

**OPERATIONAL PLAN
DEMONSTRATION SITE SUMMARY SHEET**

1. SITE NAME AND GEOGRAPHIC CO-ORDINATES:

MASINLOC, ZAMBALES: 15.48⁰ to 15.59⁰ N latitude, 119.89⁰ to 119.97⁰ E longitude

2. COUNTRY IN WHICH THE SITE IS LOCATED: Philippines

3. STATE OR PROVINCE (SUB-NATIONAL ADMINISTRATIVE UNIT) IN WHICH THE SITE IS LOCATED

Local Government Unit of Masinloc, Zambales

Local government approval (yes or no) If yes then date - November 28, 2003.

Local government involvement (yes or no)yes

Local government co-financing (yes or no) If yes then in-kind or in-cash? Both

4. LINKAGE TO NATIONAL PRIORITIES, ACTION PLANS AND PROGRAMMES:

There are several initiatives that have been made which are linked to national priorities, action plans and programmes. It was in 1991 when the local government code was legislated under Republic Act 7061. The Republic Act 8550 and the Fisheries Code was then formulated in 1998. Both enactments support the local governments primary role in marine sanctuary management and coastal resources management. In 2001 the Wildlife Act under Republic Act 9147 was made for the protection of biodiversity and regulation of bioperspectives and research in the Philippines. For the management of marine protected areas and sanctuaries, the National Integrated Protected Areas System (NIPAS) Act and Republic Act 8435, Agriculture & Fisheries Modernization respectively have been instruments that have been used to support activities on site. It was also in 1994 where the Oyon Bay was declared as protected seascape thus facilitating the establishment of an environment fund. Republic Act 8435, Agriculture and Fisheries Modernization was also established for the protection of the rights of indigenous peoples, and also technical support especially research in the area.

Having these initiatives, the central government has been assisting the local government in making ordinances, loans and programs creating co-financing which is given in cash and in-kind.

Masinloc, Zambales has high priority level for marine conservation particularly for molluscs, cetaceans, turtles, whale sharks and corals as published in the Philippine Biodiversity Conservation Priorities: A Second Iteration of the National Biodiversity Strategy and Action Plan (Ong, 2002).

5. DATE OF NATIONAL TECHNICAL GROUP MEETING WHICH CONSIDERED THE PROPOSAL AND RECOMMENDATION

1st endorsement: September 10, 2003

2nd endorsement: December 9, 2003

6. NATIONAL FOCAL POINT AND/OR NATIONAL TECHNICAL FOCAL POINT ENDORSEMENT AND/OR COMMENTS:

Comments:

The Masinloc marine sanctuary is one of the relatively few bigger sized sanctuaries in the Philippines. Its networking of MPAs would be a good model to demonstrate the synergistic outcome from good practices derived from co-management arrangements and technical advice. Since Masinloc has been considered to have high priority level in terms of marine conservation (Ong, 2002), the demonstration site is highly endorsed and recommended to be approved and implemented.

Signature:

Name and Designation: Dir. Gil S. Jacinto, National Technical Focal Point

Date: December 15, 2003

7. SITE DESCRIPTION (FULL SITE CHARACTERIZATION AS ANNEX I)

AREA

Oyon Bay, Masinloc lies between 119°52' to 119°58'E longitude and 15°28'32" to 15°34'47"N latitude. It is located in the northern part of Zambales and has an area of 7,568 hectares. The municipality includes the island-barangay of San Salvador, located about 2.5 km away from the mainland. The total coastline length is about 42.2 km (27.7 km on the mainland part of the municipality, 4.8 km in northern Panglit and 9.7 km in San Salvador Island. The reef area of Masinloc Bay is 51% of the total reef area (28.84 km²) of the whole municipality.

ENVIRONMENT

Meteorological

Masinloc, like the rest of Zambales province, falls under Type I climate, based on the modified coronas classification of PAG-ASA. This climate is characterized by two pronounced seasons, dry from November to May and wet during the rest of the year. Maximum rainfall is experienced during the month of August with the presence of the southwest monsoon and occasional typhoons. The coolest month of the year occurs during January with mean temperature of 26.6°C while the hottest occurs during May with the mean temperature of 28.3°C (PAGASA).

Physical

The coastal waters of Masinloc are bounded on the east by a series of embayments and are exposed to the South China Sea, sheltered only by a few islands. As a result, there is a strong gradient in water properties (turbidity, nutrient distribution) across the shelf, which supports a variety of important habitats. A persistent northward flow offshore is believed to contribute to the connectivity between Masinloc and other ecosystems west of Luzon.

Geological

The demonstration site is located in the Zambales range which is about 220 km, long and 40 km wide. The range consists of high peaks and rugged ridges notably Mt. Iba is approximately 1,606 m. and Mt. Pinatubo which is 1,778 m. Small coastal plains and low rolling hills characterize the northern portion of the area. The Zambales range is composed of mafic-ultramafic rocks commonly termed as the Zambales Ultramafic Complex and is part of a complete ophiolite sequence consisting of metamorphic peridotite, layered gabbro, diabase dike, swarms, chert and pelagic sediments known as the Aksitero Formation.

HABITATS

Coral Reef

Coral reefs are widespread except for Oyon Bay to Collat and Southeastern San Salvador Island. Corals in the northern transect appeared healthy (54% hard coral cover) but were less so close to the outfall of the power plant (14% hard coral cover and less). They were also somewhat depauperate of reef fish (7-8 MT/sq km) (ICRMP, 2003).

The present environmental state has a high live coral cover for all species (29% inside and 33% outside the MPA. In the last decade there was minimal change in the live coral cover in the area (from 25% in 1991 to 27% in 2002) (AFMA MFR Project, 2003). The algae cover was 34% inside and 28% outside the MPA.

Coral reefs are critical habitats for marine life as they play an important role in the productivity of the coastal ecosystem. In Masinloc, the coral reef areas serve as important nursery and spawning areas for a variety of commercially important fishery species. They recycle and concentrate nutrients from the near shore open areas/seas. They also protect the coastline from erosion by wave action.

A total of 271 reef fish and reef-associated species belonging to 35 families are recorded from San Salvador. The number of coral reef fish was 79/249 (number of genera/number of species) with coral reef fish density of 13 reef fishes per 114 ha. The general fish biomass estimates fall within the medium category (i.e., within the range of 10-20 mT/km²) (Arceo *et al* 2003) from the classification estimate established for the country (see Nañaola *et al.*, 2002).

Seagrass

The study noted that seagrass beds are dominated by the genera - *Thalassia*, *Enhalus*, and *Halophila*. The seagrass abound in the mudflats and shallow areas along the coasts of Masinloc, Palauig, Magalawa, San Salvador, San Miguel and Panglit islands. Patches of seagrass (*Enhalus sp.*) were observed in the inner bay west of San Slavador Island and South of the Poblacion. A total of eight segrass species have been reported from the Oyon Bay-Bani Point area (EIA, 1994).

Seagrass beds are important coastal resources. Similar to mangroves and coral reefs, they are also part of a critical habitat for marine life. Seagrass transplanting is one approach to its restoration and has been tested in the area.

Mangroves

Masinloc has 261 hectares in good condition. The areas are dominated by mangrove species such as *Rhizophora apiculata*, *Avicennia alba* and *A. officinalis*. *Nipa* and *bakauan* are located in small patches. Mangroves have an important role as breeding area for marine organisms. The forests provide food and shelter providing protection of the coastline against erosion. Regulation of or prohibition of harvesting of mangrove is an important step in protecting the forests.

Marine Biodiversity

Masinloc, Zambales is biologically diverse. It has a considerable number of Scleractinian coral species, reef fishes and alga. Nearly 40% (24 genera) of the total recorded in the South China Sea region is found in Masinloc. Live coral cover shows at least 10% increase over the decade (1999-2002). There are 45 families of reef fishes identified in the area with 139 genera and 390 species recorded, which is 60% of the total recorded in the national reef fish visual census database. Coral reef fish density ranges from 1560-13680 per hectare. Reef fishes can be considered over-exploited because of the rampant illegal activities in the area. There are 59 genera of algae with 110 species observed. In 2002, the present algal cover inside the MPA was 34% and 28% outside the MPA (AFMA-MFR Project).

IUCN Red Listed endangered marine turtles *Chelonia mydas* and *Erethmochelys imbricata* have been reported to nest in the sandy shores of Masinloc. In 1993, it has been nationally recognized to have a managed resource protected area (IUCN Category). Masinloc, Zambales is recognized as a priority area for the marine conservation for cetaceans, whale sharks and turtles (Ong et al., 2002).

PRESENT USE**Mining**

Masinloc is a town found on an area with huge deposits of chromite in its mountains. A mining company, BCI-Coto in Masinloc is now operating a property used to export monthly an average of 1-1.5 million pesos worth of chromite ore, mined from what is known to be the biggest deposit of refractory ore in the world. Accounting for the bigger volume of shipping done here, as compared to that handled at San Fernando, La Union, Masinloc was declared a port of entry (www.zambales.gov.ph/about.html).

Status of the Fishery and Aquatic Resources

The municipality shares almost an equal market leadership position with Sta. Cruz in terms of number of commercial and municipal fishing vessels operating in the area. Masinloc can be developed as a fishing port or fish production and/or processing area. Fishing is the primary source of income for about 29% of households in Masinloc. The inshore and near shore fisheries employ 1,750 fishermen.

There are 490 motorized fishing vessels, 255 non-motorized fishing vessels and 20 commercial fishing vessels that employ at least 30 crew per fishing vessel. Fish production of tuna, skipjack, roundscad, dolphin, Spanish mackerel and sharks recorded 4,050 m tons in 1998 valued at approximately P202.5 million. There are two (2) existing ice plants in the area with 10.0 tons daily product in capacity.

Commercial/municipal fishing is the primary source of livelihood of 29% of household in Masinloc. There are three (3) existing piers/wharves in the area (NAPOCOR, Benguet Corporation and Matalvis Fish Port) which highlights the potential of the area as a port municipality.

The municipal waters of Masinloc have abundant marine species such as yellow fin (tuna), skipjack (roundscud), squid, octopus, lapu-lapu, sea urchin, sea cucumber, Spanish mackerel, seaweed, and other marine species that command high market values.

Transportation

The Masinloc Bay is near the international sea-lanes, with good deep seabed suitable for cargo ships (at least 18 meters deep).

MANAGEMENT REGIME

Masinloc has a 127 has Marine Sanctuary Project (San Salvador Island). In 1988, the LGU in collaboration with an NGO (Haribon Foundation Inc.) and the community established a Marine Sanctuary/Marine Reservation in San Salvador, covering an area of 127.5 hectares or 1.69% of the total 7560 hectares Oyon Bay, Masinloc. A percentage of non-contiguous areas were declared as marine reservation where limited fishing was allowed. The establishment of a sanctuary and reservation were crucial for regulating the fishing industry in Masinloc. These protected areas guaranteed the sustained replenishment and regeneration of the marine resources that were in danger of being over exploited past sustainable levels.

Institutions involved in environment and natural resources management in general, and coastal management and marine biodiversity conservation in particular include national government agencies (NGAs), local government units (LGUs) and non-governmental organizations (NGOs). They operate from the national down to the village levels. Aside from the Philippine Council for Sustainable Development (PCSD), the most prominent agencies at the national level are the DA, the DENR, and the Philippine National Police (PNP)-Maritime. For the LGUs, the relevant units include the offices handling functions related to planning, agriculture and the environment. NGOs/POs are now playing active roles in Coastal Resources Management (CRM). Among these key NGOs/POs are Samahang Pangkaunlaran ng San Salvador and the Nagkakaisang Mamamayan ng Mangingisda sa Bani.

Institutional arrangements in Masinloc regarding coastal resources management (that covers coral reef management and marine bio-diversity conservation) are still labelled as 'loose'. There are no clearly defined roles and responsibilities. Although the agencies tend to coordinate their efforts, the coordination activities are largely informal. In some ways, the relationships that are being established are more inter-personal, rather than institutional.

8. STAKEHOLDERS: (Stakeholder involvement plan as Annex II)**The Local Government Unit**

The LGU Masinloc is one of 832 coastal municipalities in the Philippines. Eleven of its thirteen barangays are located along the Oyon Bay, Masinloc, where some 1,850 marginal fisher folk live and depend on its marine resources. People's initiatives to rehabilitate and protect the remaining coastal ecosystem were manifested in the LGU's project i.e., the San Salvador Marine Conservation Project and the project partnership for mangrove reforestation activities with an NGO based in Masinloc. Subsequently LGU – Masinloc has been recognized as champion of the environment for having won the 1996 "Galing Pook Award" through the Marine Conservation Project in San Salvador Island (MCPSSI).

The Samahang Pangkaunlaran ng San Salvador (SPSS)

The SPSS is a People's Organization in the island of San Salvador, a group recognized as coastal environmentally oriented citizens. They are considered to be coastal dwellers dependent generally on fishing for their livelihood and subsistence. The SPSS is also in charge in the management of the existing marine fish sanctuary in the area.

The Bantay Dagat Volunteers

Fifty (50) deputized Bantay Dagat Volunteers in Masinloc were tasked to enforce the implementation of RA 8550 otherwise known as Philippine Fishery Code and the local Fishery Ordinances within the 7,560-hectare Masinloc municipal waters.

The Nagkakaisang Mamamayan para sa Kalikasan ng Bani (NMKB)

The NMKB is a non-stock, non-profit association whose aim is to have a community of small fishers, who will sustainably protect, manage and enrich the coastal areas/seas to respond to the needs of the organization, the community and future generations.

The National Power Corporation – NPC- Masinloc Coal Fired Thermal Power Plant (MCFTPP)

NPC recognizes society's expectation of their social responsibility. It adheres to the conditionalities of the Environmental Compliance Certificate (ECC) issued by the DENR and the guidelines as stipulated in the National Integrated Protected Areas System (NIPAS) ACT thereby proclaiming the 7650 hectares Oyon Bay, Masinloc as protected Seascape. NPC prepares and implements the coastal area management plan for Oyon Bay. This plan provides a course of action for the management of the coastal area around the MCFTPP thus ensuring environmentally sustainable use and development of coastal resources of Oyon Bay. Also in compliance to the ECC conditionalities a Multi-Partite Monitoring Committee (MPMC) was created by virtue of Resolution No. 05-94 of the Sangguniang Bayan of Masinloc on January 24, 1994. The MPMC was primarily aimed at monitoring the compliance of the NPC to the ECC conditions and stipulations and to address the social and environmental concerns of the residents of Masinloc.

