK	Mandi Cuci Kakus	-
MREP/MAREMAP	-	Marine Resource Evaluation and Planning concluded in 1998/Marine Resource Evaluation and Management Project-second stage of MREP in design (both ADB supported)
NGO	Lembaga Swadaya Masyarakat	Non Governmental Organization
NKLHD	-	Regional Environmental Quality Scale
NPV	-	Net Present Value
NRM II	-	Natural Resources Management II
NSDA	-	Regional Natural Resources Scale
O & M	-	Operation and Maintenance
PDAM	Perusahaan Daerah Air Minum	Local Water Company
PJP	Proyek Jangka Panjang	Long term National Development
PKK	Peningkatan Kesejahteraan Keluarga	Family Welfare Program
PLN	Perusahaan listrik Negara	National Electric Company
PNBP	Penerimaan Negara dari Bea Perolehan Hak atas Tanah dan Bangunan	Non Tax National Income
PP	Peraturan Pemerintah	Government Regulation
PPI	Pangkalan Pendaratan Ikan	Fish Landing Office
PPTA	Pusat Penelitian Tanah dan Agroklimat	-
Prona	Proyek Nasional	-
PU	Pekerjaan Umum	Public Works
Repelita	Rencana Pembangunan Lima Tahun	Five Year Development Plan

RKL	Rencana Pemantauan Hingkungan	Environment Monitoring Plan
RPL	Rencana Pengelolaan hingkungan	Environment Management Plan
RRA	-	Rapid Rural Appraisal
RTRW	Rencana Tata Ruang Wilayah	Spatial Plan
SD	Sekolah Dasar	-
Senso	Mesin pemotong kayu yang istilah umumnya chainsaw	-
SIUP	Surat Izin Usaha Perikanan	Permission Application for Fishing Business
SLTA	Sekolah Lanjutan Atas	High School
SMP	Sekolah Menengah Pertama	Junior High School
SULUT	Sulawesi Utara	North Sulawesi
Tibo-fibo	Pedagang pengumpul	Wholesale broker
TNB	Taman Nasional Bunaken	Bunaken National Park
TPI	Tempat Pelelangan Ikan	Fishing Auction Market
UCE	-	University Consortium on the Environment
UGM	-	Gajah Mada University
UI	-	University of Jakarta
UKL	Unit Pemantauan Hingkungan	Environment Monitoring Unit
UNSRAT	Universitas Sam Ratulangi	University of Sam Ratulangi
UPL	Unit Pengelolaan Hingkungan	Environment Management Unit
URI	-	University of Rhode Island
USAID	-	United States Agency for International Development
USLE	-	Universal Soil Loss Equation
UW	-	University of Waterloo
WB	-	World Bank
WTP	-	Willingness to Pay
YU	-	York University
-	Assisten	Assistant (or Deputy Director)
-	Badan	Local Board (or Agency)
-	Balai	Office (or Authority, Agency)
-	Balai Taman Nasional Bunaken	Bunaken National Park Authority
-	Bupati (Kepara Kabupaten)	Head of Regency
-	Cabang Dinas	Branch Office
-	Camat	Head of District
-	Dana Perimbangan	Balancing Fund
-	Dana Reboisasi	Reforestation Fund
-	Dewan	Council

-	Dewan Pengelolaan Taman Nasional Bunaken	Bunaken National Park Management Council
-	Dewan Perwakilan Rakyat Daerah	Regional Peoples representative Assembly
-	Dinas	Governmental (Service) Office
-	Dinas Kehutanan	Forestry Office
-	Dinas Pengairan	Water Irrigation Office
-	Dinas Perikanan	Fisheries Office
-	Hukum Tua	Head of Village (in Minahasa Regency)
-	Kasie (kepala Seksi)	Head of Section
-	Kawasan Pelestarian Alam	Natural Preservation Area
-	Kawasan Perlindungan Setempat	Local Geographically Categorized Protection Area
-	Kawasan Rawan Bencana Alam	Natural Disaster Risk Area
-	Kawasan Suaka Alam	Natural Conservation Area
-	Kawasan Suaka Alam dan Cagar Budaya	Natural Conservation and Cultural Preservation Area
-	Kepala Desa	Head of Village
-	Keputusan	Decision / Decree
-	Kesepakatan	Mutual Agreement
-	Ketentuan	Regulation under Peraturan
-	Ketetapan	Decision/Decree under Keputusan
-	Konservasi	Conservation
-	Lindung	Protection
-	Pantai	Sea Shore
-	Pengelolaan	Management
-	Perangkat Desa	Village Government
-	Peraturan	Regulation
-	Pesisir	Coastal
-	Seksi	Section
-	Sub-Dinas	Sub-office
-	Taman Hutan Raya	Grand Forest Park
-	Taman Nasional	National Park
-	Taman Wisata	Natural Recreation Park
-	Undang Undang	Law
-	Wali Kota	Mayor

Chapter 1

Formulation of Proposed Projects and Programs in the Master Plan

Chapter 1

Formulation of Proposed Projects and Programs in the Master Plan

1.1 Classification and Prioritization

The master plan has been laid out in the Main Report of this Study. In this volume, the master plan is designed and organized as projects and programs in order to effect smooth implementation as follows:

(1) Classification of Projects/Programs

All the proposed projects and programs are classified into thirteen categories corresponding to the same categories of key strategies of master plan, namely,

- 1) Coastal Spatial Use Management;
- 2) Coastal Resources Use Management;
- 3) Urban Environmental Management;
- 4) Watershed Management;
- 5) Coastal Ecosystem and Marine Wildlife Conservation Management;
- 6) Institutions and Legislation;
- 7) Coastal Information System;
- 8) Human Resources Development;
- 9) Education and Enlightenment;
- 10) Finances;
- 11) Fishery Development;
- 12) Coastal Tourism Development; and
- 13) Improvement of Coastal Living Environment.

From 1) to 5) are categorized as a component of Management Unit Plan. These projects/programs are to be implemented to formulate basic framework and core roles of the master plan. From 6) to 10) are categorized as a component of Institutional Supporting Plan. These projects/programs are to be implemented to support the above-mentioned Management Unit Plan. These projects/programs are intended to deal with common issues to all Management Unit Plan in the five categories. From 11) to 13) are categorized as a component of Socioeconomic Development Plan. Socio-Economic Development Plan aims to develop fisheries, tourism and living environment of coastal community.

(2) Phasing of Proposed Projects and Programs

The implementation schedule of the projects/programs are divided into three:

- Short-term : Up to 2005 (=target year of PROPENAS and POLDAS)
- Mid-term : Up to 2010 (=target year of RTRW Municipality and Regency)
- Long-term : Up to 2015 (=target year of RTRW Province)

The projects/programs with an asterisk (*) next to their project codes in the list shown in the next section are deemed urgent and important. This phasing and priority are based on urgency and timing with other projects/programs.

Chapter 2

Estimation of Projects and Programs Cost

Chapter 2

Estimation of Projects and Programs Cost

2.1 Policy of Cost Estimation

The second chapter describes cost estimation of proposed projects and programs. The cost estimation are divided into initial cost and operation/maintenance cost (O/M cost), common policies are as follows:

- The costs are estimated roughly enough to clarify the content of each project/program;
- Low percent items enough to ignore (about less than 5 % of total cost) are not included, however important and essential items for implementation of projects/programs, such as monitoring cost, purchase cost of equipment, printing cost for promotion and enlightenment are included;
- The costs for supporting programs of Community Based Coastal Managemnet (CBCM) and for establishment of sanitary are integrated each phase and divided into initial costs and O/M costs;
- The projects and programs conducted by Provincial Integrated Coastal Management Office (PICMO) are estimated in each projects/programs separately from the project/program of establishment of PICMO itself; and
- The personnel cost of public officer is not included.

(1) Initial cost

Basic policies of cost estimation for initial cost are as follows:

- Initial cost is defined as the cost from preparation to just before operation stage, that is to say, it includes e.g. preliminary survey, planning, and establishment of equipment and facilities;
- Some projects/programs may need several years for preparation;
- Land purchase cost is not included;
- As to CBM and coastal resources user right, only preliminary survey, planning and promotion activities are included; and

- In case of the phased construction and development such as Protected Area, initial costs includes preliminary survey, project planning, public hearing and construction fee.

