

DRAFT

ASIAN DEVELOPMENT BANK

RRP:PHI 33276

**REPORT AND RECOMMENDATION
OF THE
PRESIDENT
TO THE
BOARD OF DIRECTORS
ON A
PROPOSED LOAN
TO THE
REPUBLIC OF THE PHILIPPINES
FOR THE
INTEGRATED COASTAL RESOURCES MANAGEMENT PROJECT**

July 2004

CURRENCY EQUIVALENTS

(as of 10 June 2004)

Currency Unit – Peso (₱)

₱1.00 = \$0.179

\$1.00 = ₱55.91

For purpose of calculation in this report, a rate of P56.00=\$1.00 was used

ABBREVIATIONS

BFAR	-	Bureau of Fisheries and Aquatic Resources
CMMD	-	Coastal and Marine Management Division
CMMO	-	Coastal and Marine Management Office
CRM	-	coastal resources management
DA	-	Department of Agriculture
DAO	-	Departmental Administrative Order
DENR	-	Department of Environment and Natural Resources
DOF	-	Department of Finance
EA	-	executing agency
EDU	-	enterprise development unit
EIRR	-	economic internal rate of return
FARMC	-	fisheries and aquatic resources management council
FIRR	-	financial internal rate of return
GEF	-	Global Environment Facility
IA	-	implementing agency
ICRMU	-	integrated coastal resources management unit
IEC	-	information, education, and communication
IEE	-	initial environmental examination
ICRM	-	integrated coastal resources management
LGC	-	local government code
LGU	-	local government unit
MCD	-	municipal coastal database
MDFO	-	Municipal Development Fund Office
MOA	-	Memorandum of Agreement
MPA	-	marine protected area
NGA	-	national government agency
OCR	-	ordinary capital resources
O&M	-	operation and maintenance
PIU	-	project implementation unit
PMO	-	project management office
PPMS	-	project performance management system
PSC	-	project steering committee
RPIU	-	regional project implementation unit

NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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LOAN AND PROJECT SUMMARY

Borrower	Republic of the Philippines
Classification	<p>Poverty: Core poverty intervention</p> <p>Sector: Agriculture and Natural Resources</p> <p>Subsector: Environment and Biodiversity</p> <p>Themes: Environmental sustainability Sustainable economic growth Governance</p> <p>Subthemes: Natural resources conservation; rural development; and civil society participation.</p>
Environment Assessment	<p>Category B.</p> <p>An initial environmental examination was undertaken.</p>
Project Description	<p>The Project will support the Government's efforts to address the critical issues of sustainable management of marine and coastal resources. The salient aspects of the Project include: (i) development of an institutional framework for integrated coastal resources management (ICRM), address policy weaknesses and legal gaps, clarify roles of national government agencies concerned and local governments, and address their capacity building needs; (ii) assessment of resources in the coastal zone of participating municipalities, development and implementation of ICRM plans, participatory law enforcement and development of eco-certification mechanisms for trade in coral associated species; (iv) biodiversity conservation in priority marine biodiversity corridors supported by focused research on critical ecosystems and threatened species; (v) assistance to municipal fisherfolks to develop sustainable enterprises and livelihood, reducing their reliance on fishing; and (vi) improvement of water supply and sanitation among the disadvantaged coastal communities, provision of infrastructure and facilities for mitigating coastal erosion and pollution, and support for a population management program that includes education on reproductive health and the link between population and environmental quality. Project interventions for conservation of globally important marine and coastal biodiversity will be supported by the Global Environmental Facility (GEF).</p> <p>The Project will be implemented in six priority marine biodiversity corridors covering about 65 municipalities in the provinces of Cagayan, Zambales, Masbate, Cebu, Siquijor, and Davao Oriental.</p>

Rationale

The coastal and marine resources of the Philippines are of national and global importance because of their rich biodiversity and valuable contribution to the economy. However, these resources are declining and are under threats due to human activities. Coral reefs, mangroves, seagrass and other important coastal habitats are under severe stress with consequential decrease in the production of coastal fisheries. The resource depletion has affected the livelihood of fisherfolks, an overwhelming majority of whom live in poverty.

Since the mid 1980s, the Government has implemented a number of coastal resources management (CRM) programs, mostly as technical assistance from multilateral and bilateral agencies and some as part of major investment and policy initiatives in the sector. Interventions under these programs, notably in marine protected areas, resulted in significant positive impacts on biophysical parameters such as coral cover, fish catch, and biodiversity; promoted good governance practices especially at the local level with the participation of local communities in resource management and law enforcement; and created an awareness among local officials and coastal communities on the need for conservation and protection of coastal ecosystems. Despite these significant gains, threats to the management of coastal resources still persist due to a number of complex factors including lack of an integrated coastal resources management (ICRM) approach to coastal zone planning, policy and institutional weaknesses, weak law enforcement, high poverty incidence among coastal fisherfolks, and open access to marine and coastal resources.

Building on the experience of past programs, the proposed Project will assist the Government to adopt a holistic approach to coastal resources management integrating terrestrial and coastal environments, strengthening policy and institutional framework, developing local government capacity, and reducing pressure on coastal resources.

Objectives

The long-term goals of the Project are enhanced coastal resources and reduced poverty among municipal fisherfolks. The Project purpose is sustainable management and conservation of coastal resources and increased income for coastal communities.

Cost Estimates

The total cost of the Project is estimated at \$63.00 million equivalent comprising \$13.00 million in foreign exchange and \$50.00 million equivalent in local currency.

Financing Plan

It is proposed that the Asian Development Bank (ADB) provide a loan for \$36.00 million from OCR to finance \$10.00 million of foreign exchange cost and \$26.00 million of local currency costs. GEF is expected to provide a grant of \$9.00 million covering \$3.00 million in foreign exchange and \$6.00 million in local currency. The central and local governments and beneficiary communities will finance the remaining \$18.00 million in local currency.

(\$ million)				
Source	Foreign Exchange	Local Currency	Total Cost	Percentage
ADB through OCR	10.00	26.00	36.00	57%
GEF Grant	3.00	6.00	9.00	14%
Central Government	--	7.00	7.00	11%
Local Governments and Communities	--	11.00	11.00	18%
Total	13.00	50.00	63.00	100%

ADB = Asian Development Bank, OCR= ordinary capital resource

The national Government (including ADB loan and GEF grant proceeds) for Project activities will be as a mix of loan and grant which would complement equity contributions of local governments and beneficiary communities. The proportion of loan and grant and terms and conditions for the loan will be in accordance with the National Government- Local Government Cost Sharing Policy.

Loan Amount and Terms	A loan of \$36.0 million from the ordinary capital resources will be provided under ADB's London interbank offered rate (LIBOR)-based lending facility. The loan will have a 22-year term including a grace period of 6 years, an interest rate determined in accordance with ADB's LIBOR-based lending facility, a commitment charge of 0.75% per annum, and such other terms and conditions set forth in the draft loan agreement.
Period of Utilization	Until 30 June 2011
Estimated Project Completion Date	31 December 2010
Executing Agency	The Department of Environment and Natural Resources (DENR) will be the Executing Agency.
Implementation Arrangements	Implementation responsibilities will be shared by DENR, the Department of Agriculture (DA) and participating municipal governments. DENR will establish a Project Steering Committee to provide overall policy guidance and oversee project implementation. DENR will also establish a Project Management Office in Manila and a Regional Project Implementation Unit (PIU) in each of the five Regions covering the project provinces. DA will establish a National PIU and five Regional PIUs. Regional PIUs will provide technical assistance to municipal governments in field level implementation of project activities. Municipal governments will undertake all resource management activities through the community-based fisheries and aquatic resources management councils (FARMCs). Similarly, municipal governments will implement most of the social and environmental infrastructure and facilities through beneficiary communities on a cost-sharing basis.
Procurement	All goods and related services financed under the loan and GEF grant will be procured in accordance with ADB's <i>Guidelines for Procurement</i> .

Consulting Services

An estimated 644 person-months (pm) of consulting services, comprising 46 pm international and 598 pm domestic consultants, will be required to assist the national government agencies, local governments, and local communities in implementing the Project. Consultants will be recruited in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory for the engagement of domestic consultants.

Project Benefits and Beneficiaries

The Project will achieve the following major benefits: (i) laws and regulations governing coastal resources management will be harmonized and interagency coordination will be improved; (ii) ICRM system will be institutionalized in 65 municipalities; (iii) about 50 MPAs including about 5,000 ha sanctuary areas will be managed by local governments, with 10% increase in fish catch outside the protected areas; (iv) about 50,000 ha of coral reefs will be brought under improved management, with 10% improvement in hard coral cover; (v) 3,500 ha of existing mangroves will be enriched/rehabilitated, and 2,500 ha of mangrove will be reestablished, with 20% improvement in density; (vi) about 3,000 ha in watersheds will be reforested and 3,500 ha will be rehabilitated contributing to reduction in soil erosion and flash flooding (vii) incidence of illegal fishing will be reduced by 50 percent; (viii) about 10,000 fisherfolks households will have 10% percent increase in real household income; (viii) women's participation in coastal resources management and alternative livelihood activities will be significantly enhanced; and (ix) disadvantaged coastal communities will have improved access to safe water, sanitation, and community services.

The poverty impact analysis in the sample municipalities indicates that about 70% of net economic gains would accrue to the poor. With 76% of the coastal people living below poverty line, 61% of whom are employed in fishing, the Project will have a major impact in combating poverty and improving income distribution in the Project area.

Risks and Assumptions

The successful implementation of the Project will require stakeholders to agree and adjust to the policy and governance regime changes to be promoted by the Project. While most of the stakeholders have been supportive of these changes during project preparation, some may be slow in responding to the needs for change during project implementation. The risk will be mitigated by the emphasis on public information and capacity building activities conducted throughout the project period.

The governance risk associated with project management including procurement and disbursement will be mitigated through the participatory management at national, regional, and field level, improving transparency and accountability. The cost-sharing arrangement will motivate local governments to strive for economy and efficiency in project implementation, and avoid corrupt practices. Most social and environmental infrastructure and facilities will be developed by beneficiary communities on a cost-sharing basis ensuring better use of the allocated fund.

It is assumed that sustainable management of marine and coastal resources will continue to be a priority item in the Government's development program and local governments will be given adequate incentives to participate in the program.

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the Philippines for the Integrated Coastal Resources Management Project.¹

II. RATIONALE: SECTOR PERFORMANCE, PROBLEMS, AND OPPORTUNITIES

A. Performance Indicators and Analysis

2. The Philippines is composed of about 7,100 islands (300,000 km² of land) and has an estimated 18,000 km coastline extending 2,000 km from north to south. With the adoption of The United Nations Convention on the Law of the Sea (inclusion of the Exclusive Economic Zone), the Philippine territorial waters approximate 2.2 million km² with a coastal regime of 226,000 km² and an oceanic regime of 1.93 million km². Of its 1,541 municipalities, 832 (or 54%) border the coast. Twenty-five major cities lie on the coast and 62% of the population lives in the coastal zone.

3. The marine and coastal areas of the Philippines supports a large extent of productive coastal ecosystems and habitats that includes about 25,000 km² of coral reefs, seagrass, and algal beds; 138,000 ha of mangroves (reduced from 450,000 ha in 1920); a variety of productive fisheries that provide more than 50 percent of the animal protein consumed in the country; and many beaches and varied coastlines of value for tourism and other development. With 430 species of corals, 2,300 species of fishes, 13 species of seagrass, hundreds of seaweed species, and literally thousands of species of different types of marine invertebrates, the Philippines has one of the richest marine and coastal ecosystems.

4. Benefits derived directly from the coastal habitats are substantial. Although not all benefits are quantified in economic terms, it is currently estimated that coral reefs alone contribute at least \$1.06 billion annually to the economy. This estimate would be significantly more with improved coastal management efforts. The Philippines is the 11th largest fish producer in the world. Its annual total fisheries yield is estimated to be worth around \$2.5 billion, equivalent to about 4.3% of its gross domestic product. Marine capture fisheries account for around 62% of the total annual fisheries yield while the rest comes from aquaculture and inland fisheries. Annual harvest of marine capture fisheries is around 1.67 million tons worth \$578 million in 1994. Municipal fisheries (excluding reef fish) were estimated to yield annual economic benefits of \$620 million in 2002. The Philippine fishing industry employs more than 1 million people (5 percent of the national labor force) with 68 percent employed in the municipal sector and 28 percent in the commercial and aquaculture sectors.

B. Analysis of Key Problems and Opportunities

1. Demographics and Coastal Poverty

5. A large proportion of the 40 million coastal population has become highly dependent on coastal and marine resources for sustenance and survival. Surveys in potential Project areas indicate that a coastal household's average annual income, is ₱56,486. Based on their source of annual income, employment provides the highest average (₱86,134), followed by farming (₱55,548), business (₱52,831), and fishing (₱50,310). Poverty incidence in the coastal community is extremely high at 76%, compared to the general level of 41.8% in the target provinces and 34.2 nationwide.

¹ ADB. 2001. *Technical Assistance to the Republic of the Philippines for the Integrated Coastal Resources Management Project*. Manila. (TA NO. 3692-PHI, for \$598,000, approved in August 2001). The TA was cofinanced by GEF for \$335,000 as grant.

6. Social infrastructure is limited in most coastal areas. Some 28% of households do not have toilets. Access to potable water for some is only through dug shallow wells (18%), artesian wells (2%), water vendors (1%), or springs (1%). Garbage is disposed primarily through burning, followed by indiscriminate dumping in vacant lots or one's own backyard. Less than 5% of households reported that their garbage is collected through a municipal solid waste collection system.

7. Women in coastal communities are more disadvantaged compared to their male counterparts. The prevailing gender division of labor, together with traditional practices among coastal community, limit and hinder women's access and control of community resources and optimization of their skills and potentials for coastal fisheries development and resource management. Contribution of women to the household and community services remains largely undervalued.

2. Sector Issues

8. The coastal resource sector, although potentially rich and productive, is declining and under threats due to human activities. Of the 25,000 km² of coral reefs, less than 5 percent are in excellent condition. Mangrove forests are declining at a rate of 2,000 ha/year, and the total coverage has decreased from around 4,500 square km in 1918 to only about 1,380 sq. km in the 1990s. Municipal fisheries production has been declining over the last 20 years, and the average reef fish catch per unit effort is now less than 2 kg/day, down from as much as 20 kg/day 30 years ago.

9. Overfishing, the use of destructive fishing practices, and habitat conversion have adversely affected the coastal ecosystems threatening permanent damage to them. Increasing pollution from land-based activities, industrial and urban development, deforestation and soil erosion have lowered water quality and contributed to declining productivity in coastal waters. Rapid population growth and increasing concentration of population and economic activities near the coastal zone have added to the mounting pressure on finite coastal resources.

10. Policy and institutional weaknesses also serve as barriers to effective coastal resource management. The absence of a comprehensive integrated coastal resources management policy and an institutional framework for its implementation has at times resulted in conflicting actions and initiatives by national government agencies and local governments. Some coastal resource management functions, notably fisheries, have been devolved to local governments but other functions pertaining to management of critical habitats such as mangroves and watersheds, pollution and foreshore management, and urban and industrial development in the coastal areas, have been retained by various agencies of national government. Local governments lack basic technical knowledge, skills and resources to successfully develop effective management regimes and harmonize various interests operating in the coastal area. In addition, lack of qualified staff prevents the Department of Environment and Natural Resources (DENR) and other national agencies concerned from assisting local governments in effectively carrying out coastal management functions and properly coordinating with them.

11. A common issue with respect to the Philippine coastal resources management has been the poor compliance with laws and regulations. This is partly because of inconsistencies in laws, regulations and guidelines that were developed over time and across sectors. At times the national regulations and Department Administrative Orders (DAOs) are in conflict with the interest of local governments and their legislative mandate. Moreover, most local governments do not have the capacity or budget to implement the laws under their jurisdiction.

12. A more detailed discussion on the sector issues and threats to biodiversity is given in Appendix 1

3. External Assistance to the Sector

13. External assistance to the Philippines marine and coastal resources sector has come from a large number of institutions including ADB, Canadian International Development Agency, Global Environment Facility (GEF), Japan Bank for International Cooperation, Organization of Petroleum Exporting Countries, the United Nations Development Programme (UNDP), United States Agency for International Cooperation (USAID) and the World Bank. ADB has been the lead agency in the sector and has provided 9 loans for \$169.5 million for 6 projects. ADB has also provided 10 project preparatory and advisory technical assistance for \$3.8 million to the sector. The next largest source is the World Bank with loans for \$115 million. A table on external assistance to the marine and coastal resources sector is given in Appendix 2.

14. The earlier ADB-assisted projects aimed at improved fisheries production. Only two ADB projects have direct relevance to the proposed project, and these are: Fisheries Sector Program [Loan Nos. 971(SF)/972-PHI], approved in 1989 for \$80 million; and Fisheries Resources Management Project [Loan Nos. 1562(SF)/1563-PHI], approved in 1997 for \$35.2 million. Most of the other external assistance to the sector was also directed at increasing the efficiency of fishing fleets and developing aquaculture, and only few programs and projects were directed at marine and coastal resources management. The notables among the latter category are the USAID-financed Coastal Resources Management Project (CRMP) and the World Bank-financed Central Visayas Regional Project and Community-based Resource Management Project (CBRMP).

15. GEF has made significant direct contribution to conserving important Philippine biodiversity resources, both through regional and country-specific projects. The GEF-supported projects that are directly or indirectly supporting marine biodiversity conservation include : (i) Conservation of Priority Protected Area Project, approved in May 1991; (ii) Partnership for the Environmental Management for the Seas of East Asia, approved in November 1998; (iii) Coastal Marine Biodiversity Conservation Project, approved in May 1999; (iv) Tubataha Reef National Marine Park, approved in March 2000; (v) Critical Ecosystems Partnership Fund, approved in July 2000; (vi) Bohol Marine Triangle, approved in December 2000; (vii) Asian Conservation Corporation/Asian Conservation Foundation, approved in May 2002; and (viii) Marine Aquaculture Market Transformation Initiative, approved in May 2004.

4. Lessons Learned from Previous Coastal Resources Management Initiatives

16. The coastal resources management initiatives of the Government, implemented with bilateral and multilateral assistance, commenced in the mid 1980s. Interventions under these initiatives, notably in marine protected areas (MPAs), resulted in significant positive impacts on biophysical parameters such as coral cover, fish catch, and biodiversity; promoted good governance practices especially at the local level with the participation of local communities in resource management and law enforcement; and created an awareness among local officials and coastal communities on the need for conservation and protection of coastal ecosystems. About 150 coastal municipalities and cities have coastal resources management programs covering about 4,000 km of coastline, the incidence of illegal fishing has declined significantly in provinces with management programs, and more than 5,000 coastal resources management practitioners with various levels of training are now available within the government and nongovernment sectors in the country.

17. Despite these significant gains, threats to the management of coastal resources still persist due to a number of complex factors including lack of an integrated approach to coastal

zone planning, policy and institutional weaknesses, weak law enforcement, high poverty incidence among coastal fisherfolks, and open access to marine and coastal resources. Following important lessons have been learned from the implementation of previous programs:

- (i) **Holistic Approach to Coastal Resources Management.** The origin of threats to coastal areas spans from the watershed divide in the mountain to the sea. An effective coastal resources management, therefore, should follow an integrated, holistic approach that consider interaction among and within resource systems as well as interaction between humans and their environment.
- (ii) **Institutional Strengthening at Local Level.** Devaluation of authority for ICRM to local government coincides well with the Local Government Code and the policy of community participation in development planning and management. Local governments need to strengthen capacity to manage their natural resources, and the national government and sector agencies should assist them through the provision of resources, legal mandate, and technical guidance. Academic institutions, NGOs, and private firms provide invaluable technical assistance and training functions in an efficient manner and should be utilized to the fullest extent.
- (iii) **Participatory Planning Addressing Local Issues.** Local government coastal management plans, developed through a community participation process, must integrate a comprehensive set of interventions in the coastal zone, depending on the issues and needs of the municipality. These include: municipal water delineation, zoning uses within municipal waters, regulating fisheries and the use of other coastal resources, legislation and enforcement of national and local laws on integrated coastal resources management (ICRM), establishment of marine sanctuaries, solid waste management, and foreshore and shoreline management.
- (iv) **Income Diversification.** Enterprise development and alternative livelihoods for fisherfolks are essential to reduce pressure on coastal fisheries. Economic interventions with private sector investment and buy-in are more viable and allow for better and faster technology transfer to village-based partners. Future projects should pay greater attention to installing a monitoring system to detect changes in incomes of affected stakeholders especially those whose livelihoods have been negatively affected by some ICRM interventions.

18. Specific lessons learned in implementation of the Fisheries Sector Program Loan as mentioned in the Project Performance Audit Report (PPA:PHI 17152) are: (i) policy initiatives should be supported by measures such as information, education and communication (IEC) campaigns and should provide for adequate preparation of stakeholders; (ii) a process approach should be adopted that allows necessary changes/modifications to original design; (iii) project implementation should involve concerned local government units (LGUs) and provide for a mechanism for determining and delineating responsibilities between the national government and LGUs; (iv) development of alternative livelihood program should provide for adequate social preparation of target beneficiaries; and (v) availability of capable locally-based NGOs is often overestimated and this constraint should be considered in the Project design. The implementation experience of the ongoing Fisheries Resources Management Project (Loan No. 1562(SF)/1563-PHI)² identified the following: (i) there is need for adequately addressing project-related capacity building needs of implementing agencies; (ii) LGUs should be directly involved in planning and implementation of field activities; (iii) not all the municipalities have capable

² As of 27 June 2004, the Project progress is 72% and disbursement 51%. The Government has requested for an extension of the loan closing date by 18 months from 30 June 2004.

NGOs to assist in Project implementation; and (iv) livelihood development activities should precede the implementation of conservation programs.

19. Similarly, major lessons learned from various GEF, USAID and World Bank assisted projects in the country and the region are: (i) projects should have a broad stakeholder focus in planning, capacity building and implementation; (ii) management plans should be flexible and adaptive to build on monitoring and research findings; (iii) projects should have a practical and simple approach involving proven and tested tools/activities; (iv) project design should emphasize institutional and financial sustainability of conservation and management initiatives; and (v) linkages with similar ongoing projects should be built in the Project design.

5. Government Policy and Strategy for Coastal Resources Management

20. The Government recognizes the problems of (i) extensive poverty in the coastal community, (ii) degradation of natural resources, (iii) unbalanced use of aquatic resources, and (iv) increasing population concentration in coastal zones. The Government has developed a plan of action for sustainable management of coastal and marine ecosystems and poverty reduction. The plan is articulated in the Philippine Agenda 21 and in the Medium -Term Development Plan for the Environment and Natural Resources Sector (2001-2004), which emphasizes: (i) community-based coastal resource management (ii) provision of alternative livelihood and basic services to poor coastal communities, (iii) improvement of marine pollution control, and (iv) institutional strengthening for socioeconomic development and ICRM in coastal areas. The specific targets pertaining to ICRM as articulated in the Medium-Term Plan are as follows: (i) establish/rehabilitate 2,000 hectares of mangrove forest and management of 27,000 hectares of coral reef; (ii) develop a national databank and management information for coastal and marine ecosystems and 15 regional coastal resources information systems; and (iii) adopt integrated coastal management covering municipal waters of 250 municipalities.