The Migrants

The physical configuration of the municipality of Masinloc makes the municipality open for in-migration especially from the Visayas and other areas. Thus, different languages and dialects are spoken in Masinloc. Locals blame transient migrants for the deteriorating condition of their coastal resources. The use of illegal methods of fishing, especially sodium cyanide in the live fish industry, is attributed to the transient fishermen.

9. THREATS: (Full causal chain analysis as Annex III)

The major threats to coral reefs in the municipality are unsustainable fishing practices, crown of thorns outbreaks, visitor trampling and anchor damage. Rampant use of cyanide in the live reef fish industry, blast fishing, non-selective fishing of juvenile or sexually mature target species, and encroachment of commercial fishers into municipal waters remain prevalent. The use of cyanide and non-selective fishing are considered to be the most critical threats because of the geographic extent and intensity of operations. An apparent decrease of fish harvest (33%) within the vicinities was perceived to be due to poison fishing, blast fishing and poaching and siltation from massive land use are also of concern.

The operations of four (4) major industrial firms in the area: Benguet Corporation's chromite operation, C-square mining Petron Oil Depot Bulk Plant and the Masinloc Coal-Fired Thermal Power Plant, are considered as contributory factors to the degradation of the coastal environment. The coal-fired plant consists of two (2) units producing a combined 600 MW of electricity.

Pollution and possible damage to the marine resources might be due to the condensing process, circulating water (or cooling water) is pumped through condenser tubes to absorb the heat content of the exhaust steam. The heated seawater flows into the discharge canal going into the Oyon Bay. Thus, the MCFTPP operations might possibly damage the coral reefs areas within the vicinity of the plant.

Lack of waste disposal/management system and the settlements for the residents of Matalviz, who are coastal dwellers and depends largely on fishing as their primary source of livelihood and subsistence may pose a threat of coastal pollution in the area. 80% of the dwellers do not have toilets, which may provide adverse impacts on waste disposal.

The root cause under IEC is the poor understanding and awareness of environmental concerns of the coastal communities and other organizations that uses the resources. Poor understanding about the significance of the coral reefs prompted activities (may it be industrial and domestic) such as pollution and over-fishing. Lack of alternative livelihood is one of the reasons of over-fishing where fishermen resort to illegal fishing and destructive activities (e.g., blast/sodium cyanide). Inadequate coordination of concerned management bodies is also identified as a problem in Masinloc, Zambales. This inadequacy directed to mangrove destruction (e.g., deforestation and illegal cutting) and other illegal activities that lead to coral reef degradation and fisheries decline. Under the capacity building, low capability of institutions to implement coastal resource management (CRM) creates ecosystem instability from accident oil spills and sudden changes in the environment (e.g., El Niño effect). Lastly, restocking and rehabilitation activities were not successful in the area. The root cause of the problem identified is the poor economic conditions of the coastal communities pushing them to over-fish the area.

Five interventions were identified in the causal chain analysis (Annex III) which will promote a decrease in coral reef degradation and fisheries, (1) information and education campaign (IEC), (2) Livelihood alternative, (3) management and coordination, (4) capacity building and (5) restocking and rehabilitation.

10. GOALS AND PURPOSE:

The main goal of the project is to sustain and promote co-management of marine sanctuaries that will help the coastal community. The livelihood opportunities that will be established and implemented are targeted to serve as incentives for reef stewardship.

11. RATIONALE:

Masinloc, Zambales is one of the 832 coastal municipalities in the Philippines. Eleven out of 13 barangays are located along the Oyon Bay, Masinloc, where some 1,850 marginal fisherfolks live and depend on its marine resources. The Oyon Bay, Masinloc accounted to 7,560 hectares. The deteriorating state of the bay's marine resources is apparent in the decrease in fish catch of fishers. Official catch statistics showing reduction from landings of 1,500 tons in 1990 to 90 metric tons in 1992 should be treated with caution since some of the sites that were monitored in 1990 were not monitored back in 1992. Department of Environment and Natural Resources (DENR) survey reports in 1994 indicate that 37% of the coral reefs in the area are in poor condition. In order to reverse the deteriorating state of the Oyon Bay, Masinloc, the LGU and the community in collaboration with NGOs/POs have jointly established and managed a 127.5 hectares marine sanctuary. A co-management arrangement with DENR was formalized through the Executive Order Proclamation of the whole Oyon Bay, Masinloc as a Protected Seascape. Pursuant to the NIPAS ACT and the local government code. This project proposal will demonstrate the enhancement of conditions of the coral reefs in the municipality through adaptive co-management and community –based CRM.

OBJECTIVES: Specifically the projects aims to:

- A.** To demonstrate sustainable community-based marine sanctuaries network.
 - To develop adaptive management strategies and coordination through monitoring and performance MPA networks;
 - To enhance coral reef and their adjacent mangrove areas;
 - To regulate and manage reef uses in surrounding reef areas.
- B.** To help build local co-management capacities and strengthen law enforcement capabilities of Bantay dagat (sea wardens) personnel together with the establishment of cooperative coordination systems.
- C.** To conduct and implement livelihood support mechanisms by determining the potential alternative and/or supplemental livelihood options and establishing appropriate guidelines/policies for reef stewardship.
- D.** To conduct Information Education Campaign in order to develop public awareness about environmental issues and concerns through the production of brochures and posters of coastal resources of Masinloc, Zamables and broadcasting knowledge on radio station.

12. OUTCOMES:

- 1. Enhanced sustainability of coral reef adaptive co-management with the government and community-based stakeholders as seen in the implementation and their adjustment in the implementation of management plans, the performance of management bodies with regular allocation budget.
- 2. Maintained health of reefs and their associated ecological goods and services based on participatory impact monitoring and evaluation.
- 3. Improved quality life of fisher stakeholders as indicated by an increase in supplemental incomes derived from reef stewardship.
- 4. Strengthened capacity of governing bodies and stakeholder stewardship as seen in compliance of policies and good monitoring and evaluation practices (e.g., participatory performance).

13. PLANNED ACTIVITIES TO ACHIEVE OUTCOMES (Monitoring and evaluation plan as Annex IV)

Component 1. Demonstrating sustainable community-based marine sanctuaries network

Comparative day to day operations involving the establishment of the marine sanctuary including the orientation and training activities (e.g., monitoring and evaluation, restocking of giant clams and sea urchin, coral reef and mangrove rehabilitation). Consultation meetings with PAMB, fisher communities and other stakeholders will be coordinated. With the assistance of consultants biophysical monitoring activities inside and outside (adjacent) the community-based marine sanctuary will be conducted. Socio-economic costs and benefits derived from marine sanctuary co-management will be evaluated. Initial appraisal and detailed benchmarking assessment of the 2 potential additional marine sanctuaries will also be conducted along with public hearings and community consultations as part of management planning and implementation process. Reef fishery and licensing system will also be established and implemented as a mechanism for regulation, information gathering and fisheries management. The fisherfolks will be trained on proper restocking and grow-out methods of marine species such as the giant clams, sea urchins and coral transplantation. Mangrove planting will also be implemented during the project period.

- 1.1 Monitoring of coral and reef fish abundance inside and outside the sanctuary
- 1.2 Construction of a rudimentary jetty for monitoring, eco-tourism and navigational purposes
- 1.3 Initial benchmark assessment of two additional marine sanctuaries/reserves
- 1.4 Detailed assessment of two (2) additional marine sanctuaries and subsequent participatory monitoring
- 1.5 Install mooring buoys for sanctuaries and navigation markers
- 1.6 Improving coordinating mechanisms for a network of marine sanctuaries and functional patrolling
- 1.7 Reef Fishery and licensing establishment and implementation and degree of compliance
- 1.8 Training on restocking and grow-out methods (e.g. giant clams, sea urchin)
- 1.9 Training on coral reef rehabilitation methods (e.g. coral transplantation) and implement transplantation

Component 2. Capacity Building

Consultants will undertake orientation and training workshops for crucial stakeholders on the improvement of the proposed network of MPAs. The exchange between the demonstration sites will be promoted by attending MPA network meetings at different adjacent sites. Consultation meetings with the MPA network and advocates will also be conducted. People's Organization will be subcontracted to conduct orientation and training for skills development and promote team building for various marine sanctuary management teams. The Bantay Dagat (sea wardens) personnel will undertake legal and paralegal training. Implementation of Information Education Campaign (IEC) will complement law enforcement operations and the capabilities of the Bantay Dagat. Participatory impact evaluation together with performance monitoring and incentive system will be formulated. Public consultation meetings in the community together with the private sector (e.g., National Power Corporation) will be undertaken to forge private-public partnerships together with the local government and National Government Agencies (NGAs).

- 2.1 Team building efforts for various marine sanctuary management teams
- 2.2 Legal and paralegal training of Bantay dagat personnel
- 2.3 Strengthen law enforcement capabilities of Bantay dagat (sea wardens) personnel

Component 3. Supplemental livelihood linked to the stewardship of the marine sanctuary

Activities that supplement income without compromising the resource base will serve as an incentive for reef stewardship. Initial assessment (scanning and feasibility studies) of the potential alternative livelihood options in the community will be conducted. Pilot implementation of prioritized livelihood after training of fisher stewards in the sanctuaries.

- 3.1 Determination of potential alternative and/or supplemental livelihood options and appropriate guidelines/policies on its implementation
- 3.2 Implementation of livelihood projects through priority marine sanctuary stewards
- 3.3 Establishment of marine sanctuary fund
- 3.4 Establishment of the report card and incentive system

Component 4. Information Education Campaign

Aside from basic awareness campaigns, education and training materials will be packaged for related coral reef management activities. Brochures, posters, notice boards and videos of the coastal resources of Masinloc, Zambales will be distributed to the public including the local middle school.

- 4.1 Production of brochures and posters on the coastal resources of Masinloc, Zambales and
- 4.2 Install permanent notice boards for raising awareness on coral reefs and their announcements
- 4.3 Radiobroadcast of information on the coral reef ecosystem and appropriate management actions being undertaken
- 4.4 Prepare middle school curricula on coral reef ecological management
- 4.5 Meetings of Protected Area Management Board (PAMB) and Strategic Action Plan for Masinloc
- 4.6 Publication of the reports

14. SUSTAINABILITY ANALYSES AND RISK ASSESSMENT

Sustainability

Sustainability criteria will be based on at least three interrelated multiple areas in the biophysical, legal, institutional and financial aspects. The biophysical sustainability criteria should imply that critical threats are effectively stopped (e.g., destructive and illegal fishing practices and result in improvement of the ecosystem state e.g., increase in fish abundance and coral cover.

The legal and institutional arrangements are considered sustainable when inter-hierarchical complementation is achieved at the village level, provincial and national level indicated by legitimized plans, formal agreements and functional cooperative arrangements such as regular meetings held and functional management criteria are continued by multisectoral bodies through the establishment of various accountable management bodies that practice good governance procedures.

In addition, the establishment of MPA network in coordination with the CRM council and national government agency will incorporate these strategies and action plan in the provincial, regional and national medium-term development plan (MTDP).

Financial sustainability would be achieved if a regularized budget of at least \$1000/year is provided for each marine sanctuary by the local government to support the village level stewardship. A budget of \$10000 annually provided by the local government to the Coastal Resource Management (CRM) office to support FARMC activities. A budget of \$2500 for Monitoring and Evaluation (M&E) and Performance Management Plan (PMP) and multisectoral fund established jointly by government and other stakeholders with at least \$5000 annually.

These funds in conjunction with the livelihood repayments and IRA will be plowed back through a regularized budget from CRM activities and monitoring.

Financial sustainability

Energy Regulation Act No. 1-94 of the Department of Energy (NPC)

Provides funding equivalent to 35% municipal share for the implementation of the Reforestation Watershed Management, Health and Environment Enhancement Projects for the municipality of Masinloc.

Provides financial and technical assistance in the implementation of environmental related projects particularly the development of coastal resources management through the formulation of the Multi-Partite Monitoring Group/Committee, which primarily aimed at monitoring the compliance of the NPC to the ECC conditions and stipulations and to address the social and environmental concerns of the residents of Masinloc.

Local Government Unit (LGU) – General Fund

LGU provides annual budget allocation for the monthly honoraria of the Bantay Dagat Volunteers, Gasoline expenses, patrol boats with complete paraphernalia and other related expenses to be used in the implementation of RA 8550 and in the monitoring and apprehending of illegal fishing activities.

20% Municipal Development Fund – Municipal Development Council (MDC)
MDC provides annual budget allocation worth 7.5 M or two (2%) percent of the twenty (20%) for the Coastal Resources Management Projects.

Institutional Sustainability

The integration of co-management arrangements and establishment of MPA networks enhances the institutional support systems at the local (e.g., provincial) and national levels.

The institutionalization of environmental trust funds with counterpart from private conditional grants has been incorporated into the marine conservation contracts. Enhanced participation and engagement of local communities, as part of local and national benefit sharing of roles and responsibilities would have been instituted. These policies helps in facilitating transparency, accountability and participatory decision making as integrated within their management plans, legislated policies and budgets.

Risks

The risks of rural impoverished fishing communities lie in the development of early stages of management institutions and the social and economic instability of local communities.

The project assumes that the macroeconomic (e.g., energy sharing schemes of local vs. national) and political conditions do not overcome the internal outcomes derived from the project. In order to buffer against these risks the legislative reforms to be instituted in the policy agenda of the strategic action plans on-site and for the region should incorporate these constraints in the expected outcomes. Political and financial leveraging of commitments through the demonstration site and national accountability of local and national government would add to the supporting structures to avoid the unsustainable impacts of these risks. MPA networks and other coordinating bodies should minimize transactional costs and provide avenues for conflict resolution concerns.