(2) Operation and Maintenance Cost (O/M Cost)

Basic policies of cost estimation for O/M cost are as follows:

- O/M cost includes operation and maintenance fee, which is for routine work;
- Some projects/programs are include only O/M cost, for example, enlightenment program is not need planning cost; and
- Concerning Protected Area, O/M cost includes maintenance fee for facilities, monitoring fee and periodic public hearing fee.

2.2 Breakdown of Estimated Cost

For cost estimation, breakdown is categorized as shown in Table 2.1 and 2.2.

Table 2.1 Breakdown of Estimated Initial Cost

Items	Contents
Study & Design	- Sector master plan, feasibility study and detail design are categorized this item. - Personnel cost (see Personnel Cost), survey cost, reporting, formalities.
Construction of Facilities & Structures	- Construction fee of facilities and structures including labor cost, material cost, rental and purchase fee of machinery and so on.
Equipment	- Necessary equipment for initial stage such as survey & laboratory equipment and fixture, but not including stationery and consumption. - Some projects need several years to purchase equipment. - Additional purchase of equipment is not included.
Printing	- Necessary printing for initial phase such as for public hearing, enlightenment. - Reports, broacher, poster and so on.
Seminar & Meeting	- Seminar, meeting, work shop before implementation of projects/programs. - Not including internal meeting. - Not including periodic meeting during operation stage.
Transportation	- Transportation fee, car rental fee, gas charge. - Not including local transportation within city limits.
Personnel Cost	- External services such as hiring private company and advisor. - Accommodation.
Others	- Office equipment, office supply and so on.

Table 2.2 Breakdown of Estimated O/M Cost

Items	Contents
Monitoring	<ul style="list-style-type: none">- Periodic/ routine monitoring.- Not including preliminary survey.
Equipment	<ul style="list-style-type: none">- Maintenance fee such as consumption, periodic check, overhaul and so on.
Printing (Reports, Broacher, Poster)	<ul style="list-style-type: none">- Periodically published/distributed printing (reports, broacher, poster newsletter etc.).- Including additional printing during operation stage.
Seminar & Meeting	<ul style="list-style-type: none">- Periodic seminar and meeting during operation stage.
Transportation	<ul style="list-style-type: none">- Transportation fee during operation stage.- For patrol.- Not including local transportation within city limits.
Personnel Cost	<ul style="list-style-type: none">- External services such as hiring private company and advisor.- Accommodation.

2.3 Basis of Unit Cost

Basis of unit cost for proposed projects/programs are shown in Table 2.3 and 2.4.

Table 2.3 Basis of Unit Cost for Proposed Projects and Programs

		Specifications	Floor Area (m ²)	Unit Price (mill. Rp.)
Construction Facilities and Structure				
1	Aquarium	aquarium (coral and fishes)	2,000	16/m ²
2	Museum	exhibition hall	1,000	2/m ²
3	Visitor Center	normal construction class	1,000	3/m ²
4	Toilet (MCK)	4 separate unit for men/women	20	3/m ²
5	Rest house/hut	lodge class	100	3/m ²
6	Hotel luxurious			5/m ²
7	Hotel standard (1 to 3 star class)			4/m ²
8	Hotel melati			3/m ²
9	Beach resort cottage	30 rooms class		3/m ²
10	Home stay	normal house class	20	3/m ²
11	Beach house	cottage class	100	2/m ²
12	Restaurant		500	4/m ²
13	Shops		100	3/m ²
14	Parking			0.3/m ²

Table 2.4 Basis of Unit Cost for Proposed Projects and Programs (1)

		Specifications	Unit Price (mill. Rp.)
Construction Facilities and Structure			
1	Earth works	land development	1,000/ha
2	Infrastructure	water supply, electricity, drainage, parking, toilet etc.	3,000/ha
Construction Facilities and Structure (Marine Work)			
1	Land reclamation	for commercial buildings	4,000/ha
2	Marina	For powerboats and yachts	5,000/set
3	Jetty (concrete)	l=50m, for fishery and tourism	5,000/set
4	Jetty (wooden)	l=20m, for tourism	2,000/set
5	Power boat (big)	30 passengers, Purchase fee	1,000/unit
6	Power boat (middle)	15 passengers, Purchase fee	700/unit

Table 2.4 Basis of Unit Cost for Proposed Projects and Programs (2)

		Specifications	Unit Price (mill. Rp.)
7	Power boat (small)	5 passengers, Purchase fee	300/unit
8	Row boat	3 passengers, Purchase fee	10/unit
9	Outrigger (big)	20 passengers, with power Purchase fee	30/unit
10	Outrigger (middle)	10 passengers, with power Purchase fee	20/unit
11	Outrigger (small)	5 passengers, with no power Purchase fee	10/unit
12	Buoy setting		2/unit
13	Artificial beach	Construction of bank protection	8,000/set
14	Shorebank works	Construction of bank protection	800/set
15	Artificial reef	InteCo type	2/set
16	T-Groin	construction of tide embankment	400/set
Road			
1	Vehicle road	w=6.0m for construction paving with asphalt on the hill	2/m
2	Improvement of road	w=6.0m for improvement	1/m
3	Trail-A (cycling)	w=3.5m, for construction paving with asphalt	1/m
4	Trail-B (pedestrian)	w=2.0m	0.5/m
5	Trecking path	w=1.5m, earth	0.2/m
Landscaping			
1	Gardening	Land formation, forestation, purchase of toy tools	125/ha
2	Street planting	Coconut	25/km
3	Sign board (large)	3m x 3m x 3m(h)	5/unit
4	Sign board (small)	1m x 1m x 2m(h)	4/unit
5	Sports court	tennis court, volleyball court	2,000/ha
6	Play ground	Playground, etc.	500/ha
7	Camp site	Water supply, electricity, drainage, parking, toilet etc.	200/ha
8	Observation tower	For 20m height, 20 person capacity	150/set
9	Mangrove planting		1,000/ha
10	Mangrove boardwalk	1m (W) x 500 m (L), made from wood	0.5/m

Table 2.4 Basis of Unit Cost for Proposed Projects and Programs (3)

		Specifications	Unit Price (mill. Rp.)
Personnel Cost			
White Color Wworker			
1	Golongan 2	10 years-career after graduating high school	0.8/MM
		20 years-career after graduating high school	0.9/ MM
2	Golongan 3	20 years-career after graduating college	1.1/ MM
3	Golongan 4	25 years-career after graduating college	1.4/ MM
Construction			
1	Normal Work		0.5/ MM
2	Specific Work	Diving work	1.0/ MM
Transportation			
1	Sedan	For purchase	276.0/vehicle
		For maintenance charge (7 % of purchase cost)	19.3/year
2	Kijan	For purchase	115.0/vehicle
		For maintenance charge (7 % of purchase cost)	8.1/year
Maintenance Fee and Others			
1	Maintenance Fee		5 % of initial cost

Chapter 3

Proposed Projects and Programs Profile

Chapter 3

Proposed Projects and Programs Profile

3.1 List of Projects and Programs

The proposed projects/programs shown in Table 3.1 are drawn up in accordance to the master plan. Profile of proposed projects and programs is given after page 3-1.

3.2 Cost Benefit Analysis

Based on the cost deprived from each profile of projects and program, The Study Team tried cost benefit analysis in order to evaluate availability of proposed projects and programs.

The result of analysis is explained in “8.6 Financial Plan in Volume II Master Plan”. In this Volume IV, breakdown of the costs by year (Appendix A) and results of calculation of discount prices (Appendix B) are attached respectively.