21. In 2003, the Government drafted with UNDP assistance a national policy and institutional framework for integrated coastal resources management. The framework, *ArcDev: A Framework for Sustainable Philippine Archipelagic Development*, articulates a common vision and unified strategy for coastal and marine resources development. The salient aspects of the Framework are: (i) promotion of archipelagic integration that recognizes the interactions of land, sea, air, and people in an archipelagic setting; (ii) meaningful and responsive participation of all stakeholders in planning and implementation of an integrated ocean-management policy; (iii) conservation, protection, and use of marine resources and marine environment for the benefit of present and future generation; and (iv) sustainable development of coastal resources for economic development in the coastal region and well being of coastal people. A comprehensive policy on coastal resources management has also been drafted with USAID assistance and needs to be finalized through a consultative process and enacted into a law.

6. ADB's Sector Objectives and Strategies

22. The guiding principles for ADB's assistance program in the Philippines are found in its Country Strategy and Program Update 2003-2005. The ADB's country operational strategy is closely aligned with the Philippine Government's development objectives. It includes the objectives of poverty reduction, promotion of equitable growth, improvement of social services delivery, protection of the environment, and promotion of good governance. The areas of concern included within the environmental protection objectives in the country operational strategy are: (i) urban air quality, (ii) surface water quality, (iii) solid waste management, (iv) forest resources, and (v) coastal resources.

23. The Republic of the Philippines-ADB Poverty Partnership Agreement, signed on 10 October 2001, articulates four major goals: (i) macroeconomic stability and equitable growth; (ii)

agricultural modernization with social equity; (iii) comprehensive human development and protecting the vulnerable; and (iv) good governance. The goals and objectives of the proposed Project are consistent with those of the Government and ADB development programs for the country. The Project will improve the management of coastal and marine resources and biodiversity, and reduce poverty among coastal communities. It will increase and broaden environment-friendly economic opportunities and provide needed environmental and social services and facilities to coastal communities. Through policy and institutional strengthening and increase participation, the Project will enhance good governance practices at all levels.

III. THE PROPOSED PROJECT

A. Objective and Scope

24. The long-term goals are enhanced coastal resources and reduced poverty among municipal fisherfolk. The project purpose is sustainable management of coastal resources and increased income for coastal communities.

25. The Project will cover the six provinces of Cagayan, Zambales, Cebu, Siquijor, Davao Oriental, and Masbate. The selection was based on a set of criteria that takes into account, among others, presence of priority biodiversity corridors with vulnerable important migratory paths, habitats, ecosystems, or other resources deemed critical for management and protection, status of coastal communities that can potentially benefit from the enhanced management of coastal resources, and willingness of provinces and municipalities to support an integrated coastal resources management program. Within these provinces, multiple municipalities will be targeted. Factors taken into account in the selection of participating municipalities include: (i) no major investments on ICRM activities were made in recent years or are planned under any ongoing projects in the municipality; (ii) existence of a comprehensive ICRM plan, municipal coastal database (MCD), land use plan, or environmental management plan which will hasten project implementation; (iii) existence of a formal office with coastal management responsibility within the municipal administrative set up; (iv) community participation in preparing and implementing development schemes, managing resources, and enforcing laws and regulations; and (v) commitment to the Local Government Unit-National Government Cost-Sharing policy and certification by the Bureau of Local Government Finance of the municipality's fiscal capacity to participate in the Project. Based on initial assessment, 65 out of the 120 coastal municipalities in the 6 provinces have been preliminarily selected (Appendix 3) and the selection will be confirmed during further processing of the Project.

26. The Project formulation followed a participatory approach involving stakeholders at various stages of its preparation. Coastal communities and local governments in study municipalities participated in the information gathering stage which comprised assessment of resources, community needs and capacities. At the planning stage, focus group discussions were held with fisherfolks, farmers, Bantay Dagat (marine watch teams), NGOs, LGUs, and local entrepreneurs. Consultations were also carried out with ongoing CRM initiatives and universities and research institutions active in the sector. Preliminary project design including initial project framework, project approach and implementation arrangements were discussed in six provincial workshops participated by all the coastal municipalities in the provinces and the feedback was used in refining the project design. The refined design was discussed in a national workshop participated by national, provincial and municipal government representatives. A Project Framework is given in Appendix 4.

B. Components and Outputs

27. The Project will comprise four components: Part A: Policy and Institutional Strengthening and Development; Part B: ICRM and Biodiversity Conservation; Part C: Enterprise Development and Income Diversification; and Part D: Social and Environmental Services and Facilities.

1. Part A: Policy and Institutional Strengthening and Development

28. The component aims at: (i) rationalizing the Government policy for ICRM and improving the coordination mechanism; (ii) strengthening institutional capacities at national and local government level; and (iii) developing a performance-based incentive and disincentive system for local governments. Policy weaknesses and legal gaps in the management of coastal zone and coastal habitat will be studied and corrective measures recommended. Drawing on the works under the previous UNDP assistance, the Project will develop an institutional framework for coordination of ICRM at national and local government level. A comprehensive national policy on ICRM will be finalized and an IEC campaign will be undertaken. In light of the national policy, the roles of DA, DENR, local Government and other national Government agencies in ICRM and related activities will be clarified. Imposition and collection of user fees and resource rents for MPAs, mangroves, coral reefs, beaches and foreshores as sustainable means for financing ICRM operations will be studied, pilot tested and operationalized.

29. The Project will support human resources and institutional development of DA, DENR and local governments. Capacity building needs of the institutions and their human resources will be assessed and appropriate strategies will be developed to address the needs. In view of the present moratorium on the creation of any new regular staff positions in the national government agencies, DENR is expected to address the present shortage of qualified staff in marine and coastal resources management through staff redeployment and training. About 600 DA, DENR and municipal government staff will be trained in various aspects of ICRM including basic practices of coastal resources management, resource enhancement, social preparation, environmental management, and biodiversity conservation. Multisectoral ICRM organizations at local government level, including Fisheries and Aquatic Resources Management Committees (FARMCs), *Bantay Dagat* (marine watch teams), and NGOs will be developed and strengthened.

30. The Project will support identification, pilot testing, and implementing a performance-based incentive-disincentive system that builds on and links to DENR's coastal resources management certification system. The system establishes performance benchmarks for local governments, and viable material incentives will be provided to the certificate recipient local governments to continue good coastal resources management practices. The performance-based incentive system will also be linked to the ecogovernance index developed under the USAID-assisted Ecogovernance Project of DENR.

2. Part B: Integrated Coastal Resource Management and Biodiversity Conservation

31. The component will promote basic ICRM practices i. e. adaptive planning and budgeting, municipal water delineation, law enforcement, pollution control and environmental management, licensing for resource use, and management of foreshore, beaches and mangrove in all the participating municipalities. Coastal resources in 65 municipal waters will be assessed through participatory and scientific resource assessment. Participatory assessment will be followed in the coastal waters of all the project municipalities while scientific assessments will be followed in selected sites of high biodiversity, and the results will be compiled in a Coastal Resources Database. ICRM plans will be developed and integrated into the municipal planning process. About 3,500 ha of mangroves will be brought under improved management and about 2,500 ha

of mangrove areas will be reforested. About 3,000 ha of denuded watersheds will be reforested and 3,500 ha of forests in watershed will be rehabilitated. Local FARMCs and NGOs will be trained on participatory enforcement mechanism for fisheries laws and regulations and provided with basic equipment and facilities.

32. The component will also protect and manage coastal ecosystems in selected threatened areas of high biodiversity. Networks of 50 MPAs, comprising about 15-20 new MPAs and 30-35 existing MPAs, will be developed in the six priority biodiversity areas of Babuyan Corridor, Ticao Pass-San Bernardino Strait-Samar Sea Corridor, Daanbantayan Corridor, Pujada Bay Corridor, Zamabales Coast and Siquijor Coast. MPA management plans will be developed/strengthened and functional organizations will be put into place. The management plans will be supported by focus research on critical biodiversity resources including sensitive ecosystems, threatened flagship species, and will include species restocking and pilot schemes for coral reef and giant clam transplanting. Five ICRM Centers will be established as hubs for biodiversity monitoring and research, and training and demonstration activities. ICRM Centers will also be the focal points for undertaking an information, education and communication (IEC) campaign to be developed and implemented in coordination with the ongoing works under communication, education, and public awareness (CEPA) program of the Convention on Biodiversity. Operational linkages between IEC and CEPA will be examined and specific recommendations will be made during further processing of the Project. The Project will also support development and implementation of a system for eco-certification of sustainable harvesting activities in coral reef-associated species, taking into account the changing degree of vulnerability of species, and will be linked to the biodiversity monitoring program of the Project. The proposed eco-certification will cover food fish and ornamental fish for aquarium market.³ About 650 members coastal community and staff of participating municipalities will be trained and trade of marine species in 65 municipalities will be regulated and managed.

3. Part C: Enterprise Development and Income Diversification

33. The component aims at providing municipal fisherfolks with supplementary income and reducing their reliance on fishing through promotion of environment-friendly sustainable enterprises and livelihoods. Technical and institutional support will be provided to undertake viable livelihoods and enterprises that have been identified from similar ongoing programs and other potential ones. Enterprises providing employment opportunities to about 7,800 people will be developed during the project period. Care will be taken to ensure the suitability of these enterprises as providers of equal employment opportunities to women, and at least 30% of the enterprise participants will be women. Activities will include: (i) conduct social preparation including community organization, needs and resource assessment, and savings mobilization; (ii) establish an enterprise development unit (EDU) in each province, identify appropriate livelihoods and enterprises, and undertake feasibility and market studies; (iii) establish at least 2 demonstration enterprises in each of the 65 participating municipalities, and train 100 fisherfolks on technical and managerial aspects of enterprises; (iv) assist community groups in preparing bankable business plans and accessing to credit facilities of formal banking systems such as LBP, DBP, rural and thrift banks, cooperatives and NGOs or other existing and programmed credit facilities including the *Isang Bayan*, *Isang Produkto*, *Isang Milyong Piso* Program; (v) assist developing partnership between the coastal communities and private entrepreneur in enterprise operation, management and marketing; and (vi) promotion and development of ICRM related eco-tourism.

³ In developing an eco-certification system for aquarium market fish, the Project will coordinate with GEF assisted Marine Aquarium Market Transformation Initiative, approved in May 2004.

4. Part D: Social and Environmental Services and Facilities

34. This component will provide for addressing the basic social services needs among disadvantaged coastal communities, and support local governments efforts to mitigate coastal pollution and degradation of resources. The component will follow a demand-driven approach, providing a maximum funding of ₱4.50 million to a municipality (to supplement the municipality's own and beneficiary contributions) for improving water supply and sanitation, managing solid wastes, providing add-on school classrooms and day care centers, and mitigating coastal pollution and erosion. The selection criteria for social infrastructure are given in Appendix 5. The component will also support designing and implementing a progressive village level population management program advocating population management and educating coastal communities on linkages between population growth and environmental quality.

C. Special Features

35. **Biodiversity Conservation with GEF Participation.** A key feature of the Project is the conservation of biodiversity of global importance with GEF involvement. The biodiversity conservation measures under the Project follows an innovative approach through development of networks of MPAs within marine corridors that are recognized as having high biodiversity of global significance. By promoting protection of sites over an extended ocean area within the corridors, greater exchange of fish and larvae will result thus improving chances of restoring biodiversity where resource depletion and loss of habitat has occurred. Through reducing gaps in management coverage in the corridors, weak links in management chain will be reduced. This should therefore support more effective management of marine corridors in their entirety. The role of GEF in the Project is detailed in Appendix 6.

36. **Poverty Targeting.** The Project design includes a combination of measures to maximize poverty impact. The rural poverty incidence in the six provinces that will receive support for ICRM ranges between 25.8% and 77.0%, with a six-province average of 59.0% compared with the national average of 48.8%. Within the rural population, the incidence of poverty is much higher in the coastal communities at 76.0%, and the coastal population will be the primary beneficiary of improved coastal resources management supported by the project. The criteria for selection of schemes under the social and environmental services and facilities component will give priority to communities that have a high incidence of poverty. Similarly, the income diversification and enterprise development component will focus on poor disadvantaged groups with little or no access to technology and capital.

37. **Governance.** The project will support implementation of the ecogovernance index developed by the USAID-assisted Ecogovernance Project of DENR that aims at greater transparency, accountability and participatory decision-making in the management of natural resources, including marine and coastal resources, and environmental management. The index is made of four activities that represent the flow of government actions in resource management: planning, budgeting, implementation (including procurement and issuance of permits and licenses), and control or enforcement (monitoring, reporting, sanctioning, etc.). The index would be applied to measuring performance of DA, DENR and local governments concerned.

38. **Gender and Development.** Despite their extensive involvement in the marketing of fisheries and other aquatic products, women are not well represented in coastal resources management, nor in trainings, meetings and other related activities. While recognizing the need to respect local values and beliefs, and the choices of both men and women about taking part in specific activities, the Project will promote greater involvement of women in the decision-making process of ICRM. Gender analysis will be done at all stages of the Project implementation. Specific activities will include: (i) gender sensitization training at national and local levels and

collection of gender disaggregated data in household socioeconomic studies, biodiversity and related ICRM research and policy and legal studies as basis for defining intervention measures; (ii) integration of gender analysis in ICRM planning, monitoring and evaluation; and conduct of gender and development orientation and related training to national and local government personnel and community members. The Project strategy for gender and development is outlined in the Summary Poverty Reduction and Social Strategy and Gender Plan in Appendix 7.

39. **Environment.** The Project activities are aimed at, among other things, sustainable management of marine and coastal resources and environmental protection, and by design, are not expected to create any significant adverse environmental impact. An initial environmental examination (IEE) was conducted during project preparation and the findings are summarized in Appendix 8. The IEE determined that while most activities will contribute to environmental improvement, some activities may have adverse impact, if not implemented properly. Activities with potential adverse impact relate to two components: (i) Part C: Income Diversification and Enterprise Development; and (ii) Part D: Social and Environmental Facilities and Services. Component C will support development of small-scale mariculture including cage farming which may potentially have small adverse environmental impacts. Such adverse impacts will be avoided or mitigated through appropriate siting, operation, and monitoring. Prior to the commencement of mariculture, fisherfolks will be trained on technology and management regime of mariculture, including environmental management. The mariculture operation will be monitored as part of the overall resource management plan and environmental problems and issues will be identified in time for appropriate action. Social and environmental facilities under Component D will include development of rural water supply, public toilets, class rooms, day care centers, and small-scale coastal erosion structures – construction of which, if not done properly, may cause environmental problems. An IEE will be prepared for each such scheme identifying potential environmental concerns and recommending appropriate mitigation measures.

40. **Social Safeguards and Indigenous People.** The Project will require extremely small plots for the construction of social and environmental facilities, which will be obtained either in available unoccupied public land or through purchases in the open market. Since the land acquisition will not entail exercising the right of eminent domain, such acquisition will not involve ADB's *Policy on Involuntary Resettlement*. Documentations of plot location, ownership, cost and tenure status and guarantees that land purchases are not forced upon the sellers and public land plots are unoccupied will be included in the municipal CRM Plans as condition of ADB approval for infrastructure facilities.

41. Socioeconomic surveys undertaken during the feasibility study identified the presence of two small groups of people that are classified as indigenous cultural minorities in one of the municipalities. However, these groups have adapted to the mainstream and fully participate in broader multi-ethnic social and economic environment, and hardly fall into the category of indigenous people as defined in ADB's *Policy on Indigenous Peoples*. This notwithstanding, the municipal ICRM plans will include detailed social assessments undertaken with stakeholder participation, which will identify indigenous people or ethnic minorities in the project area, if any. Where present, equal entitlement of project benefits will be ensured through the selection criteria for social infrastructure, livelihood activities, and other employment generation activities. Approval of ICRM plans will be conditional to ADB's endorsement of the detailed social assessments.

42. Resource management activities such as establishment of no-take zones, in coastal waters, control of destructive fishing, and mangrove and watershed management may impact the livelihoods of some people in the short-term. In such a case, the livelihood rehabilitation

action plan will be incorporated in the ICRM plan, which will draw on the enterprise and livelihood activities and other employment generation activities provided in the Project.

D. Cost Estimates

43. The total cost of the Project (including taxes, price contingencies, and interest during construction) is estimated at \$63.00 million equivalent (Table 1), of which \$13.00 million is the direct and indirect foreign exchange cost, including about \$3.50 million for interest and other charges during construction. The balance of \$50.00 million equivalent is the local currency cost. A summary of cost estimates is given in Appendix 9 and details are available in Supplementary Appendix B.

Table 1: Cost Estimates
(\$ million)

Item	Foreign Exchange	Local Currency	Total
A. Policy and Institutional Strengthening and Development	0.26	1.47	1.74
B. ICRM and Biodiversity Conservation	5.60	21.15	26.75
C. Enterprise Development and Income Diversification	0.48	4.92	5.40
D. Social and Environmental Services and Facilities	1.85	8.73	10.57
E. Project Implementation	0.53	4.84	5.37
Subtotal (A, B, C)	8.73	41.11	49.84
F. Contingencies			
1. Physical	0.87	3.78	4.65
2. Price	0.23	5.11	5.34
G. Interest and Other Charges During Construction	3.16	-	3.16
Total	13.00	50.00	63.00

E. Financing Plan

44. The Government has requested a loan of \$36.00 million from ADB's ordinary capital resources to finance \$10.00 million in foreign exchange costs and \$26.00 million equivalent in local currency costs. The loan will have a 22-year term, including a grace period of 6 years, an interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.75% per annum,⁴ and such other terms and conditions set forth in the draft loan agreement. The Government has provided ADB with (i) the reasons for its decision to borrow under ADB's LIBOR-based lending facility on the basis of these terms and conditions,⁵ and (ii) an undertaking that these choices were its own independent decision and not made in reliance on any communication or advice from ADB.

45. The Government has requested GEF to provide a grant financing for the Project, and the latter has agreed in principle to consider a grant of \$9.00 million equivalent. The grant, to be administered by ADB, will cover \$3.00 million in foreign exchange costs and \$6.00 million equivalent in local currency costs.

46. ADB and GEF together will finance \$45 million (72% of the total Project cost) and the balance \$18.00 million will be provided by the national Government, participating municipal governments, and beneficiary communities. The responsibility for coastal resources management has been partly devolved to the local governments and, accordingly, the Government will have a cost-sharing arrangement with the LGUs for the project activities

⁴ {Where commitment charges form part of interest during construction, show these as separate line items in the cost estimate table.}

⁵ {Include the reasons in the minutes of the loan negotiations.}

undertaken by them. The Government's financial support to the LGUs will be a mix of loan and grant which would complement equity contributions from the LGUs and beneficiaries. The proportion of the loan and grant and terms and conditions for the loan will be governed by the current lending terms and conditions of the LGU-National Government Cost-Sharing Policy.

47. ADB and GEF will finance 64% of the local cost of the Project. The high percentage of local cost financing is principally because of the nature of the works envisaged under the Project, which is mainly capacity building of stakeholders at various levels and participatory management of natural resources. The Project is classified as a core poverty intervention project and will contribute significantly to combating poverty and improving the living conditions of people in the Project area. Therefore, the ADB and GEF financing a large portion of the local currency costs is justified on project considerations.

Table 2: Financing Plan
(\$ million)

Source	Foreign Exchange	Local Currency	Total	Percentage
ADB	10.00	26.00	36.00	57%
GEF	3.00	6.00	9.00	14%
Central Government	-	7.00	7.00	11%
Local Governments and Beneficiaries	-	11.00	11.00	18%
Total	13.00	50.00	63.00	100%

F. Implementation Arrangements

1. Project Management and Coordination

48. DENR will be the executing agency (EA) and will be responsible for overall management of the project. The project implementing agencies are as follows:

- (i) Policy and institutional strengthening and development component: DA, DENR and municipal governments;
- (ii) ICRM and biodiversity conservation: DA, DENR, provincial and municipal governments
- (iii) Enterprise development and income diversification component: DA, DENR and municipal governments
- (iv) Social and environmental services and facilities: municipal governments

49. The Coastal and Marine Management Office (CMMO) at the DENR Central Office will be the project management office (PMO). DENR will establish a Regional Project Implementation Unit (RPIU) in the Coastal and Marine Management Division (CMMD) located at the DENR Regional Offices (in Region II, III, V, VII, and XI). The Provincial Environment and Natural Resources Offices and Community Environment and Natural Resources Offices of DENR will assist DENR-CMMDs in Project implementation.

50. Each participating municipality will establish an ICRM Unit (ICRMU), normally attached to the Municipal Agriculture Office. ICRMU will be the focal point for field implementation and will implement the project activities in coordination with FARMCs, Bantay Dagat and other relevant people's organizations (POs) in the municipality. RPIU will sign a memorandum of agreement (MOA) with the municipality concerned and will work directly with the ICRMU in specific activities, such as ICRM planning, implementation of ICRM best practices, social and environmental protection, law enforcement, enterprise development, etc.

51. DA will be responsible for providing support and guidance to DENR and local governments on all technical aspects relating to fisheries management, traded and threatened marine species, and aquaculture activities under the enterprise development and income diversification component. DA shall support national policy activities such as studies on resource rents and users' fees as applicable to fishery activities and initiatives to harmonize conflicting jurisdiction between national agencies involved in CRM. DA shall also contribute to the efforts to consolidate existing databases on fisheries and coastal resources. DA will provide these services through BFAR. BFAR will establish a National PIU at its Central Office and a Regional PIU at each of the five regions that cover the project area.

52. DENR will establish a Project Steering Committee (PSC) to oversee and coordinate project implementation. The PSC will be chaired by the DENR Secretary (or his authorized representative), and comprise senior officials of the National Economic and Development Authority, Departments of Agriculture, and Budget and Management, provincial governments of the six project provinces, and PMO Director. Participating LGUs will be invited to attend meeting on issues that require their participation. DENR will also establish a Regional Steering Committee (RSC) in each of the five project regions to oversee and coordinate project implementation within the region. The RSC will comprise representatives of concerned agencies and institutions at regional level and local governments. A project organization chart is given in Appendix 10.

2. Implementation Period

53. The project will be implemented over a period of 6 years, commencing in early 2005. A summary project implementation schedule is given in Appendix 11.

3. Flow of Loan and Grant Proceeds

54. For activities to be implemented by DA and DENR, the loan and grant proceeds will be provided through budgetary allocation to these agencies. Activities to be implemented by municipal governments will be jointly financed by the national Government, municipality concerned, and local communities. Financing from the national Government, using ADB loan and GEF grant proceeds, will be disbursed through the Municipal Development Fund Office (MDFO) of DOF as a mix of loan and grant (para. 46).⁶ The cost-sharing arrangement will be confirmed by the municipality concerned through a council resolution and reflected in the MOA between MDFO and the municipality.

55. DOF will establish two imprest accounts to be operated by DENR, one for the loan and the other for GEF grant, to facilitate timely release of funds for making payments, particularly for expenditures under small contracts. DENR will operate and maintain the imprest account in accordance with ADB's *Loan Disbursement Handbook*. The initial deposit will be based on expected disbursements for the first six months of implementation, and will not exceed \$1.0 million in aggregate. The ADB's Statement of Expenditure Procedure will be followed to liquidate funds advanced to the imprest accounts, and individual payments using imprest account funds should not normally exceed \$100,000.