15. ESTIMATED BUDGET: (Details in Annexes V.1 and V.2)

Total estimated budget of the demonstration site project: US\$ 373,950, including:

| | |
|--------------------------------|----------------------|
| GEF funding: | \$118,000 USD |
| Government co-funding in kind: | \$ 8,100 |
| Government co-funding in cash: | \$247,850 |

15.1 Summary Budget by Activities (Details described in Annex V.1)

| | Activities | GEF | Co-funding | | Total |
|--------------|---|----------------|--------------|----------------|----------------|
| | | | in-kind | in-cash | |
| 1.1 | Marine sanctuary network orientation workshop | 2,350 | | 2,130 | 4,480 |
| 1.2 | CRM Planning Workshop | 3,150 | | 0 | 3,150 |
| 1.3 | Detailed assessment of two (2) additional marine sanctuaries | 8,050 | | 9,050 | 17,100 |
| 1.4 | Monitoring of coral and reef fish inside and outside the sanctuary | 4,380 | | 8,760 | 17,460 |
| 1.5 | Training on reseeded and grow-out methods (e.g. giant clams, sea urchin and abalone) | 1,280 | | 3,000 | 4,280 |
| 1.6 | Implementation of reseeded and grow-out methods of sea urchins | 11,160 | | 3,600 | 14,760 |
| 1.7 | Reef Fishery and licensing establishment and implementation | 1,450 | | | 1,450 |
| 1.8 | Coral Reef rehabilitation | 2,680 | | 4,050 | 6,730 |
| 1.9 | Initial assessment of potential additional marine sanctuaries/reserves | 2,000 | 5,300 | | 7,300 |
| 1.10 | Establishment of marine sanctuary fund | 1,500 | | | 1,500 |
| 2.1 | Patrolling activities | 3,670 | | 4,320 | 7,990 |
| 2.2 | Strengthen law enforcement capabilities of Bantay dagat (sea wardens) personnel | 1,500 | | | 1,500 |
| 3.1 | Orientation workshop in determination of potential alternative livelihood options and appropriate guidelines/policies on its implementation | 3,300 | 1,800 | | 7,500 |
| 3.2 | Training of the potential alternative livelihood options | 2,700 | | 1,640 | 2,700 |
| 3.3 | Implementation of livelihood projects | 11,700 | | 174,000 | 184,500 |
| 4.1 | Trainings | 600 | | 600 | 600 |
| 4.2 | Material development | 3,000 | | 6,000 | 9,000 |
| 4.3 | Public awareness | 1,000 | 1,000 | 0 | 2,000 |
| 5.1 | Demonstration site manager (one person @ 30 @ 690\$) | 20,700 | | | 20,700 |
| 5.2 | Counterpart of management body and expenses for the venue (2.5 years @ 3000 US\$) | 0 | | 9,000 | 9,000 |
| 5.3 | Technical assistant to the demonstration site manager (one technical assistant @ 30 months @ 181 US\$) | 5,430 | | | 5,430 |
| 5.4 | Travel on official business (2 persons @ 3 trips @ 3 years @ \$110; 2 persons @ 3 trips @ 2.5 years @ \$110) | 2,200 | | 2,200 | 4,400 |
| 5.5 | Travel of the Focal Point to the demonstration site (one person @ 12 trips @ 1 year @ 2.5 years @ 100 US\$) | 3,000 | | | 3,000 |
| 5.6 | Meetings of Management Board | 2,100 | | 4,500 | 6,600 |
| 5.7 | Monitoring and evaluation of the project | 9,000 | | | 9,000 |
| 5.8 | Office non-expendable equipment | 4,700 | | | 4,700 |
| 5.9 | Office expendable supplies | 1,200 | | | 1,200 |
| 5.10 | Operation and maintenance of office (\$500 @ 30months) | | | 15,000 | 15,000 |
| 5.11 | Communication | 2,100 | | | 2,100 |
| 5.12 | Audit expenses 30 months | 2,100 | | | 2,100 |
| Total | | 118,000 | 8,100 | 247,850 | 373,950 |

15.2 Summary Budget by Object of expenditure (Details described in Annex V.2).

| Object of expenditure Budget in \$US | GEF | Co-funding | | Total |
|---|----------------|----------------|--------------|----------------|
| | | In-cash | In-kind | |
| 1000 Project Personnel Component | 36,800 | 15,700 | 0 | 52,500 |
| 1100 Project personnel | 26,130 | 9,000 | | 35,130 |
| 1200 Consultant | 5,470 | 4,500 | | 9,970 |
| 1600 Travel on official business | 5,200 | 2,200 | | 7,400 |
| 2000 Sub-contract component | 36,970 | 195,860 | 7,100 | 239,930 |
| 2200 Subcontract component | 36,970 | 195,860 | 7,100 | 239,930 |
| 3000 Training Component | 15,850 | 21,290 | 1,000 | 38,140 |
| 3200 Group training | 15,250 | 16,190 | 1,000 | 32,440 |
| 3300 Meeting/conference | 600 | 5,100 | 0 | 5,700 |
| 4000 Equipment Component | 17,280 | 15,000 | 0 | 32,280 |
| 4100 Expendable Equipment | 9,720 | | | 9,720 |
| 4200 Non-expendable equipment | 7,560 | | | 7,560 |
| 4300 Premises | 0 | 15,000 | | 15,000 |
| 5000 Miscellaneous Component | 11,100 | 0 | 0 | 11,100 |
| 5200 Reporting Costs | 9,000 | | 0 | 9,000 |
| 5300 Sundry | 2,100 | 0 | 0 | 2,100 |
| Grand Total | 118,000 | 247,850 | 8,100 | 373,950 |

16. IMPLEMENTATION PLAN:

| Activities | 2005 | | 2006 | | | | 2007 | | | |
|--|------|-----|------|-----|-----|-----|------|-----|-----|-----|
| | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| 1 Demonstrating sustainable community-based marine sanctuaries network | | | | | | | | | | |
| 1.1 Marine sanctuary network orientation workshop | | | | | | | | | | |
| 1.1.1 Subcontract consultants for marine sanctuary network orientation on the framework of marine sanctuary network and planning meeting (2 days x \$70 @ 2 consultants @ 3 sites) | | | X | | | | | | | |
| 1.1.2 Conduct orientation workshop (2 days x 54 participants x \$5/day) | | | X | | | | | | | |
| 1.1.3 Consultations of concerned stakeholders in the MPA network (at least 6 representative from 9 villages) (54 participants x \$30) | | | X | | | | | | | |
| 1.2 CRM planning workshop | | | | | | | | | | |
| 1.2.1 Undertake CRM planning workshops for integration (15 participants x \$30 per year) | | X | | | | X | | | | X |
| 1.2.2 Updated CRM and MPA network action plan report by consultant (3 days x \$300/day x 2 periods) | | | | | | X | | | | X |
| 1.3 Detailed assessment of two (2) additional marine sanctuaries | | | | | | | | | | |
| 1.3.1 Convene public consultations and hearings (50 participants x \$5/day x 3 days) | | X | | | | | | | | |
| 1.3.2 Initial assessment of potential additional marine sanctuaries/ reserves (3 persons @ 10 days @ \$100) | | | X | | | | | | | |
| 1.3.3 Boat rental (10 days) | | | X | | | | | | | |
| 1.3.4 Assign Consultants to design and undertake benchmarking of coral and reef fish, submit report to local gov't. of Masinloc and Coral Reef Management Committee (2 consultants x \$200/day x 5 days) | | | X | | | | | | | |

| Activities | | 2005 | | 2006 | | | | 2007 | | | |
|------------|--|------|-----|------|-----|-----|-----|------|-----|-----|-----|
| | | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| 1.3.5 | Install mooring buoys for sanctuaries and navigation markers (45 buoys @ \$35) | | | | X | | | | | | |
| 1.3.6 | Assign contractor to design, install and maintain mooring buoys at appropriate areas (\$10 @ 15 days @ 10 persons) | | | | X | | | | | | |
| 1.3.7 | Boat rental (15 days) | | | | X | | | | | | |
| 1.4 | Monitoring of coral and reef fish inside and outside the sanctuary | | | | | | | | | | |
| 1.4.1 | Subcontract for monitoring activities and prepare reports (2 persons x \$200 x 5 days/year) | | X | | | | X | | | | X |
| 1.4.2 | Boat rental (15 days) | | X | | | | X | | | | X |
| 1.5 | Training on reseeded and grow-out methods (e.g. giant clams, sea urchin and abalone) | | | | | | | | | | |
| 1.5.1 | Participants cost (10 participants @ 5 days @ 10) | | | X | | | | | | | |
| 1.5.3 | Boat Rental (5 days) | | | | X | | | | | | |
| 1.5.4 | Assign resource speakers for the training (2 speakers x \$100/day x 5 days) | | | | X | | | | | | |
| 1.6 | Implementation of reseeded and grow-out methods of giant clams, sea urchin and abalone | | | | | | | | | | |
| 1.6.1 | Purchase of giant clams, sea urchin and abalone \$30 @ 200 @ 3 sites; 8 @ 500 @ sites; 1.2 @ 2000 @ 3 sites; 1.2 @ 2000 @ 3 sites | | | | | | X | | | | |
| 1.6.2 | Pilot restocking activities in marine sanctuaries (e.g. giant clams, sea urchin) | | | | | | X | | | | |
| 1.6.3 | Boat rental (15 days @ \$36) | | | | | | X | | | | |
| 1.7 | Reef Fishery and licensing establishment and implementation | | | | | | | | | | |
| 1.7.1 | Assign consultants to establish and implement Reef Fishery and Licensing system (5 x \$130 per year) | | X | | | | X | | | | X |
| 1.7.2 | Registration and renewal (5 survey technicians x \$30 per year) | | X | | | | X | | | | X |
| 1.8 | Coral Reef rehabilitation | | | | | | | | | | |
| 1.8.2 | Assign resource speakers for the training (2 speakers x \$100/day x 5 days) | | | | | | X | | | | |
| 1.8.3 | Conduct training on coral reef rehabilitation methods (10 participants x 5 days x \$40/day) | | | | | | X | | | | |
| 1.8.1 | Boat rental (5 days @ \$36) | | | | | | | | X | | |
| 1.9 | Construction of a jetty for monitoring, eco-tourism and navigational purposes | | | | | | | | | | |
| 1.9.1 | Assign contractors to design and construct a small jetty (~50 meters) | | | X | | | | | | | |
| 1.10 | Mangrove rehabilitation, protection & maintenance | | | | | | | | | | |
| 1.10.1 | Assign contractors for rehabilitation and management of mangroves (10 ha) | | | X | | | X | | | X | |
| 1.11 | Initial assessment of potential additional marine sanctuaries/reserves | | | | | | | | | | |
| 1.11.1 | Subcontract to train, design and undertake Participatory Coastal Resource Assessment (PCRA), and prepare report (2 persons x \$200/day x 5 days) | | X | | | | | | | | |
| 1.12 | Establishment of marine sanctuary fund | | | | | | | | | | |
| 1.12.1 | Assign finance and fund management specialist for scanning and cost revenue analyses, set-up business and sustainable financing plan (5 days x \$130/day per year) | | X | | | | X | | | | X |
| 2 | Capacity building | | | | | | | | | | |
| 2.1 | Patrolling activities | | | | | | | | | | |
| 2.1.1 | Contract people's organization to conduct training on enforcement skill activities (20 participants x \$25/day x 3 days) | | | | | X | | | | | |

| Activities | | 2005 | | 2006 | | | | 2007 | | | |
|------------|--|------|-----|------|-----|-----|-----|------|-----|-----|-----|
| | | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| 2.1.3 | Conduct patrolling activities (2 persons @ \$10 @ 4 week @ 36 months) | X | X | X | X | X | X | X | X | X | X |
| 2.1.7 | Boat rental for patrolling (144 days @ 30 months) | X | X | X | X | X | X | X | X | X | X |
| 2.1.4 | Communication equipment such as handheld radio | X | | | | | | | | | |
| 2.1.5 | Purchase 2 binoculars | X | | | | | | | | | |
| 2.1.6 | Patrol light (superlight) | X | | | | | | | | | |
| 2.1.9 | mask and snorkel (10 sets) | X | | | | | | | | | |
| 2.2 | Strengthen law enforcement capabilities of Bantay dagat (sea wardens) personnel | | | | | | | | | | |
| 2.2.1 | Training course on legislation (2 per year @ 50 participants @ \$5/day) | | X | | | | X | | | | X |
| 3 | Supplemental livelihood linked to the stewardship of the marine sanctuary | | | | | | | | | | |
| 3.1 | Orientation workshop in determination of potential alternative livelihood options and appropriate guidelines/policies on its implementation | | | | | | | | | | |
| 3.1.1 | Assign contractors to conduct training for livelihood option/s (20 participants x \$25/day x 3 days) | | | | | | X | | | | |
| 3.1.2 | Subcontract to assess supplemental and complementary livelihood options and conduct alternative livelihood training for fishermen (5-day training) | | | | | X | | | | | |
| 3.2 | Training of the potential alternative livelihood options | | | | | | | | | | |
| 3.2.1 | Conduct training on supplemental and complementary livelihood and stewardship for fishermen (10 participants x 5 days x \$40/day) | | | | | X | | | | | |
| 3.2.2 | Conduct training on business management (20 participants x \$25/day x 3 days) | | | | | | X | | | | |
| 3.3 | Implementation of livelihood projects | | | | | | | | | | |
| 3.3.1 | Contract livelihood centers to implement livelihood projects (60 households @ \$300; 580 households @ \$ 300) | | | | | | X | X | X | X | X |
| 3.3.2 | Subcontract product development and ecolabeling (market study and product development) | | | | | | X | X | | | |
| 4 | Information and Education Campaign | | | | | | | | | | |
| 4.1 | Trainings | | | | | | | | | | |
| 4.1.1 | Conduct of consultation meetings for public awareness (2 per year @ 50 participants x \$5/day) | | X | | | | X | | | | X |
| 4.2 | Material development | | | | | | | | | | |
| 4.2.1 | Assign contractors to design and produce brochures and posters (1000 copies each) | | | X | | | | | | | |
| 4.2.2 | Assign contractors to make bulletin boards e.g., fisheries administrative ordinances etc. (5 notice boards @ \$400; 15 notice boards @ \$400) | | X | | | | | | | | |
| 4.3.1. | Assign contractors to produce a ten minute video on "Masinloc Experience" for schools in Masinloc, Zambales (100 VCDs to be given to schools) | | | | | X | | | | | |
| 4.3. | Public awareness | | | | | | | | | | |
| 4.3.2. | Subcontract radio station to broadcast knowledge of coral reef ecosystem on local radio | X | X | X | X | X | X | X | X | X | X |
| 5 | Project Management and Administration | | | | | | | | | | |
| 5.1 | Demonstration site manager (one person @ 30 @ 750 US \$) | X | X | X | X | X | X | X | X | X | X |
| 5.2 | Counterpart of management body and expenses for the venue (30 months @ \$300) | X | X | X | X | X | X | X | X | X | X |
| 5.3 | Technical assistant to the demonstration site manager (one technical assistant @ 30 months @250 US \$) | X | X | X | X | X | X | X | X | X | X |
| 5.4 | Travel on official business (2 persons @ 10 trips @110 US \$) | | X | | X | | X | | X | | X |
| 5.5 | Travel of the Focal Point to the demonstration site (one person @ 30 months @ \$120) | X | X | X | X | X | X | X | X | X | X |

| Activities | | 2005 | | 2006 | | | | 2007 | | | |
|------------|---|------|-----|------|-----|-----|-----|------|-----|-----|-----|
| | | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| 5.6 | Meetings of Management Board | | | | | | | | | | |
| 5.6.1 | Transportation and hotel for the participants (5 meetings @ 15 pax @ 4 days @ \$30) | | X | | X | | X | | X | | |
| 5.6.2 | Co-funding from participation of the management board meeting (15 participants @ 3 days @ 5 meetings @ 2 meetings @ \$30) | | X | | X | | X | | X | | X |
| 5.7 | Monitoring and evaluation of the project | | | | | X | | | | X | X |
| 5.8 | Office non-expendable equipment | | | | | | | | | | |
| 5.8.1 | One (1) LCD Projector | X | | | | | | | | | |
| 5.8.2 | One (1) Notebook computer with accessories | X | | | | | | | | | |
| 5.8.3 | One (1) Desktop computer | X | | | | | | | | | |
| 5.8.4 | One (1) printer | X | | | | | | | | | |
| 5.8.5 | One (1) Digital camera | X | | | | | | | | | |
| 5.8.6 | One (1) Underwater housing (for camera) | X | | | | | | | | | |
| 5.9 | Office expendable supplies | X | X | X | X | X | X | X | X | X | X |
| 5.1 | Operation and maintenance of office 500 @ 30 months | X | X | X | X | X | X | X | X | X | X |
| 5.11 | Communication | | | | | | | | | | |
| 5.11.1 | Telephone/Fax | X | X | X | X | X | X | X | X | X | X |
| 5.11.2 | Postage/Freight | X | X | X | X | X | X | X | X | X | X |
| 5.12 | Audit expenses 2.5 years | | | | | | | | | | X |