Table 3.1 List of Proposed Projects and Programs

Project Code	Project / Program Name	Implement Schedule						Implementation Body (Main Execution Agency)	Costs (Million, Rp)	
		Short-Term				Mid-Term	Long-Term		Initial	Operation Maintenance
		2002	2003	2004	2005	2006-2010	2011-2015			
MS	Coastal Spatial Use Management								2,012.0	0.0
* MS-1	Formulation of District and Regency Level Coastal Spatial Use Plan						PICMO/KICMO, BAPETILBANG, etc.		1,810.0	0.0
MS-2	Establishment of Coastal Development Permission System						PICMO/KICMO		202.0	0.0
MR	Coastal Resources Use Management									
* MR-1	Establishment of Coastal Resources Inventory Map						PICMO, KICMO		950.0	8,110.0
* MR-2	Community Program for Community Based Coastal Management						PICMO, BAPETILBANG		14,852.4	29,883.0
MR-3	Establishment of Coastal Fisheries Management Center						PICMO, Fishery Office		2,493.0	6,507.0
MR-4	Installation of Community Artificial Reefs and Other FADs						Fishery Office		104.0	1,487.0
MR-5	Community Production Mangrove Forest Development						Forestry Office		0.0	950.0
MR-6	Stop Dynamite Fishing and Coral Mining (Promotion for alternative materials for septic tank without Coral Rock)						PICMO/KICMO		370.0	0.0
MR-7	Program on Fishery Resources Monitoring						PICMO, Fishery Office		340.0	7,150.0
MR-8	Publication of White Paper for Coastal Resources						PICMO		0.0	440.0
MU	Urban Environmental Management									
MU-1	Program on water pollution control in Manado						BAPEDALDA		400.0	150.0
MU-2	Program on water pollution control in Bitung						BAPEDALDA		365.0	100.0
MU-3	Program on Solid Waste Collection System in the Coastal Areas in Manado						Manado Municipality, Manado Port Authority		470.0	420.0
MU-4	Program on Solid Waste Collection System in the Coastal Areas in Bitung						Bitung Municipality, Bitung Port Authority		425.0	420.0
MU-5	Formulation and implementation of beautification programs for the coastal areas of Manado						Provincial/Manado Settlement/Regional Infrastructure, Manado Port Authority		555.0	630.0
MU-6	Formulation and implementation of beautification programs for the coastal areas of Bitung						Provincial/Bitung Settlement/Regional Infrastructure, Bitung Port Authority		555.0	630.0
MW	Watershed Management									
MW-1	Protection of Soil Erosion for Coral Reef Conservation						Forestry/Agriculture Office		0.0	11,780.0
MW-2	Formulation of Water Pollution Control Plan for Rural Coastal Villages						PICMO/KICMO		100.0	0.0
ME	Coastal Ecosystem and Marine Wildlife Conservation Management									
ME-1	Program on Coastal Environmental Monitoring						PICMO, BAPEDALDA		1,270.0	9,750.0
ME-2	Patrol of Illegal Activities for Coastal Environmental Conservation						Water Police		1,940.0	8,450.0
* ME-3	Establishment of Coastal Environmental Protection Area						PICMO, Bitung Municipality		3,720.0	4,700.0
* ME-4	Establishment of Coastal Environmental Protection Area						PICMO, Manado Municipality		3,661.0	4,631.0
SI	Institutions and Legislation									
* SI-1	Establishment of Provincial Coastal Environmental Policy Institution						PICMO		240.0	225.0
* SI-2	Establishment of Coastal Environmental Policy Institution in Districts						Coastal Government		1,310.0	0.0
SI-3	Establishment of Municipal and Regent Integrated Coastal Management Office (KICMO)						Manado, Bitung, Mahalasa, Boleang/Mongondow		570.0	0.0
SI	Coastal Information System									
SI-1	Establishment of Coastal Information Center						PICMO		1,750.0	8,580.0
SI-2	Development and Maintenance of Coastal Provincial GIS						Coastal Information Center		0.0	13,436.4
SH	Human Resources Development									
* SH-1	Establishment of Local Government Training Center						Provincial Government		5,450.0	5,950.0
SH-2	Development of Coastal Management Course in Local Universities						Sam Ratulangi University		2,834.0	0.0
SH-3	Establishment of Extension Office Training Centers for CBCM						PICMO		658.0	1,822.5
SE	Education and Enlightenment									
SE-1	Revision of Curriculum for Environmental Education						Education Office		143.0	16.0
SE-2	Training Program on School Teachers for Environmental Education						PICMO, Education Office		0.0	1,262.8
SE-3	Training Program on Coastal Community Leaders for Community Coastal Management						KICMO		0.0	142.0
SE-4	Promotion of Awareness for Coastal Management for Local Government Officials						PICMO		0.0	63.0
SE-5	Enlightenment Program on Coastal Users						PICMO/KICMO		0.0	50.0
SF	Finances									
SF-1	Study and establishment of fundraising and/or fishery collection systems						PICMO/KICMO		0.0	326.0
DF	Fishery Development									
DF-1	Development of Seaweed Processing Factory						Fisheries office		2,760.0	3,400.0
DF-2	Feasibility Study on Mariculture of Groupers						Fisheries office		300.0	0.0
DT	Coastal Tourism Development									
DT-1	Establishment of Certification System for Coastal Tourism Operators						PICMO, Tourism office		466.0	0.0
DT-2	Establishment of Tourist Center for Coastal Environmental Conservation						Tourism office		1,393.5	1,264.8
DT-3	Development of Trekking and Cycling Routes in Manado Tira Island						PICMO, Tourism office		18,231.5	3,681.0
IE	Improvement of Coastal Living Environment									
IE-1	Supporting Program for Community Based Coastal Resources Management						PICMO/BAPETILBANG, Ministry of Health, etc.		4,250.0	0.0
IE-2	Master Plan and Feasibility Study for Improvement of Water Supply and Other Social Infrastructure in Small Islands and Remote Area						PICMO/BAPETILBANG, Ministry of Health, etc.		100.0	0.0

Note: Projects with * show priority projects/Programs

Project No. MS-1

1.	PROJECT TITLE	Formulation of Provincial and Municipal/Regency Coastal Spatial Use Plan
2.	LOCATION	The coastal areas in North Sulawesi
3.	IMPLEMENTATION AGENCIES	Leading Agencies : <u>Provincial Coastal Spatial Use Plan</u> PICMO, BAPELITBANG <u>Municipal/Regency Coastal Spatial Use Plan</u> KICMO, BAPPEDA
4.	OBJECTIVES	<ul style="list-style-type: none"> • to establish planning guidelines for the formulation of coastal spatial use plan • to formulate Provincial Coastal Spatial Use Plan • to formulate Municipal/Regency Coastal Spatial Plan
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • minimization of conflict among coastal spatial and resource users • effective use of the coastal area based on potentiality of coastal development and environmental conservation
6.	PROJECT COST	Rp. 1,810.0 million
	6-1. INITIAL INVESTMENT COST	Rp. 1,810.0 million (2002, 2007, 2012)
	6-2. OPERATION / MAINTENANCE	None
7.	IMPLEMENTATION SCHEDULE	Short, Mid, Long (2002-3-4, 2007-8-9, 2012-13-14)
8.	PROJECT DESCRIPTION	<p>Short Term</p> <p>Establishment of planning guidelines</p> <ul style="list-style-type: none"> - Establishment of guidelines including planning methodology and procedure at the provincial and municipal/regency levels, including decision making process, financial sources, binding (?) and penalties, etc. - Preparation of planning manual for the formulation of the spatial use plan for the coastal areas, including implementation of coastal buffer zone, set-back lines of the buildings, and other technical criteria. <p>Preparation of coastal spatial use planning for province, Manado, Bitung Minahasa and Bolaang Mongondow</p> <ul style="list-style-type: none"> - Existing coastal spatial use survey - Collection of secondary data and information - Preparation of Coastal Spatial Use Plan - Holding of public hearing <p>Mid/Long Term</p> <p>Prepared Coastal Spatial Use Plan will be reviewed and revised every five years.</p>
9.	RELATION WITH OTHER PROJECT/S	Close coordination with RTRW is necessary

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Review of Coastal Spatial Plan	Rp. 2 mil. /expert	4 experts x 1 month x 5 places x 3 years	Rp. 120 mil.	3 times (2002, 2007, 2012)
Field Survey	Rp. 2 mil. /expert	8 experts x 3 months x 5 places x 3 years	Rp. 720 mil.	
Preparation of Coastal Spatial Use Plan	Rp. 2 mil. /expert	5 experts x 4 months x 5 places x 3 years	Rp. 600 mil.	
Transportation				
Car rental	Rp. 0.2 mil.	30 days x 5 areas x 3 years	Rp. 90 mil.	3 times (2002, 2007, 2012)
Printing				
Map	Rp. 0.5 mil.	100 sheets x 5 places	Rp. 250 mil.	
Seminar & Meeting				
Public hearing	Rp. 3 mil.	2 times x 5 places	Rp. 30 mil.	
Total			Rp. 1,810 mil.	