4. Procurement

56. Goods and services financed partly or wholly by ADB and GEF will be procured in accordance with the ADB *Guidelines for Procurement under ADB Loans*. Equipment to be procured under the Project will consist primarily of office, laboratory and training equipment,

⁶ The Government plans to replace MDFO with the recently established Municipal Finance Corporation (MFC), an affiliate of the Land Bank of the Philippines.

motorbikes, utility vehicles, and motorized boats. Contract packages exceeding \$500,000 will be awarded on the basis of international competitive bidding. Each contract costing between \$100,000 and \$500,000 will be awarded through international shopping. Minor equipment and materials costing less than \$100,000 will be procured through direct purchase.

57. Civil works under Part D of the Project will be carried out using labor-intensive technology, with arrangements for cost-sharing by local communities in the form of labor, local material, or cash. Such civil works packages will be contracted out by the LGUs to the communities following the procedures for Community Participation in Procurement as provided in ADB's *Guidelines for Procurement under ADB Loan*, with a contract ceiling of \$10,000 equivalent. Civil works packages exceeding \$10,000 equivalent will be awarded on the basis of local competitive bidding. A tentative list of packages of goods and services, excluding consulting services, is given in Appendix 12.

5. Consulting Services

58. The project will require an estimated 644 person-months (pm) of consulting services: 46 pm international and 598 pm domestic. This relatively large input is due to shortage of trained staff in EA and IAs, and the need for expert assistance to support a decentralized implementation arrangement with intensive interaction with various stakeholders. An outline of the terms of reference of consulting services is given in Appendix 13. Consultants will be selected and engaged through firms in accordance with ADB's *Guidelines on the Use of Consultants*, and other arrangements satisfactory to ADB for the engagement of domestic consultants. In selecting consultants, the quality and cost-based selection mode will be used.

6. Accounting and Auditing

59. All agencies involved in Project implementation will maintain separate accounts exclusively for Project-related disbursements. PMO will review and consolidate these accounts and have them audited annually in accordance with sound auditing practices by the sovereign audit agency of the Government or other auditors acceptable to ADB. The audit report will include a statement verifying that funds disbursed by ADB were used for the purpose for which they are provided. The report will also include auditor's opinion on the use of imprest account and SOE procedure. Copies of audited accounts and auditor's report will be submitted to ADB within six months after the end of each fiscal year.

7. Project Performance Monitoring and Evaluation

60. A project performance management system (PPMS) will be established at national and field level. PPMS will encompass the following elements: (i) monitoring of physical and financial progress as well as the economy and efficiency in achieving major activities; (ii) monitoring of the level and adequacy of participation of various stakeholders in planning and implementing project activities and the performance of Project EA and IAs against ecogovernance index; (iii) collection of gender disaggregated data in benchmark surveys and policy and legal studies; (iv) monitoring the Project's social, environmental, biodiversity conservation, and economic impacts including the establishment of benchmark information and data; and (v) developing a mechanism for making necessary adjustments in project design and implementation arrangements in light of the PPMS findings.

61. Consistent with GEF Operational Strategy, the biodiversity monitoring will pay special attention to species selection, current occurrence, density and other demographic parameters, including yield studies, and regeneration surveys, and actual impacts of harvesting. The Project will coordinate with the GEF in designing the monitoring and evaluation of the biodiversity. The GEF is in the process of developing a Project Information Form for Biodiversity (PIFB); once

developed, PIFB forms and relevant GEF targets will be incorporated in the monitoring program. The five ICRM centers will oversee the monitoring and evaluation program. The Project will also coordinate with the European Union financed Association of Southeast Asian Nations Biodiversity Conservation Center, Philippines, to draw from their experience in developing biodiversity information monitoring system. The PPMS will provide for baseline, midterm and completion surveys and train staff at the RPIUs on the proper monitoring of field activities for ICRM and biodiversity, alternative livelihood, and social and environmental infrastructure. PPMS findings will be incorporated in quarterly project progress reports to be prepared by PMO within three weeks of the end of the reporting period and submitted to ADB, PSC, and NGAs and local governments concerned. The Project will also establish a website, in English and Tagalog, for wider dissemination of project initiatives and achievements and to provide a feedback mechanism. The website will draw upon on the municipal coastal and MPA databases, and will also serve as a depository for ICRM related reports and publications.

IV. PROJECT BENEFITS, IMPACTS, AND RISKS

A. Environmental, Social and Poverty Reduction Benefits

62. The project will directly address threats to coral reefs, seagrass beds, mangroves and beaches – the major coastal ecosystems. These independent ecosystems perform a wide range of biological and physical functions that underline their environmental, biological, and economic importance. Ensuring their protection is vital to arresting declining fish catch and a potential collapse of coastal fisheries. At project completion, the fish catch outside the no-take zones of the project supported 50 sanctuaries is expected to increase by 10% over the baseline. There will be 10% increase in hard coral cover in the 50,000 ha reef areas and 20% improvement in density of the 3,500 ha mangroves that would be brought under improved management practices. The incidence of destructive fishing in the coastal waters of 65 municipalities will be reduced by 50%. Other immediate benefits from the protection of these marine and coastal ecosystems are prevention of coastal erosion and saline water intrusion into the coastal aquifer, and natural assimilation and treatment of coastal wastes.

63. A major environmental benefit of the Project is protection of the globally important biological diversity of Philippine waters. The 50 MPAs in the priority marine biodiversity corridors will form a network of reefs and associated coastal ecosystems that harbor unique flagship species and contribute to conservation and management of important marine and coastal species (para. 32). Babuyan Corridor is a breeding ground for humpback whales; Daanbantayan Corridor harbors thresher sharks, manta rays and banded sea snakes; Ticao Pass-San Bernardino Strait – Samar Sea is the migratory route of whales, dolphins and green, olive ridley and hawksbill sea turtles; and Pujada Bay Corridor lies along a whale shark migratory path and contains nesting breeding grounds for sea turtles. The illegal commercial poaching, overfishing and destructive fishing being practiced in the MPAs will be eliminated or reduced and the rich biological diversity will be conserved.

64. Mechanisms and strategies for beneficiary community participation, such as information, education, and communication (IEC) campaign, community organization and training, and credit access and enterprise development training, will help transform coastal communities into responsible resource users and managers. IEC and extension programs will result in behavioral changes in coastal communities, particularly in the use of coastal resources, and bring about improvements in reef health.

65. By improving coastal fisheries resources and generating opportunities, the Project will address two of the root causes of rural poverty in the Philippines as identified in ADB's *Poverty Assessment for the Philippines (2004)*: weak performance of agricultural sector and low employment generation capacity of the economy. The decline in coral productivity and related

fisheries resources, estimated at 2% per annum, has been directly affecting the real incomes of fisherfolks. The gains from ICRM component will mostly be within the municipal waters of 15-km zone which are primarily the domain of small fisherfolks and off-limits to commercial fishing under the Fisheries Code of 1998. Community enforcement of regulations mainly through fisherfolks, most of whom are poor, will ensure that the majority of the project gains in terms of fish catch accrue to the poor. Additionally, improved state of coastal waters will enhance ecotourism potentials/values which will generate employment opportunities in the communities, as experienced under similar ongoing projects. Employment will also be generated through community-contracted watershed and mangrove rehabilitation.

66. Improvements in water supply, sanitation, and day care facilities will improve the general health and living environment of disadvantaged coastal communities and enhance their productive capacity contributing to the overall economic development in the area. The construction of the infrastructure will be undertaken through community contracts which will generate employment opportunity for the local population.

67. Enterprise development activities will lead to improved skills for the fisherfolks and will enable them to either establish enterprises or seek better employment opportunities. The alternative livelihood and enterprise schemes will relieve pressure on coastal resources, thus preventing their deterioration. Detailed assessments of potentials and demand were undertaken in six sample municipalities, which led to identification of 12 representative livelihood/micro-enterprise activities. The incremental annual incomes net of labor costs from these enterprises are estimated in the range of ₱7,870 (\$140) to ₱93,400 (\$1667). The anticipated returns to labor ranged from ₱210/day to ₱732/day, which is 175% to 610% of the daily average wage rate of ₱120/day.

68. Improved management of coastal resources together with alternative livelihood and enterprise schemes will benefit about 10,000 fisherfolk families, with an average 10% increase in real household income. The poverty impact analysis in the sample municipalities indicates that about 70% of the net economic gains would accrue to the poor. With 76% of the population in coastal communities living below poverty line, 61% of whom are employed in fishing, the Project will have a major impact in combating poverty and improving income distribution in the Project area.

B. Policy Impact and Institutional Benefits

69. The establishment of an institutional framework for ICRM will remove the present deficiencies in coordination of integrated coastal resources management at national and regional level. Measures to effectively address existing policy weaknesses and legal gaps will be identified and a comprehensive coastal resources management policy will be developed. The policy will help implement the Local government Code of 1991 which provides for close involvement of local governments in developing and managing local resources. The Project will help build capacity at national, regional and local levels for a participatory approach to resource management and enhance transparency and accountability in management decisions. Many a functions of coastal resources assessment and management will be undertaken following a participatory approach, with national government agencies providing technical support to local governments and the latter undertaking the field implementation with active involvement of local communities and NGOs. With technical and logistic supports under the Project, local community organizations such as *Bantay Dagat* (marine watch team) will be responsible for enforcing laws and regulation in municipal waters. This participatory approach including the cost-sharing arrangement between the national and local governments will enhance local ownership and sustainability of benefits. Thus, national government agencies, LGUs, municipalities and the communities will be part of an institutional framework to implement location-specific ICRM plans.

C. Economic Benefits

70. The economic benefits of the Project will be derived from four major sources: (i) coral reef management and conservation; (ii) mangrove rehabilitation and management; (iii) watershed rehabilitation and management; and (iii) livelihood and enterprise development. The quantifiable benefits from coastal habitat (reef and mangrove) can be grouped as follows: (i) fishery values: these are the net values of *sustainably* managed commercial reef and mangrove fishery; (ii) local uses: these refer to the myriad of marketed and nonmarketed uses from reefs and mangroves that are not associated with commercial fishery, for example aquarium trade, gleaning of coral reef flats, small-scale capture fishery and hunting in mangroves, etc; (iii) erosion control and waste management: this refers to the coral reefs and seagrass acting as barriers to destructive wave actions on coastline, and mangrove protecting coastal zones against destructive typhoons and tidal waves, and managing wastes through assimilation; and (iv) global use values: these include sustainable export of live fish, international tourism, and aesthetic and biodiversity values of reefs.

71. An economic analysis was undertaken for the Project taking into account expected quantifiable benefits from above mentioned four sources of benefits. Valuation of benefits and the methodology of the analysis are given in Appendix 14. The anticipated economic internal rate of return (EIRR) of the Project is 15.9%. The EIRR is not sensitive to cost overruns or incremental benefit shortfalls.

72. Financial analyses were carried out for 12 representative livelihood/enterprise schemes, and each scheme is financially viable with the financial internal rate of returns (FIRR) values ranging between 70% and 289%. The sensitivity analysis showed that enterprises are not very sensitive to output price or the production costs, and that the enterprises could withstand drop in output price of 18% to 35% and a surge in production costs of 23% to 83%.

D. Sustainability

73. The participatory principle underpinning the Project design and its financing arrangements will help develop a sense of ownership among various stakeholders- particularly local governments and communities- and this, in turn, will enhance the Project's sustainability. Rationalization of sector policy providing greater management responsibility to local governments for foreshore areas and MPAs will also enhance sustainability of Project initiatives. Institutional weakness at national, regional and municipality level will be addressed and government staff, local communities and NGOs will be strengthened to shoulder their responsibilities.

74. Analysis of the current budget and expenditure patterns for project municipalities shows that on average the annual counterpart funding requirements for project activities during project implementation would be about 2% and 8% of the revenues and development expenditures, respectively of an average 4th class municipality – the majority group among project municipalities. During the post-project period, the annual funding requirements to support recurring costs for Project initiatives, including O&M of infrastructure facilities, would be 1% of the municipal revenues and 6% of the present development expenditures, respectively. Assuming that current trends in funding are maintained, the municipal governments would have sufficient resources to sustain the Project's impact.

75. The capacity of municipal governments for sustainable financing of ICRM will be augmented through development of appropriate policy for user fees and resource rents for MPA, mangroves, coral reefs, beaches, foreshore fisheries and mariculture. The Project provides for undertaking of relevant policy studies and formulation of recommendation, and pilot

testing of the recommendations in five municipalities. Successful models will be supported at least in one-third of the municipalities during the project period.

E. Risks

76. Risks that may affect Project implementation, constrain attainment of objectives and ultimately impact the success include: (i) degradation of global environment and macroeconomic conditions; (ii) lack of political will to support ICRMP; (iii) institutional weaknesses; (iv) peace and order situation; and (v) governance and anti-corruption.

77. **Degradation of Global Environment and Macroeconomic Conditions.** Global and regional environment conditions (e.g., climate change, disease outbreaks, coral bleaching) could undermine Project gains in resource management and biodiversity conservation. In addition, populations of some severely depleted species in high biodiversity sites may not be restored through Project interventions. Worsening macroeconomic context (national, regional, or global) over the duration of the Project and unexpected increases in human population may undermine gains in poverty reduction.

78. The Project design provides for countermeasures to address above risks. High biodiversity sites have been selected from various biogeographic regions throughout the Philippines that are expected to respond differently, or not be exposed to the same regional or global conditions. The Project will focus on several different threatened species and habitats and promote the establishment of networks or corridors of MPAs to ensure that the risks are dispersed. The possible effect of worsening macroeconomic situation on poverty reduction will be addressed through an adaptive manner in implementing the Project. Thus, a variety of enterprise development and social services option will be employed in response to the needs of local communities.

79. **Institutional Weaknesses.** DENR does not have adequate number of qualified staff for the sector. Under the current moratorium on creation of new regular positions, DENR will address the issue through staff redeployment and enhancing their skills through in-house training, and hiring contractual staff. Provision has been made in the Project design for hiring of contractual staff and enhancement of staff skills at national, regional and local level through appropriate training.

80. **Political Will.** Since the mid-1980s, the national Government has shown increasing commitment to marine and coastal resource management. Continued Government commitment to the sector is evident from recent actions including drafting of the national policy and institutional framework for the sector and establishment of national and regional offices dedicated to the sector and a coordination mechanism. Similarly, local governments are also taking increasing initiatives in managing their coastal resources, which is reflected in the establishment of municipal coastal database and development of coastal management plans in majority of coastal municipalities in the Project area. However, changes in the local leadership during Project implementation may affect the emphasis on the sector. This risk will be mitigated through municipal council resolutions and MOAs with DENR and MDFO providing binding commitments covering the project period.

81. **Peace and Order.** The 65 municipalities selected for the project do not currently have serious peace and order problems. If peace and order problem develops in an area, the PSC could decide, in consultation with ADB, to redirect efforts and staff to a more secure area within the province.

82. **Governance and Anticorruption.** Good governance assumes an important dimension in the Project because its successful implementation will require stakeholders concerned at

various levels to agree and adjust to the policy and governance regime changes that are being promoted by the Project. Most of the stakeholders have been receptive to these changes, some may be slow in responding to the needs for change during project implementation. The risk will be mitigated by the emphasis on information, education and communication (IEC) campaign to be conducted throughout the project period.

83. The governance risk associated with project management including procurement and disbursement will be mitigated through the participatory management at national, regional, and field level, improving transparency and accountability. The cost-sharing arrangement will motivate local governments to strive for economy and efficiency in project implementation, and avoid corrupt practices. Most social and environmental infrastructure and facilities will be developed by beneficiary communities on a cost-sharing basis ensuring better use of the allocated fund. In addition, performance of DA, DENR and local governments will be monitoring against the ecogovernance index (para. 37).

V. ASSURANCES

A. Specific Assurances

84. In addition to the standard assurances, the Government and DENR have given the following assurances, which are incorporated in the legal documents:

- (i) Adequate budget will be provided for the Project activities and funds will be released regularly throughout the Project period.
- (ii) Adequate number of qualified staff at national, regional, and provincial level will be made available for the project throughout its implementation.
- (iii) Each participating municipality will enter into an implementation agreement with the national Government on terms and conditions satisfactory to ADB, including the commitment of the municipality to (a) provide the required equity contribution, in cash or kind; and (b) necessary budget to support the recurring expenditures of coastal resources management after project completion.
- (iv) The Government will ensure that MDFO or its successor will disburse eligible loan and grant funds to the participating municipalities upon their fulfillment of the requirements.
- (v) In case GEF cofinancing does not materialize, the Government will either arrange for alternate financing to make up for the difference or the Project scope will be scaled-down accordingly.

B. Conditions for Loan Negotiations (to be deleted after negotiations)

85. The following are the conditions for loan negotiations

- (i) A PMO will be established and a Project Director will be appointed.

C. Conditions for Loan Effectiveness

86. The following are the conditions for loan effectiveness:

- (i) A PSC will be established for overseeing and coordinating Project implementation.

- (ii) A National PIU and five Regional PIUs (one each in Region II, III, V, VII, and XI) will be established by DA.
- (iii) Five Regional PIUs (one each in Region II, III, V, VII, and XI) will be established by DENR

VI. RECOMMENDATION

87. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve:

- (i) the loan of \$36,000,000 to the Republic of the Philippines for the Integrated Coastal Resources Management Project from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a term of 22 years, including a grace period of 6 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan agreement presented to the Board; and
- (ii) the administration by ADB of a grant assistance not exceeding \$9,000,000 to the Republic of the Philippines for the purpose of the Integrated Coastal Resources Management Project to be financed by GEF.

TADAO CHINO
President

{Date}

MARINE AND COASTAL RESOURCES SECTOR ISSUES AND THREATS TO BIODIVERSITY

A. Declining Resources

1. The coastal resource sector, although potentially rich and productive, is declining and under threat from a complexity of factors as discussed in the following paragraphs.

2. **Fisheries Resources.** Various scientific studies have demonstrated that Philippine fisheries had exceeded maximum sustainable yields by 1987. The average fish catch per unit effort for coral reef fisheries is now less than 2 kg/day, down from as much 20 kg/day 30 years ago. Total production has been static for the last 10 years despite increased number and tonnage of commercial vessels and an increased number of municipal fishers. Catch composition is changing towards lower value species and economic revenues are declining. Much of the declining fisheries productivity can be attributed to overharvesting, destructive fishing, and loss of habitats. Excess capacity in the fishing industry, increasing population and poverty put additional pressure on resources. Poverty forces people to use destructive methods to meet their immediate needs, which causes further resource depletion and continuing poverty in a cyclical manner.

3. **Coral Reefs.** Coral reefs provide food, livelihood, recreational and tourism opportunities, erosion protection, and extremely high level of biodiversity. Of the 25,000 km² of coral reefs, less than 5 percent are still in excellent condition. Destructive fishing and overfishing are the most prevalent problems affecting the coral reefs of the Philippines. Other major threats include sedimentation and coastal development. Since coral reefs are habitats of about 90 percent of the fish caught by the coastal fishers in the country, their degradation results in rapid decrease of fisheries production in coastal areas.

4. **Mangroves.** Mangrove coverage in the Philippines has decreased from around 4,500 square km in 1918 to only about 1,380 sq. km in the 1990s. Satellite image analyses indicate that Mindanao has the most remaining mangrove areas in the country (29% of the country's total) while Luzon and Mindoro have the least. Old growth mangrove forests are to be found only in Palawan (5,317 ha) and Mindanao (4,582 ha). The rapid loss of mangrove cover has exacerbated shoreline erosion, led to destruction of natural habitats for demersal fish and shrimp, increased the occurrence of saline water intrusion into freshwater aquifers, and affected the livelihood of coastal fishers.

5. **Pollution.** Coastal ecosystems are threatened by nutrient loading or eutrophication. Nutrients come from industrial, commercial, agricultural, and domestic wastewater runoff carrying organic wastes and fertilizer residue. Nutrients enhance the growth of algae (sometimes causing red tides) and bacteria, resulting in the reduction of light and oxygen in coastal waters.

6. **Erosion and sedimentation.** Industrial logging, combined with the lack of proper forest management has resulted in the loss of nearly 80% percent of the Philippines' original forests. Agricultural activities are practiced in steep slopes, and contour farming and other soil conservation practices are not widely utilized. Poor management practices lead to soil and increased flooding, which in turn causes higher costs of coastal infrastructure maintenance, risks to lives, and damages to aquatic habitats.

7. **Foreshore and Shoreline Areas.** Approximately 70% of the municipalities and 12% of the largest cities in the Philippines are located in the coastal zone. The country's foreshore (the land strip between high and low tides) and shoreline areas are mainly being used for settlements and housing. The proliferation of coastal dwellers, who have no rights over the land

they occupy and oftentimes have no basic facilities for sanitation, solid waste management, sewerage, and water supply, are contributory factors to the degradation and deterioration of coastal environment.

8. The current status of resources have adversely affected the globally important coastal and marine biodiversity in the Philippines. An analysis of key barriers that restrict the protection of the biodiversity is given in Figure A1.1 and Table A1.1.

B. Weak Law Enforcement and Legal Gaps

9. A common issue with respect to the Philippines coastal resources management has been the poor compliance of laws and regulations. This is partly because of inconsistencies in policy documents that were developed over time and across sectors. Jurisdictional overlaps result when two or more laws govern different uses of coastal resource. Moreover, the local application of these laws is affected by the local legislative mandate of the local government units (LGUs) that have broad management functions and prerogatives under the Local Government Code (LGC). Some of the major gaps and inconsistencies in existing laws and regulations to deal with coastal resource management issues are discussed in the following paragraphs.

10. **Environment Management.** Environmental management is currently the domain of both DENR and LGUs. With regard to pollution control, rules and regulations governing water pollution, whether inland, coastal, or offshore, remain relatively scant and are not covered by new and comprehensive legislation. What currently exist are legal provisions on vessel-source pollution under the Marine Pollution Decree. A policy gap exists with respect to all other types of aquatic pollution.

11. **Mangroves.** The law governing mangrove resources presently consists of general provisions contained in the Revised Forestry Code enacted in 1975 and the Fisheries Code of 1998. At present, the conversion, alienation, and disposition of mangroves are prohibited under prevailing laws, and those released for fishpond development but remain unutilized or were abandoned are required to be reverted to the public domain. The process for reversion to the public domain is usually a contentious issue among the Department of Environment and Natural Resources (DENR), Bureau of Fisheries and Aquatic Resources (BFAR) of the Department of Agriculture (DA) and the fishpond lessee.

12. **Foreshore.** Laws governing the foreshore are among the most archaic in the Philippines. They are also among the most scattered, spread across several different codes, including the Spanish Law of Waters of 1866, the Civil Code, the Public Land Act, the Water Code, the Fisheries Code, and LGC. Although the LGU has ample powers for land classification, zoning, and regulation of all businesses and structures within their territorial jurisdiction, overlapping mandates with DENR and DA-BFAR result in very little actual regulation. There is no definitive coastal land use policy to provide guidance as to the proper allocation of roles and responsibilities, as well as definite priorities for how coastal areas should be used.

C. Institutional Weaknesses

13. DENR and DA-BFAR, the two key national agencies with responsibility for ICRM, are short of qualified staff for the sector. Both the agencies have ongoing programs for staff redeployment and training to overcome shortages for the sector. In addition, contractual staff have been recruited to meet immediate requirements.

14. The Local Government Code of 1991 has devolved some of the coastal resources management functions and responsibilities to local governments. Local governments' capacity to carry out the responsibility has only recently begun to mature as a direct result of increasing awareness of the socioeconomic importance of coastal resources. However, most the local governments lack financial and technical resources to ensure sustainable management of resources.