17. PROPOSED MANAGEMENT OF THE ACTIVITIES. (Details described in Annex VI)

The Marine Science Institute, specialized executing agency will be accountable to see to it that the activities in the demonstration site are properly implemented. In this connection, the national focal point will check the progress of the project by visiting the demonstration site once a month until the project ends. The national focal point is also responsible to report the progress of the demonstration site to the Project Coordinating Unit (PCU) and Regional Working Group on Coral Reef.

The appointed demonstration site manager is responsible to execute the activities in the work plan. This is under the direction of the Coral Reef Management Council that is composed of the PAMB, LGUs and DENR. The demonstration site manager is also responsible to report the over-all progress and problems encountered in the project implementation.

As proposed, two marine sanctuaries will be added adjacent to the existing one. There will be a separate committee in-charge per sanctuary. This will aid in effectively implementing the activities in each sanctuary.

18. INFORMATION ON PROPOSED EXECUTING AGENCY (IES) (Information on the entity(ies) that will execute activities including their legal status).

The Marine Science Institutes' threefold mandate of research, graduate education and development of environmentally sound technologies have shown a track record of performance and accountability in the last 3 decades of its existence. Aside from academic excellence, it has been recognized as a center of excellence in ecosystem research and development. In coral reef research and management, its programs in science-based participatory and community-based management have been seen in the catalytic and facilitative role of the Philippine Coral Information Network and the formulation of the Philippine Marine Sanctuary Strategy. The institute has regularly performed many technical advisory roles in the national and international bodies in the marine sciences.

19. EXECUTING AGENCY CONTACT PERSON:

Dr. Porfirio M. Aliño

Demonstration Site Manager

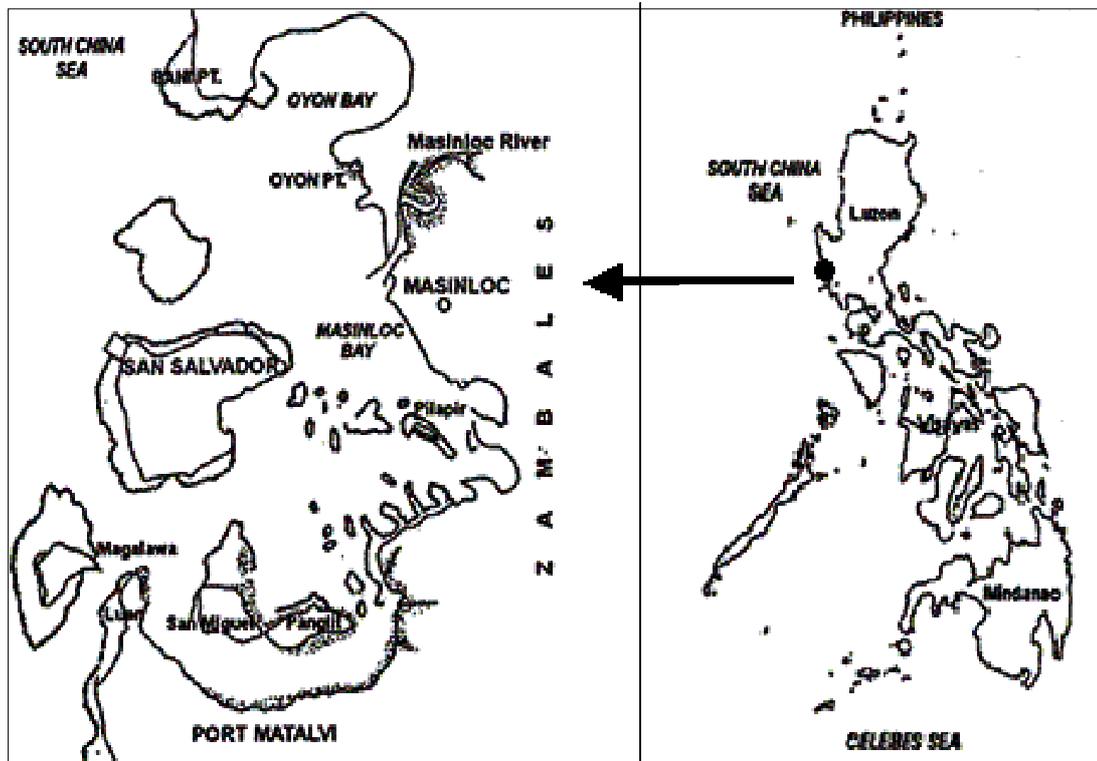
(To be hired)

National Focal Point for Coral Reefs

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ANNEX I SITE CHARACTERISATION

1.1 Map of Masinloc, Zambales



1.2 Site Description

Masinloc, Zambales (Figure 1) is geographically located at 15.48-15.59 degrees latitude and 119.89-119.97 degrees longitude. It consists of various reef types such as fringing (mainland and island), patch reefs and atoll. The present area is approximately 127 ha. It is biologically diverse having live coral cover for all species (Table 1) inside the MPA of 33.24% and 29.06% outside the MPA (AFMA-MFR Project 2003) with algal cover (Table 3) of 34% (inside) and 28% (outside). From 1991 to 2002, change in live coral cover for all species increased from 25 to 27%. Fish species richness (Table 2) is high showing 97 genera and 249 species based from fish visual census observations. Abundance is moderate ranging from 1560-13680 per hectare. Thus, it indicates that the area is moderately over-exploited.

Seagrass and mangrove in Masinloc Bay are the interacting ecosystems with coral reef. Marine turtles such as *Chelonia mydas* and *Eretmochely imbricata* particularly in Subic and Masinloc are considered to be endangered and threatened species (IUCN Red List Category; Ong 2002). Medium-term management plans had indicated that the Subic-Bataan Protected Area and Oyon Bay, Masinloc Protected Seascape shall be part of its priority areas for conservation (Ong 2002).

In August 1993, Masinloc was declared as protected landscape/Seascape under proclamation 231. Ecotourism and their environment fund are potential sources that can be used to develop the site considering the significant level of direct stakeholder involvement in management.

Destructive fishing such as bombing and poisoning is the major threat in the site followed by pollution caused by sedimentation, heavy metals, organic pollutants and eutrophication. Coastal development from dredging and tourism and natural disasters like storm, volcanic eruption and land subsidence, coral bleaching and infestation of Crown-of-Thorns are also noted. Industrial and mariculture development are the potential threat in the next coming years.

Social and economic drives of change in environmental sites has been considered as stress-pressure particularly with the operation of the coal fired Power Plant in 1995. Population growth within the area is 0.21% a total municipal resident population of 569,266. There is coastal zoning and institutional framework for MPA in Subic-Bataan Protected Area which is around 80 km away but no functional coastal management plan for Masinloc.

AREA

Oyon Bay, Masinloc lies between 119°52" to 119°58"E longitude and 15°28'32" to 15°34'47"N latitude. It is located in the northern part of Zambales and has an area of 7,568 hectares. The municipality includes the island-barangay of San Salvador, located about 2.5 km away from the mainland. The total coastline length is about 42.2 km (27.7 km on the mainland part of the municipality, 4.8 km in northern Panglit and 9.7 km in San Salvador Island. The reef area of Masinloc Bay is 51% of the total reef area (28.84 km²) of the whole municipality.

ENVIRONMENT

Meteorological

Masinloc, like the rest of Zambales province, falls under Type I climate, based on the modified coronas classification of PAG-ASA. This climate is characterized by two pronounced seasons, dry from November to May and wet during the rest of the year. Maximum rainfall is experienced during the month of August with the presence of the southwest monsoon and occasional typhoons. The coolest month of the year occurs during January with annual mean temperature of 26.6C while the hottest occurs during May with the mean annual temperature of 28.3C (PAGASA).

Physical

The coastal waters of Masinloc are bounded on the east by a series of embayment and are exposed to the South China Sea, sheltered only by a few islands. As a result, there is a strong gradient in water properties (turbidity, nutrient distribution) across the shelf, which supports a variety of important habitats. A persistent northward flow offshore is believed to contribute to the connectivity between Masinloc and other ecosystems west of Luzon.

Geological

The demonstration site is located in the Zambales range which is about 220 km, long and 40 km wide. The range consists of high peaks and rugged ridges notably Mt. Iba is approximately 1,606 mas and Mt. Pinatubo which is 1,778 mas. Small coastal plains and low rolling hills characterize the northern portion of the area. The Zambales range is composed of mafic-ultramafic rocks commonly termed as the Zambales Ultramafic Complex and is part of a complete ophiolite sequence consisting of metamorphic peridotite, layered gabbro, diabase dike, swarms, chert and pelagic sediments known as Aksitero Formation.

HABITATS

Coral Reef

Coral reefs are widespread except for Oyon Bay to Collat and Southeastern San Salvador Island. Corals in the northern transect appeared healthy (54% hard coral cover) but were less so close to the outfall of the power plant (14% hard coral cover and less). They were also somewhat depauperate of reef fish (7-8 MT/sq km) (ICRMP, 2003).

The present environmental state has a high live coral cover for all species (29% inside and 33% outside the MPA. In the last decade there was minimal change in the live coral cover in the area (from 25% in 1991 to 27% in 2002) (AFMA MFR Project, 2003). The algae cover was 34% inside and 28% outside the MPA.

Coral reefs are critical habitats for marine life as they play an important role in the productivity of the coastal ecosystem. In Masinloc, the coral reef areas serve as important nursery and spawning areas for a variety of commercially important fishery species. They recycle and concentrate nutrients from the near shore open areas/seas. They also protect the coastline from erosion by wave action.

A total of 271 reef fish and reef-associated species belonging to 35 families in San Salvador. The number of coral reef fish was 79/249 (number of genera/number of species) with coral reef fish density of 13 reef fishes per 114 ha. The general fish biomass estimates fall within the medium category (i.e., within the range of 10-20 mT/km²) (Arceo et al 2003) from the classification estimate established for the country (see Nañola et al., 2002)

Seagrass

The study noted that seagrass beds are dominated by the genera - *Thalassia*, *Enhalus*, and *Halophila*. The seagrass abound in the mudflats and shallow areas along the coasts of Masinloc, Palauig, Magalawa, San Salvador, San Miguel and Panglit islands. Patches of seagrass (*Enhalus sp.*) were observed in the inner bay west of San Salvador Island and south of the Poblacion. A total of eight seagrass species have been reported from the Oyon Bay-Bani Point area (EIA, 1994).

Seagrass beds are important coastal resources. Similar to mangroves and coral reefs, they are also part of a critical habitat for marine life. Seagrass transplanting is one approach to its restoration and has been tested in the area.

Mangroves

Masinloc has 261 hectares in good condition. The areas are dominated by mangrove species such as *Rhizophora apiculata*, *Avicennia alba* and *A. officinalis*. *Nipa* and *bakauan* are located in small patches. Mangroves have an important role as breeding area for marine organisms. The forests provide food and shelter providing protection of the coastline against erosion. Regulation of or prohibition of harvesting of mangrove is an important step in protecting the forests.

Marine Biodiversity

Masinloc, Zambales is biologically diverse. It has considerable number of Scleractinian coral species, reef fishes and alga. Nearly 40% (24 genera) of the total recorded in the South China Sea region is found in Masinloc. Live coral cover shows at least 10% increase over the decade (1999-2002). There are 45 families of reef fishes identified in the area with 139 genera and 390 species recorded, which is 60% of the total recorded in the national reef fish visual census database. Coral reef fish density range from 1560-13680 per hectare. Reef fishes remain to be considered over-exploited because of the rampant illegal activities in the area. There are 59 genera of algae with 110 species observed. In 2002, the present algal cover inside the MPA is 34% and 28% outside the MPA (AFMA-MFR Project).

IUCN Red Listed endangered marine turtles *Chelonia mydas* and *Erethmochelys imbricata* have been reported to nest in the sandy shores of Masinloc. In 1993, it has been nationally recognized to have a managed resource protected area (IUCN Category). Masinloc, Zambales is recognized as priority area for the marine conservation for cetaceans, whale sharks and turtles (Ong et al., 2002).

PRESENT USE

Mining

Masinloc is a town found on an area with huge deposits of chromite in its mountains. A mining company, BCI-Coto in Masinloc is now operating a property used to export monthly an average of 1-1.5 million pesos worth of chromite ore, mined from what is known to be the biggest deposit of refractory ore in the world. Accounting of the bigger volume of shipping done here, as compared to that handled at San Fernando, La Union, Masinloc was declared a port of entry (www.zambales.gov.ph/about.html).