Project No. MS-2

1.	PROJECT TITLE	Formulation of Coastal Development Permission System
2.	LOCATION	The coastal areas in North Sulawesi
3.	IMPLEMENTATION AGENCIES	Leading agency: PICMO, KICMO, Provincial and Municipal/Regency Settlement Regional Infrastructure Office, Municipal/Regency Tourism Office
4.	OBJECTIVES	<ul style="list-style-type: none"> • to re-establish Business and Building Permission System for the coastal area • to enforce Business and Building Permission System for the coastal area
5.	EXPECTED EFFECT/S	• regulation of coastal development and spatial use
6.	PROJECT COST	Rp. 202.0 million
6-1.	INITIAL INVESTMENT COST	Rp. 202.0 million (2003-2004)
6-2.	OPERATION / MAINTENANCE	None
7.	IMPLEMENTATION SCHEDULE	Short (2003-2004)
8.	PROJECT DESCRIPTION	<ul style="list-style-type: none"> - Workshops are held with government office and the private sector in order to have common understanding - Coastal development Permission System is established - Public hearing - Dissemination of new system to the public
9.	RELATION WITH OTHER PROJECT/S	- This project must be consistent with the project MS-1

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Transportation				
Car rental for public hearing	Rp.0.2 mil.	3 days x 4 times	Rp. 24 mil.	(2003, 2004)
Printing				
Brochure	Rp.50 mil.		Rp. 50 mil.	
Seminar & Meeting				
Public hearing	Rp. 8 mil.	4 times x 4 places	Rp. 128 mil.	(2003, 2004)
Total			Rp. 202 mil.	

Project No. MR-1

1.	PROJECT TITLE	Establishment of Community Coastal Resources User Right
2.	LOCATION	All coastal communities in North Sulawesi
3.	IMPLEMENTATION AGENCIES	Leading agency: PICMO, KICMO
4.	OBJECTIVES	<ul style="list-style-type: none"> • to provide incentive for priority of coastal resources use for the community • to promote community based coastal management
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • promotion of sustainable coastal resources use at the community level
6.	PROJECT COST	Rp. 7,070.0 million
6-1.	INITIAL INVESTMENT COST	Rp. 960.0 million (2002)
6-2.	OPERATION / MAINTENANCE	Rp. 6,110.0 million (2003-2015)
	Short (2002-2005)	Rp. 1,410.0 million
	Mid (2006-2010)	Rp. 2,350.0 million
	Long (2011-2015)	Rp. 2,350.0 million
7.	IMPLEMENTATION SCHEDULE	Short term (2002-2005): Preparation Mid, Long term (2006- 2015): Implementation
8.	PROJECT DESCRIPTION	<p>Short term (2002-2005)</p> <ul style="list-style-type: none"> - to conduct technical survey - to disseminate and socialize to LGUs and communities for introduction of resource user right - to establish Municipal/Regency Coastal Resources Coordination Committee by district level - to coordinate coastal community meeting for implementation <p>Mid to Long term</p> <ul style="list-style-type: none"> - to delineate territorial boundaries - to organize community meetings - to disseminate and socialize to LGUs and communities - to serve consultation for communities
9.	RELATION WITH OTHER PROJECT/S	<ul style="list-style-type: none"> - The monitoring of the coral reefs should be connected with this project. - Other campaigns can be integrated to this project, such as stopping mangrove-cutting and fishing explosions, among other harmful and oftentimes illegal practices.

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Technical Study	Rp. 2 mil./expert	5 experts x 10 months	Rp. 100 mil.	
Printing				
Posters, Handbills	Rp.2.5 mil./3,000 sets	4 areas x 2 times	Rp. 20 mil.	
Seminar & Meeting				
Meetings	Rp.2 mil.	4 areas x 30 times	Rp. 240 mil.	
Transportation				
1 car for campaign	Rp. 20 mil.	30 days	Rp. 600 mil.	
Total			Rp. 960 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Field survey	Rp. 2 mil./expert	5 experts x 10 months x 13 years	Rp.1,300 mil.	
Printing				
Posters	Rp. 2.5 mil./1,000 sets	4 areas x 4 kinds x 13 years	Rp.520 mil.	
Seminar & Meeting				
Meetings	Rp. 0.5 mil.	4 areas x 40 times x 13 years	Rp.1,040 mil.	
Transportation				
1 car for campaign	Rp. 100 mil.	13 years	Rp.1,300 mil.	
Personnel cost				
NGOs , Volunteers	Rp. 0.5 mil.	30 person x 10 months x 13 years	Rp.1,950 mil.	
Total			Rp.6,110 mil.	

Project No. MR-2

1.	PROJECT TITLE	Supporting Program for Community Based Coastal Resources Management
2.	LOCATION	All coastal communities in the Study Area
3.	IMPLEMENTATION AGENCIES	Leading Agency: KICMO or BAPELITBANG Related Agency: PICMO or BAPELITBANG, KICMO, or BAPPEDA/BAPPEKO, District level Development and Environment. Section of PMD, Village level management groups and community people
4.	OBJECTIVES	<ul style="list-style-type: none"> • to support promotion of community based coastal resources management plan and its implementation • to expand community based coastal management
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • formulation of coastal resources management plan by coastal communities and its implementation by themselves • empowerment of coastal communities through the process of formulation of management plan in terms of proper understanding of eco-system and organizing ability to formulate management plan
6.	PROJECT COST	Rp. 74,855.4 million
6-1.	INITIAL INVESTMENT COST	Rp. 44,962.4 million (2003)
6-2.	OPERATION / MAINTENANCE	Rp. 29,893.0 million (2003-2015)
	Short (2002-2005)	Rp. 5,010.0 million
	Mid (2006-2010)	Rp. 12,525.0 million
	Long (2011-2015)	Rp. 12,358.0 million
7.	IMPLEMENTATION SCHEDULE	Short – Long (2003-2015)
8.	PROJECT DESCRIPTION	<p>No. of commencement Projects Year 2003: 5 villages / Year 2004: 10 villages Year 2005-2014: 15 villages / Year 2015: 14 villages</p> <p>Phase 1 (~2005)</p> <ol style="list-style-type: none"> 1. Train Extension Officers and introduce the concept of CBCRM to the coastal communities 2. Identify existing coastal management problems in coastal communities and prioritize the problems 3. Develop ideas how to solve the existing coastal management problems 4. Formulate community coastal management plans and management groups to implement management projects 5. Formulate village ordinance and get it authorized by the local government <p>Phase 2 (~2010)</p> <ol style="list-style-type: none"> 1. Implement community coastal management plans 2. Rehabilitate fishing ground and fishery resources 3. Rehabilitate mangrove 4. Develop sanitation facilities in the coastal area 5. Establish monitoring system by communities and patrolling system for coastal areas 6. Establish communication and information dissemination system between villages and local government
9.	RELATION WITH OTHER	Project MS-1, SL-1 should be implemented before the project.

PROJECT/S	Project MR-1, MR-6, MR-7, SH-3 should be implemented together with this project. Project MR-4 and MR-5 will be implemented after the communities formulated management plans.
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Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Planning				
Printing				
Photocopy of Documents and Brochures	Rp.2.5 mil	10 months	Rp. 25 mil.	Cost of EO training is excluded (refer to SH-3)
Seminar & Meeting				
Workshop	Rp.0.5mil.	4 areas x 5 times	Rp. 10 mil.	
Transportation				
Car	Rp. 1 mil.	7 experts x10 months	Rp. 70 mil.	
		Sub Total	Rp.105 mil.	
Preparation work by each village				
Study & Design				
Environmental survey & Socioeconomic survey			Rp. 160 mil.	
Equipment				
Typewriter Scale	Rp.1 mil. Rp. 0.6 mil.		Rp.1.6 mil.	
Printing				
			Rp. 4 mil.	
Seminar & Meeting				
Study tour	Rp.1 mil.	8 times	Rp. 8 mil.	
Meetings	Rp.0.2mil.	20 times	Rp. 4 mil.	
Seminar & Workshop	Rp.0.375 mil.	8 times	Rp. 3 mil.	
Transportation				
Car	Rp. 70 mil.		Rp. 70 mil.	
		Sub-Total	Rp.250.6 mil.	
			Rp. 44,857.4 mil.	250.6 x 179 villages
		Total	Rp. 44,962.4 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Monitoring			Rp. 25 mil.	
Printing				
Newsletter			Rp. 3 mil.	
Seminar & Meeting				
Meeting/Workshops			Rp 7 mil.	
Transportation				
			Rp. 120 mil.	
Personnel cost				
Allowance for EOs			Rp. 12 mil.	
		Sub Total	Rp167mil/village	
		Total	Rp. 29,893 mil.	167 mil. x 179 villages