Figure A1.1 Threats to Biodiversity and the Project Conceptual Model

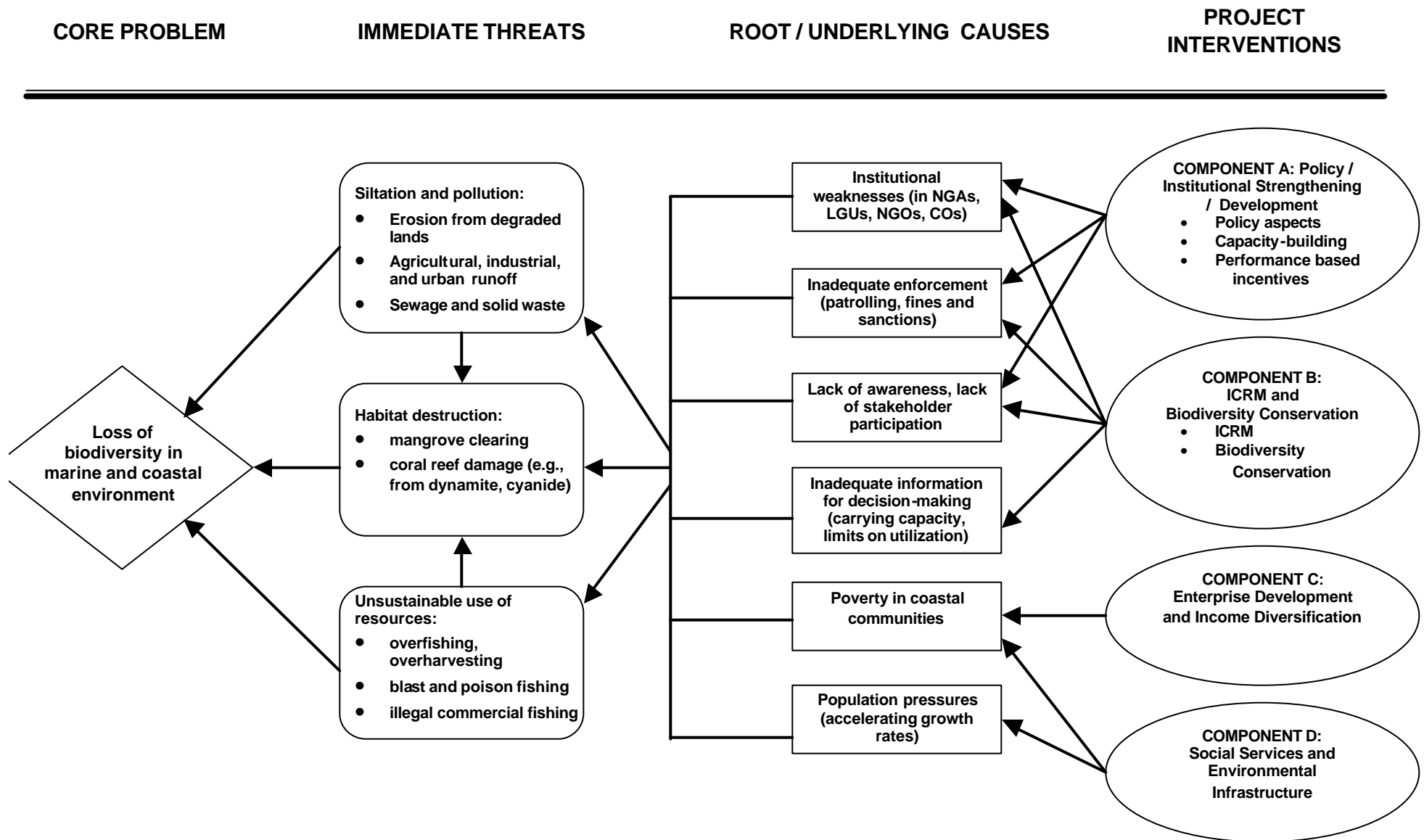


Table A1.1 Threats Analysis and Project Response Matrix

Threats and Constraints	Root Causes	Key Project Responses/ Interventions
<u>SILTATION AND POLLUTION</u> <ul style="list-style-type: none"> Erosion from degraded (deforested, overgrazed) lands Agricultural, industrial, and urban runoff Sewage and solid waste in coastal areas 	<ul style="list-style-type: none"> Inadequate enforcement of land use ordinances 	<ul style="list-style-type: none"> Environmental impact monitoring system established ICRM plans including upland management developed Legal seminars conducted for local judges
	<ul style="list-style-type: none"> Institutional weaknesses: poor coordination between DA, DENR, other agencies for integrated management 	<ul style="list-style-type: none"> Review and finalize ArcDev institutional framework, emphasizing cross-sectoral interactions affecting coastal zone Complete policy study on delineation of agency responsibilities Multi-sectoral community organizations organized 600 DENR, DA, LGU staff trained in ICRM 6,500 ha of watersheds reforested or rehabilitated
	<ul style="list-style-type: none"> Lack of awareness regarding upland actions and resultant lower watershed and coastal impacts 	<ul style="list-style-type: none"> awareness and training workshops in 65 municipalities
	<ul style="list-style-type: none"> Poverty in coastal communities 	<ul style="list-style-type: none"> provide environmental infrastructure, including erosion control, sewage/sanitation
	<ul style="list-style-type: none"> Population pressure causing depletion of resources, land degradation 	<ul style="list-style-type: none"> conduct training for reproductive health, contraception
<u>HABITAT DESTRUCTION</u> <ul style="list-style-type: none"> Mangrove and seagrass cutting/ clearing Coral reef damage (dynamite, cyanide, other destructive practices) 	<ul style="list-style-type: none"> Inadequate enforcement and lack of effective economic incentives and disincentives 	<ul style="list-style-type: none"> 50 MPAs established, management plans completed, management activities undertaken <i>bantay dagat</i> trained in enforcement, equipment procured incentive systems pilot-tested
	<ul style="list-style-type: none"> Lack of institutional capacity (technical, administrative) to manage/rehabilitate coastal resources 	<ul style="list-style-type: none"> 600 DENR, DA, LGU staff trained in ICRM 3,500 ha of mangroves brought under improved management
	<ul style="list-style-type: none"> Poverty in coastal communities resulting in use of destructive practices 	<ul style="list-style-type: none"> 6,500 community members trained in promising enterprises
	<ul style="list-style-type: none"> Population pressure causing inappropriate land transformation (e.g., mangroves converted to fishponds) 	<ul style="list-style-type: none"> conduct training for reproductive health, contraception

Threats and Constraints	Root Causes	Key Project Responses/ Interventions
UNSUSTAINABLE RESOURCE USE <ul style="list-style-type: none"> • Overfishing, overharvesting • Blast and poison fishing • Illegal commercial fishing 	<ul style="list-style-type: none"> • Inadequate enforcement and lack of effective economic incentives and disincentives 	<ul style="list-style-type: none"> • 50 MPAs established, management plans completed, management activities undertaken • municipal waters delineated, licensing system in place • <i>bantay dagat</i> trained in enforcement, equipment procured • incentive systems pilot-tested • policy study on user fees and resource rents • eco-certification instruments designed
	<ul style="list-style-type: none"> • Inadequate information for decision-making: establish realistic controls on capture activities (quantitative, spatial, temporal) 	<ul style="list-style-type: none"> • scientific assessment of resources in 6 provinces completed; coastal resource database established • biodiversity research conducted, international symposia held
	<ul style="list-style-type: none"> • Institutional weaknesses: conservation objectives not firmly mainstreamed into economic development agendas 	<ul style="list-style-type: none"> • Review and finalize ArcDev institutional framework • Prepare participatory ICRM plans
	<ul style="list-style-type: none"> • Lack of awareness and participation regarding long-term consequences of short-term actions 	<ul style="list-style-type: none"> • Awareness campaigns implemented in 65 municipalities • ICRM centers established for information dissemination
	<ul style="list-style-type: none"> • Population pressure causes maximum sustainable yields to be exceeded 	<ul style="list-style-type: none"> • conduct training for reproductive health, contraception
	<ul style="list-style-type: none"> • Poverty in coastal communities causes adoption of efficient but destructive extraction methods 	<ul style="list-style-type: none"> • environment-friendly land- and sea-based enterprises identified, 130 demonstration enterprises established (e.g., ecotourism pilot project)

EXTERNAL ASSISTANCE TO THE MARINE AND COASTAL RESOURCES SECTOR

Institution	Amount (\$'000)
A. Grant	
1. <u>Multilateral</u>	
a. Asian Development Bank	3,800
b. European Union	8,900
c. Food and Agriculture Organization of the United Nations	251
d. International Atomic Energy Agency	134
e. Global Environment Facility	3,118
f. United Nations Development Programme	2,232
	18,435
2. <u>Bilateral</u>	
a. Australian Agency for International Development	194
b. Canadian International Development Agency	10,500
c. Japan Bank for International Cooperation	64
d. Japan International Cooperation Agency	200
	10,958
Subtotal (A)	29,393
B. Loan	
1. <u>Multilateral</u>	
a. Asian Development Bank	169,500
b. World Bank	115,000
	284,500
2. <u>Bilateral</u>	
a. Japan Bank for International Cooperation	80,064
Subtotal (B)	364,564
Total (A+B)	393,957

Source: Information collected by the Project team.

LIST OF PROJECT MUNICIPALITIES^a

Province/Municipality (No. of Coastal Municipalities)	Province/Municipality (No. of Coastal Municipalities)
Cagayan	Cebu
1. Abulog	1. Alcantara
2. Ballesteros	2. Alcoy
3. Buguey	3. Alegria
4. Gattaran	4. Argao
5. Gonzaga	5. Badian
6. Peñablanca	6. Barili
7. Sanchez Mira	7. Boljoon
8. Sta. Praxedes	8. Carmen
9. Sta. Teresita	9. Cordova
10. Aparri	10. Daanbantayan
11. Calayan	11. Dalaguete
12. Claveria	12. Dumanjug
	13. Ginatilan
Masbate	14. Lapu-Lapu City
1. Aroroy	15. Malabuyoc
2. Baleno	16. Moalboal
3. Batuan	17. Ronda
4. Catanglan	18. Samboan
5. Cawayan	19. Sta. Fe
6. Claveria	20. Sibonga
7. Dimasalang	21. Tabogon
8. Esperanza	22. Tuburan
9. Mandaon	
10. Masbate	Davao Oriental
11. Milagros	1. Baganga
12. Monreal	2. Mati
13. Palanas	3. Tarragona
14. Pio V. Corpuz	
15. Placer	Zambales
16. San Fernando	1. Botolan
17. San Jacinto	2. Cabangan
18. San Pascual	3. Masinloc
19. Uson	4. Palauig
Siquijor	5. San Antonio
1. Enrique Villanueva	6. San Felipe
2. Larena	7. San Narciso
3. Lazi	8. Sta. Cruz
4. Maria	

a Of the listed municipalities, 65 will be included in the Project.

PROJECT FRAMEWORK

Design Summary	Indicators and Targets	Monitoring Mechanism	Assumptions and Risks
Goal Enhanced coastal resources Poverty reduction in the coastal areas	Depletion of coastal resources is arrested and 30% improvement in productivity and biophysical state of resources by year 20 Poverty incidence in coastal communities reduced by one third by year 20	National statistics, and State of Ocean Reports National statistics and livelihood surveys	
Purpose Sustainable management of the coastal resources Improved income levels for the coastal communities	10% improvement over baseline levels in fisheries resources and 10% improvement in hard coral cover and 20% improvement in mangrove density in participating municipalities by year 7 10% increase in real household incomes of fisher folk households over baseline by year 7	State of the Ocean Reports of DENR, Coastal and Marine habitat monitoring reports, Project impact assessments, PCR and PPAR National Household Level surveys, Project impact assessments, PCR and PPAR	<u>Risks</u> Degradation of global environment and macroeconomic conditions
Outputs 1. Policy environment and legal framework for Integrated Coastal Resources Management (ICRM) rationalized, institutional capacities strengthened and improved governance 2. ICRM institutionalized and functional at the local levels, and coastal ecosystems and resources in the threatened areas of biodiversity are protected and managed 3. Alternative and supplementary livelihoods provided	Increased stakeholder participation in major policy decisions, and resource and budget allocation for ICRM by year 4 Participating LGUs score at least 75% on the Ecogovernance Index and the Project score at least 80% by year 6\ In the 65 participating municipalities, 50,000 ha of coral reefs with 5,000 ha of no take zones, 6,000 ha of mangroves, and 6,500 ha of watersheds are managed with active participation of communities by year 6 50,000 ha of coral reefs and 3,500 ha of mangroves are under improved management and 2,500 ha of mangrove reforested and managed by year 6 Incidence of illegal fishing, threats to marine habitats and encroachments to foreshore areas reduced by 50% by year 6 At least 30 percent increase in fish density and 5 percent increase in fish species richness over baseline in no take zones by year 6 By year 6, 780 enterprises are established of which at least 60% remain operational beyond their first year of operations	Department Administrative Orders and Legal Instruments, and Project PPMS LGU's ICRM reports, Project Impact Assessment, and PPMS Municipal Development Plans, and LGU budget documents Municipal Development Plans, Records of ICRM organizations, and PPMS Records of ICRM organizations, and PPMS Reports of participatory and scientific assessments, Records of ICRM and community organizations, and Project Impact Assessment Records of ICRM and community organizations, PPMS, and Project Impact	<u>Assumptions</u> Enforcement of regulations and other instruments.

Design Summary	Indicators and Targets	Monitoring Mechanism	Assumptions and Risks
4. Improved health and social conditions in the coastal communities	<p>The enterprises provide supplemental employment opportunities to 7,800 of which at least 30% are women</p> <p>At least 1,000 households with improved access to safe drinking water, and 1,000 households with access to improved sanitation facilities by year 6</p> <p>Households in at least 65 barangays benefiting from social facilities such as community centers, daycare centers, and new classrooms by year 6</p>	<p>Assessment Records of community organizations, Training reports, and PPMS</p> <p>Records of ICRM and community organizations, PPMS, and Project Impact Assessment Records of ICRM and community organizations, PPMS, and Project Impact Assessment</p>	
Activities			
A. Policy and Institutional Strengthening and Development			
<u>A-1: Policy Aspects</u>			
a. Establish and implement institutional framework for coordinating ICRM	Review and finalize institutional framework (ArcDev) prepared by the Government in year 1	Study reports, Department Records, and PPMS	<u>Assumption</u> National Government remains committed to ICRM and biodiversity
b. Finalize ICRM Policy	Coordinating bodies at national, regional and provincial levels established and funded by year 2	Study reports, Department Records, and PPMS	
	Review of draft ICRM policy prepared by the Government completed in year 1	Study reports, Department Records, Legislative records, and PPMS	
	Policy studies on marine pollution, mangrove management, foreshore management, coastal tourism, environmental impact assessment, biodiversity conservation and trade in coral reef associated fish and vertebrate species completed by year 3		
	Department administrative orders to implement new CRM policy issued by year 3		
c. Clarify the roles of DENR, DA, LGUs and other stakeholders in implementing the new ICRM policy and institutional frameworks	Draft ICRM law prepared for submission to the congress by year 4		
d. Develop means of sustainable financing for ICRM operations	Policy study on marine protected areas under the national integrated protected area systems act completed by year 2 and the act revised on basis of its recommendations by year 3	Study reports, and Department Records	
	Policy study on delineation of responsibilities completed and the recommendations implemented through relevant administrative orders by year 2		
	Policy study on user fees and resource rents for mangroves, coral reefs, beaches, foreshores, fisheries and mariculture and on appropriate implementation arrangements is completed by year 3	Study reports, and PPMS	
e. Undertake ICRM policy	Pilot testing in 6 locations completed by year 3		
	Campaigns conducted for DENR,	Campaign reports, and	

Design Summary	Indicators and Targets	Monitoring Mechanism	Assumptions and Risks
<p>awareness and advocacy campaigns</p> <p><u>A-2: Capacity Building and Institutional Development</u></p> <p>a. Develop and implement human resources and institutional development strategies for DENR, DA and LGUs</p> <p>b. Develop the ICRM and marine biodiversity research agenda for DENR and DA</p> <p><u>A-3: Performance based Incentive and Disincentive System</u></p> <p>a. Identify and pilot test appropriate incentive systems for ICRMs that link to ICRM certification systems adopted by DENR's Coastal and Marine Management Office</p> <p>b. Design and implement an effective incentive system linked to ICRM certification</p>	<p>DA, 6 provinces and 65 LGUs by year 3</p> <p>Assessment of human resources and institutions, and capacity building requirements of DENR, DA and LGUs and develop strategies to address these developed by year 2</p> <p>Respective strategies are owned by DENR, DA and LGUs</p> <p>600 DENR, DA and LGU staff are trained in various aspects of ICRM by year 6</p> <p>Research agenda and plans are approved by year 2</p> <p>Existing incentive and disincentive systems at local, national and international levels documented by year 2</p> <p>Promising incentive systems pilot tested in 6 municipalities by year 3</p> <p>Incentive system designed and documented, and endorsed by at least 3 NGAs in year 4</p> <p>Awareness and training workshops conducted in each of the 65 municipalities conducted in year 4</p> <p>Incentive system is adopted in at least 50% of the municipalities by year 6</p>	<p>PPMS</p> <p>Study reports, Budget documents and Department Records, and PPMS</p> <p>Study reports PPMS</p> <p>Study reports, and PPMS</p> <p>Administrative records, Workshop proceedings, Municipal Development Plans and LGU Budgets</p> <p>PPMS</p>	<p><u>Assumption</u> Sufficient numbers of qualified personnel will be available for training when required</p> <p><u>Assumption</u> National Government's commitment to provide incentives to the performing municipalities</p>
B. ICRM and Biodiversity Conservation			
<p><u>B-1: Integrated coastal resource management (ICRM)</u></p> <p>a. Undertake awareness and education campaign</p> <p>b. Undertake the coastal resources assessment through participatory coastal resources assessment (PCRA) and scientific observations</p>	<p>Awareness campaigns for communities and LGU staff designed by year 2</p> <p>Awareness campaigns implemented in the communities neighboring the 65 municipalities completed by year 6</p> <p>PCRAs completed in 65 municipalities (including MPAs), and coastal resource maps indicating location, extent and use patterns in year 2 and updated in year 6</p> <p>Scientific assessments of resources and habitats in 6 provinces completed in years 1, 3 and 6</p> <p>Coastal resource database established by year 2</p>	<p>Campaign reports, and PPMS</p> <p>Study reports, and PPMS</p>	<p><u>Assumptions</u> Municipalities continued commitment to ICRM, and community participation in the planning, budgeting and execution of management plans</p> <p>Communities' commitment to the ICRM and their effective enforcement of the ICRM regulations in the municipal waters</p> <p>Continued</p>

Design Summary	Indicators and Targets	Monitoring Mechanism	Assumptions and Risks
c. Develop and strengthen ICRM organizations	Multi-sectoral and community organizations including Fish and Aquatic Resources Management Committees, NGOs, community organizations and Bantay Dagat) organized in 65 municipalities by year 6 195 members of ICRM organizations trained in organizational aspects by year 3 975 members of ICRM organizations trained in ICRM by year 3	Records of ICRM organizations, Training records, and PPMS	backstopping of the LGUs by the national government agencies in technical and enforcement matters
d. Prepare participatory ICRM plans and institutionalize these in LGU planning and budgeting	Participatory planning workshops undertaken in 65 municipalities in year 2 Integrated ICRM plans including the upland management developed and incorporated in municipal development plans in 65 municipalities by year 2 and updated annually during project implementation Each of the 65 municipalities provides an adequate annual allocation for ICRM activities for years 2-6	PPMS, Municipal Development Plans, and LGU Budgets	
e. Participatory implementation of ICRM plans	Planning and coordination hubs established at the provincial levels in year 1 Municipal coastal databases established in 65 municipalities by year 2 Environmental impact monitoring system established in 65 municipalities by year 2 Municipal water delineated into zones and a system of licensing in place in 65 municipalities by year 2 By year 6, sustainable financing mechanisms (user fees, rents and revenue generation) are introduced in at least 33% of the municipalities	Administrative orders, Municipal Development Plans, LGU Budgets, ICRM organizations' records, and PPMS	
f. Rehabilitation and management of mangroves and watersheds through community participation	By year 6, 3,500 ha of mangroves brought under improved management and 2,500 ha of mangroves reforested By year 6, 3,500 ha of watersheds rehabilitated and 3,000 ha of watersheds reforested	Municipal Development Plans, LGU Budgets, ICRM organizations' records, and PPMS	
g. Design and implement participatory enforcement mechanisms	650 Bantay Dagat (marine watch team) members and 650 community members familiarized in fisheries laws and regulations by year 3 65 legal seminars conducted for the local judges by year 2 650 Bantay Dagat members and 650 community members trained in enforcement related activities by year 3 77 patrol boats and 77 sets of	Administrative orders, Municipal Development Plans, LGU Budgets, ICRM organizations' records, and PPMS	

Design Summary	Indicators and Targets	Monitoring Mechanism	Assumptions and Risks
<p><u>B-2: Biodiversity Conservation</u></p> <p>a. Establishment of ICRM centers</p> <p>b. Conduct research on critical biodiversity resources</p> <p>c. Identify marine protected areas (MPAs), networks or corridors of MPA</p> <p>d. Prepare and implement integrated management and rehabilitation plans</p> <p>e. Habitat rehabilitation, restoration and stock enhancement</p> <p>f. Establish and strengthen eco-certification of sustainable harvesting activities</p>	<p>enforcement equipment procured by year 2</p> <p>5 centers established by year 2</p> <p>30 studies on habitat condition, population size of threatened species, trends in coastal resources and baseline studies completed by year 6</p> <p>5 international evaluation symposia, each with up to 100 participants, are held by year 6</p> <p>50 MPAs for effective management with at least 5,000 ha of sanctuary (no take) areas identified by year 3</p> <p>Management plans for the 50 MPAs developed by year 3</p> <p>At least 5 coordinating bodies to manage MPA Networks and Corridors by year 2</p> <p>MPA database and rating system operationalized by year 2</p> <p>By year 6, management activities undertaken in the 50 MPAs</p> <p>Appropriate eco-certification instruments designed and 325 community members, 325 traders and 325 LGU staff trained in eco-certification by year 6</p> <p>In 50 MPAs, trade of marine species regulated and managed through eco-certification by year 3</p>	<p>Study reports, and PPMS</p> <p>Study reports, PPMS, and Symposia Records</p> <p>Study reports, Administrative orders, and PPMS</p> <p>Administrative orders, Municipal Development Plans, LGU Budgets, ICRM organizations' records, and PPMS</p> <p>Administrative orders, Municipal Development Plans, LGU Budgets, ICRM organizations' records, and PPMS</p> <p>Study report, LGU eco-certification records, and PPMS</p>	<p><u>Assumptions</u></p> <p>LGU's and communities' continued commitment to the biodiversity conservation</p>
C. Enterprise Development and Income Diversification			
<p>a. Mobilize self-reliant community groups</p>	<p>650 community groups established by year 6</p> <p>Organizational training and needs assessment completed in 650 community groups by year 6</p> <p>Internal savings mobilized in 75% of the community groups by year 6</p> <p>By year 6, 50% of community groups are linked to sources of credit</p>	<p>Records of ICRM organizations, Training records, and PPMS</p>	<p><u>Assumptions</u></p> <p>The NGOs with adequate coverage in the municipalities and with the proper orientation are recruited in a timely manner.</p> <p>Adequate coverage of microfinance institutions in the project area.</p> <p>Enterprise Development Units are established and staffed in timely manner.</p>