Status of the Fishery and Aquatic Resources

The municipality shares almost an equal market leadership position with Sta. Cruz in terms of number of commercial and municipal fishing vessels operating in the area. Masinloc can be developed as a fishing port or fish production and/or processing area. Fishing is the primary source of income for about 29% of households in Masinloc. The inshore and near shore fisheries employ 1,750 fishermen.

There are 490 motorized fishing vessels, 255 non-motorized fishing vessels and 20 commercial fishing vessels that employ at least 30 crew per fishing vessel. Fish production of tuna, skipjack, roundscad, dolphin, Spanish mackerel and sharks accounted to 4,050 m tons in 1998 valued at approximately P202.5 million. There are two (2) existing ice plants in the area with 10.0 tons capacity.

Commercial/municipal fishing is the primary source of livelihood of 29% of household in Masinloc. There are three (3) existing piers/wharves in the area (NAPOCOR, Benguet Corporation and Matalvis Fish Port) which highlights the potential of the area as a port municipality.

The municipal waters of Masinloc has abundant marine species such as yellow fin (tuna), skipjack (roundscud), squid, octopus, lapu-lapu, sea urchin, sea cucumber, Spanish mackerel, seaweed, and other marine species that commands higher market values.

Transportation

The Masinloc Bay is near the international sea-lanes, with good deep seabed suitable for cargo ships (at least 18 meters deep).

MANAGEMENT REGIME

Masinloc has a 127 has Marine Sanctuary Project (San Salvador Island). In 1988, the LGU in collaboration with an NGO (Haribon Foundation Inc.) and the community established a Marine Sanctuary/Marine Reservation in San Salvador, covering an area of 127.5 hectares or 1.69% of the total 7560 hectares Oyon Bay, Masinloc. A percentage of non-contiguous areas were declared as marine reservation where limited fishing was allowed. The establishment of a sanctuary and reservation were crucial for regulating the fishing industry in Masinloc. These protected areas guaranteed the sustained replenishment and regeneration of the marine resources that were in danger of being over exploited past sustainable levels.

Institutions involved in environment and natural resources management in general, and coastal management and marine biodiversity conservation in particular include national government agencies (NGAs), local government units (LGUs) and non-governmental organizations (NGOs). They operate from the national down to the village levels. Aside from the Philippine Council for Sustainable Development (PCSD), the most prominent agencies at the national level are the DA, the DENR, and the Philippine National Police (PNP)-Maritime. For the LGUs, the relevant units include the offices handling functions related to planning, agriculture and the environment. NGOs/POs are now playing active roles in Coastal Resources Management (CRM). Among these key NGOs/POs are Samahang Pangkaunlaran ng San Salvador and the Nagkakaisang Mamamayan ng Mangingisda sa Bani.

Institutional arrangements in Masinloc regarding coastal resources management (that covers coral reef management and marine bio-diversity conservation) are still labelled as 'loose'. There are no clearly defined roles and responsibilities. Although the agencies tend to coordinate their efforts, the coordination activities are largely informal. In some ways, the relationships that are being established are more inter-personal, rather than institutional.

1.3 List of species

Table 1 List of coral genera in Macinloc.

| | |
|-----------------------|----------------------|
| <i>Acropora</i> | <i>Goniastrea</i> |
| <i>Astreopora</i> | <i>Leptastrea</i> |
| <i>Coeloseris</i> | <i>Leptoria</i> |
| <i>Gardineroseris</i> | <i>Fungia</i> |
| <i>Leptoseris</i> | <i>Heliofungia</i> |
| <i>Euphyllia</i> | <i>Lithophyllon</i> |
| <i>Caulastrea</i> | <i>Merulina</i> |
| <i>Cyphastrea</i> | <i>Hydnopora</i> |
| <i>Diploastrea</i> | <i>Lobophyllia</i> |
| <i>Echinopora</i> | <i>Galaxea</i> |
| <i>Favia</i> | <i>Echinophyllia</i> |
| <i>Favites</i> | <i>Goiniopora</i> |

Source: Resource Inventory, 2001.

Table 2 List of coral reef fish in Masinloc.

| Family | Species | Family | Species |
|---------------|---------------------------------------|-----------------|------------------------------------|
| Acanthuridae | <i>Acanthurus japonicus</i> | Carangidae | <i>Atule mate</i> |
| | <i>Acanthurus lineatus</i> | | <i>Carangoides orthogrammus</i> |
| | <i>Acanthurus nigricans</i> | | <i>Caranx melampyngus</i> |
| | <i>Acanthurus nigricauda</i> | | <i>Caranx sexfasciatus</i> |
| | <i>Acanthurus nigrofuscus</i> | | <i>Selar crumenophthalmus</i> |
| | <i>Acanthurus nigroris</i> | | <i>Selaroides leptolepis</i> |
| | <i>Acanthurus olivaceus</i> | Centriscidae | <i>Aeoliscus strigatus</i> |
| | <i>Acanthurus pyroferus</i> | Chaetodontidae | <i>Chaetodon auriga</i> |
| | <i>Acanthurus thompsoni</i> | | <i>Chaetodon baronessa</i> |
| | <i>Acanthurus xanthopterus</i> | | <i>Chaetodon bennetti</i> |
| | <i>Ctenochaetus binotatus</i> | | <i>Chaetodon citrinellus</i> |
| | <i>Ctenochaetus striatus</i> | | <i>Chaetodon ephippium</i> |
| | <i>Ctenochaetus strigosus</i> | | <i>Chaetodon kleinii</i> |
| | <i>Ctenochaetus tominiensis</i> | | <i>Chaetodon lineolatus</i> |
| | <i>Naso annulatus</i> | | <i>Chaetodon lunula</i> |
| | <i>Naso hexacanthus</i> | | <i>Chaetodon melannotus</i> |
| | <i>Naso lituratus</i> | | <i>Chaetodon mertensii</i> |
| | <i>Naso lopezi</i> | | <i>Chaetodon octofasciatus</i> |
| | <i>Naso unicornis</i> | | <i>Chaetodon ornatissimus</i> |
| | <i>Naso vlamingii</i> | | <i>Chaetodon oxycephalus</i> |
| | <i>Zebrasoma flavescens</i> | | <i>Chaetodon punctatofasciatus</i> |
| | <i>Zebrasoma scopas</i> | | <i>Chaetodon rafflesii</i> |
| | <i>Zebrasoma veliferum</i> | | <i>Chaetodon selene</i> |
| Apogonidae | <i>Apogon aureus</i> | | <i>Chaetodon speculum</i> |
| | <i>Apogon guamensis</i> | | <i>Chaetodon trifascialis</i> |
| | <i>Apogon kallopterus</i> | | <i>Chaetodon trifasciatus</i> |
| | <i>Apogon trimaculatus</i> | | <i>Chaetodon ulietensis</i> |
| | <i>Archamia fucata</i> | | <i>Chaetodon unimaculatus</i> |
| | <i>Archamia zosterophora</i> | | <i>Chaetodon vagabundus</i> |
| | <i>Cheilodipterus macrodon</i> | | <i>Chaetodon xanthurus</i> |
| | <i>Cheilodipterus quinquelineatus</i> | | <i>Forcipiger longirostris</i> |
| | <i>Sphaeramia nematoptera</i> | | <i>Heniochus acuminatus</i> |
| Aulostomidae | <i>Aulostomus chinensis</i> | | <i>Heniochus chrysostomus</i> |
| Balistidae | <i>Balistapus undulatus</i> | | <i>Heniochus monoceros</i> |
| | <i>Melichthys vidua</i> | | <i>Heniochus singularius</i> |
| | <i>Pseudobalistes flavimarginatus</i> | | <i>Heniochus varius</i> |
| | <i>Rhinecanthus verrucosus</i> | Chanidae | <i>Chanos chanos</i> |
| | <i>Sufflamen bursa</i> | Cirrhitidae | <i>Cirrhitichthys falco</i> |
| | <i>Sufflamen chrysopterus</i> | | <i>Paracirrhites arcatus</i> |
| | <i>Sufflamen fraenatus</i> | | <i>Paracirrhites forsteri</i> |
| Blenniidae | <i>Aspidontus taeniatus</i> | Dactylopteridae | <i>Dactyloptena orientalis</i> |
| | <i>Atrosalarias fuscus</i> | Diodontidae | <i>Diodon hystrix</i> |
| | <i>Istiblennius edentulus</i> | Ephippidae | <i>Platax orbicularis</i> |

Table 2 cont. List of coral reef fish in Masinloc.

| Family | Species | Family | Species |
|---------------|--------------------------------------|---------------|-------------------------------------|
| | <i>Platax teira</i> | | <i>Pseudocheilinus hexataenia</i> |
| Fistulariidae | <i>Fistularia commersonii</i> | | <i>Pseudocheilinus octotaenia</i> |
| Gobiidae | <i>Amblyeleotris guttata</i> | | <i>Anampses caeruleopunctatus</i> |
| | <i>Amblygobius albimaculatus</i> | | <i>Anampses meleagrides</i> |
| | <i>Amblygobius phalaena</i> | | <i>Anampses twistii</i> |
| | <i>Cryptocentrus cinctus</i> | | <i>Cheilio inermis</i> |
| | <i>Exyrias bellissimus</i> | | <i>Coris batuensis</i> |
| | <i>Exyrias puntang</i> | | <i>Coris caudimacula</i> |
| | <i>Valenciennea strigata</i> | | <i>Coris gaimard</i> |
| Haemulidae | <i>Plectorhinchus chaetodonoides</i> | | <i>Gomphosus varius</i> |
| | <i>Plectorhinchus diagrammus</i> | | <i>Halichoeres biocellatus</i> |
| | <i>Plectorhinchus gaterinus</i> | | <i>Halichoeres chrysus</i> |
| | <i>Plectorhinchus lessonii</i> | | <i>Halichoeres hortulanus</i> |
| | <i>Plectorhinchus lineatus</i> | | <i>Halichoeres margaritaceus</i> |
| | <i>Plectorhinchus orientalis</i> | | <i>Halichoeres marginatus</i> |
| | <i>Plectorhinchus picus</i> | | <i>Halichoeres melanochir</i> |
| Holocentridae | <i>Myripristis adusta</i> | | <i>Halichoeres melanurus</i> |
| | <i>Myripristis kuntee</i> | | <i>Halichoeres nebulosus</i> |
| | <i>Myripristis murdjan</i> | | <i>Halichoeres prosopeion</i> |
| | <i>Myripristis violacea</i> | | <i>Halichoeres purpurascens</i> |
| | <i>Neoniphon sammara</i> | | <i>Halichoeres richmondi</i> |
| | <i>Sargocentron caudimaculatum</i> | | <i>Halichoeres scapularis</i> |
| | <i>Sargocentron diadema</i> | | <i>Hemigymnus fasciatus</i> |
| | <i>Sargocentron rubrum</i> | | <i>Hemigymnus melapterus</i> |
| | <i>Sargocentron spiniferum</i> | | <i>Hologymnosus doliatus</i> |
| Kyphosidae | <i>Kyphosus vaigiensis</i> | | <i>Macropharyngodon meleagris</i> |
| Labridae | <i>Bodianus axillaris</i> | | <i>Macropharyngodon negrosensis</i> |
| | <i>Bodianus diana</i> | | <i>Stethojulis bandanensis</i> |
| | <i>Bodianus loxozonus</i> | | <i>Stethojulis strigiventer</i> |
| | <i>Bodianus mesothorax</i> | | <i>Stethojulis trilineata</i> |
| | <i>Choerodon anchorago</i> | | <i>Thalassoma hardwicke</i> |
| | <i>Cheilinus celebicus</i> | | <i>Thalassoma janseni</i> |
| | <i>Cheilinus chlorourus</i> | | <i>Thalassoma lunare</i> |
| | <i>Cheilinus fasciatus</i> | | <i>Thalassoma lutescens</i> |
| | <i>Cheilinus orientalis</i> | | <i>Thalassoma purpureum</i> |
| | <i>Cheilinus oxycephalus</i> | | <i>Thalassoma quinquevittatum</i> |
| | <i>Cheilinus trilobatus</i> | | <i>Diproctacanthus xanthurus</i> |
| | <i>Cirrhilabrus cyanopleura</i> | | <i>Labrichthys unilineatus</i> |
| | <i>Epibulus insidiator</i> | | <i>Labroides bicolor</i> |
| | <i>Oxycheilinus bimaculatus</i> | | <i>Labroides dimidiatus</i> |
| | <i>Oxycheilinus digrammus</i> | | <i>Labropsis micronesica</i> |
| | <i>Oxycheilinus unifasciatus</i> | Lethrinidae | <i>Gnathodentex aureolineatus</i> |
| | <i>Pseudocheilinus evanidus</i> | | <i>Lethrinus harak</i> |

Table 2 cont. List of coral reef fish in Masinloc.