Project No. MR-3

1.	PROJECT TITLE	Establishment of Coastal Fisheries Management Center
2.	LOCATION	In North Sulawesi Province: At a location preferably some place along the southern coast. Possibly between Kema and Basaan.
3.	IMPLEMENTATION AGENCIES	Leading Agencies : PICMO, Provincial Fishery office Related Agencies : Regency/Municipality KICMO, DKP with funding and staffing assistance
4.	OBJECTIVES	- to develop awareness and understanding among coastal fishermen of sustainable resource use and responsible fisheries through demonstration, trials, on-the-spot job training, workshops and field seminars
5.	EXPECTED EFFECT/S	- development of awareness, understanding and initiatives among coastal fishermen and fish farmers for implementation of FM for sustainable resource use within ecological limits and under the custodian rights - practical planning and effective implementation of community-based fisheries management programs - contribution towards achievement of livelihood security for marginal coastal fisherman
6.	PROJECT COST	Rp. 8,000.0 million
6-1.	INITIAL INVESTMENT COST	Rp. 2,493.0 million (2004-5005)
6-2.	OPERATION / MAINTENANCE	Rp. 5,507.0 million (2006-2015)
	Short (2002-2005)	None
	Mid (2006-2010)	Rp.2,126.5 million
	Long (2011-2015)	Rp.3,380.5 million
7.	IMPLEMENTATION SCHEDULE	Construction (2004-2005) Operation (2006- onwards)
8.	PROJECT DESCRIPTION	<p>The center has mainly three functions namely; 1. Education and Training, 2. Demonstration, and 3. Research and Study. The objective of each function is:</p> <ol style="list-style-type: none"> 1. to educate and train fishermen and/or fish farmer communities or societies in principles and practices of fisheries management and sustainable resource use under the new concept of "restricted resource use right" or "custodial right"; 2. to demonstrate to selected fishermen and or fish farmers from coastal fisheries-related communities/societies improved practices of fishing, aquaculture, processing and marketing for improvement in technologies and equipment; 3. to research on alternative means of livelihood for marginal coastal fisherman to improve productivities of aquaculture in the coastal area, on enhancement of quality preservation and improvement of fisheries, and diversification of aquaculture to improve sustainability and broaden the choices. <p>The description of each function is as follows:</p> <ol style="list-style-type: none"> 1. Education and Training <ul style="list-style-type: none"> ◆ Fisheries Management and Rules for Responsible/ Sustainable Resource Use ◆ Self-Reporting Data and Information Collection & Analysis

		<ul style="list-style-type: none"> ◆ Aquaculture Practices (Brackish Water Backyard Pond Culture, Marine Cage Grow-out Culture, Ornamental Fish Breeding, Fish Fry and Feeding, Fish/Crustacean Disease and Health Care, Seaweed Culture Diversification, Ecosystem Preservation) ◆ Processing and Preservation Practices ◆ Diversification of Traditional Processing <p>2. Demonstration</p> <ul style="list-style-type: none"> ◆ Artificial Reef/ Fish Aggregation Devices setting and maintenance ◆ Artificial Seed Stocking ◆ Fry release/Seaweed planting ◆ Fish Health Care ◆ Fishing technique diversification, hatchery operations and traditional cottage-type processing <p>3. Research/Study</p> <ul style="list-style-type: none"> ◆ Small-scale marine species backyard pond ◆ Brackish water culture ◆ Breeding trials of ornamental fish species ◆ Small-scale coastal production activities
9.	RELATION WITH OTHER PROJECT/S	

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Construction of facilities & structures				
Demonstration Hall	Rp2mil/m ²	186 m ²	Rp. 372 mil.	
Lecture Rooms	Rp2mil/m ²	93 m ²	Rp. 186 mil.	
Fishpond	Rp.167 mil./ha	6 x 0.35 ha	Rp. 350 mil.	
Grow-out Cage	Rp.100 mil./set	4 sets (15mx10m)	Rp. 400 mil.	
Living Quarters	Rp2mil/m ²	467 m ²	Rp. 935 mil.	
Equipment				
			Rp. 250 mil.	
Total			Rp. 2,493 mil.	

Note: Construction with locally available materials and constructed by local contractors. (The existing center in the Philippines of a similar scale of the proposed center was constructed at the cost of less than US\$100,000 in 1990-1993 by 100% local materials and manpower.)

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Personnel cost				
Staff (2006-2010)	Rp.1.1mil. /person, month	19 persons x 12 month x 5 years	Rp. 1,254 mil.	
(2011-2015)	Rp.1.1mil. /person, month	38 persons x 12 month x 5 years	Rp. 2,508 mil.	
Facilities & Equipment				
7% of construction cost	Rp.174.5 mil./year	10 years	Rp. 1,745 mil.	
Total			Rp.5,507 mil.	

Note: Fishpond operations will be conducted on a separate account as self-supporting basis so as to pay off expenditure with revenue from fish sales

Project No. MR-4

1.	PROJECT TITLE	Installation of Community Artificial Reefs and Other FADs
2.	LOCATION	The coastal areas in North Sulawesi
3.	IMPLEMENTATION AGENCIES	Leading Agencies : Provincial Fishery Office Related Agencies: Municipal/Regency Fishery Offices
4.	OBJECTIVES	<ul style="list-style-type: none"> • to rehabilitate damaged fishing ground • to provide opportunity for introduction of own resources and collective management at community level to fishermen
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • increase of fish production in coastal water • Improvement of economic situation of coastal fishermen through increasing of income
6.	PROJECT COST	Rp. 1,591.0 million
6-1.	INITIAL INVESTMENT COST	Rp. 104.0 million (2002)
6-2.	OPERATION / MAINTENANCE	Rp. 1487.0 million (2003-2010)
	Short (2002-2005)	Rp. 372.0 million
	Mid (2006-2010)	Rp. 1,115.0 million
	Long (2011-2015)	None
7.	IMPLEMENTATION SCHEDULE	Short, Mid, Long (2002-3-4, 2007-8-9, 2012-13-14)
8.	PROJECT DESCRIPTION	<p>Short Term (2002) Formulation of Community Artificial Reef Establishment Plan including:</p> <ul style="list-style-type: none"> - community selection - design of artificial reefs and other FADs - implementing schedule - training of Technical Supporting Team <p>Short Term (2003-2005), Mid Term (2006-2010) Implementation of setting artificial reef and other FADs 2003-2005: 5 communities/year 2006-2010: 10 communities/year</p> <ul style="list-style-type: none"> - community meeting - field survey for site selection - making of artificial reefs and FADs - setting of artificial reefs and FADs <p>Monitoring</p> <ul style="list-style-type: none"> - monitoring survey
9.	RELATION WITH OTHER PROJECT/S	Close relation with MR-1 and MR-2

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Preparation of plan	Rp. 3 mil. /expert	2 experts x 2 months	Rp. 12 mil.	
Printing				
Report	Rp. 7 mil.		Rp. 7 mil.	30 copies
Brochure	Rp. 25 mil.		Rp. 25 mil.	200 copies
Seminar & Meeting				
training for Technical Supporting Team	Rp. 60 mil.		Rp. 60 mil.	
Total			Rp. 104 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Monitoring (equipment, transportation)	Rp. 2.5 mil./time	10 sites x 8 years	Rp. 200 mil.	
Equipment				
Diving equipment (rent)	Rp.2 mil.	2 days x 3 sites x 65 sites	Rp. 780 mil	
Construction				
Materials for artificial reef	Rp. 5 mil.	65 sites	Rp. 325 mil	
Seminar & Meeting				
Community meetings	Rp. 0.2 mil.	4 times x 65 sites	Rp. 52 mil	2 year (2006, 2011)
Transportation				
Rental car	Rp.0.2 mil	3 days x 2 times x 65 sites	Rp. 78 mil	2 year (2006, 2011)
Boat hire	Rp. 0.4 mil	2 days x 65 sites	Rp. 52 mil	
Total			Rp. 1,487 mil.	