Design Summary	Indicators and Targets	Monitoring Mechanism	Assumptions and Risks
b. Environment friendly land and sea based enterprises identified, pilot tested and developed in participating municipalities	6 Enterprise Development Units established and 100 staff trained in business development planning by year 2 20 Fish related and land based activities identified through needs assessment, skills inventories and 12 market studies undertaken by year 6 130 demonstration enterprises established by year 6 6,500 (100 per municipality) community members trained in the promising enterprises and entrepreneurial skills by year 6 5 pilot eco-tourism initiatives conducted by year 6	Administrative records, Community groups' activity reports, Training reports, PPMS PCR and PPAR	
D. Social and Environmental Services and Facilities			
a. Assess need and feasibility for social and environment related infrastructure	Assessments completed in 65 participating municipalities by year 6 Feasibilities and Initial environmental evaluations or environmental impact assessments completed for 130 schemes by year 5	Study report Feasibility and IEE or EIAs, and PPMS	<u>Assumptions</u> The LGUs have competent engineering staff to undertake the surveys, basic designs and environmental assessments.
b. Provide social and environment infrastructure addressing priority environmental and social needs	130 infrastructure schemes completed by year 6	ICRM Organizations' reports, Completion Certificates, and PPMS	
c. Design and implement population management program	Training modules for education on reproductive health, contraception and link between population and environmental quality by year 2 650 barangay health workers and 25,000 persons trained through population management program by year 6	Training records, and PPMS	
Inputs	Resources (\$ million)		
Resource Management	5.09	Loan and Financial Information System (LFIS), PPMS, and Project Progress Reports	<u>Assumptions</u> Timely compliance with the relevant assurances and loan covenants Timely establishment of project offices and recruitment of consultants Contracts will be negotiated and awarded in a timely manner Equipment will be procured in a timely manner Adequate counterpart funding will be available when required
Capacity Building	2.25		
NGO Services	2.86		
Demonstration and Trials	1.05		
Dissemination Activities	2.51		
PPMS, Studies, Surveys and Audits	4.90		
Consulting Services	5.18		
Equipment and Materials	2.52		
Vehicles	1.31		
Land Purchase	0.89		
Civil Works	8.26		
Implementation and Supervision	4.57		
<u>Recurrent Costs</u>	<u>8.46</u>		
<u>Total Base Costs</u>	<u>49.84</u>		

All targets are in context of project area and relative to the project baselines

SELECTION CRITERIA FOR PROJECT INTERVENTIONS

A. Social Infrastructure

1. General Criteria

- (i) The social assessment for the community has been undertaken and is included in the municipal ICRM plan approved by the ADB,
- (ii) The land for the scheme is either unoccupied public land, or has been paid for in cash or has been donated voluntarily and the proof of the transaction/voluntary donation has been submitted,
- (iii) In case the social assessment identified presence of indigenous people or ethnic minorities or other disadvantaged groups in the community, the scheme provides equitable benefits to these groups, and
- (iv) Alternate designs have been considered and the proposed design is the least cost option.
- (v) Initial environmental examination (IEE) completed, and no significant adverse impact identified. In case of significant adverse impacts, an environmental impact assessment (EIA) is undertaken and mitigating measures identified and provided in the plan and cost estimates. IEE/EIA revised and approved by relevant DENR office as per the Government environmental regulations.
- (vi) The community is willing to contribute in kind or in cash for the 10% of the investment costs and full cost of operation and maintenance.

2. Specific Criteria

- 1. In case of a drinking water scheme;
 - (i) The scheme benefits at least 25 households,
 - (ii) Majority of the beneficiary population are poor, or have no ready access to the safe drinking water, and
 - (iii) The scheme will reduce the average economic cost of water relative to the existing source.
- 2. In case of a sanitation scheme;
 - (i) The scheme benefits at least 25 households, and
 - (ii) Majority of the beneficiary population are poor, or high prevalence of disease/
- 3. In case of social facilities such as community centers and classrooms for existing schools;
 - (i) The facility serves a community of at least 100 households.

B. Mangrove and Watershed Rehabilitation and Reforestation

1. Mangrove

- (i) The social assessment in the surrounding communities has been undertaken and is included in the municipal ICRM plan approved by the ADB,
- (ii) In case of watersheds, the area the watershed is unoccupied public land,
- (iii) In case the social assessment identified presence of interests of indigenous people or ethnic minorities or other disadvantaged groups in the area, the indigenous people development plan and livelihood rehabilitation plans have been prepared, and
- (iv) All communities in the surrounding areas are equitable represented in the rehabilitation/reforestation contract.

2. Watersheds

- (i) The social assessment in the surrounding communities has been undertaken and is included in the municipal ICRM plan approved by the ADB,
- (ii) In case the social assessment identified presence of interests of indigenous people or ethnic minorities or other disadvantaged groups in the area, the indigenous people development plan and livelihood rehabilitation plans have been prepared, and
- (iii) All communities in the surrounding areas are equitable represented in the rehabilitation/reforestation contract.

C. Livelihood and Enterprise Development Activities

- (i) Preference has been given to the poor fisherfolks and those whose livelihoods have been restricted by the Project activities, and
- (ii) In case the social assessment identified presence of indigenous people or ethnic minorities or other disadvantaged groups in the community, the activities provide equitable benefits to these groups.
- (iii) Initial environmental examination (IEE) completed, and no significant adverse impact identified. In case of significant adverse impacts, an environmental impact assessment (EIA) is undertaken and mitigating measures identified and provided in the plan and cost estimates. IEE/EIA revised and approved by relevant DENR office as per the Government environmental regulations.

ROLE OF GLOBAL ENVIRONMENT FACILITY IN THE PROJECT

A. Broad Development Objective

1. The Government of the Philippines (GOP) adheres to the goals of the Convention on Biological Diversity (CBD) that it ratified on 8 October 1993 and the agreements made at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil. In line with these commitments, the Philippines developed a *National Biodiversity Strategy and Action Plan (NBSAP)* in 1996, which has been recently updated.⁷ This is the framework upon which national efforts in biodiversity conservation and management are based. GOP's Department of Environment and Natural Resources (DENR) has also formulated the *Philippines Biodiversity Conservation Priority-Setting Program (PBCPP)*, a prioritization of marine and terrestrial biodiversity sites nationwide according to their importance in contributing to overall biodiversity within the country and according to the degree of urgency for conservation. Implicit in this priority-setting exercise is the intention on the part of the government to take the aggressive steps needed to conserve important biodiversity resources. Through its *Medium-Term Philippine Development Plan (MTDP), 1999-2004*, the GOP indicated its commitment to the principle of environmental sustainability in pursuing economic growth. Specific targets for coastal and marine resources management are provided for in the plan. In *ArcDev: A Framework for Sustainable Philippine Archipelagic Development* (2004), the DENR outlines a draft strategy and institutional set-up for sustainable management of marine and coastal resources. Through these various plans and policy instruments, the GOP clearly demonstrates the high priority being placed on the conservation and management of its natural resources, including marine biodiversity, within an overall sustainable development context.

B. Rationale for GEF Involvement

2. The Philippines is recognized as one of earth's biodiversity hotspots, and one of just 17 'megadiversity' countries.⁸ The Philippines' marine systems stand out as some of the most important among some 237 ecoregions⁹ identified as areas where the Earth's biological wealth is most distinctive and rich, and where its loss will be most severely felt if conservation efforts are not successful.

3. The Philippines archipelago comprises over 7,100 islands bounded by the South China Sea, Pacific Ocean, and Celebes and Sulu Seas, with a total ocean area of 2.2 million square kilometers (km²) and coastline of over 18,000 km. The Philippine coastal zone covers a total of about 11,000 km² of land and 267,000 km² of coastal waters. The nation lies at the global epicenter of marine biological diversity known as the 'Coral Triangle,' roughly bounded by the Philippines to the north, Indonesia to the west, and Papua New Guinea and Australia's Great Barrier Reef to the southeast. For many Indo-Pacific marine species, the Philippines is situated at or near the center of their distribution range.¹⁰ The coverage of coral reefs is estimated at around 25,000 km², roughly 10 percent of the country's total land area. The country's coral reefs host about 400 species of corals, 970 species of benthic algae, and a third of the 2,300 fish

⁷ Ong, P.S., L.E. Afuang, and R.G. Rosell-Ambal (eds.) 2002. *Philippine Biodiversity Conservation Priorities: A Second Iteration of the National Biodiversity Strategy and Action Plan*. DENR-PAWB, CI-Philippines, UP-CIDS, and FPE. Quezon City, Philippines.

⁸ Critical Ecosystems Partnership Fund (CEPF) 2002. *The Philippines Hotspot*.

⁹ In 'The Global 200', a World Wildlife Fund (WWF) survey.

¹⁰ University of the Philippines-Center for Integrative and Development Studies/Protected Areas and Wildlife Bureau (DENR)/Conservation International Philippines (January 2000). *Highlights of the planning meeting: National Biodiversity Conservation Priority-Setting Workshop*. Eugenio Lopez Center, Antipolo.

species of Philippine waters. Coral reef areas also provide feeding grounds for larger pelagic species, including sharks and rays, whales and dolphins, and sea turtles.¹¹

4. Two other major associated marine coastal ecosystems, mangrove forests and seagrass beds, also contribute significantly to the country's total marine and coastal biodiversity. About 138,000 hectares of mangrove forest (1990 figure) occur in the Philippines,¹² containing about 370 species of plants and animals.¹³ Thirteen species of seagrasses have been recorded for the Philippines, a level of diversity, which is second only to Australia's.¹⁴ No accurate estimates of the extent of coverage of seagrass beds in the Philippines are available.

5. In addition to the inherent biodiversity value of these important resources are also significant economic values. Coral reefs yield a range of products and generate economic benefits through: (i) harvest of products for direct food consumption, including fish, crustaceans, mollusks, and other aquatic organisms;¹⁵ (ii) use of coral reef areas for scuba diving and other tourism and recreational activities; (iii) capture of live fish and other organisms for the live food fish trade and for aquariums; (iv) harvest of shells and other decorative materials; (v) gathering of coral materials used for construction; (vi) use of coral reef organisms for development of new drugs and chemical compounds in the pharmaceutical industry; and (vii) study of coral reefs for research and educational purposes. In addition to these uses and potential values, coral reefs also perform important physical functions by protecting shorelines from erosion, and adding coralline sand for the build-up of beaches. Shore protection and beach-building contribute significantly to the economic value derived from coral reefs. Estimates have been made of the potential sustainable annual economic benefits for coral reefs in the Philippines, and are presented in Table A6.1.

Table A6.1: Sustainable Coral Reef Resource Use Values by Habitat Quality/Condition for the Philippines, in 1998 Terms

Resource Use	Production Range			Range of Potential Annual Revenue (\$)		
	Poor	Fair	Excellent	Poor	Fair	Excellent
Sustainable fisheries (local consumption), tons	2 - 6	4 - 12	10 - 30	3,000 - 9,000	6,000 - 18,000	15,000 - 45,000
Sustainable fisheries (live fish export), tons	0.1 - 0.5	0.25 - 0.75	0.5 - 1.0	1,000 - 5,000	2,500 - 7,500	5,000 - 10,000
Tourism (on-site residence), number of visitors	20 - 200	40 - 400	100 - 1,000	400 - 4,000	800 - 8,000	2,000 - 20,000
Tourism (off-site residence), number of visitors	100 - 200	200 - 400	500 - 1,000	500 - 1,000	1,000 - 2,000	2,500 - 5,000
Coastal protection (prevention of erosion)				1,000 - 5,000	2,000 - 10,000	5,000 - 25,000
Aesthetic/biodiversity value (willingness-to-pay)			600 - 2,000	480 - 1,600	960 - 3,200	2,400 - 8,000

Source: White, A. T. and A. Cruz-Trinidad. 1998, *The Values of Philippine Coastal Resources: Why Protection and Management are Critical*, Cebu City, Philippines: Coastal Resource Management Project

6. Despite the obvious importance of the Philippines' marine biodiversity, these resources are being severely threatened by a range of inappropriate activities and their damaging effects. As of 1997 surveys, less than 5 percent of coral reefs in the Philippines were observed to be in

¹¹ Asian Development Bank (15 February 2000). Integrated Coastal Resources Management (ICRM) Project. GEF proposal for entry into pipeline and GEF Block B grant.

¹² DENR/UNEP 1997. *Philippines Biodiversity: an assessment and action plan*. Bookmark, Makati.

¹³ Calumpong, Hilconida P., and Ernani G. Meñez (1997). *Field guide to the Common Mangroves, Seagrasses and Algae of the Philippines*. Bookmark, Makati.

¹⁴ Ibid.

¹⁵ Annual fish yield from coral reefs ranges from 5 to 20 metric tons/ km² depending on reef condition. Coral reef fish account for 55 percent of fish consumed by the average Filipino family, and contribute 11-29 percent to total fish production. (Burke, L., et al. 2002. *Reefs at Risk in Southeast Asia*. World Resources Institute.)

excellent condition (i.e., having 75 to 100% live coral cover, including both hard corals and soft corals), 28 percent in good condition (50-75% live coral cover), 42 percent in fair condition (25-50% live coral cover), and 27 percent in poor condition (less than 25% live coral cover). This represents a significant decline in live coral coverage from surveys conducted in the 1970s, especially in some areas of the country (most notably, the Visayas).¹⁶ A similar picture is seen for associated coastal ecosystems. With annual losses of around 2,000 hectares/yr, only about 138,000 hectares of mangroves exist today, as compared to 450,000 hectares that existed in 1920.¹⁷ It is estimated that about 20 to 30 percent of the country's original seagrass beds have been lost.¹⁸ Data compiled over many years indicate that the threats to biodiversity stem from multiple causes. The key threats include (i) pollution and siltation in coastal areas; (ii) habitat destruction; (iii) unsustainable harvest of resources, and (iv) global climate change. These threats, and their underlying root causes, are discussed in more detail in Appendix 1.

C. Baseline Development Path

7. As part of its country strategy to assist the Philippines, and in line with the national priorities for biodiversity conservation mentioned above, the Asian Development Bank (ADB), with counterpart support from the GOP and beneficiary communities, will contribute to a 'sustainable baseline' development path through the strategic interventions of the Integrated Coastal Resource Management Project (ICRMP). The project seeks to improve the management and condition of coastal and marine resources and biodiversity, and to reduce poverty in coastal communities that in a cyclical fashion contributes to further resource depletion and degradation. Project interventions will be in the areas of (i) policy and institutional strengthening and development, (ii) coastal resource management and biodiversity conservation, (iii) enterprise development and poverty reduction, and (iv) social services and small-scale infrastructure for environmental protection.

8. Proposed baseline activities of the ICRMP will contribute significantly to the effectiveness of ICRM and biodiversity conservation efforts nationwide, and will help to raise the existing national 'realistic baseline' to the level of a 'sustainable baseline.' Achievement of this sustainable baseline level implies that management and protection of valuable coastal and marine resources and biodiversity will be improved within the implementation areas, to a level sufficient to meet national objectives for sustainable development.

9. Baseline activities of the ICRMP will help to remove barriers to effective coastal resource management and will reduce threats to resources that are important not only for the continued integrity of natural ecosystems but also for supporting sustainable economic development. The principal project activities that will have a beneficial impact in these areas are: (i) harmonizing policies and strengthening DENR and other institutions to facilitate improved management of coastal resources; (ii) establishment of a nationwide performance-based incentive and disincentive system linked to CRM certification; (iii) strengthening of ICRM planning and management at the local level, including promotion of ICRM 'best practices'; (iv) providing necessary infrastructure and equipment to strengthen CRM-related enforcement activities; (v) utilizing a municipal coastal database (MCD) as a standardized format to evaluate CRM efforts; (vi) conducting community organizing activities; (vii) facilitating the development of environmentally-sustainable enterprises; (viii) undertaking pilot eco-tourism activities; (ix) conducting an aggressive program to promote family planning and population initiatives to reduce human pressure on finite coastal and marine resources; and (x) providing social and environmental infrastructure to raise the standard of living in coastal communities.

¹⁶ Burke, L., et al. (2002) *Reefs at Risk in Southeast Asia*. World Resources Institute.

¹⁷ DENR 2001.

¹⁸ Fortes, M.D. 1994. Philippines seagrasses: status and perspectives. In: Wilkinson, C., et al (eds.). *Proceedings 3rd ASEAN-Australia Symposium on Living Coastal Resources*. Vol. I: Status Reviews. pp. 291-310.

10. Many of these activities will also contribute directly or indirectly to promoting biodiversity conservation. However, it should be noted that in developing countries such as the Philippines, conserving biodiversity has associated high opportunity costs and a shortfall of local benefits.¹⁹ Thus, it may not always be in the national interest to pursue biodiversity conservation objectives, especially if these are global in scope and where they may impede national economic development goals. In addition, the GOP lacks the financial, material and human resources that would be needed to achieve the higher objectives for conservation and management of globally-important biodiversity resources. It is therefore appropriate that funding from GEF will be utilized to cover the incremental costs of implementing the necessary interventions to achieve such global benefits.

D. GEF Alternative

11. The GEF Alternative will build on the national 'sustainable baseline' to secure the sustainable conservation and management of globally significant marine and coastal biodiversity. In particular, it will seek to: (i) mainstream biodiversity policies and programs within the context of harmonized national integrated coastal resources management (ICRM) policies and coordinated national and local institutions; (ii) generate awareness on the value of biodiversity resources nationally and globally in areas of high priority; (iii) develop a national research agenda to strengthen biodiversity conservation and undertake specific research at selected biodiversity sites; (iv) establish ICRM centers to support public education, research, and conservation activities; and (v) pursue conservation measures at selected sites, especially the creation of networks of marine protected areas (MPAs) along marine biogeographic corridors and migration paths.

E. Global Environmental Benefits

12. With the baseline activities primarily focusing on sustainable management of marine and coastal resources, support from GEF will help achieve global environmental benefits. Cost savings and efficiencies are achieved by combining complementary baseline and incremental activities together in an integrated package. If activities aimed at achieving global benefits were conducted in isolation from sustainable baseline activities, achieving global benefits would be far more costly (due to addition of 'sunk costs', lack of sustainability, etc.), and not likely attainable.

13. By ensuring that globally significant species and ecosystems remain viable, especially in areas that are important marine migratory pathways or breeding sites, GEF support will contribute to global environmental benefits (existence values). Direct and indirect economic use benefits will be derived from such activities as eco-certification of marine products and conservation-friendly ecotourism. Options values (potential uses not yet known, e.g., pharmacological properties of some coral species) will be enhanced through the GEF-supported activities. Finally, bequest benefits will be ensured, as the conservation of globally significant species will continue to benefit future generations of humanity.

¹⁹ Panayotou, T. and D. Glover. 1995. Economic and Financial Incentives for Biodiversity Conservation and Development. In ADB/IUCN-World Conservation Union (1995). *Biodiversity Conservation in the Asia and Pacific Region: Constraints and Opportunities*.

SUMMARY POVERTY REDUCTION, SOCIAL STRATEGY AND GENDER PLAN

Table 1: Summary: Poverty Reduction and Social Strategy

A. Linkages to the Country Poverty Analysis

Sector identified as a National Priority in Country Poverty Analysis?	Yes	Sector identified as a National Priority in Country Poverty Partnership Agreement	Yes
Contribution of the sector/subsector to reduce poverty in Philippines: A large proportion of the 40 million coastal population is highly dependent on coastal and marine resources for food and employment. More than 1 million people (5% of the labor force) are employed in the commercial and municipal fisheries sector which also supplies 50% of the country's protein needs. A degraded resource base and inequitable access are some reasons cited as causes of poverty in coastal communities.			

B. Poverty Analysis

Proposed Classification: Core Poverty Intervention	Thematic Classification: Natural resources conservation; rural development; and civil society participation.
Integrated coastal resource management is the project's main approach to enhance productivity of coastal resources such as fisheries, coral reefs and mangroves which provide both economic and ecological benefits to coastal communities. The project area includes 65 municipalities in 6 provinces. The rural poverty incidence in the six provinces range between 25.8% and 77%, with a six-province average of 59% compared with the national average of 48.8%. Within the rural population, the incidence of poverty is higher among coastal communities at 76%, and the coastal population will be the primary beneficiary of the proposed Project. The project aims to reduce poverty in target sites by enhancing coastal resources through integrated management, providing supplemental incomes through alternative livelihoods, improving access to safe water and sanitation facilities, and promoting participation and good governance in planning and implementing the project.	

C. Participation Process

Stakeholder analysis prepared:	Yes (Supplementary Appendix A)
Participation Strategy prepared:	Yes (Supplementary Appendix A)
The project followed a participatory approach in its formulation and the project scope and implementation arrangements were developed through a series of workshops arranged at national, regional, and local levels, and comprehensive socioeconomic studies undertaken in the sample municipalities. Provision has been made to encourage similar participation in all major activities in implementing the project, namely policy and institutional development at national and local government level, development and implementation of integrated coastal resources management (ICRM) plans, and identification and development of social infrastructure and livelihood activities. An institutional framework for coordination of ICRM and development of a comprehensive ICRM policy will be developed through a consultative process involving various stakeholders including government officials at national and local levels, civil societies, educational and research institutions, multilateral and bilateral external institutions involved in the sector, and coastal communities. Most activities at the field level will be implemented by local governments through local communities and NGOs, with technical guidance from the national sector agencies concerned. A participatory coastal resource assessment, drawing on the knowledge and experience of fisherfolks, supplemented by specialist assistance, will form the basis for the preparation of a municipal ICRM plan. The municipal level fisheries and aquatic resources management councils (FARMCs), comprising municipal officials, fisherfolks representative and NGOs, will be the focal point for ICRM activities. Community-based <i>Bantay Dagat</i> (marine watch team) will be responsible for law enforcement in coastal waters, and they will be provided necessary training and logistical support to undertake the responsibility. A cost-sharing approach will be adopted in developing safe water, sanitation and similar health and social facilities among disadvantaged coastal communities. A similar cost-sharing arrangement between the municipal government and the central Government will be a prerequisite for all central Government assistance under the Project to a municipality; the arrangement will enhance ownership and participation of municipal government in overall implementation of the Project.	

D. Gender and Development

Gender Plan Prepared	Yes (Table 2)
The gender and development strategy will include various practical steps to enhance women's participation in coastal resource management planning, access to formal and informal trainings, participation in decision making at community and professional levels, and ability to protect their interests and improve their livelihoods. Through gender sensitization training and gender-disaggregated data, the awareness about the gender and development issues will be enhanced among all stakeholders of the project.	