| Family | Species | Family | Species |
|---------------|-------------------------------------|---------------|-------------------------------------|
| | <i>Lethrinus nebulosus</i> | | <i>Ostracion meleagris</i> |
| | <i>Lethrinus ornatus</i> | | <i>Ostracion solorensis</i> |
| | <i>Monotaxis grandoculis</i> | Pempheridae | <i>Pempheris oualensis</i> |
| Lutjanidae | <i>Aphareus furca</i> | | <i>Pempheris vanicolensis</i> |
| | <i>Lutjanus biguttatus</i> | Pinguipedidae | <i>Parapercis clathrata</i> |
| | <i>Lutjanus decussatus</i> | | <i>Parapercis cylindrica</i> |
| | <i>Lutjanus fulvus</i> | | <i>Parapercis hexopthalma</i> |
| | <i>Lutjanus gibbus</i> | | <i>Parapercis tetracantha</i> |
| | <i>Lutjanus lutjanus</i> | | <i>Parapercis xanthozona</i> |
| | <i>Lutjanus monostigma</i> | Plotosidae | <i>Plotosus lineatus</i> |
| | <i>Lutjanus vitta</i> | Pomacanthidae | <i>Centropyge bicolor</i> |
| | <i>Macolor niger</i> | | <i>Centropyge bispinosus</i> |
| Microdesmidae | <i>Nemateleotris decora</i> | | <i>Centropyge heraldi</i> |
| | <i>Nemateleotris magnifica</i> | | <i>Centropyge tibicen</i> |
| | <i>Ptereleotris evides</i> | | <i>Centropyge vrolikii</i> |
| Monacanthidae | <i>Acreichthys radiatus</i> | | <i>Genicanthus lamarck</i> |
| | <i>Acreichthys tomentosus</i> | | <i>Pomacanthus semicirculatus</i> |
| | <i>Aluterus scriptus</i> | | <i>Pygoplites diacanthus</i> |
| | <i>Amanses scopas</i> | Pomacentridae | <i>Abudefduf sexfasciatus</i> |
| | <i>Oxymonacanthus longirostris</i> | | <i>Abudefduf vaigiensis</i> |
| | <i>Pervagor aspricaudus</i> | | <i>Acanthochromis polyacanthus</i> |
| | <i>Pervagor janthinosoma</i> | | <i>Amblyglyphidodon aureus</i> |
| Mugilidae | <i>Crenimugil crenilabis</i> | | <i>Amblyglyphidodon curacao</i> |
| | <i>Valamugil seheli</i> | | <i>Amblyglyphidodon leucogaster</i> |
| Mullidae | <i>Mulloidichthys flavolineatus</i> | | <i>Amphiprion clarkii</i> |
| | <i>Mulloidichthys vanicolensis</i> | | <i>Amphiprion melanopus</i> |
| | <i>Parupeneus barberinus</i> | | <i>Amphiprion ocellaris</i> |
| | <i>Parupeneus bifasciatus</i> | | <i>Amphiprion perideraion</i> |
| | <i>Parupeneus cyclostomus</i> | | <i>Amphiprion sandaracinos</i> |
| | <i>Parupeneus indicus</i> | | <i>Chromis amboinensis</i> |
| | <i>Parupeneus multifasciatus</i> | | <i>Chromis atripectoralis</i> |
| | <i>Parupeneus pleurostigma</i> | | <i>Chromis atripes</i> |
| | <i>Upeneus tragula</i> | | <i>Chromis lepidogenys</i> |
| Muraenidae | <i>Gymnothorax javanicus</i> | | <i>Chromis margaritifer</i> |
| Nemipteridae | <i>Pentapodus macrurus</i> | | <i>Chromis ovatiformes</i> |
| | <i>Scolopsis affinis</i> | | <i>Chromis retrofasciata</i> |
| | <i>Scolopsis bilineatus</i> | | <i>Chromis ternatensis</i> |
| | <i>Scolopsis ciliatus</i> | | <i>Chromis vanderbilti</i> |
| | <i>Scolopsis lineatus</i> | | <i>Chromis viridis</i> |
| | <i>Scolopsis margaritifer</i> | | <i>Chromis weberi</i> |
| | <i>Scolopsis monogramma</i> | | <i>Chromis xanthura</i> |
| | <i>Scolopsis trilineatus</i> | | <i>Chrysiptera caeruleolineatus</i> |
| Ostraciidae | <i>Ostracion cubicus</i> | | <i>Chrysiptera leucopoma</i> |

Table 2 cont. List of coral reef fish in Masinloc.

| Family | Species | Family | Species | Family | Species |
|------------------|--------------------------------------|--------------|----------------------------------|---|-----------------------------------|
| | <i>Chrysiptera oxycephala</i> | | <i>Cetoscarus bicolor</i> | | <i>Plectropomus areolatus</i> |
| | <i>Chrysiptera rollandi</i> | | <i>Chlorurus pyrrhurus</i> | | <i>Plectropomus leopardus</i> |
| | <i>Chrysiptera springeri</i> | | <i>Hipposcarus longiceps</i> | | <i>Plectropomus oligacanthus</i> |
| | <i>Chrysiptera talboti</i> | | <i>Scarus bleekeri</i> | | <i>Variola louti</i> |
| | <i>Dascyllus aruanus</i> | | <i>Scarus bowersi</i> | | <i>Diploprion bifasciatum</i> |
| | <i>Dascyllus reticulatus</i> | | <i>Scarus dimidiatus</i> | Siganidae | <i>Siganus argenteus</i> |
| | <i>Dascyllus trimaculatus</i> | | <i>Scarus festivus</i> | | <i>Siganus corallinus</i> |
| | <i>Dischistodus perspicillatus</i> | | <i>Scarus flavipectoralis</i> | | <i>Siganus doliatus</i> |
| | <i>Dischistodus prosopotaenia</i> | | <i>Scarus forsteni</i> | | <i>Siganus fuscescens</i> |
| | <i>Hemiglyphidodon plagiometopon</i> | | <i>Scarus frenatus</i> | | <i>Siganus guttatus</i> |
| | <i>Neoglyphidodon melas</i> | | <i>Scarus ghobban</i> | | <i>Siganus javus</i> |
| | <i>Neoglyphidodon nigroris</i> | | <i>Scarus globiceps</i> | | <i>Siganus puellus</i> |
| | <i>Neoglyphidodon trilobatus</i> | | <i>Scarus microrhinos</i> | | <i>Siganus punctatus</i> |
| | <i>Plectroglyphidodon dickii</i> | | <i>Scarus niger</i> | | <i>Arothron nigropunctatus</i> |
| | <i>Plectroglyphidodon lacrymatus</i> | | <i>Scarus oviceps</i> | | <i>Canthigaster amboinensis</i> |
| | <i>Pomacentrus adelus</i> | | <i>Scarus psittacus</i> | | <i>Canthigaster bennetti</i> |
| | <i>Pomacentrus alexanderae</i> | | <i>Scarus quoyi</i> | | <i>Canthigaster compressa</i> |
| | <i>Pomacentrus amboinensis</i> | | <i>Scarus rivulatus</i> | | <i>Canthigaster coronata</i> |
| | <i>Pomacentrus bankanensis</i> | | <i>Scarus schlegeli</i> | | <i>Canthigaster janthinoptera</i> |
| | <i>Pomacentrus brachialis</i> | | <i>Scarus sordidus</i> | | <i>Canthigaster solandri</i> |
| | <i>Pomacentrus burroughi</i> | | <i>Scarus tricolor</i> | | <i>Canthigaster valentini</i> |
| | <i>Pomacentrus chrysurus</i> | Scorpaenidae | <i>Dendrochirus zebra</i> | Zanclidae | <i>Zanclus cornutus</i> |
| | <i>Pomacentrus coelestis</i> | | <i>Pterois antennata</i> | | |
| | <i>Pomacentrus lepidogenys</i> | | <i>Pterois ruselli</i> | 45 | 390 |
| | <i>Pomacentrus moluccensis</i> | | <i>Pterois volitans</i> | | |
| | <i>Pomacentrus nigromarginatus</i> | | <i>Scorpaenopsis diabolus</i> | Source: UP Marine Science Institute Database | |
| | <i>Pomacentrus philippinus</i> | Serranidae | <i>Pseudanthias huchtii</i> | | |
| | <i>Pomacentrus smithi</i> | | <i>Pseudanthias squamipinnis</i> | | |
| | <i>Pomacentrus stigma</i> | | <i>Aethaloperca rogaa</i> | | |
| | <i>Pomacentrus vaiuli</i> | | <i>Anyperodon leucogrammicus</i> | | |
| | <i>Pomachromis richardsoni</i> | | <i>Cephalopholis argus</i> | | |
| | <i>Stegastes lividus</i> | | <i>Cephalopholis boenak</i> | | |
| | <i>Stegastes nigricans</i> | | <i>Cephalopholis cyanostigma</i> | | |
| | <i>Stegastes obreptus</i> | | <i>Cephalopholis leopardus</i> | | |
| Priacanthidae | <i>Priacanthus cruentatus</i> | | <i>Cephalopholis miniata</i> | | |
| | <i>Priacanthus hamrur</i> | | <i>Cephalopholis urodeta</i> | | |
| | <i>Priacanthus macracanthus</i> | | <i>Epinephelus areolatus</i> | | |
| Pseudochromi dae | <i>Labracinus cyclophthalmus</i> | | <i>Epinephelus fasciatus</i> | | |
| | <i>Labracinus melanotaenia</i> | | <i>Epinephelus hexagonatus</i> | | |
| | <i>Pseudochromis fuscus</i> | | <i>Epinephelus merra</i> | | |
| | <i>Pseudochromis perspicillatus</i> | | <i>Epinephelus ongus</i> | | |
| Scaridae | <i>Calotomus carolinus</i> | | <i>Epinephelus quoyanus</i> | | |
| | <i>Calotomus japonicus</i> | | <i>Epinephelus tauvina</i> | | |

Table 3 List of algae for Zambales.

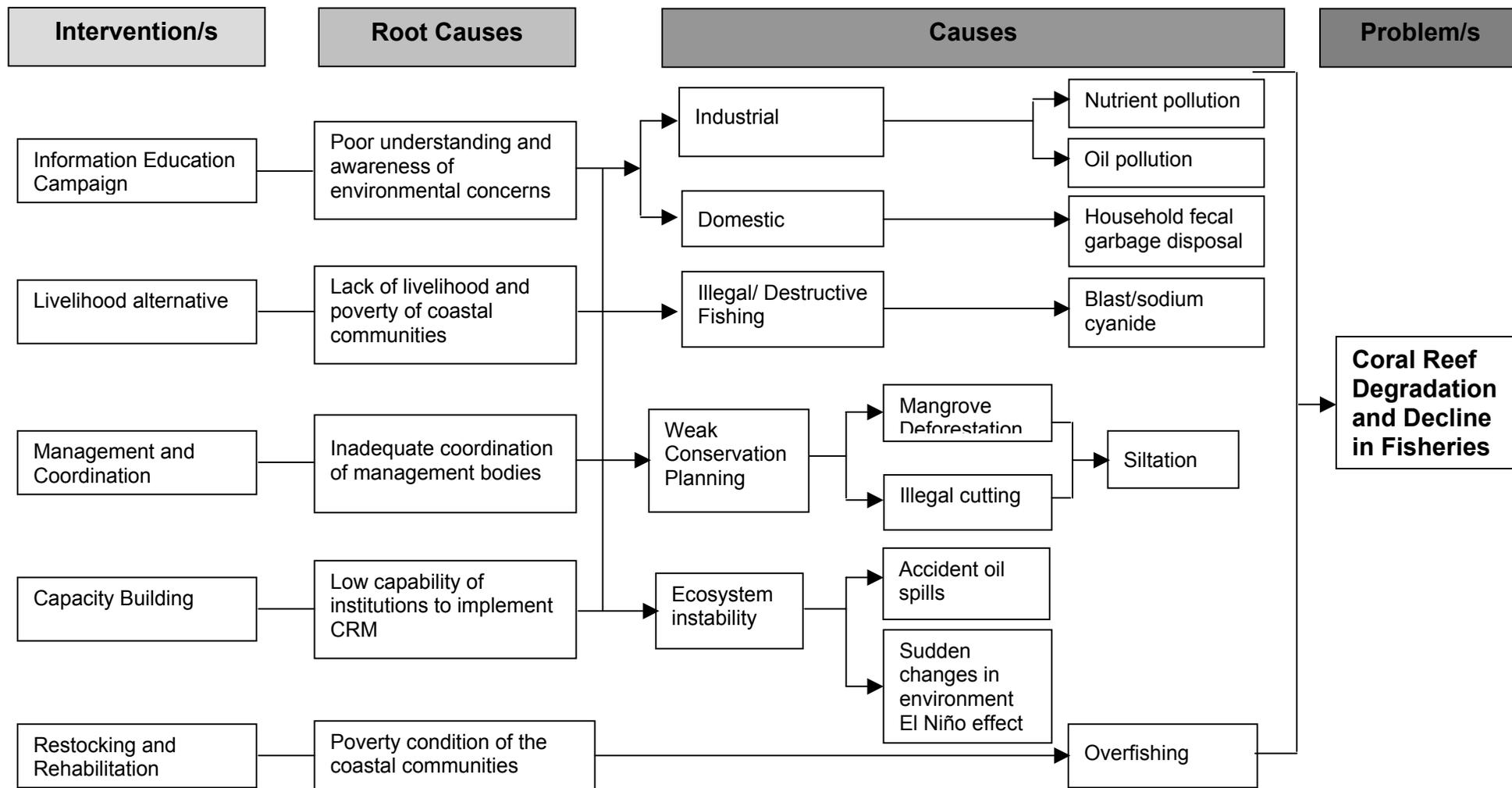
| Species | Species |
|----------------------------------|------------------------------------|
| <i>Acanthophora muscoides</i> | <i>Hypnea cervicornis</i> |
| <i>Acanthophora spicifera</i> | <i>Hypnea sp.</i> |
| <i>Acetabularia crenulata</i> | <i>Jania decussato-dichotoma</i> |
| <i>Acetabularia major</i> | <i>Kappaphycus cottonii</i> |
| <i>Actinotrichia fragilis</i> | <i>Laurencia cartilaginea</i> |
| <i>Amansia glomerata</i> | <i>Laurencia flexilis</i> |
| <i>Amphiroa foliacea</i> | <i>Laurencia obtusa</i> |
| <i>Amphiroa fragilissima</i> | <i>Laurencia papillosa</i> |
| <i>Anadyomene plicata</i> | <i>Laurencia sp.</i> |
| <i>Anadyomene wrightii</i> | <i>Leveillea jungermanniioides</i> |
| <i>Asparagopsis taxiformis</i> | <i>Liagora sp.</i> |
| <i>Avrainvillea erecta</i> | <i>Lobophora variegata</i> |
| <i>Avrainvillea lacerata</i> | <i>Mastophora rosea</i> |
| <i>Boergesenia forbesii</i> | <i>Mesophyllum erubescens</i> |
| <i>Enteromorpha intestinalis</i> | <i>Neomeris annulata</i> |
| <i>Galaxaura fasciculata</i> | <i>Padina australis</i> |
| <i>Galaxaura marginata</i> | <i>Padina sp.</i> |
| <i>Galaxaura oblongata</i> | <i>Padina tetrastomatica</i> |
| <i>Galaxaura sp.</i> | <i>Peyssonnelia rubra</i> |
| <i>Galaxaura subverticillata</i> | <i>Peyssonnelia sp.</i> |
| <i>Gelidiella acerosa</i> | <i>Porolithon boergesenii</i> |
| <i>Gelidiopsis repens</i> | <i>Portieria hornemannii</i> |
| <i>Gracilaria arcuata</i> | <i>Rhodopeltis sp.</i> |
| <i>Gracilaria coronopifolia</i> | <i>Sargassum baccularia</i> |
| <i>Gracilaria salicornia</i> | <i>Sargassum binderi</i> |
| <i>Gracilaria eucheumoides</i> | <i>Sargassum crassifolium</i> |
| <i>Gracilaria sp.</i> | <i>Sargassum cristaefolium</i> |
| <i>Gracilaria verrucosa</i> | <i>Sargassum polycystum</i> |
| <i>Halicoryne wrightii</i> | <i>Sargassum sp.</i> |
| | <i>Sargassum sullivanii</i> |
| <i>Halimeda discoidea</i> | <i>Sporolithon erythraeum</i> |
| <i>Halimeda macroloba</i> | <i>Sporolithon sp.</i> |
| <i>Halimeda opuntia</i> | <i>Titanophora sp.</i> |
| <i>Halimeda sp.</i> | <i>Titanophora weberae</i> |
| <i>Halimeda velasquezii</i> | <i>Tolypiocladia sp.</i> |
| <i>Halymenia durvillaei</i> | <i>Turbinaria conoides</i> |
| <i>Halymenia maculata</i> | <i>Turbinaria decurrens</i> |
| <i>Hormophysa cuneiformis</i> | <i>Turbinaria ornata</i> |
| <i>Hydroclathrus clathratus</i> | <i>Turbinaria sp.</i> |
| <i>Hydroclathrus tenuis</i> | <i>Udotea orientalis</i> |
| <i>Hydrolithon samoense</i> | <i>Valonia ventricosa</i> |
| | <i>Zellera tawallina</i> |
| | <i>Zonaria sp.</i> |
| | 110 |