Project No. MR-5

1.	PROJECT TITLE	Community Production Mangrove Forest Development
2.	LOCATION	All coastal villages in the Study Area
3.	IMPLEMENTATION AGENCIES	Leading Agency: Provincial Forestry Office Related Agency: PICMO, KICMO, Regency/Municipal Forestry Office, Village-level Mangrove Committee
4.	OBJECTIVES	<ul style="list-style-type: none"> to establish communal mangrove forests managed by principally community people.
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> reduction of burden to natural mangrove forests around the community as wood and firewood for fuel are supplied from the communal mangrove forests for consumption of community people
6.	PROJECT COST	Rp. 950.0 million
6-1.	INITIAL INVESTMENT COST	None
6-2.	OPERATION / MAINTENANCE	Rp. 950.0 million (2006-2010)
	Short (2002-2005)	None
	Mid (2006-2010)	Rp. 950.0 million
	Long (2011-2015)	None
7.	IMPLEMENTATION SCHEDULE	Mid (2006-2010)
8.	PROJECT DESCRIPTION	<ul style="list-style-type: none"> Planning of community mangrove forest development principally by village people with technical advice from Forestry Dept. (Kec.) Mangrove nursery construction by village people, with technical advice from Forestry Dept. (Kec.) Mangrove planting by village people, with technical advice from Forestry Dept. (Kec.) Management of the established community mangrove forests by village people, with technical advice from Forestry Dept. (Kec.)
9.	RELATION WITH OTHER PROJECT/S	Project No.MR-2 must be implemented together with this project.

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Transportation				
1 car	Rp.70 mil	5 years	Rp.350 mil.	
Others				
Nursery construction subsidy	Rp.120mil	5 years	Rp.600 mil.	
Total			Rp.950 mil.	

Project No. MR-6

1.	PROJECT TITLE	Stop Illegal Activities in the Coastal Area (dynamite fishing, coral mining)
2.	LOCATION	All coastal communities in the Study Area
3.	IMPLEMENTATION AGENCIES	Leading Agency: PICMO, KICMO Related Agency: Provincial and Municipal/Regency Fishery Office, or BAPPEDA/BAPPEKO, and other related municipal/regency agencies, Police, Coast Guard Development and Env. Section of PMD, Village Management groups and community people
4.	OBJECTIVES	<ul style="list-style-type: none"> to stop illegal activities in the coastal area in order to decrease the destruction of coral reefs.
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> development of awareness of coastal community people of the consequence of destructive and illegal activities in the coastal area make people realize the consequence of the practice of using coral rocks in septic tanks
6.	PROJECT COST	Rp. 370.0 million
	6-1. INITIAL INVESTMENT COST	Rp. 370.0 million (2002-2005)
	6-2. OPERATION / MAINTENANCE	None
7.	IMPLEMENTATION SCHEDULE	Short Term 2002-2005
8.	PROJECT DESCRIPTION	<ul style="list-style-type: none"> Survey on the people's perception on illegal activities such as dynamite fishing and coral mining Focus group meetings Education programs to focus groups on the ecological system in the coastal area and impacts of the illegal activities Organize community based patrolling system (community watch) and establish communication system between focused communities and authorities Organize workshop to the police authority on the coastal management including coastal ecosystem and impacts of illegal activities
9.	RELATION WITH OTHER PROJECT/S	Project MR-2, ME-3 , SE-4 and SE-5 should be implemented together with this project.

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Survey on people's awareness and attitude	Rp.2 mil/expert	3 expert	Rp 6 mil.	
Equipment				
AV equipment	Rp.10 mil.		Rp .10 mil.	
Computer, Printer, Copier	Rp.30 mil.		Rp. 30 mil.	
Printing				
Newsletter	Rp.3 mil.	4 years	Rp. 12 mil.	
Pamphlets, leaflets	Rp.3 mil.	4 years	Rp. 12 mil.	
Seminar & Meeting				
Meetings, Seminars /workshops, TV/Radio program, Newspaper	Rp.50 mil.	4 years	Rp. 200 mil.	
Transportation				
1 vehicle	Rp.25 mil.	4 years	Rp. 100 mil.	
		Total	Rp. 370 mil.	

Project No. MR-7

1.	PROJECT TITLE	Program on Fishery Resources Monitoring
2.	LOCATION	All coastal areas in North Sulawesi
3.	IMPLEMENTATION AGENCIES	Leading agency: Provincial Fishery Office, PICMO Related agencies: KICMO, Municipal/Regency Fishery Offices, Coastal Communities
4.	OBJECTIVES	<ul style="list-style-type: none"> • to manage fishery resources based on scientific data • to promote sustainable fishery resources management
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • development of a more effective coastal fishery resources management and strategic fishery
6.	PROJECT COST	Rp. 7,490.0 million
6-1.	INITIAL INVESTMENT COST	Rp. 340 million (2002)
6-2.	OPERATION / MAINTENANCE	Rp. 7,150.0 million (2003-2015)
	Short (2002-2005)	Rp. 1,650.0 million
	Mid (2006-2010)	Rp. 2,750.0 million
	Long (2011-2015)	Rp. 2,750.0 million
7.	IMPLEMENTATION SCHEDULE	Short to long term 2002 – 2015
8.	PROJECT DESCRIPTION	<p>Initial stage (2002)</p> <ul style="list-style-type: none"> - to disseminate information to fishermen to get their cooperation - to develop data format and database for fishery resources <p>Operation stage (2003-2015)</p> <ul style="list-style-type: none"> - to formulate Fishery Resources Monitoring Plan - to collect data from data sources such as government agencies and fishermen - to compile data - to input data to develop database and analyze data - to issue annual fishery resources statistical book
9.	RELATION WITH OTHER PROJECT/S	<ul style="list-style-type: none"> - Data also comes from coastal communities (MR-2). - Result of monitoring will be published as White Paper (MR-8).

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Programming including preparation of manual	Rp.2 mil.	4 experts x10months	Rp.80 mil.	
Equipment				
Computer set			Rp.200 mil.	
Printing				
Posters, Handbills			Rp.20 mil.	
Seminar & Meeting				
Meetings			Rp.40 mil.	
Total			Rp.340 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Monitoring	Rp.300mil	13 years	Rp.3,900 mil.	
Printing				
Posters	Rp.90 mil	13 years	Rp.1,170 mil.	
Transportation				
1 car for campaign	Rp.100mil	0.6 year x 13 years	Rp.780 mil.	
Personnel cost				
NGOs and Volunteers	Rp.0.5 mil	20 persons x 10 month x 13 years	Rp.1,300 mil.	
Total			Rp.7,150 mil.	

Project No. MR-8

1.	PROJECT TITLE	Publication of White Paper for Coastal Resources
2.	LOCATION	North Sulawesi
3.	IMPLEMENTATION AGENCIES	Leading agency: PICMO Related agencies: KICMO, Provincial Fishery Office, Municipal/Regency Fishery Offices, Coastal Communities
4.	OBJECTIVES	<ul style="list-style-type: none"> • to disseminate people to work towards understanding of coastal resources conditions in coastal communities • to evaluate performance of coastal resources policy • to provide coastal resources management policy and data/information
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • have a common understanding of the coastal resource conditions and policy of the government
6.	PROJECT COST	Rp. 440.0 million
6-1.	INITIAL INVESTMENT COST	None
6-2.	OPERATION / MAINTENANCE	Rp. 440.0 million
	Short (2002-2005)	Rp. 110.0 million (2003)
	Mid (2006-2010)	Rp. 220.0 million (2006, 2009)
	Long (2011-2015)	Rp. 110.0 million (2012)
7.	IMPLEMENTATION SCHEDULE	Short to long term 2003 – 2012 (every 3 years)
8.	PROJECT DESCRIPTION	Operation and Maintenance <ul style="list-style-type: none"> - to prepare a statistical book for coastal resources management including 1) Analysis of the existing coastal resources use, 2) Review and analysis of policies and performance, 3) Coastal resources policy for next period) - to publish the annual statistical book for coastal resources management
9.	RELATION WITH OTHER PROJECT/S	This project requires data from “Program on Fishery Resources Monitoring (MR-7)” and “Supporting Program for Community Based Coastal Management (MR-2)”

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Printing				
Offset printing, binding, distribution	Rp.50 mil.	4 times	Rp.200 mil.	300 copies/issue x 4 times (2003, 2006, 2009, 2012, every 3 years)
Personnel cost				
NGOs and Volunteers	Rp.0.5mil.	12 persons x10months x 4 times	Rp.240 mil.	4 times (2003, 2006, 2009, 2012, every 3 years)
Total			Rp.440 mil.	