E. Social Issues

Subject	Significance	Strategy to Address Issues	Output Prepared
Resettlement	Not significant	The project will not require any significant acquisition of land and resettlement of people	
Gender	Significant	Full participation of women in all stages of ICRM development. Opportunities for training and formal studies to be provided; "leadership roles" in ICRM related activities such as ICRM and Enterprise Centers to be supported. Gender-disaggregated data emphasize opportunities to promote women's access to information and formal mechanisms for decision-making.	See Table 2 in this Appendix
Affordability	Significant	Match financial responsibilities to benefits and costs for local governments as well as national government. Formulate performance-based incentive systems to encourage and reward CRM-supportive municipalities.	Main text, Para 32: Governance, and Para. 64: Sustainability.
Labor	Not significant	Livelihood activities to be supported by the project will create opportunities for family labor, including women. Possibility for livelihood activities to be replicated by private sector to create additional employment.	
Indigenous People	Not significant	Available information suggests that the Project would not affect indigenous people that would require preparation of a separate indigenous people's development plan, nor would affected persons have the characteristics to be classified as such. If such groups are identified who may be significantly affected by Project implementation, then indigenous people's development plans (IPDPs) will be prepared in accordance with the ADB's <i>Policy on Indigenous Peoples</i> , and implementation of Project activities at such sites would be conditional on the ADB's approval of the relevant IPDPs.	
Governance	Significant	Good governance assumes an important dimension in the Project because its successful implementation will require stakeholders concerned at various levels to agree and adjust to the policy and governance regime changes that are being promoted by the Project. Most of the stakeholders have been receptive to these changes, some may be slow in responding to the needs for change during project implementation. The risk will be mitigated by the emphasis on information, education and communication (IEC) campaign to be conducted throughout the project period. The governance risk associated with project	

		management including procurement and disbursement will be mitigated through the participatory management at national, regional, and field level, improving transparency and accountability. The cost-sharing arrangement will motivate local governments to strive for economy and efficiency in project implementation, and avoid corrupt practices. Most social and environmental infrastructure and facilities will be developed by beneficiary communities on a cost-sharing basis ensuring better use of the allocated fund.	
Sustainability	Significant	<p>The participatory principle underpinning the Project design and its financing arrangements will enhance local ownership and this, in turn, will enhance the Project's sustainability. Rationalization of sector policy providing greater management responsibility to local governments for foreshore areas and MCAs will also enhance sustainability of Project initiatives..</p> <p>On average the counterpart funding requirements for project activities during project implementation would be about 2% and 8% of the revenues and development expenditures, respectively of an average 4th class municipality – the majority group among project municipalities. During the post-project period, the annual funding requirements to support recurring costs for Project initiatives, including O&M of infrastructure facilities, would be 1% of the municipal revenues and 6% of the present development expenditures, respectively. Assuming that current trends in funding are maintained, the municipal governments would have sufficient resources to sustain the Project's impact.</p> <p>Sustainable financing of ICRM will be augmented through development of appropriate policy for user fees and resource rents for MCA, mangroves, coral reefs, beaches, foreshore fisheries and mariculture. The Project provides for undertaking of relevant policy studies and formulation of recommendation, and pilot testing of the recommendations in five municipalities. Successful models will be implemented at least in one-third municipalities during the project period.</p>	

Table 2: Gender Plan

Components/Activities	Gender Approach and Target
Component 1: Policy and institutional development	
National Integrated Coastal Resource Management Policies, Plans and Programs	
Conduct policy studies on Coastal Resources Management (CRM) and biodiversity conservation	<ul style="list-style-type: none"> ? ICRM Project consultation process for review of current policies to involve women at community level ? Project design to assess potential impact of policies on women's access to coastal resources
Study and recommend appropriate user fees and resource rents	<ul style="list-style-type: none"> ? Studies on resource rent to involve women in discussions and related trainings and focus on valuation of women's contribution to coastal management initiatives ? Recommendations to assess potential role of women in the management of users' fees
Conduct Information, Education and Communication (IEC) on CRM policies	<ul style="list-style-type: none"> ? ICRMP Policy and IEC component targets women policy makers as advocates for CRM ? Women's groups, especially those with environmental concerns, identified by ICRMP for "marketing" and advocacy of CRM messages
Coordination mechanisms and capacity building	
Human resources and institutional analysis	<ul style="list-style-type: none"> ? Trainings, formal studies and conduct of research, to be supported by ICRMP shall ensure equal opportunities for women professionals ? Project to assist in the staffing of CMMO and ICRMP project office and target a staffing ratio of 50% women ? Gender-sensitive training and career plans are considered in project design
Local training	<ul style="list-style-type: none"> ? Project design ensures equal opportunities for women to participate in all trainings including those with technical orientation such as mangrove rehabilitation and coastal resource assessment ? Project design to inculcate gender-sensitive themes in all trainings including reproductive health and population ? Enterprise trainings to comprise at least 50% women
Performance-based incentive system	
CRM certification process	<ul style="list-style-type: none"> ? Project design considered women's role and experience in CRM certification process and shall build on their capacities to continue and improve on CRM certification
Performance-based incentives/disincentives	<ul style="list-style-type: none"> ? Project design to ensure equal opportunities to women's groups to avail of financial incentives
Component 2: CRM and biodiversity conservation	
Coastal management system for local governments	
Participatory and scientific assessments	<ul style="list-style-type: none"> ? ICRM and biodiversity component to actively involve women in Participatory Coastal Resource Assessments (PCRA) and in discussions pertaining to scientific assessment ? Project targets the organization and support of at least one women's group per <i>barangay</i> ? Design recognizes role of women in all aspects of CRM planning
ICRM provincial centers	<ul style="list-style-type: none"> ? Consideration for women as ICRM center administrators or technical support staff ? Focus on role of women in the packaging of associated livelihood activities such as tours, manufacture of souvenirs and local delicacies, etc.
Establish effective systems for sustainable management of trade in coral reef species	<ul style="list-style-type: none"> ? Identification of women's role on sustainable management of trade in coral reef species such as live fish, seahorses and shells ? Design involves women in information campaigns on endangered species ? Design utilizes women informants to trace market channels for coral reef species

Components/Activities	Gender Approach and Target
Component 3: Enterprise development and poverty reduction	
Social preparation	<ul style="list-style-type: none"> ? Design ensures the involvement of women in community organizing either as facilitators or participants ? Design involves women in identification of enterprise opportunities, previous experiences, technical and financial capabilities, and needs
Enterprise development unit	<ul style="list-style-type: none"> ? Women to manage ICRM centers/EDU as administrators or as technical support staff ? Women and women's group to identify products, markets and market opportunities, innovators and entrepreneurs and external investors ? Training on business management, capital and savings flows to involve women
Component D: Social and environmental services and facilities	
Environmental and social infrastructure	<ul style="list-style-type: none"> ? Women to be consulted in identifying environment and social service needs and location of proposed facilities ? Women's group to spearhead recycling and associated revenue generating activities
Support for coastal pollution and erosion control	<ul style="list-style-type: none"> ? Women participate in identifying creative and sustainable solutions to pollution control, watershed mgmt and riverbank stabilization activities

SUMMARY INITIAL ENVIRONMENTAL EVALUATION

A. Description of the Project

1. The Integrated Coastal Resource Management Project will enhance the capacities of national government agencies and local government units to sustainably manage and conserve coastal resources for poverty reduction. This is to be attained through institutional strengthening and policy reform at the national level and through integrated coastal resource management and biodiversity conservation strategies adopted at the local level, complemented by environment-friendly livelihood activities and the provision of social and environmental infrastructure. In general, the project is not expected to create any significant negative environmental impacts; in fact, it will produce various environmental benefits by directly addressing threats to coastal resources and habitats.

B. Description of the Environment

2. The Project area covers 65 municipalities in the provinces of Cagayan, Zambales, Masbate, Cebu, Siquijor and Davao Oriental. The area covers 1, 800 km of coastline representing 10% of the total coastline of the country. Six municipalities were selected as study sites with the following features.

3. **Claveria, Cagayan.** Claveria is located on the northwestern portion of the Province of Cagayan. It has a total land area of 19,400 sq km. and consists of 41 *barangays* (villages), 14 of which are coastal. Claveria has 12 km of coastline made up of alluvial sand, sparse mangroves and marginally developed coral reefs. The area is hypothesized to have an upwelling condition. Tunas, sailfish, dolphin fish and sharks are some species that can be caught in the deep waters offshore; lobsters and the popular *porphyra* is harvested nearshore. Beach seining and milkfish fry gathering is done on a seasonal basis. Main environmental issues identified include: (i) intrusion of foreign fishing fleets; (ii) fish kills due to density of fish cages in Pata river; and (iii) illegal occupation of foreshore lands.

4. **Masinloc, Zambales.** The municipality of Masinloc is bounded by Oyon and Masinloc Bays. It has a land area of 30,600 ha and is comprised of 13 barangays, 10 of which are coastal. Total length of coastline is about 42.2 km. Coastal resources in the area include mangroves, coral reefs and seagrass. There are a total of 260 ha. of mangroves in good condition within the Masinloc-Oyon Bay area. Corals located near the cooling water outfall of the Coal-Fired Power Plant were dead but still standing, while those inside and outside the nearby San Salvador Fish Sanctuary appeared healthy. Fish biomass was also observed to be highest inside and near the sanctuary. There are more than a thousand municipal fishers and 10 commercial fishing boats originating mainly from the Visayas.

5. Main environmental issues in the municipality include erosion and sedimentation, pollution from residential areas situated along the coastline and dust and discharge of cooling water from the Power Plant. Reclamation was also observed, mainly for housing, and unregulated construction of foreshore structures such as revetments. Blast fishing and cyanide fishing are also considered major threats to fisheries and coral resources.

6. **Batuan, Masbate.** Batuan is the southernmost municipality on Ticao Island in the province of Masbate. It has 14 barangays, 10 of which are coastal. Total land area is 5,340 hectares. It has 33 km of shoreline, excluding offshore islands. There are 7 coral reef areas in Batuan which are in poor to fair condition. There are 168 has of good quality mangroves in the reserve area and 163 has have been identified as suitable for replanting. The main coastal resource management problems in Batuan are declining fish catch and poverty which are

attributed to mangrove and coral reef destruction due to illegal activities such as conversion and cutting, for mangroves, and destructive fishing and sand quarrying, for coral reefs.

7. **Lazi, Siquijor.** The municipality of Lazi is one of the six municipalities that comprise the island province of Siquijor. It is located at the southern part of the province bordered on the south by the Mindanao Sea. The town of Lazi has a total land area of 8,461 hectares with 18 barangays, 7 of which are coastal, and shoreline of 15.59 kilometers characterized by sandy, rocky beaches and limestone cliffs. The municipal waters of Lazi, with an area of 24,574.96 has, is 3 times larger than its land area. Mangrove habitat condition was rated fair to good (heavy cutting, fishpond conversions and some cutting for firewood) and seagrass condition was also rated as good. The overall rating of the coral reef habitat is fair, having a 38.5% percent coral cover, and a relatively high average fish abundance of economically important fish species. Main coastal resource issues include damaged coastal habitats, mainly from mangrove conversion, and low fish catch due to illegal fishing. Revival of an old limestone quarry may also pose a threat to the coastal environment.

8. **Daanbantayan, Cebu.** Daanbantayan is on the northern tip of Cebu bordering the Visayan Sea. The municipality has 20 barangays, 15 of which are coastal, and 6 offshore islands with only two of them are inhabited. It has a land area of 9,266 ha and a coastline of 43 km. Daanbantayan is situated in one of the most highly fished areas of the Visayan Sea. Of the 70,000 population, about 17% are fishers. Not many mangroves were observed but there are considerable seagrasses and the coral reef is in its incipient stage of development. Thresher sharks, whales, dugongs, sharks, rays and sea turtles are known to inhabit the area.

9. Mangrove clearing, sand and pebble quarrying, and illegal occupation in foreshore areas are among the environmental issues in the area. Blast fishing is also rampant. Tourism, particularly in Malapascua Island, with visible negative impacts on biodiversity.

10. **Mati, Davao Oriental.** Mati is located in the Southeastern part of Davao Oriental covering an area of 79,109 ha. Twenty six barangays comprise the municipality, 16 of which are coastal. The coastal waters consists of (i) Pujada Bay within which is located Balite Bay; (ii) Mayo Bay, and (iii) coastal waters south of Pujada Bay extending to Cape San Agustin. Pujada Bay is a seascape under the NIPAS system.

11. Mati has more than a thousand hectares of mangroves and its coral reefs range from fair to excellent. From a biodiversity point of view, endangered species such as whales, dolphins, sharks, rays and turtles inhabit the waters. The main environmental issues observed in Mati are erosion, mainly due to steep slopes and erodible clay loam soils; pollution, with red tide occurrence becoming more frequent; and reclamation that is associated with illegal occupancy.

C. Potential Environmental Impacts and Mitigation Measures

12. All activities under Component A: Policy and Institutional Strengthening and Development, and Component B: Integrated Coastal Resources Management and Biodiversity Conservation will have positive environmental impact. Component C: Enterprise Development and Income Diversification, and Component D: Social and Environmental Services and Facilities, were identified to be under Category B or activities that may have some adverse environmental impacts and may necessitate an IEE.

13. Component C will support development of small-scale enterprises based on activities in inland areas and coastal waters. Inland activities would not involve any significant civil works, use of equipment, machineries or chemicals, and would not generate harmful effluents, and are normally not expected to have any significant environmental impact. Nonetheless, each scheme will be screened for compliance with government regulations, and environmental mitigation

measures will be incorporated, if required. Activities that would be located on coastal waters would include mariculture, such as sea-weed farming and cage fish farming. Cage fish farming may potentially have some adverse impacts which will be avoided or mitigated through appropriate siting, operation, and monitoring. Prior to the commencement of mariculture, fisherfolks will be trained on technology and management regime of mariculture, including environmental management. The mariculture operation will be monitored as part of the overall resource management plan and environmental problems and issues will be identified in time for appropriate action.

14. Social and environmental facilities under Component D will include development of rural water supply, public toilets, class rooms, day care centers, and small-scale coastal erosion structures – construction of which, if not done properly, may cause environmental problems. An IEE will be prepared for each such scheme identifying potential environmental concerns and recommending appropriate mitigation measures.

D. Environmental Impact Monitoring

15. Environmental impact monitoring will be carried out as part of the overall project performance monitoring system (PPMS). Such monitoring will cover (i) compliance with the Government's environmental requirements, which are similar to ADB's requirements, in carrying out activities under all four components of the Project; (ii) preparation, review and approval of IEE, and other environmental impact assessment reports, if required; (iii) monitoring with the compliance with IEE/EIA recommended mitigation measures during subproject/scheme implementation; and (iv) undertaking of mid-term assessment of the impact on coastal habitats and ecosystems

E. Conclusion

16. The IEE findings suggest that the environmental impacts of the project are expected to be minimal relative to its environmental gains. Based on ADB guidelines, an IEE would suffice. Activities that may have some adverse environmental impacts relate to mariculture and social and environmental infrastructure facilities, and general mitigation measures have been identified in the IEE; each scheme will have separate IEE and EIA, if required, prior to its implementation. Environmental impacts will be monitored and addressed appropriately.

PROJECT COSTS

Table A8.1 Expenditure Accounts Project Cost Summary

Item	(\$ Million)			%	% Total
	Local	Foreign	Total	Foreign Exchange	Base Costs
Investment Costs					
Resource Management /a	4.58	0.51	5.09	10	10
Capacity Building /b	2.03	0.23	2.25	10	5
NGO Services /c	2.86	-	2.86	-	6
Demonstrations and Trials /d	0.95	0.11	1.05	10	2
Dissemination Activities /e	2.26	0.25	2.51	10	5
PPMS, Studies, Surveys and Audits /f	3.43	1.47	4.90	30	10
Consulting Services					
International	0.10	0.91	1.01	90	2
Domestic	2.92	1.25	4.17	30	8
Subtotal	3.02	2.16	5.18	42	10
Equipment and Materials					
Equipment /g	0.78	1.16	1.94	60	4
Materials /h	0.29	0.12	0.42	30	1
Furnishing and Furniture /i	0.14	0.02	0.16	10	-
Subtotal	1.21	1.31	2.52	52	5
Vehicles /j	0.26	1.05	1.31	80	3
Land Purchase /k	0.89	-	0.89	-	2
Civil Works /l	6.61	1.65	8.26	20	17
Implementation and Supervision /m	4.57	-	4.57	-	9
Total Investment Costs	32.65	8.73	41.38	21	83
Recurrent Costs					
Incremental Staff Salaries and Allowances	1.55	-	1.55	-	3
Office Operation and Maintenance	0.30	-	0.30	-	1
Equipment Operation and Maintenance	0.44	-	0.44	-	1
Vehicle Operation and Maintenance	1.12	-	1.12	-	2
Steering and Coordinating Committees	0.02	-	0.02	-	-
Infrastructure Operation and Maintenance	1.73	-	1.73	-	3
Bantay Dagat Costs	3.30	-	3.30	-	7
Total Recurrent Costs	8.46	-	8.46	-	17
Total BASELINE COSTS	41.11	8.73	49.84	18	100
Physical Contingencies	3.78	0.87	4.65	19	9
Price Contingencies	5.44	0.23	5.67	4	11
Total PROJECT COSTS	50.33	9.83	60.16	16	121
Interest During Implementation	-	2.73	2.73	100	5
Commitment Charges	-	0.53	0.53	100	1
Total Costs to be Financed	50.33	13.10	63.42	21	127

\a Includes Planning, Water Zoning, Watershed and Mangrove Management, MPA Management and Habitat Improvement

\b Includes training for DENR, DA-BFAR, LGU and NGO staff and Communities

\c Includes Community Mobilization activities

\d Includes Pilot Testing for Sustainable Financing Mechanisms, Incentive-Disincentive System and Eco-Certification and Demonstrations for Livelihood & Enterprise Development Activities

\e Information, Education and Communication (IEC) campaignss and Dissemination Workshops

\f Includes PPMS, Policy Studies, PCRA and Scientific Surveys and Project Audits

\g Includes Office, Laboratory and Enforcement Equipment

\h Includes materials for publicity and population management program

\i Includes furnishings and furniture for the project offices

\j Includes motorboats, utility vehicles and motorcycles

\k Includes land for the ICRM Centers

\l Includes Social and Environmental Infrastrurcture and ICRM Centers

\m Includes implementation support for Performance Based Incentive-Disincentive System , staffing costs for Project Offices and operating costs for EDUs and Project Offices

Table A8.2: Disbursement Accounts by Financiers
(\$ Million)

Item	Asian Development Bank - OCR		Global Environment Facility		Local Government Units		Government of the Philippines		Community Contribution		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Resource Management	3.50	55.4	2.18	34.6	-	-	0.63	10.0	-	-	6.31	9.9
Capacity Building	-	-	0.71	26.4	1.18	43.5	0.82	30.1	-	-	2.71	4.3
NGO Services	3.21	90.0	-	-	-	-	0.36	10.0	-	-	3.56	5.6
Demonstrations and Trials	1.07	82.2	0.10	7.8	-	-	0.13	10.0	-	-	1.30	2.0
Dissemination Activities	2.64	86.3	0.11	3.7	-	-	0.31	10.0	-	-	3.05	4.8
PPMS, Studies, Surveys and Audits	2.68	44.9	2.47	41.5	0.24	4.0	0.57	9.6	-	-	5.96	9.4
Consulting Services												
International	0.46	40.8	0.56	49.2	-	-	0.11	10.0	-	-	1.14	1.8
Domestic	3.77	76.3	0.68	13.7	-	-	0.49	10.0	-	-	4.94	7.8
Subtotal	4.23	69.7	1.24	20.3	-	-	0.61	10.0	-	-	6.07	9.6
Equipment and Materials												
Equipment	1.38	63.0	0.59	27.0	-	-	0.22	10.0	-	-	2.19	3.5
Materials	0.45	90.1	-	-	-	-	0.05	9.9	-	-	0.50	0.8
Furnishing and Furniture	0.16	90.0	-	-	-	-	0.02	10.0	-	-	0.18	0.3
Subtotal	1.99	69.4	0.59	20.6	-	-	0.29	10.0	-	-	2.87	4.5
Vehicles	1.25	85.6	0.06	4.4	-	-	0.15	10.0	-	-	1.46	2.3
Land Purchase	-	-	-	-	-	-	1.00	100.0	-	-	1.00	1.6
Civil Works	7.40	75.0	0.23	2.3	1.25	12.7	0.03	0.3	0.96	9.7	9.86	15.5
Implementation and Supervision	5.13	90.0	-	-	-	-	0.57	10.0	-	-	5.70	9.0
Recurrent Costs	-	-	1.26	12.2	3.43	33.2	1.86	18.0	3.77	36.6	10.31	16.3
Total PROJECT COSTS	33.08	55.0	8.95	14.9	6.09	10.1	7.31	12.1	4.73	7.9	60.16	94.9
Interest During Implementation	2.73	100.0	-	-	-	-	-	-	-	-	2.73	4.3
Commitment Charges	0.53	100.0	-	-	-	-	-	-	-	-	0.53	0.8
Total Disbursement	36.34	57.3	8.95	14.1	6.09	9.6	7.31	11.5	4.73	7.5	63.42	100.0

\a Includes Planning, Water Zoning, Watershed and Mangrove Management, MPA Management and Habitat Improvement

\b Includes training for DENR, DA-BFAR, LGU and NGO staff and Communities

\c Includes Community Mobilization activities

\d Includes Pilot Testing for Sustainable Financing Mechanisms, Incentive-Disincentive System and Eco-Certification and Demonstrations for Livelihood and Enterprise Development Activities

\e Information, Education and Communication (IEC) campaignss and Dissemination Workshops

\f Includes PPMS, Policy Studies, PCRA and Scientific Surveys and Project Audits

\g Includes Office, Laboratory and Enforcement Equipment

\h Includes materials for publicity and population management program

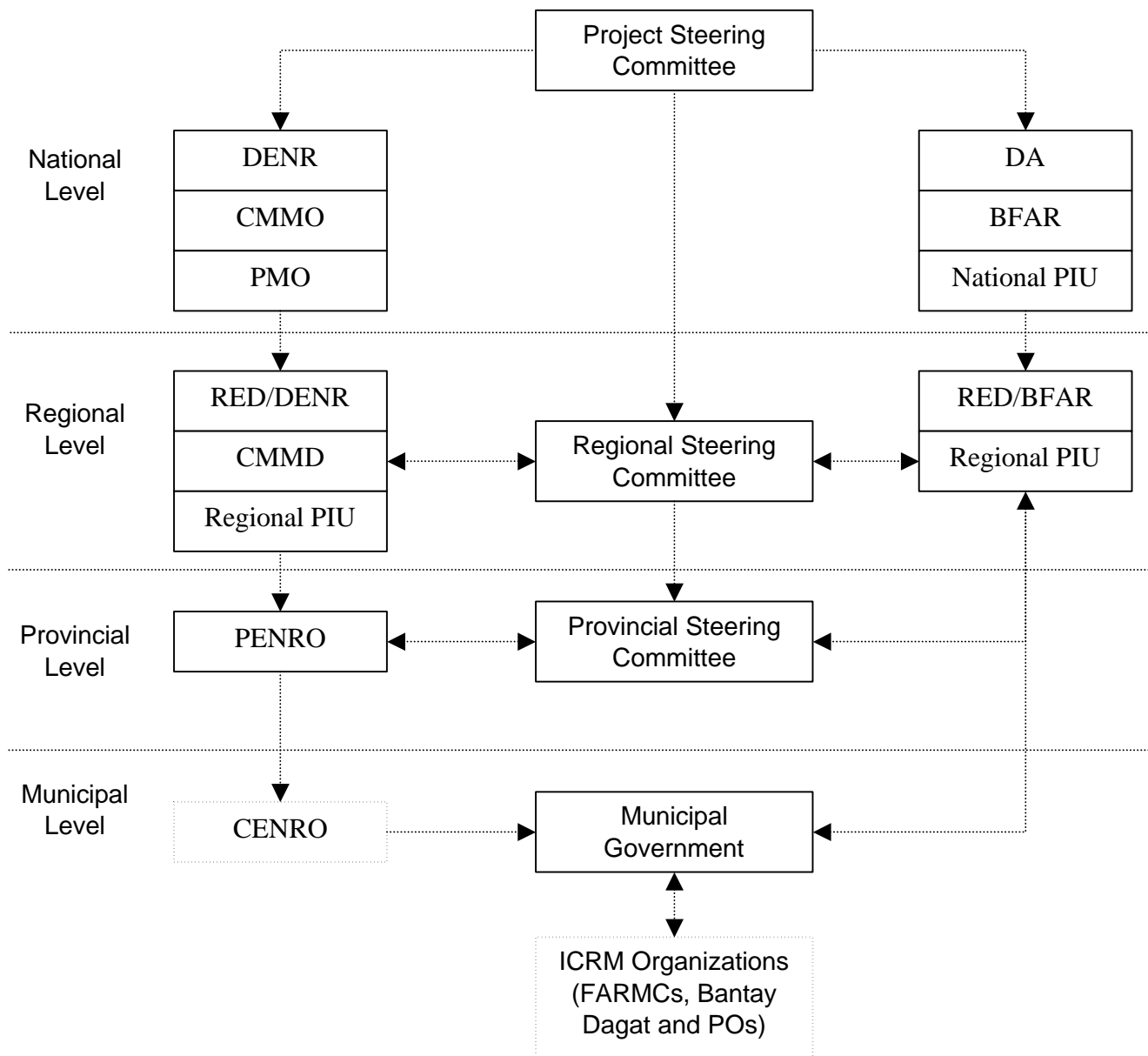
\i Includes furnishings and furniture for the project offices

\j Includes motorboats, utility vehicles and motorcycles

\k Includes land for the ICRM Centers

\l Includes Social and Environmental Infrastrurcture and ICRM Centers

\m Includes implementation support for Performance Based Incentive-Disincentive System , staffing costs for Project Offices and operating costs for EDUs and Project Offices

PROJECT ORGANIZATION CHART

PROJECT IMPLEMENTATION SCHEDULE

[illegible]

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TENTATIVE LIST OF PROCUREMENT PACKAGES

To be prepared during Appraisal

OUTLINE TERMS OF REFERENCE OF CONSULTANTS

A. Introduction

1. A team of international and domestic consultants will be recruited to assist the Government in implementing the Project. The team will also include assisting professionals for providing technical services to provincial and municipal LGUs. Table 13.1 details the individual expert requirements throughout the project period of 6 years.