Source: Holdings of the G.T. Velasquez Phycological Herbarium as of 11/28/03 (updated by Dr. E. Ganzon-Fortes)

ANNEX II STAKEHOLDER INVOLVEMENT PLAN

| Type of Stakeholder | Name of Stakeholder | Involvement/interests | Activities/Problems | Potential Impact (+/-) | Resource Management Participation |
|-----------------------------------|---|--|--|------------------------|---|
| Livelihood | | | | | |
| | 1. Local fishermen | Food, revenue | Fishing/boat anchoring, illegal fishing gears | (+/-) | Many fishermen recognize the importance of coral reefs and willing to work closely with governmental agencies if there is sufficient enabling environment |
| | | | | | Registry and compliance with the rules and regulations if they are recipient of IEC |
| | 2. Fishermen outside of Masinloc, Zambales | Food, revenue | Fishing/boat anchoring, illegal fishing gears | (-) | Compliance to local and national laws if there is sufficient IEC |
| | 3. Tourism businessmen, local tourist boats | Revenue | Guide tours/boat anchoring, garbage, sewage | (+/-) | Tourism zone committee participation in Tourist Management Plan implementation |
| | 4. Tour boats outside of Masinloc, Zambales | Revenue, recreation and service providers | Guide tours/boat anchoring, garbage, sewage | (-) | Compliance with visitor management protocols and guidelines, Implementing Rules and Regulations (IRR) |
| | 5. Tourism association and the sector stakeholder | Recreation and service providers | Snorkeling, SCUBA diving, no diving skills, collection of coral reef organism, trampling on corals | (-/+) | Participation in the drafting of tourism guidelines and implementation of visitor management system |
| Agencies/Institutions | | | | | |
| Local Government Institutions | 1. Provincial Government | Co-chair with the PAMB | Planning, implementation and management of the proposed Demonstration Site | (+) | Coordinate with LGU and NGAs and POs; Policy advise and formalized leveraging |
| | 2. PAMB | Management policy implementation | Assist in the implementation of the proposed demonstration site | (+) | Policy guide for the implementation of the management plans |
| | 3. FARMC | Consultative advisory council to the LGU | Co-management and implementation of the proposed demonstration site | (+) | Consultative body |
| | 4. CRM Committee | LGU counterpart group | Co-management and implementation of the proposed demonstration site | (+) | Local steering committee of various action plans |
| | 5. San Salvador Marine Conservation Project | Conservation and protection of coral reefs | Co-management of the proposed Demonstration Site | (+) | Assist in coordinating with the project especially in marine sanctuary management and operations |
| National Government Agencies | 1. DENR | Co-implementation and coordination of the proposed demonstration site | Assist in the implementation of the proposed demonstration site | (+) | GEF focal point for UNEP-SCS and oversight for Masinloc Demo site Project |
| | 2. DA-BFAR | Technical assistance and over-all project direction | Assist in the implementation of the proposed demonstration site | (+) | Partner in technical assistance to the LGU for Fisheries Management |
| | 3. UPMSI-MERF | Technical assistance and coordination with DENR/LGU/UNEP | Assist in the implementation of the proposed demonstration site | (+) | Coral reef focal point for demo site; coordinate with NGA, Provincial LGU and UNEP-GEF-SCS PCU |
| Organizations | | | | | |
| People's Organization | 1. The Nagkakaisang Mamamayan para sa Kalikasan ng Bani | Conservation and protection of coral reefs | Co-management of the proposed demonstration site | (+) | Collaborator in the conservation and protection of the marine sanctuary |
| | 2. The Samahang Pangkaunlaran ng San Salvador (SPSS) | Conservation, protection and development of coral reefs | Co-management of the proposed demonstration site | (+) | Marine sanctuary stewardship especially of mangrove reforestation |
| Local Non-Government Organization | 1. The Bantay Dagat Volunteers | Conservation and protection of coral reefs | Patrolling on the proposed demonstration site | (+) | Law enforcement assistance and compliance; monitoring of CRM ordinance |
| Private sector | 1. Masinloc Power Plant (NPC) | Management and conservation of the coastal areas including the proposed demonstration site | Co-management of the proposed demonstration site | (+) | Compliance to the ECC conditionalities and guidelines issued by the DENR and co-financing for environment fund |

ANNEX III CAUSAL CHAIN ANALYSIS OF MASINLOC, ZAMBALES



ANNEX IV MONITORING AND EVALUATION PLAN FOR MASINLOC, ZAMBALES

1. Collecting and reporting data on performance indicators

Environmental Indicators

Biophysical monitoring activities inside and outside (adjacent) the three community-based marine sanctuaries will be conducted annually, from the start to the end of the project. The data collected will be analyzed and uploaded to the established database, Marine Information Database Archive System (MIDAS) of the Marine Science Institute. A participatory MPA monitoring will be undertaken using the fish visual census with benthos assessment using Uychiaoco et al (2001) methods.

Socio-economic Indicators

Initial assessment (scanning and feasibility studies) of the potential livelihood options that can be conducted will be undertaken. Consultation meetings, training and workshops will also be done with prioritized selection of qualified community stewards of the community-based marine sanctuaries. Team building efforts for various members of the marine sanctuary management team will also be programmed. Integration of the fisheries and socio-economic information will utilize FISH BE (Licuanan et al. 2004).

Process Indicators

Impact assessment of project activities such as in demonstrating sustainable community-based marine sanctuaries network, capacity building, and supplemental livelihood linked to the stewardship of the marine sanctuaries and information and education campaign (IEC) will be evaluated. Aside from using the MPA rating system (CCEF 2004), this will be modified with governance indicators (EcoGov 2 in prep) to gauge transparency, accountability and participatory decision-making in the processes outlined earlier.

The demonstration site manager is tasked to submit progress reports including financial reports semi-annually to the donor under the terms of agreement. This is a prerequisite for the processing and release of the next quarter budget request. The progress of the project implementation will also be assessed by the focal point.

2. Schedule of mid-term review, self-evaluation and end-of-project evaluation

| Monitoring/Evaluation | 2005 | | 2006 | | | | 2007 | | | |
|--|------|---|------|---|---|---|------|---|---|---|
| | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Ecological monitoring | | | | | | | | | | |
| Mid-term review | | | | | | | | | | |
| Evaluation of the progress by the management board | | | | | | | | | | |
| Evaluation in the end of project | | | | | | | | | | |

The National Coral Reef committee and other related groups such as the Philippine Marine Sanctuary support group network and the Philippine Coral Reef information network will include this as part of the national coral reef strategy. The design of the M&E forms will follow similar protocols as in Uychiaoco et al (2001) for the biophysical concerns and also adopt some of the World Commission on Protected Areas (2001) protocols for management effectiveness, and the Philippine Marine Sanctuary report card system that has adopted the CCEF MPA rating system.

3. Description of how monitoring and evaluation activities will involve participants and stakeholders

Participant involved in the training including stakeholders will be engaged in the monitoring and evaluation of three community-based marine sanctuaries, coral rehabilitation and mangrove rehabilitation. As mentioned earlier an initial technical working group will be organized to establish criteria that will incorporate equitable representation of the major stakeholders together with their level of commitment, technical acumen and appropriate match with their respective tasks and responsibilities for the particular activities. A performance monitoring plans of various groups will likewise be formulated in the 1st quarter of mobilization.

4. Resources that will be allocated to monitoring and evaluation

Six thousand (US \$) is allocated for the ecological monitoring for the duration of the project, which includes consultation fees and other expenses related to monitoring. One thousand (US \$) for the mid-term review, 2500 (US \$) for the evaluation of the progress by the management board and another 2500 (US \$) for the evaluation at the end of the project.

5. How will monitoring and evaluation results be used in management?

An initial feedback of the results will be made before the end of each trip and a draft report will be given not more than two months after data collection. After formal acceptance by the local community and LGU, a formal presentation will be made no later than a month after formal acceptance. Two midyear-sharing summits will be facilitated for an all stakeholders forum.

ANNEX V.1 BUDGET BY ACTIVITIES

| Activities | GEF | | | | | Government | | | | | GEF | Co-funding | | Total |
|------------|--|---|-------|------|------|------------|-------|------|------|------|-------|------------|---------|-------|
| | 1000 | 2000 | 3000 | 4000 | 5000 | 1000 | 2000 | 3000 | 4000 | 5000 | | In-kind | In=cask | |
| | 1 | Demonstrating sustainable community-based marine sanctuaries network | | | | | | | | | | | | |
| 1.1 | Marine sanctuary network orientation workshop | | | | | | | | | | | | | |
| 1.1.1 | | 280 | | | | | 180 | | | | 280 | | 180 | 460 |
| 1.1.2 | | | 450 | | | | | 450 | | | 450 | | 450 | 900 |
| 1.1.3 | 1,620 | | | | | 1,500 | | | | | 1,620 | | 1,500 | 3,120 |
| 1.2 | CRM Planning Workshop | | | | | | | | | | | | | |
| 1.2.1 | | | 1,350 | | | | | | | | 1,350 | | | 1,350 |
| 1.2.2 | 1,800 | | | | | | | | | | 1,800 | | | 1,800 |
| 1.3 | Detailed assessment of two (2) additional marine sanctuaries | | | | | | | | | | | | | |
| 1.3.1 | | | 750 | | | | | 750 | | | 750 | | 750 | 1,500 |
| 1.3.2 | | 2,000 | | | | | | | | | 2,000 | | | 2,000 |
| 1.3.3 | | 360 | | | | | | | | | 360 | | | 360 |
| 1.3.4 | | 2,000 | | | | | 5,300 | | | | 2,000 | | 5,300 | 7,300 |
| 1.3.5 | | | | 900 | | | | | | | 900 | | | 900 |
| 1.3.6 | | 1,500 | | | | | 3,000 | | | | 1,500 | | 3,000 | 4,500 |
| 1.3.7 | | 540 | | | | | | | | | 540 | | | 540 |

| Activities | | GEF | | | | | Government | | | | | GEF | Co-funding | | Total |
|------------|--|-------|-------|-------|-------|------|------------|-------|-------|------|------|-------|------------|---------|--------|
| | | 1000 | 2000 | 3000 | 4000 | 5000 | 1000 | 2000 | 3000 | 4000 | 5000 | | In-kind | In=cask | |
| 1.4 | Monitoring of coral and reef fish inside and outside the sanctuary | | | | | | | | | | | 0 | | | 0 |
| 1.4.1 | Subcontract for monitoring activities and prepare reports (2 persons x \$160 x 4 days/year; 4 persons x \$160 x 4 days/year) | | 3,840 | | | | | 7,680 | | | | 3,840 | | 7,680 | 11,520 |
| 1.4.2 | 3 Boats to be rented (15 days) | | 540 | | | | | 1,080 | | | | 540 | | 1,080 | 1,620 |
| 1.5 | Training on reseeding and grow-out methods (e.g. giant clams, sea urchin and abalone) | | | | | | | | | | | 0 | | | 0 |
| 1.5.1 | Participants cost (10 participants @ 5 days @ 10) | | | 500 | | | | | 3,600 | | | 500 | | | 500 |
| 1.5.2 | Boat Rental (5 days) | | 180 | | | | | | | | | 180 | | | 180 |
| 1.5.3 | Assign resource speakers for the training (2 speakers x \$100/day x 3 days) | 600 | | | | | 3,000 | | | | | 600 | | 3,000 | 3,600 |
| 1.6 | Implementation of reseeding and grow-out methods of sea urchins | | | | | | | | | | | 0 | | | |
| 1.6.1 | Purchase of sea urchins 1.2 @ 2700 @ 3 sites | | | | 9,720 | | | | | | | 9,720 | | | 9,720 |
| 1.6.2 | Pilot reseeding activities in marine sanctuaries of sea urchins (\$ 20 @ 5 days @ 9 persons @ 1 site; \$ 20 @ 5 days @ 2 sites @ 18 persons) | | | 900 | | | | | | | | 900 | | 3,600 | 4,500 |
| 1.6.3 | Boat rental (15 days @ \$ 36) | | 540 | | | | | | | | | 540 | | | 540 |
| 1.7 | Reef Fishery and licensing establishment and implementation | | | | | | | | | | | 0 | | | 0 |
| 1.7.1 | Assign consultants to establish and implement Reef Fishery and Licensing system (5 x \$100 @ 2 year) | 1,000 | | | | | | | | | | 1,000 | | | 1,000 |
| 1.7.2 | Registration and renewal (5 survey technicians x \$30 per year) | 450 | | | | | | | | | | 450 | | | 450 |
| 1.8 | Coral Reef rehabilitation | | | | | | | | | | | 0 | | | 0 |
| 1.8.1 | Assign resource speakers for the training (2 speakers x \$100/day x 5 days; \$300 - food, transportation and venue) | | 1,000 | | | | | 300 | | | | 1,000 | | 300 | 1,300 |
| 1.8.2 | Conduct training on coral reef rehabilitation methods (10 participants x 5 days x \$30/day; 25 participants x 5 days x \$30/day) | | | 1,500 | | | | | 3,750 | | | 1,500 | | 3,750 | 5,250 |
| 1.8.3 | Boat rental (5 days) | | 180 | | | | | | | | | 180 | | | 180 |
| 1.90 | Initial assessment of potential additional marine sanctuaries/reserves | | | | | | | | | | | 0 | | | 0 |
| 1.9.1 | Subcontract to train, design and undertake Participatory Coastal Resource Assessment (PCRA), and prepare report (2 persons x \$200/day x 5 days) | | 2,000 | | | | | 5,300 | | | | 2,000 | 5,300 | | 7,300 |
| 1.10 | Establishment of marine sanctuary fund | | | | | | | | | | | 0 | | | 0 |