Project No. MU-1

1.	PROJECT TITLE		Program on Water Pollution Control in Manado
2.	LOCATION		The municipality of Manado
3.	IMPLEMENTATION AGENCIES		Leading agency: BAPEDALDA Related agencies: PICMO, KICMO Bitung
4.	OBJECTIVES		<ul style="list-style-type: none"> • to minimize pollution load to the sea from factories, markets, households, vessels and others • to promote people's awareness
5.	EXPECTED EFFECT/S		<ul style="list-style-type: none"> • conservation of coastal environment through improvement of water quality around the urban area
6.	PROJECT COST		Rp. 550 million
	6-1.	INITIAL	Rp. 400 million (2003-2005)
	6-2.	OPERATION/ MAINTENANCE	Rp. 150 million (2006-2015)
		Short (2002-2005)	None
		Mid (2006-2010)	Rp. 75 million
		Long (2011-2015)	Rp. 75 million
7.	IMPLEMENTATION SCHEDULE		Short to long term 2003 – 2015
8.	PROJECT DESCRIPTION		<p>Short term (2003-2005)</p> <ul style="list-style-type: none"> - Review and promotion of the implementation of the wastewater project - Formulate and implement enlightenment program including seminars/forums - Implement the management plan by the Municipality including the construction of sewage treatment plants and pipes system, installation of MCK, and other necessary measures <p>Mid to Long term (2006-2015)</p> <ul style="list-style-type: none"> - Continue enlightenment program - Implementation of the wastewater project
9.	RELATION WITH OTHER PROJECT/S		<ul style="list-style-type: none"> - Monitoring and reporting of the seawater quality and conditions of the marine ecosystems to the related agencies are important. - Promoting for implementation of sewage treatment facilities proposed by "Master Plan for Human Waste and Wastewater Disposal for the City of Manado," prepared by Directorate General of Cipta Karya, Dept. of Public Works, PT.DACREA and Montgomery Watson Pasadena USA

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Review	Rp. 50 mil.		Rp. 50 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 350 mil.		Rp. 350 mil.	
Total			Rp. 400 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Printing				
Broacher	Rp. 50 mil.		Rp. 50 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 100 mil.		Rp. 100 mil.	
Total			Rp. 150 mil.	

Project No. MU-2

1.	PROJECT TITLE	Program on Water Pollution Control in Bitung
2.	LOCATION	The municipality of Manado
3.	IMPLEMENTATION AGENCIES	Leading agency: BAPEDALDA Related agencies: PICMO, KICMO Bitung
4.	OBJECTIVES	<ul style="list-style-type: none"> • to formulate and implement pollution control in order to minimize pollution load to the sea from factories, markets, households, vessels and others • to promote people's awareness
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • conservation of coastal environment through improvement of water quality around the urban area
6.	PROJECT COST	Rp. 465 million
	6-1. INITIAL	Rp. 365 million (2003-2005)
	6-2. OPERATION/ MAINTENANCE	Rp. 100 million (2006-2015)
	Short (2002-2005)	None
	Mid (2006-2010)	Rp. 50 million
	Long (2011-2015)	Rp. 50 million
7.	IMPLEMENTATION SCHEDULE	Short to long term 2003 – 2015
8.	PROJECT DESCRIPTION	<p>Short term (2003-2005)</p> <ul style="list-style-type: none"> - to formulate pollution control plan - to formulate and implement enlightenment program including seminars/forums <p>Mid to Long term (2006-2015)</p> <ul style="list-style-type: none"> - Continue enlightenment program - Implementation of the pollution control
9.	RELATION WITH OTHER PROJECT/S	<ul style="list-style-type: none"> - Monitoring and reporting of the seawater quality and conditions of the marine ecosystems to the related agencies are important. - Promoting for implementation of sewage treatment facilities proposed by "Master Plan for Human Waste and Wastewater Disposal for the City of Manado," prepared by Directorate General of Cipta Karya, Dept. of Public Works, PT.DACREA and Montgomery Watson Pasadena USA

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Review	Rp. 300 mil.		Rp. 300 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 350 mil.		Rp. 65 mil.	
Total			Rp. 365 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Printing				
Broacher	Rp. 50 mil.		Rp. 35 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 100 mil.		Rp. 65 mil.	
Total			Rp. 100 mil.	

Project No. MU-3

1.	PROJECT TITLE	Program on Solid Waste Collection System in the Coastal Areas in Manado
2.	LOCATION	The municipality of Manado
3.	IMPLEMENTATION AGENCIES	Leading agency: Manado Municipality (Manado Cleaning Service Office), Manado Port Authority
4.	OBJECTIVES	<ul style="list-style-type: none"> • to improve solid waste collection system in the coastal areas in Manado to minimize waste discharge into the coastal area • to carry out enlightenment activities on solid waste management to the enterprises and residents.
5.	EXPECTED EFFECT/S	Ultimate expected effect is to minimize the degradation of the quality of coastal water and keep clean and beautiful townscape of the coastal areas of Manado, where the international tourist gate and center of the region rest.
6.	PROJECT COST	Rp. 890 million
	6-1. INITIAL	Rp. 470 million (2003-2005)
	6-2. OPERATION/ MAINTENANCE	Rp. 420 million (2004-2015)
	Short (2002-2005)	Rp. 70 million
	Mid (2006-2010)	Rp. 175 million
	Long (2011-2015)	Rp. 175 million
7.	IMPLEMENTATION SCHEDULE	Short to long term 2003 – 2015
8.	PROJECT DESCRIPTION	<p>Initial stage</p> <ul style="list-style-type: none"> - to enlighten the residents, visitors, tourists, enterprises and other users on cleaning the beaches, ports and coastal areas - to install garbage cans along the Boulevard road and other coastal roads - to increase the number of trucks for the collection of solid waste in the coastal zones (purchase of 10-ton truck is the basis for the above cost estimate) <p>Operation & Maintenance</p> <ul style="list-style-type: none"> - to increase frequency and intensity of the collection service by truck(s) in the coastal areas - to direct the Manado Port Authority to clean the Manado Port area at least twice a year with the use of their boats and other resources
9.	RELATION WITH OTHER PROJECT/S	

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Equipment				
Garbage can	Rp. 40 mil		Rp. 40 mil.	
Truck	Rp. 400 mil.		Rp 400 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 20 mil		Rp. 20 mil.	
Total			Rp. 470 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Transportation				
Truck	Rp. 28 mil./year	12 years	Rp. 336 mil.	
Equipment				
Maintenance of garbage can	Rp. 2 mil./year	12 years	Rp. 24 mil.	
Maintenance of boat	Rp. 5 mil./year	12 years	Rp. 60 mil.	
Total			Rp. 420 mil.	

Project No. MU-4

1.	PROJECT TITLE	Promotion of the Implementation of Solid Waste Collection System in the Coastal Areas in Bitung
2.	LOCATION	The municipality of Bitung
3.	IMPLEMENTATION AGENCIES	Leading agency: Bitung Municipality (Bitung Cleaning Service Office), Bitung Port Authority
4.	OBJECTIVES	<ul style="list-style-type: none"> • to improve solid waste collection system in the coastal areas in Bitung to minimize waste discharge into the coastal area • to carry out enlightenment activities on solid waste management to the enterprises and residents
5.	EXPECTED EFFECT/S	Ultimate expected effect is to minimize the degradation of the quality of coastal water and keep clean and beautiful townscape of the coastal areas of Bitung, which is positioned as the international tourist gate and center of the region.
6.	PROJECT COST	Rp. 845 million
	6-1. INITIAL	Rp. 425 million (2003-2005)
	6-2. OPERATION/ MAINTENANCE	Rp. 420 million (2004-2015)
	Short (2004-2005)	Rp. 70 million
	Mid (2006-2010)	Rp. 175 million
	Long (2011-2015)	Rp. 175 million
7.	IMPLEMENTATION SCHEDULE	Short to long term 2003 – 2015
8.	PROJECT DESCRIPTION	<p>Initial stage</p> <ul style="list-style-type: none"> - to enlighten the residents, visitors, tourists, enterprises and other users on cleaning the beaches, ports and coastal areas - to install garbage cans along the major coastal roads - to increase the number of trucks for the collection of solid waste in the coastal zones (purchase of 10-ton truck is the basis for the above cost estimate) <p>Operation & Maintenance</p> <ul style="list-style-type: none"> - to increase frequency and intensity of the collection service by truck(s) in the coastal areas - to direct the Bitung Port Authority to clean the Bitung Port area at least twice a year with the use of their boats and other resources.
9.	RELATION WITH OTHER PROJECT/S	

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Equipment				
Garbage can	Rp. 40 mil.		Rp. 40 mil.	
Truck	Rp. 400 mil.		Rp. 400 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 20 mil.		Rp. 20 mil.	
Total			Rp. 470 mil.	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Transportation				
Truck	Rp. 28 mil./year	12 years	Rp. 336 mil.	
Equipment				
Maintenance of garbage can	Rp. 2 mil./year	12 years	Rp. 24 mil.	
Maintenance of boat	Rp. 5 mil./year	12 years	Rp. 60 mil.	
Total			Rp. 420 mil.	