2. Consultants will be located at the national and provincial levels. Fifteen consultant positions are proposed for the national PMO, four of which are international consultants. Four international consultants are as follows: (i) Integrated Coastal Resources Management (ICRM) Specialist and Project Management Consultant/Team Leader; (ii) Biodiversity Conservation Consultant; (iii) Research Advisor (Biodiversity); and (iv) Project Performance Management Specialist (PPMS). Their terms of reference and main qualifications are outlined as follows.

B. International Consultants

3. **Integrated Coastal Resources Management Specialist/Team Leader.** The consultant shall assist the Project Management Office (PMO) in overall project management and administration, supervise the project consultant team, and refine the scope of work for all project staff consistent with the project framework, indicators and required outputs, in consultation with the Departments of Environment and Natural Resources (DENR) and Agriculture (DA). Overall all technical guidance on component activities and strategies on policy reform and advocacy, biodiversity, local governance, establishment of social and environmental infrastructure and livelihood is to be provided by the TL to the project team in consultation with the DENR, DA, and other relevant national agencies. He/she shall initiate required programs to facilitate project implementation at national, regional, provincial, and municipal levels. The consultant shall ensure the delivery of project reports and outputs required by the Government and ADB and organize periodic project meetings together with PMO and regional project implementation units.

4. The Team Leader shall have a minimum of 10 years experience in project management and ICRM-related work with a Master's degree in natural sciences or other relevant discipline. He/she must have work experience in managing large, multifaceted projects of similar nature in Southeast Asia. Philippine experience will be of advantage.

5. **Biodiversity Conservation Consultant.** The consultant shall ensure that biodiversity conservation is an integrated element of overall integrated coastal resources management activities including policy reform, planning and management interventions, research and monitoring, data gathering, and information, education and communication (IEC). The consultant shall provide technical leadership in the following areas: (i) improving the design and management of marine protected areas (MPAs) and target the development of MPA networks; (ii) develop biodiversity conservation training programs for staff of the Coastal and Marine Management Office (CMMO) of DENR, Bureau of Fisheries and Aquatic Resources of DA (DA-BFAR) and participating municipal governments; and (iii) provide guidance to CMMO, DA-BFAR, academic and scientific organizations, and NGOs for strengthening of eco-certification programs. The consultant shall provide technical input to CMMO and DA-BFAR national and regional offices in the development of programs and activities for habitat restoration and species enhancement. The consultant shall coordinate with the Research Advisor – Biodiversity (RA-BD) and Biodiversity Consultant (domestic consultant) on the development of research programs, approaches, and interventions for biodiversity conservation elements of ICRM and work in tandem with the IEC consultants on the development of multimedia IEC materials,

design and operation of ICRM centers with respect to incorporation of educational displays, exhibits, and activities. The BDC shall prepare regular progress reports on biodiversity conservation activities of the project and assist in the planning and implementation of regional and national biodiversity and MPA management workshops and international conference.

6. The consultant shall possess a Masters degree in natural sciences (fisheries, marine biology, and affiliated courses) and 10 years of work experience in CRM and marine biodiversity conservation, preferably in the Philippines. The consultant shall have sufficient experience working and guiding a group of professionals and must have excellent analytical and writing skills.

7. **Research Advisor – Biodiversity (RA-BD).** The RA-BD consultant shall design and analyze a needs assessment study to identify critical areas of research required to fill data gaps with respect to biodiversity resources and conservation and management needs. He/she shall form a selection committee and develop criteria for formulation and evaluation of research proposals together with the biodiversity consultant, provincial marine ecologists, DENR-CMMO, DENR Ecosystems Research and Development Bureau and BFAR's National Fisheries Research and Development Institute. Other functions of the RA-BD consultant are as follows: (i) monitor progress of targeted research activities, including review of reports, site visits to observe research activities, etc.; (ii) Issue regular progress reports on biodiversity conservation research; and (iii) assist in the planning and implementation of regional, and national biodiversity and MPA management workshops and international conference.

8. The RA-BD consultant shall have a minimum of master's degree in natural sciences and 5 years of work experience in biodiversity conservation research or related activity, demonstrated excellent analytical and writing skills and at least 3 publications in international journals on a relevant subject.

9. **Project Performance Management Specialist (PPMS).** The PPMS consultant (international) shall work with the PPMS (domestic) to assist national and provincial consultants as well as the DENR-PMO and BFAR-PIU in project monitoring and evaluation. The PPMS shall assist in the design and establishment of a project performance management system that shall encompass the following elements: (i) monitoring of physical and financial progress as well as the economy and efficiency in achieving major activities; (ii) monitoring of the level and adequacy of participation of various stakeholders in planning and implementing project activities; (iii) monitoring the Project's social, environmental, and economic impacts including the establishment of benchmark information and data; and (iv) developing a mechanism for making necessary adjustments in project design and implementation arrangements. The PPMS consultant will provide for baseline, midterm and completion surveys and train staff at the RPIUs on the proper monitoring of field activities for ICRM and biodiversity, alternative livelihood, and social and environmental infrastructure. The consultant shall prepare recommendations on the consolidation of existing ICRM-related databases and train DENR and BFAR staff to manage a national database. Lastly, the PPMS consultant shall produce project data summaries and assessments of progress (relative to implementation schedule) and performance (relative to indicators) on a quarterly or annual basis, as needed for reporting purposes.

10. The suggested qualifications for the PPMS consultant are as follows: (i) Masters Degree in coastal/marine resources, management, economics or a relevant field; (ii) 10 years experience in establishing and managing monitoring databases, and project benefits M & E that are user-friendly; (iii) Excellent computer skills, including programming, database management, statistical/ graphics packages, and web-based information management systems with particular applications to coastal management types of data.

C. Domestic Consultants

11. There shall be 11 domestic consultants assigned at the national level. These are (i) ICRM Specialist / Deputy Project Team Leader; (ii) Policy and Institutional Development Specialist; (iii) Legal Specialist; (iv) Information, Education and Communication (IEC)/Training Specialist; (v) Human Resources Specialist; (vi) Biodiversity Specialist; (vii) Research Advisor on Science-based Management; (viii) Enterprise Development Specialist; (ix) Community Development and Gender Specialist; (x) Environmental Management Specialist; and (xi) Project Performance Management Specialist (PPMS). In addition, there shall be 6 ICRM Specialists/Provincial Team Leaders assigned at the provincial level. Forty-four person months of unallocated consultant time are also provided.

12. **Integrated Coastal Resource Management (ICRM) Specialist/Deputy Team Leader (ICRM/DTL).** There shall be an ICRM/DTL (domestic consultant) who shall take over the functions of the ICRM TL (international consultant) in the second year of the project. Functions and qualifications are similar to that of the international ICRM TL.

13. **Policy and Institutional Development Specialist (PIDS).** The PIDS consultant shall perform functions related to policy reform and advocacy and institutional strengthening activities as identified in the logframe. The PIDS shall review the status of implementation of national CRM policy and relevant issuances in coordination with Legal Consultant and spearhead the review and finalization of said national CRM policy. The consultant shall also spearhead the drafting and advocacy work for a CRM legislation and submit such to Congress. The consultant shall ensure that DENR and DA-BFAR are fully involved in the review of policies and shall assist the two agencies in the development of inter-agency mechanisms at the national and regional levels. Institution building activities will focus on the supervision of the HR consultant and IEC/Training Consultant in the development of the HR Plan, capacity-building program and related policy agenda. Likewise, the PIDS consultant shall spearhead the development of a national CRM incentive/disincentive system in coordination with the ICRM TL and the PPMS consultant.

14. The desired qualifications of the PIDS consultant are as follows: (i) Post-graduate degree in Social Sciences (Economics, Public Administration, Sociology, Philosophy or allied courses); (ii) At least 10 years experience in policy research and analysis, advocacy and institutional capacity-building preferably in the general area of coastal resources and environmental management; and (iii) willing to work with interdisciplinary groups, willing to travel, and must have good writing and communication skills.

15. **Legal Specialist (LS).** The main tasks of the legal specialist are as follows: (i) provide legal research services, legal opinions, and recommendations to DENR, BFAR, and LGUs on proposed policy reforms pertaining to the identified issue areas in CRM; (ii) assist DENR, BFAR and LGUs in the development of policy instruments required in the course of implementation of the Project, including the drafting and development of DAOs and municipal ordinances; and (iii) assist in the development of the ICRM incentive/disincentive system particularly its legal implications. The legal specialist shall also assist in the development of capacity-building programs to strengthen policy and decision-making offices and personnel of DENR and LGUs. In coordination with the PIDS and the IEC specialist, the legal specialist shall help develop relevant IEC materials for dissemination to DENR and DA-BFAR regional offices as well as participating provinces and municipalities.

16. The legal specialist shall possess a Bachelor of Laws degree from a reputable law school and must be a member of the Bar. In addition, the legal specialist must have at least 10 years experience in resource or environment-management aspects, preferably involving policy

research pertaining to coastal and marine resources, and advanced training or education in the management of coastal/ marine resources.

17. Information, Education, and Communication/Training Specialist (IEC/TS). The IECTS shall design and implement IEC and advocacy campaign to increase levels of awareness of CRM and marine biodiversity conservation. In coordination with CMMO Information Division, the IECTS shall prepare and coordinate preparation and production of national and provincial IEC materials and conduct national CRM awareness surveys. As training consultant, he/she shall oversee the preparation of a training needs assessment and design and evaluation of CENRO curriculum in coordination with DENR-CMMO and HR division. The IECTS shall oversee the implementation of the training program at national, regional, and provincial levels and assist in the development of guidelines for contracting of overall training contractor to the Project. He/she must possess a post-graduate degree in communication, journalism, and/or education with a particular emphasis on environmental education, at least 10 years experience performing the role of IEC and/or Training Consultant for similar environment-related project, and evidence of materials and programs initiated and conducted by the Consultant in past jobs that are relevant for the ICRMP scope of work and responsibilities.

18. Human Resource Specialist (HRS). The HRC shall assess the institutional capacities of DENR offices performing ICRM functions both at national and local levels and that of the LGUs in Project areas at multiple levels of government. He/she shall work with DENR central office HR and training department, as well as the concerned regional office, to determine the background, work performance, and career plans of CENROs and other staff requiring training and higher education and prepare an HR plan focusing on enhancement of staff capabilities in CRM and accompanying implementation schedule. He/she shall assist CMMO and regional offices in the identification and prioritization of staff for training, attendance in conference, educational assistance, by developing criteria and system for recruitment and selection and draft and evaluate contracting arrangements for training providers.

19. The HRC shall possess a post-graduate degree in psychology, sociology, education, or allied field in HR management and development, 10 years experience in institutional strengthening activities especially of agencies of GOP, familiarity with government systems and procedures, such as civil service rules and regulations, DBM procedures, etc., and excellent writing and communication skills.

20. Biodiversity Specialist (BDS). The BDS (domestic) shall ensure that biodiversity conservation is an integrated element of overall ICRM activities including policy reform, research and monitoring, data gathering, IEC, and the design of planning and management interventions, in coordination with the BDC (international) and the RA-BD. The BDS shall assist and take-over the functions of the BDC (international) and ensure the implementation of biodiversity strategies planned for under the project. Similar qualifications apply.

21. Research Advisor - Science-based Management (RA-SM). The RA-SM shall design and implement a workshop for setting research agenda to support science-based management of coastal resources and provide assistance to DENR-CMMO and ERDB in developing linkages among scientists and resource managers at the national and local levels. The RA-SM shall develop guidelines for the selection of research proposals from academe and other DENR units and a process for delivering research results to managers. He/she shall coordinate with other members of the Consultant Team, notably the PIDC and the RA-BD on the evaluation of the national research agenda on CRM. The RA-SM shall have a minimum of M.S. degree in natural sciences (Ph.D. preferred) and 10 years of work experience in CRM, conservation, fisheries, or related activity and excellent analytical and writing skills.

22. **Enterprise Development Specialist (EDS).** The EDS shall coach and train assisting professionals, the LGU CRM unit, staff of provincial enterprise development units (EDUs) and peoples' organizations on the identification of enterprise opportunities, market linkages and potential financial intermediaries. The EDS shall take the lead in building up the capability of EDUs as one-stop service center on sustainable livelihood/enterprise development through mentoring, technical guidance, workshops, and other means. The EDS shall supervise and provide oversight to Enterprise Development Assisting Professionals. The key qualifications of the EDS are: Masters degree in liberal arts, economics, business, or related field, 10 years business and marketing experience in the private sector and in particular, experience in community-based and conservation-oriented enterprise development.

23. **Community Development and Gender Specialist (CDGS).** The CDGS shall develop the framework and manual of operations for Social Preparation and Community Development aspects of the project including mechanisms and procedures for community mobilization, stakeholder's participation, and NGO consultations. He/she shall coordinate with the other Consultants to develop guidelines for gender analysis and mainstreaming in ICRMP. He/she shall design and lead socioeconomic assessments for Project M & E and monitor reports and evaluate performance of NGOs, academe, or groups that are contracted for the Project. Lastly, the CDGC shall oversee Community Development and Gender Assisting Professionals. The key qualifications of the CDGS are as follows: master's degree in community development, social work, sociology or anthropology, with 5 years practical experience in community development involving gender; indigenous people in the Philippines and resettlement; and minimum of 2 years of managerial and coordination work, preferably with some exposure on alternative community education and mobilization methodologies for CRM, gender analysis and planning, and PCRA. The CDGC must be willing to spend considerable time to travel to the project field areas.

24. **Environmental Management Specialist (EMS).** The EMS shall perform the following tasks: (i) supervise and oversee the activities of the Social and Environmental Infrastructure Assisting Professionals (SEIS-AP) at the provincial level; (ii) coordinate with SEIS-APs in the preparation of IEE and securing the required permits or ECCs for the social infrastructure, enterprise development, and environmental enhancement projects; (iii) coordinate with and assist the PIDS in the formulation of policies and guidelines relevant to environmental protection, especially in the areas of foreshore management, erosion, and pollution; and (iv) coordinate with and assist the HR Consultant in the development and preparation of training modules related to environmental management. The EMS must have a B.S. degree in environmental science, or other applied sciences and a minimum of 10 years experience in environmental management, with specialized experience in planning, EIA, solid/hazardous waste, and sanitation or water supply.

25. **Project Performance Management Specialist (PPMS).** The PPMS (domestic) shall work with the PPMS (international) to assist national and provincial consultants as well as the DENR-PMO and BFAR-PIU in project monitoring and evaluation. The functions and qualifications for the PPMS (domestic) are similar to that of the international PPMS.

D. Provincial Level Assistance

26. There shall be 6 ICRM Specialists/Provincial Team Leaders (domestic consultants) assigned to the six sites. A major responsibility of this Team will be to guide and mentor the field level operations that include all NGO and/or academic contracts for work at the provincial, municipal, and barangay levels as specified in the Project logical framework and workplans as they are developed for each province. Together with the Assisting Professionals (AP)s, the following milestones are expected to be completed by the Provincial Teams: Coastal area profiles completed and utilized through functional municipal coastal databases; Barangay and

municipal level FARMCs organized in all appropriate areas; Municipal/city governments allocating budget for CRM; Municipal/city ordinances enacted for CRM; Multimunicipal or province-wide CRM organization formed and active; Implementation of various CRM projects with LGU support; Enterprises developed and engaging specified numbers of beneficiaries; and Social infrastructure activities implemented.

27. **ICRM Specialists/Provincial Team Leaders (PTL).** The PTLs shall serve as overall coordinator and facilitator for all provincial area activities and area staff for the Project in coordination with the DENR and BFAR PIUs and the provincial and municipal CRM offices established for project implementation. The PTLs shall brief LGU officials on the project and identify key stakeholders in the area, prepare province-wide directory containing contact persons, and identify key stakeholders. He/she shall facilitate the CRM planning and implementation process in targeted municipalities and province-wide through the creation or strengthening of multi-municipal and provincial CRM planning, implementation, and enforcement activities and participation in the provincial CRM committees. The PTL shall compile and be responsible for baseline data for the preparation of coastal area profiles and monitoring data for the Project M & E system at the provincial and municipal levels. In coordination with national level consultants, assist in developing and conducting training sessions for the CRM implementation Team. The PTL must have a Masters degree in environmental, resource management, or socioeconomics, 7 years of CRM-related work at field level, experience in project management and team leadership, and be an effective communicator and facilitator in public forums and technical working groups.

E. Assisting Professionals (AP)

28. There shall be 6 teams of APs assigned to the 6 provinces consisting of the following: Marine Ecologist, Enterprise Development Assistant, Community Development and Gender Assistant, and Social and Environmental Infrastructure Engineer.

29. **Marine Ecologists (ME).** The MEs shall provide technical assistance for the onsite activities at the provincial and municipal levels related to training, capability-building, and M & E activities, especially in the resource ecological and socioeconomic assessments, PCRA, and marine biodiversity conservation activities. They shall provide technical inputs on the development of MPA networks, habitat restoration, and species enhancement/protection activities and facilitate the implementation of research, extension, and development activities relating to marine ecological and biodiversity conservation concerns. The MEs shall work with the International and National Biodiversity Consultants to assess, design, plan and implement biodiversity interventions consistent with policies of DENR and DA-BFAR. They shall also act as liaison persons and coordinate with municipalities (LGUs) so that they contribute to the overall effective implementation of ICRMP and assist in preparing IEC materials, in coordination with the IEC consultants, for use in Project region/province-specific IEC publications. The MEs shall have a minimum of a Bachelor's degree in natural sciences and knowledge of coastal management issues, at least 5 years of work experience in CRM, biodiversity conservation, or related activity, and experience working and relating with local coastal communities.

30. **Enterprise Development Assistant (EDA).** The EDAs, in coordination with the EDC, shall assist in the establishment of the Enterprise Development Units. This task includes the review and assessment of livelihood/enterprise programs in the municipalities, identification of products and markets, conduct of feasibility and market studies, and identification of possible financial intermediaries. The EDAs shall assist the EDC in implementing required training programs and all other ICRMP enterprise development activities and events. The prospective EDAs must have a college degree in liberal arts, economics, or business and at least 2 years business and marketing experience in the private sector and more specifically in community-based and conservation-oriented enterprise development.

31. **Community Development and Gender Assistant (CDGA).** The primary task of the CDGAs is to coordinate with the contracted NGOs, academe, or groups to implement the Project framework on community mobilization, stakeholders participation, and gender analysis and mainstreaming. They should ensure that community activities on enterprise, ICRM, and planning for social and environmental infrastructure are orchestrated properly. As such, they should assist NGOs and communities in establishing linkages with LGU in the municipal level and other groups working in CRM and related fields and together with the RPIUs, monitor reports and evaluate performance of NGOs, academe, or groups that had been contracted. Other tasks include: assistance in determining and implementing additional training on gender awareness and sensitivity and gender planning for RPIUs; coordination with national agencies at the municipal level (i.e., DOH, DSWD) in the actual implementation of subcomponents on day-care centers and the Progressive Population Management Project. The prospective candidates for CDGAs should have a Bachelors degree in social sciences (sociology, social work, community development, etc) and at least 5 years practical experience in community development and gender. A minimum of 2 years of managerial and coordination work, preferably with some exposure on alternative community education and mobilization methodologies for CRM, gender analysis and planning, and PCR is also preferred. Lastly, the CDGAs must be a resident of the province or should be willing to take temporary residence in said area.

32. **Social and Environmental Infrastructure Engineer (SEE).** The SEEs shall assist the municipalities and province in the identification, planning, and design of necessary social and environmental infrastructure that would contribute to the overall objectives of integrated coastal resource management or prevent/mitigate further damage to the coastal environment from externalities resulting from anthropogenic activities. As such, the SEEs shall formulate an environmental management plan and environmental monitoring program, including proposals for social development, contingency, institutional, and IEC plans for the specific subprojects consistent with environmental regulations and standards in use in the Philippines. The SEEs shall undertake consultations with the national/local officials and conduct scoping sessions, as part of the EIA process, at the Project site or in any other designated places convenient to the interested/affected person(s) or stakeholders for their participation in the decision-making process and coordinate with the Environmental Consultant on procedures for preparing an IEE or EIA, as needed. Key qualifications of the SEEs are as follows: a B.S. Degree in Civil/Sanitary Engineering or other applied sciences and a minimum of 5 years experience in the identification and planning of social and environmental infrastructure requirements.

F. Nongovernment Organizations

33. The Project will engage qualified NGOs to assist local governments in mobilizing communities for resource management, enterprise development and in implementing social infrastructure and facilities. NGOs will be selected on a competitive basis following procedures similar to the selection of consultants. Details on the scope of NGO services and terms of reference will be prepared during project appraisal.

Table 13.1: Consulting Services and Supporting Technical Staff

Expertise	No. of Persons	Person-months						
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
A. CONSULTANTS								
1. International Consultants								
a. ICRM and Project Management Consultant/Team Leader	1	6	9					15
b. Biodiversity Conservation Specialist	1	6	6	5	3		2	22
c. Research Advisor (Biodiversity)	1		1	1	1			3
d. Project Performance Management Specialist (PPMS)	1		4	2				6
Total International Person-Months	4							46
2. Domestic Consultants								
<u>National Level</u>								
a. ICRM and Project Management Consultant/Deputy Team Leader	1	6	11	11	6	3	3	40
b. Policy and Institutional Development Specialist	1	6	11	9	8			34
c. Legal Specialist	1	6	6	6	6			24
d. Information, Education and Communications (IEC) Expert	1	6	6	6	6			24
e. Human Resources Specialist	1	3	3					6
f. Research Advisor (Science Management)	1	1	1	1				3
g. Environmental Management Specialist	1	3	6	6	6			21
h. Community Development and Gender Specialist	1	6	11	9	8			34
i. Enterprise Development Specialist	1	6	7	7	7	6		33
j. PPMS	1	6	6	4	4	4	6	30
k. Biodiversity Specialist	1		6	11	6			23
l. Unallocated		11	11	11	11			44
<u>Provincial Level</u>								
a. ICRM Consultant/Provincial Team Leader	6	6	11	11	11	5.5	2.5	282
Total Domestic Person-Months	17							598
Total Consultants' Person-Months	21							644
B. ASSISTING PROFESSIONALS								
1. Marine Ecologists	5	6	9	9	6	3	3	180
2. Social and Environmental Infrastructure Engineer	6	6	9	6	6			162
3. Community Development/Gender Assistant	6	6	11	6	6			174
4. Enterprise Development Asistant	6	6	11	6	6	6		210
Total Assisting Professionals Person-Months	23							726

FINANCIAL AND ECONOMIC ANALYSES

A. Introduction

1. The project will facilitate sustainable management of coastal resources through: (i) strengthening overall policy and legal framework; (ii) building capacities of communities, civil society groups, and government institutions at national, provincial and municipal levels; (iii) undertaking participatory resource use planning and management, biodiversity conservation, and resource enhancement; and (iv) providing social and environmental services and facilities. By reducing the decline in quality and productive capacity of coastal habitat, the Project will lead to direct and indirect economic benefits including improved fish catch, reduced erosion in foreshore and upland areas, increased local and global use values²⁰.

2. The development of alternative and supplemental incomes, through viable livelihood and micro-enterprises, will relieve pressure on the coastal resources. The progressive population management program in the coastal barangays, with education on reproductive health and the linkage between population and environmental quality, will alleviate future population pressure on coastal resources.

B. Methodology

3. Project has an implementation period of 6 years, while economic life of the Project interventions is expected to be 20 years.

1. Exchange Rate and Discount Rate

4. For this analysis, the prevailing inter-bank exchange rate, i.e., P56 per US dollar has been used. A discount rate of 12% has been used to ascertain the net present value (NPV) and also as the cut off point for the economic internal rate of return (EIRR).

2. Price Assumptions

5. Financial benefits and costs are estimated in constant 2003 terms. Financial prices are based on findings of the surveys undertaken during the feasibility study. The analysis uses a domestic price numeraire where the shadow exchange rate factor (SERF) has been used to adjust the prices of traded commodities to the domestic levels. The SERF is assumed to be 1.2, which is the standard SERF for the Philippines as indicated in the Government's Investment Coordination Committee's Project Evaluation Procedures and Guidelines. The values of coastal resources and the products from livelihood activities have been taken at the border price levels and their economic values have been derived by adjusting these with the SERF. To take into account local unemployment and under employment, labor costs have been shadow priced at 0.61.

3. Natural Resource Values

6. The Project will undertake an integrated approach to managing the coastal resources, which will imply focus on the coastal resources as well as upland resources such as the watersheds. There is abundant literature on valuation of these resources in the Philippines and a detailed discussion is presented in the Supplementary Appendix C. The main resource values associated with the coral reefs originate from: fisheries for local consumption, erosion control, local use (tourism with on-site residence), and global use (fisheries for live export, off-site tourism, and aesthetic/biodiversity value Table A14.1 summarizes the use values for the coral

²⁰ Most commonly documented local and global use values include; tourism, recreation and habitat/refugia.

reefs for various levels of habitat quality or condition. For the purpose of this analysis, median values for each of the three habitat quality or condition strata have been used and their values have been adjusted to the 2003 levels by the G-5 Manufacturing Unit Value (MUV) Index.

7. The main benefits from the mangroves include: wood, fisheries, erosion control, waste treatment, recreation, and habitat/refugia (biodiversity). Table 14.2 summarizes the use values for the mangroves under different management regimes. As the Government of Philippines has banned cutting of the mangroves, the analysis excludes any benefits expected from the wood use. The resource use values for the erosion control and waste treatment have so far not been quantified for the Philippines; however, the literature shows these have potentially high values. For the purpose of this analysis, the values for erosion control and waste treatment have been conservatively estimated at 10% and 5% of estimated values for other countries, respectively. The values have been adjusted to the 2003 levels by the G-5 Manufacturing Unit Value (MUV) Index.

8. The wood and soil erosion abatement are the primary benefits from the watersheds. With the ban on logging in the watershed areas, the analysis excludes any benefits from the wood. The recent estimates suggest that one hectare of mature plantation can annually prevent loss of 8.58 tons of soil²¹, which is estimated at P736/ton in the 2003 terms.

Table A14.1: Sustainable Coral Reef Resource Use Values by Habitat Quality/Condition for the Philippines, in 1998 Terms

Resource Use	Production Range			Range of Potential Annual Revenue (\$)		
	Poor	Fair	Excellent	Poor	Fair	Excellent
Sustainable fisheries (local consumption), tons	2 - 6	4 - 12	10 - 30	3,000 - 9,000	6,000 - 18,000	15,000 - 45,000
Sustainable fisheries (live fish export), tons	0.1 - 0.5	0.25 - 0.75	0.5 - 1.0	1,000 - 5,000	2,500 - 7,500	5,000 - 10,000
Tourism (on-site residence), number of visitors	20 - 200	40 - 400	100 - 1,000	400 - 4,000	800 - 8,000	2,000 - 20,000
Tourism (off-site residence), number of visitors	100 - 200	200 - 400	500 - 1,000	500 - 1,000	1,000 - 2,000	2,500 - 5,000
Coastal protection (prevention of erosion)				1,000 - 5,000	2,000 - 10,000	5,000 - 25,000
Aesthetic/biodiversity value (willingness-to-pay)			600 - 2,000	480 - 1,600	960 - 3,200	2,400 - 8,000

Source: White, A. T. and A. Cruz-Trinidad. 1998, The Values of Philippine Coastal Resources: Why Protection and Management are Critical, Cebu City, Philippines: Coastal Resource Management Project

9. Based on the preceding discussions, the financial resource use values for coral reef, mangroves and watershed have been updated to the 2003 levels and are summarized in Table 14.3.

²¹ Estimated value of soil derived through replacement method by Pabuayon, I. M.; Cruz, R. V. O.; Calderon, M. M.; Rivera, M. N.; Lumanta, L. C. and Tolentino, N. O., 2000, Economic Valuation of Philippine Bamboo Resources, A Final Report

Table A14.2: Sustainable Mangrove Resource Use Values by Management regime for the Philippines, in 1998 Terms

Resource Use	With Re-Plantation (\$/km ² /yr)	Managed, Naturally Regenerated (\$/km ² /yr)
Direct Uses:		
Wood Products	15,600	9,000
Fish	53,800	53,800
Indirect Uses:		
Erosion Control/Disturbance Regulation ^a	183,900	183,900
Waste Treatment ^a	669,600	669,600
Recreation	65,800	65,800
Habitat/Refugia (Biodiversity)	16,900	16,900

^aEstimates for Philippines are not available and the value is based on studies undertaken for other countries.

Source: White, A. T. and A. Cruz-Trinidad. 1998, The Values of Philippine Coastal Resources: Why Protection and Management are Critical, Cebu City, Philippines: Coastal Resource Management Project

Table A14.3: Resource Use Values in the Financial Terms

Resource	Price (P/ton)	Values in 2003 Terms (P/km ² /Year)		
		Excellent	Fair	Poor
Coral Reef				
Fisheries	40,000			
Erosion Control		873,000	873,000	349,000
Local use		640,000	256,000	128,000
Global Use		1,338,000	739,000	442,000
Mangroves				
Fisheries	40,000		3,216,000	
Fuelwood			-	
Erosion Control			1,069,800	
Waste Treatment			3,895,000	
Global Use (Recreation)			3,828,000	
Global use (habitat/ refugia)			983,000	
Watershed				
Averted Soil Loss	736		631,000	

4. Enterprise Models

10. During course of the feasibility study, interviews and focus group discussions were conducted with entrepreneurs and key informants in the study municipalities, which provide the basis for setting up enterprise models for the representative livelihood/ micro-enterprise schemes. The range of representative activities include: (i) land-based (e.g., production of organic fertilizer, fiber and coir dust, rope and twine, geo-textile nets as well as raising of swine); (ii) fishery-related (such as tilapia culture in earthen ponds, salt making, dried seaweed production, fish cage culture, and dried salted fish production; and (iii) micro-enterprise (e.g., soap making, and mushroom culture). The selection of these representative enterprises, aside from being financially viable, takes into account fisher folks' limited financial, technical and entrepreneurial capabilities.

11. The models for the enterprises span over a period of six years, which provides for an establishment period of one year and an operational period of five years. The useful life of the structures such as sheds and boats has been assumed to be six years while that for the tools and other capital investment has been taken as three years.

12. The working capital requirement for the enterprises have been estimated on the basis of the costs required for initiating production operations and depending on type of the enterprise the requirement has been assumed to range between 1 and 3 months.

C. Project Benefits

1. Project Coverage and Benefit Area

13. The Project will cover 65 municipalities in 6 provinces and will build capacities of the 600 national, regional, provincial and municipal level government staff. Additionally, the Project will train 975 community members and NGOs in integrated coastal resources management and will strengthen bantay dagats in the participating municipalities. The Project will also provide social and environmental infrastructure in 130 coastal barangays and will conduct a progressive population management program in the 65 municipalities. Moreover, the Project will facilitate establishment of 780 enterprises to provide alternate and supplemental livelihood, which will directly benefit 7,800 fisher folk.

14. During the feasibility study, six municipalities were studied in detail and sufficient information on the resources was obtained through secondary sources for a seventh municipality. In absence of the detailed information for rest of the municipalities, the analysis has been undertaken for seven municipalities where the benefits are based on the resources available within these municipalities and the overall project costs have been taken on a pro rata basis.

15. In the study municipalities, the data available from the municipal coastal databases and the assessments undertaken through the feasibility study have been used to classify the coastal resources on basis of their habitat quality/condition. Table 14.4 summarizes the coral reef and mangrove areas in the study municipalities.

Table A14.4: Coral Reef and Mangrove Area in the Study Municipalities

Municipality	Coral Reef Area (km ²)			Mangrove Area (km ²)
	Excellent	Fair	Poor	
Masinloc, Zambales	0.91	1.37	7.72	0.10
Claveria, Cagayan	0.01	0.01	0.09	-
Daanbantayan, Cebu	1.83	2.73	15.43	0.05
Lazi, Siquijor	0.18	0.27	1.54	0.03
Bagangga and Mati, Davao Oriental	3.66	5.47	30.87	17.20
Batuan, Masbate	0.37	0.55	3.09	2.60
All Study Municipalities	6.96	10.40	58.74	19.98

Note: feasibility study Assessments

16. The Project will establish 50 marine protected areas (MPAs), each of which on average will include a no take zone of 100 hectares (1 km²), or 5,000 hectares (50 km²) in aggregate. For the purpose of this analysis, it has been assumed that the no take zones will be coral reef areas of fair habitat quality/condition and will be proportionally divided between the municipalities. Similarly, the Project will re-establish 2,500 hectares of mangroves and 3,000 hectares of watersheds, and rehabilitate 3,500 hectares each of mangroves and watersheds, which have also been assumed to be distributed proportionally between the municipalities. For the purpose of this analysis, the livelihood and micro-enterprises have also been assumed to be proportionally distributed between the study municipalities.

2. Quantified Benefits

17. In the without Project scenario, it is assumed that the productivity of the coral reefs will decline at a rate of 2% per annum, the historic rate of decline recorded for the Philippines²².

²² McAllister, D. E. 1988, Environmental, Economic and Social Costs of Coral Reef Destruction in the Philippines, *Galaxea* 7: 161-178

While the Project anticipates to check the decline in productivity and significantly improve the productivity levels, the analysis conservatively assumes that in the with Project scenario, the decline rate in the coral reef productivity will only be halved in the participating municipalities. As the MPAs and the no take zones within these comprise coral reefs of fair condition, the without Project scenario has been assumed as in case of the coral reefs. Given that the no take zones will be a fraction of the municipal waters within each of the municipalities and will be focus of more intense activities, the productivity gains from the no take zones are anticipated to increase at 10 percent per year or the productivity to triple in 20 years²³. However, the analysis conservatively assumes that the productivity will instead double over the period of 20 years.

18. In case of the mangroves, the resource values and the productivity are expected to decline at a rate of 1.6% per annum, the historic decline rate for the Philippines. With enrichment planting and effective enforcement of regulations through community participation, the productivity of mangroves is anticipated to improve in the participating municipalities. However, for the purpose of this analysis, it is conservatively assumed that the annual decline in the mangrove productivity will be reduced by half to 0.8% in the “with project” scenario. In addition, it is assumed that the areas of mangroves reestablished with the community participation will reach the full productivity by year 5 and thereafter the productivity levels will be maintained through continued community management.

19. With the ban on logging in the watersheds, it is assumed that in the “without project” scenario the soil erosion abatement capacity in the partially denuded forest areas will be maintained. In the “with project” scenario, the rehabilitation in the form of timber stand improvement is assumed to recover the soil erosion abatement capacity by one third over a period of 5 years.

20. In case of the completely denuded forest areas, the soil erosion increase with time; however, in absence of data on the trends in the soil erosion, the analysis assumes that erosion levels are steady. In the with project scenario, the re-forested watersheds are assumed to reach their full soil erosion abatement capacity by year 5.

21. In case of the livelihood and micro-enterprises, the analysis assumes that all enterprises will be incremental. While it is anticipated that the enterprise development activities will continue beyond the Project implementation period, the analysis conservatively considers only those enterprises that will be established during the Project implementation.

3. Non-Quantified Benefits

22. Apart from the benefits discussed in the preceding sections, there are a number of benefits that cannot be readily quantified, e.g.; (i) improved nation wide coastal resources management resulting from improved policy and legal framework and institutional strengthening of Department of Environment and Natural Resources, Department of Agriculture’s Bureau of Fisheries and Aquatic Resources and municipal local government units; (ii) improved coastal resources management in neighboring municipalities resulting from the information, education and communication campaigns in the Project area; (iii) improved revenues for the local government units through introduction of user fees; (iv) improved ecological governance

²³ The benefits from establishing MPAs were first documented by the Silliman University Marine Laboratory at the Sumilon Island fish sanctuary, which was established in 1974. This initial experiment on coral reef management, which prohibited all types of fishing activities on a portion of the island over a period of 8 years, allowed researchers to monitor and collect data on the regenerative capacity of the reef under an effective management scheme. Observed benefits included: (i) an improved coral reef substrate condition; (ii) a tripling of the individual fish abundance per 500 m² with the most significant increase among those fish targeted by fishers; and (iii) substantial increases in yearly fish catch to fishers on the Sumilon Island reef, not in the sanctuary, from about 14 t/km²/yr to almost 36 t/km²/yr or a regeneration rate of about 12 percent/yr (Russ and Alcala 1996).

resulting from empowerment of coastal communities in resources management and in Project implementation; (v) reduced cost and improved quality of social and environment related infrastructure resulting from greater community participation in planning, designing and construction activities; and (vi) improved community welfare resulting from provision of the social and environmental services and infrastructure.

D. Assessment of Financial Returns from Livelihood Enterprises

23. The results of the financial analysis are summarized in Table 14.5 and the details are provided in the Supplementary Appendix C. The results show that the financial rates of return (FIRR) for the enterprises are anticipated to range from 70 to 289%. Depending on the size of enterprises, the annual income net of cash and in kind costs from these enterprises ranges from P 7,800 to P93,000. Returns to labor, which are calculated by dividing revenue, less all costs except labor, by the amount of labor required, are found to be significantly higher than the minimum wage rate applied in the rural areas for agriculture-related activities.

Table A14.5: Anticipated Financial Returns from Representative Livelihood/ Micro-enterprises

Livelihood Schemes/ Micro-enterprises ^a	Investment Costs (P)	Annual Revenue (P)	Annual Production Cost (P)	Annual Net Income (P)	FIRR (%)	Employment Generation (person day)	Return to Labor (P)
Land-based Livelihood Projects							
Organic Fertilizer	9,524	21,840	9,654	12,186	144	30	479
Swine	8,723	41,400	21,573	19,827	198	120	732
Fiber and Coir Dust	10,387	29,765	12,557	17,208	200	98	250
Rope and Twine	17,610	94,910	48,589	46,321	289	338	210
Geo-textile	22,732	97,861	66,795	31,066	158	116	341
Fishery-related Livelihood Projects							
Tilapia Culture	6,678	13,714	5,843	7,879	121	30	337
Salt Making	8,354	28,800	15,323	13,477	190	80	242
Seaweed Culture	29,044	97,200	47,255	49,945	118	250	273
Rabbit Fish Cage	53,370	74,880	35,882	38,998	75	80	561
Dried Salted Fish	24,467	136,515	94,605	41,911	143	127	262
Micro-Enterprise Projects							
Soap Making	51,446	272,876	183,342	89,533	174	264	412
Mushroom	142,683	202,500	109,127	93,373	70	528	250

^a Livelihood projects refer to income-augmenting activities with volume of production generating revenue of less than P100,000/yr and micro-enterprise projects refer activities with volume of production generating revenue of more than P200,000/yr

24. It is typical of livelihood/micro-enterprise schemes to exhibit very high FIRR values (mainly due to low capital investment and production costs relative to high revenues), which, in turn, are highly volatile to changes in output prices and production cost. This is confirmed by the results of the sensitivity analysis conducted on the FIRR values of each livelihood/micro-enterprise scheme. The results of the sensitivity analysis also indicate that the FIRR values of the enterprises are more sensitive to decreases in output price or revenue (i.e., sensitivity indicator ranging from 1.84 to 4.22) than to increases in costs (i.e., sensitivity indicator ranging from 1.21 to 3.51).

E. Assessment of Economic Returns

1. Project Investment and Recurrent Costs

25. All costs are in constant year 2003 terms. Investment costs are net of price contingencies, interest during construction and taxes and duties. Foreign cost content of the costs has been adjusted by the SERF while the local component has been taken at its full value.

26. While it could be argued that the scope of benefits from the policy aspects, institutional development, capacity building and community development will not be limited to the Project area, the analysis takes into account costs of all the Project activities. For analyzing returns to the study municipalities, the costs for the study municipalities have been derived on a pro rata basis.

2. Economic Worth

27. The economic viability was undertaken based on the calculated stream of net incremental costs and quantified benefits attributable to the Project activities over a period of 20 years. The economic internal rate of return (EIRR) has been assessed for study municipalities and has been extrapolated for the Project with the assumption that the study municipalities are representative of the Project as a whole. The calculations are detailed in Supplementary Appendix C and results are summarized in Table 14.6. The EIRR for the study municipalities is estimated at about 15.9 percent and the economic net present value (ENPV) at a discount rate of 12% is estimated at P61.0 million. The Project EIRR is also estimated at about 15.9 percent and the economic net present value (ENPV) at P566.2 million.

Table A14.6: Anticipated Economic Performance

Scenario	Study Municipalities		Overall Project	
	EIRR (%)	ENPV (P Million)	EIRR (%)	ENPV (P Million)
Base Case	15.9	61.0	15.9	566.2
- 10% cost overrun	14.3	37.8	14.3	294.6
- 10% decline in Incremental Benefits	14.1	31.7	14.1	351.2

28. Sensitivity of the Project's anticipated economic worth to critical factors was analyzed and switching values are presented in Table A14.7. The results show that the Project is anticipated to remain economically viable at cost overruns of up to 33.9% and reduction in incremental benefits of up to 20.8%. Similarly, the Project is anticipated to remain economically viable at shortfalls in incremental fish catch, incremental coral reef benefits and incremental mangrove benefits by 110.5%, 101.4% and 33.8%, respectively.

F. Distribution Analysis and Poverty Impact Assessment

29. Table 14.8 summarizes the poverty impact analysis and distribution analysis for the study municipalities. The net economic benefits from the Project (difference in net present value of economic and financial benefits) are estimated to be about P65.3 million of which 51% are expected to accrue to the fisher folk directly while another 31% are expected to accrue to the coastal communities. Other gains to the economy accruing from the global use values are estimated at P17.9 million, which offset the net resource outflow of ₱6.28 million from the Government.

Table A14.7: Switching Values

Parameters	Switching Value (%)
Cost Overrun	33.9
Incremental Benefit Reduction	20.8
Shortfall in Incremental Fish Catch	110.5
Shortfall in Incremental Coral Reef Benefits	101.4
Shortfall in Incremental Mangrove Benefits	33.8

30. Apportioning the gains between the poor and those above the poverty line within the fisher folks and the coastal communities, and assuming that the Government tax revenues will be evenly expended amongst the population, the Project yields a PIR of 0.70.

Table A14.8: Poverty Impact and Distribution Analysis of Project Returns

Benefits/Costs	Distribution of Gains and Losses						
	Financial Present Value ^a	Economic Present Value ^a	Net Economic Benefits	Fisher Folk	Coastal Communities	Government/Economy	Overall
Incremental Benefits (P million)							
Fisheries Value	45.94	55.13	9.19	9.19			
Erosion Control - Upland	0.06	0.07	0.01		0.01		
Erosion Control - Foreshore	62.18	74.62	12.44		12.44		
Waste Treatment	27.99	33.59	5.60		5.60		
Local Use Value	10.76	12.92	2.15		2.15		
Global Use Value	89.38	107.26	17.88			17.88	
Livelihood Enterprises	17.01	20.42	3.40	3.40			
Incremental Costs (P million)							
Implementation Costs - Non Labor	(165.63)	(158.20)	7.43			7.43	
Implementation Costs - Labor	(16.96)	(9.02)	7.94	7.94			
Enterprise Investment Costs	(1.79)	(2.14)	(0.36)	(0.36)			
Enterprise Operating Costs - Non Labor	(6.58)	(7.90)	(1.32)	(1.32)			
Enterprise Operating Costs - Labor	(2.32)	(1.42)	0.91	0.91			
Recurrent Costs - Non Labor	(25.37)	(39.08)	(13.71)			(13.71)	
Recurrent Costs - Labor	(31.09)	(17.38)	13.71	13.71			
Net Present Value (P million)	3.59	68.86	65.27	33.47	20.20	11.60	
Gains and Losses (P million)				33.47	20.20	11.60	65.27
Proportion of the Poor (%)^{b,c}				79	76	34	
Net Benefits for the Poor (P million)				26.29	15.27	3.94	45.51
Poverty Impact Ratio							0.70

^a At a discount rate of 12%.

^b Poverty incidence amongst fisherfolk and coastal communities is based on the surveys undertaken by the feasibility study.

^c The national poverty incidence as reported by the Philippines Institute of Development Sciences for Year 2002.