Project No. MU-5

1.	PROJECT TITLE	Formulation and Implementation of Beautification Programs for the Coastal Areas of Manado
2.	LOCATION	The coastal areas of the city of Manado
3.	IMPLEMENTATION AGENCIES	Leading agency: Provincial and Manado Settlement and Regional Infrastructure, Manado Port Authority Related agencies: PICMO, KICMO
4.	OBJECTIVES	<ul style="list-style-type: none"> to beautify the urban coastal area in Manado as one of the international tourist areas in Indonesia
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> beautification of the most important coastal areas in Manado as one of the international tourist areas in the region
6.	PROJECT COST	Rp. 1,185 million
	6-1. INITIAL	Rp. 555 million (2005-2006)
	6-2. OPERATION/ MAINTENANCE	Rp. 630 million (2007-2015)
	Short (2004-2005)	None
	Mid (2006-2010)	Rp. 280 million
	Long (2011-2015)	Rp. 350 million
7.	IMPLEMENTATION SCHEDULE	Mid – long term: Study & Design :2005 - 2006 Implementation and O&M : 2007 and after
8.	PROJECT DESCRIPTION	<ul style="list-style-type: none"> to prepare and establish the design guidelines for building construction along the coastal areas in Manado, and to formulate the beautification programs (the study period is 12 months in 2006, to be carried out by a consultant) to promote to maintain the existing and proposed building structures in good conditions by respective public and private sectors, such as road pavements, drainage, waste bins, hotels, restaurants, shops, residents, street lighting and planting, etc., based on the above design guidelines. to manage the implementation of the beautification program for the important coastal areas with the cooperation of the related public and private sectors in the middle and long-term period
9.	RELATION WITH OTHER PROJECT/S	

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Planning of construction of facilities and structure	Rp. 500 mil.		Rp. 500 mil.	
Printing				
Poster and handbills	Rp. 500 mil.		Rp. 5 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 50 mil.		Rp. 50 mil.	
Total			Rp. 555 mil.	

Note: excluding construction cost

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Printing				
for public relations	Rp. 20 mil./year	9 years	Rp. 180 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 50 mil	9 years	Rp. 450 mil.	
Total			Rp. 420 mil.	

Project No. MU-6

1.	PROJECT TITLE	Formulation and Implementation of Beautification Programs for the Coastal Areas of Bitung
2.	LOCATION	The coastal areas of the municipality of Bitung
3.	IMPLEMENTATION AGENCIES	Leading agency: Provincial and Bitung Settlement and Regional Infrastructure, Bitung Port Authority Related agencies: PICMO, KICMO
4.	OBJECTIVES	<ul style="list-style-type: none"> to beautify the urban coastal area in Bitung as one of the international tourist areas in Indonesia
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> maintenance and creation of beautiful and clean townscape for the tourists and the people of the region
6.	PROJECT COST	Rp. 785.0 million
	6-1. INITIAL	Rp. 555.0 million (2005-2006)
	6-2. OPERATION/ MAINTENANCE	Rp. 630.0 million (2007-2015)
	Short (2004-2005)	None
	Mid (2006-2010)	Rp. 280.0 million
	Long (2011-2015)	Rp. 350.0 million
7.	IMPLEMENTATION SCHEDULE	Mid – long term: Study & Design :2005 - 2006 Implementation and O&M : 2007 and after
8.	PROJECT DESCRIPTION	<ul style="list-style-type: none"> to prepare and establish the design guidelines for building construction along the coastal areas in Bitung, and formulation of the beautification programs (the study period is 12 months in 2006, to be carried out by a consultant) to promote to maintain the existing and proposed building structures in good conditions by respective public and private sectors, such as road pavements, drainage, waste bins, hotels, restaurants, shops, residents, street lighting and planting, etc., based on the above design guidelines to manage the implementation of the beautification program for the important coastal areas with the cooperation of the related public and private sectors in the middle and long-term period
9.	RELATION WITH OTHER PROJECT/S	

Initial Cost

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Planning of construction of facilities and structure	Rp. 500 mil		Rp. 500 mil.	
Printing				
Poster and handbills	Rp. 500 mil		Rp. 5 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 50 mil		Rp. 50 mil.	
Total			Rp. 555 mil.	

Note: excluding construction cost

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Printing				
Material for public relations purpose	Rp. 20 mil./year	9 years	Rp. 180 mil.	
Seminar & Meeting				
Seminar and forum	Rp. 50 mil	9 years	Rp. 450 mil.	
Total			Rp. 630 mil.	

Project No. MW-1

1.	PROJECT TITLE	Protection from Soil Erosion for Coral Reef Conservation
2.	LOCATION	Inland area of rehabilitation zones in Coastal Management Zoning
3.	IMPLEMENTATION AGENCIES	Leading Agency : Provincial Forestry Office and Agriculture Office, Municipal/Regency Forestry Office and Agriculture Office Related Agencies : PICMO, KICMO
4.	OBJECTIVES	<ul style="list-style-type: none"> • to rehabilitate soil in rehabilitation zones in order to reduce potentiality of soil erosion
5.	EXPECTED EFFECT/S	<ul style="list-style-type: none"> • minimization of the load from soil erosion and improvement of ecological environment in the coastal areas • conservation of coral reefs in danger of impacted by discharged soil from the land
6.	PROJECT COST	Rp. 11,780.0 million
6-1.	INITIAL INVESTMENT COST	None
6-2.	OPERATION / MAINTENANCE	Rp. 11,780.0 million (2006-2010)
	Short (2002-2005)	None
	Mid (2006-2010)	Rp. 11,780.0 million
	Long (2011-2015)	None
7.	IMPLEMENTATION SCHEDULE	Mid term (2006-2010)
8.	PROJECT DESCRIPTION	<ul style="list-style-type: none"> - Preparation of guidance of method of soil erosion control to local farmers - Monitoring of the inland area - Reforestation and rehabilitation works in rehabilitation zones - Soil stabilizing work in rehabilitation zone - Environmental education
9.	RELATION WITH OTHER PROJECT/S	

Operation & Maintenance

Items	Unit Cost	Quantity	Sub-Total	Remark
Study & Design				
Construction of facilities & structures				
Soil stabilizing work	Rp.1,500 mil.	x 5 years	Rp. 7,500 mil.	
Equipment				
Production cost of seedlings	Rp. 450 mil.	x 5 years	Rp. 2,250 mil.	
Equipment for monitoring	Rp. 0.2 mil.	x 5 years	Rp. 1 mil.	
Equipment and consumables for reforestation work	Rp. 6 mil.	x 5 years	Rp. 30 mil	
Equipment and consumables for soil stabilizing work	Rp. 3 mil.	x 5 years	Rp. 15 mil.	
Transportation				
Monitoring (Patrol car)	Rp. 3.3 mil.	10 staff x 2.4month x 5 years	Rp. 400 mil.	
Personnel cost				
Staff for monitoring staff (part time)	Rp 0.2 mil.	10 staff x2.4month x 5 years	Rp. 24 mil.	
Staff for reforestation staff	Rp. 1 mil.	13 staff x12months x 5 years	Rp. 780 mil.	
Staff for soil stabilizing and guidance to local farmers	Rp. 1 mil.	13 staff x12months x 5 years	Rp. 780 mil.	
Total			Rp.11,780 mil.	