| Activities | | GEF | | | | | Government | | | | | GEF | Co-funding | | Total |
|------------|---|------|-------|-------|------|------|------------|-------|------|------|------|----------|------------|---------|----------|
| | | 1000 | 2000 | 3000 | 4000 | 5000 | 1000 | 2000 | 3000 | 4000 | 5000 | | In-kind | In=cask | |
| 1.10.1 | Assign finance and fund management specialist for scanning and cost revenue analyses, set-up business and sustainable financing plan (5 days x \$100/day per year) | | 1,500 | | | | | | | | | 1,500 | | | 1,500 |
| 2 | Capacity building | | | | | | | | | | | 0 | | | 0 |
| 2.1 | Patrolling activities | | | | | | | | | | | 0 | | | 0 |
| 2.1.1 | Contract people's organization to conduct training on enforcement skill activities (15 participants x \$22/day x 3 days) | | 990 | | | | | | | | | 990 | | | 990 |
| 2.1.2 | Conduct patrolling activities (2 persons @ \$8 @ 4 week @ 30 months) | | 1,920 | | | | | | | | | 1,920 | | | 1,920 |
| 2.1.3 | Boat rental for patrolling (144 days @ \$36) | | | | | | 4,320 | | | | | 0 | 4,320 | | 4,320 |
| 2.1.4 | Communication equipment such as handheld radio | | | | 360 | | | | | | | 360 | | | 360 |
| 2.1.5 | Purchase 1 binocular | | | | 50 | | | | | | | 50 | | | 50 |
| 2.1.6 | Patrol light (superlight) | | | | 50 | | | | | | | 50 | | | 50 |
| 2.1.7 | Mask and snorkel (10 sets) | | | | 300 | | | | | | | 300 | | | 300 |
| 2.2 | Strengthen law enforcement capabilities of Bantay dagat (sea wardens) personnel | | | | | | | | | | | 0 | | | 0 |
| 2.2.1 | Training course on legislation (2 per year @ 40 participants @ \$5/day) | | | 1,500 | | | | | | | | 1,500 | | | 1,500 |
| 3 | Supplemental livelihood linked to the stewardship of the marine sanctuary | | | | | | | | | | | 0 | | | 0 |
| 3.1. | Orientation workshop in determination of potential alternative livelihood options and appropriate guidelines/policies on its implementation | | | | | | | | | | | 0 | | | 0 |
| 3.1.1 | Assign contractors to conduct training for livelihood option/s (20 participants x \$25/day x 3 days) | | | 1,500 | | | | | | | | 1,500 | | | 1,500 |
| 3.1.2 | Subcontract to assess supplemental and complementary livelihood options and conduct alternative livelihood training for fishermen (3-day training) (10 persons @ 3 days @ \$60; 10 persons @ 3 days @ \$60) | | 1,800 | | | | | 1,800 | | | | 1,800 | 1,800 | | 3,600 |
| 3.2 | Training of the potential alternative livelihood options | | | | | | | | | | | 0 | | | 0 |

| Activities | GEF | | | | | Government | | | | | GEF | Co-funding | | Total |
|------------|---|--|--------|-------|-------|------------|---------|-------|-------|------|----------|------------|---------|----------|
| | 1000 | 2000 | 3000 | 4000 | 5000 | 1000 | 2000 | 3000 | 4000 | 5000 | | In-kind | In=cask | |
| | 3.2.1 | Conduct training on supplemental and complementary livelihood and stewardship for fishermen (10 participants x 3 days x \$40/day; 12 participants @ 3 days @ \$40/day and \$100 for food and transportation) | | | 1,200 | | | | 1,640 | | | 1,200 | | 1,640 |
| 3.2.2 | Conduct training on business management (15 participants x \$25/day x 2 days) | | | 1,500 | | | | | | | 1,500 | | | 1,500 |
| 3.3 | Implementation of livelihood projects | | | | | | | | | | 0 | | | 0 |
| 3.3.1 | Contract livelihood centers to implement livelihood projects (30 households @ \$300; 580 households @ \$ 300) | | 10,200 | | | | 174,000 | | | | 10,200 | | 174,000 | 184,200 |
| 3.3.2 | Subcontract product development and ecolabeling (market study and product development) | | 1,500 | | | | | | | | 1,500 | | | 1,500 |
| 4 | Information and Education Campaign | | | | | | | | | | 0 | | | 0 |
| 4.1 | Trainings | | | | | | | | | | 0 | | | 0 |
| 4.1.1 | Conduct of consultation meetings for public awareness (1 per year @ 40 participants x \$5/day) | | | 600 | | | | 600 | | | 600 | | 600 | 1,200 |
| 4.2 | Material development | | | | | | | | | | 0 | | | 0 |
| 4.2.1 | Assign contractors to design and produce brochures and posters (600 copies each) | | | 2,000 | | | | | | | 2,000 | | | 2,000 |
| 4.2.2 | Assign contractors to make bulletin boards e.g., fisheries administrative ordinances etc. (5 notice boards @ \$200; 15 notice boards @ \$400) | | 1,000 | | | | | 6,000 | | | 1,000 | | 6,000 | 7,000 |
| 4.3. | Public awareness | | | | | | | | | | 0 | | | 0 |
| 4.3.1. | Subcontract radio station to broadcast knowledge of coral reef ecosystem on local radio | | 1,000 | | | | | 1,000 | | | 1,000 | 1,000 | | 2,000 |
| 5 | Project Management and Administration | | | | | | | | | | 0 | | | 0 |
| 5.1 | Demonstration site manager (one person @ 30 @ 690 US \$) | 20,700 | | | | | | | | | 20,700 | | | 20,700 |
| 5.2 | Counterpart of management body and expenses for the venue (2.5 years @ 3000 US\$) | | | | | 9,000 | | | | | 0 | | 9,000 | 9,000 |
| 5.3 | Technical assistant to the demonstration site manager (one technical assistant @ 30 months @181 US\$) | 5,430 | | | | | | | | | 5,430 | | | 5,430 |

| Activities | | GEF | | | | | Government | | | | | GEF | Co-funding | | Total |
|--------------|--|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|----------------|--------------|----------------|----------------|
| | | 1000 | 2000 | 3000 | 4000 | 5000 | 1000 | 2000 | 3000 | 4000 | 5000 | | In-kind | In=cask | |
| | | | | | | | | | | | | | | | |
| 5.4 | Travel on official business (2 perons @ 3 trips @ 3 years @ \$110; 2 perons @ 3 trips @ 2.5 years @ \$110) | 2,200 | | | | | 2,200 | | | | | 2,200 | | 2,200 | 4,400 |
| 5.5 | Travel of the Focal Point to the demonstration site (one person @ 12 trips @ 1 year @ 2.5 years @ 100 US \$) | 3,000 | | | | | | | | | | 3,000 | | | 3,000 |
| 5.6 | Meetings of Management Board | | | | | | | | | | | 0 | | | |
| 5.6.1 | Transportation and hotel for the participants (2 times a year @ 7 participants X 2 days X 2.5 years X \$30) | | | 2,100 | | | | | | | | 2,100 | | | 2,100 |
| 5.6.2 | Co-funding from participation of the management board meeting (15 participants @ 3 days @ 2.5 years @ 2 meetings @ \$70) | | | | | | | | 4,500 | | | 0 | | 4,500 | 4,500 |
| 5.7 | Monitoring and evaluation of the project | | | | | 9,000 | | | | | | 9,000 | | | 9,000 |
| 5.8 | Office non-expendable equipment | | | | | | | | | | | 0 | | | 0 |
| 5.8.1 | One (1) LCD Projector | | | | 1,500 | | | | | | | 1,500 | | | 1,500 |
| 5.8.2 | One (1) Notebook computer with accessories | | | | 1,500 | | | | | | | 1,500 | | | 1,500 |
| 5.8.3 | One (1) Desktop computer | | | | 750 | | | | | | | 750 | | | 750 |
| 5.8.4 | One (1) printer | | | | 150 | | | | | | | 150 | | | 150 |
| 5.8.5 | One (1) Digital camera | | | | 500 | | | | | | | 500 | | | 500 |
| 5.8.6 | One (1) Underwater housing (for camera) | | | | 300 | | | | | | | 300 | | | 300 |
| 5.9 | Office expendable supplies | | | | 1,200 | | | | | | | 1,200 | | | 1,200 |
| 5.10 | Operation and maintenance of office (\$500 @ 30months) | | | | | | | | | 15,000 | | 0 | | 15,000 | 15,000 |
| 5.11 | Communication | | | | | | | | | | | 0 | | | 0 |
| 5.11.1 | Telephone/Fax | | | | | 1,500 | | | | | | 1,500 | | | 1,500 |
| 5.11.2 | Postage/Freight | | | | | 600 | | | | | | 600 | | | 600 |
| 5.12 | Audit expenses 30 months | | 2,100 | | | | | | | | | 2,100 | | | 2,100 |
| Total | | 36,800 | 36,970 | 15,850 | 17,280 | 11,100 | 15,700 | 202,960 | 22,290 | 15,000 | 0 | 118,000 | 8,100 | 247,850 | 373,950 |

ANNEX V.2 BUDGET BY OBJECT OF EXPENDITURE

| | | 2nd 2005 | | | 1st 2006 | | | 2nd 2006 | | | 1st 2007 | | | 2nd 2007 | | | Grand Total | | | | |
|-------------|------------------------------------|--------------------------|------------|---------|----------|-------|------------|----------|-------|-------|------------|---------|-------|----------|------------|---------|-------------|-------|------------|---------|--------|
| | | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total |
| | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | |
| 1000 | Project personnel component | | | | | | | | | | | | | | | | | | | | |
| | 1100 | <i>Project personnel</i> | | | | | | | | | | | | | | | | | | | |
| | 1101 | 4,140 | | 0 | 4,140 | 4,140 | | 0 | 4,140 | 4,140 | | 0 | 4,140 | 4,140 | | 0 | 4,140 | 4,140 | | 0 | 20,700 |
| | 1102 | | | 1,800 | 1,800 | | | 1,800 | 1,800 | | | 1,800 | 1,800 | | | 1,800 | 1,800 | | 0 | 0 | 9,000 |
| | 1103 | 1,086 | | | 1,086 | 1,086 | | | 1,086 | 1,086 | | | 1,086 | 1,086 | | | 1,086 | 1,086 | | 0 | 0 |
| | 1199 | 5,226 | 0 | 1,800 | 7,026 | 5,226 | 0 | 1,800 | 7,026 | 5,226 | 0 | 1,800 | 7,026 | 5,226 | 0 | 1,800 | 7,026 | 5,226 | 0 | 1,800 | 26,130 |
| | 1200 | Consultant | | | | | | | | | | | | | | | | | | | |
| | 1201 | 0 | | 0 | 0 | 1,620 | | 1,500 | 3,120 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 1,620 |
| | 1202 | 0 | | 0 | 0 | 0 | | 0 | 0 | 900 | | 0 | 900 | 0 | | 0 | 900 | 900 | | 0 | 1,800 |
| | 1203 | 0 | | 0 | 0 | 600 | | 3,000 | 3,600 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 600 |
| | 1204 | 500 | | 0 | 500 | 0 | | 0 | 0 | 500 | | 0 | 500 | 0 | | 0 | 0 | 0 | | 0 | 1,000 |
| | 1205 | 150 | | 0 | 150 | 0 | | 0 | 0 | 150 | | 0 | 150 | 0 | | 0 | 150 | 150 | | 0 | 450 |
| | 1299 | 650 | 0 | 0 | 650 | 2,220 | 0 | 4,500 | 6,720 | 1,550 | 0 | 0 | 1,550 | 0 | 0 | 0 | 0 | 1,050 | 0 | 0 | 5,470 |

| | | 2nd 2005 | | | 1st 2006 | | | 2nd 2006 | | | 1st 2007 | | | 2nd 2007 | | | Grand Total | | | | | | | | |
|------|--|--------------|------------|--------------|--------------|--------------|------------|--------------|---------------|--------------|------------|--------------|---------------|--------------|------------|--------------|--------------|--------------|------------|--------------|--------------|---------------|----------|---------------|---------------|
| | | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | | | | |
| | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | | | |
| 1600 | Travel on official business | | | | | | | | | | | | | | | | | | | | | | | | |
| 1601 | Travel on official business (2 persons @ 10 trips @110 US \$) (5.4) | 440 | | 440 | 880 | 440 | | 440 | 880 | 440 | | 440 | 880 | 440 | | 440 | 880 | 2,200 | 0 | 2,200 | 4,400 | | | | |
| 1602 | Travel of the Focal Point to the demonstration site (one person @ 30 months @ \$100) (5.5) | 600 | | 0 | 600 | 600 | | 0 | 600 | 600 | | 0 | 600 | 600 | | 0 | 600 | 3,000 | 0 | 0 | 3,000 | | | | |
| 1699 | Total | 1,040 | 0 | 440 | 1,480 | 1,040 | 0 | 440 | 1,480 | 1,040 | 0 | 440 | 1,480 | 1,040 | 0 | 440 | 1,480 | 5,200 | 0 | 2,200 | 7,400 | | | | |
| 1999 | Component total | 6,916 | 0 | 2,240 | 9,156 | 8,486 | 0 | 6,740 | 15,226 | 7,816 | 0 | 2,240 | 10,056 | 6,266 | 0 | 2,240 | 8,506 | 7,316 | 0 | 2,240 | 9,556 | 36,800 | 0 | 15,700 | 52,500 |
| 2000 | Sub-contract component | | | | | | | | | | | | | | | | | | | | | | | | |
| 2200 | Subcontract component | | | | | | | | | | | | | | | | | | | | | | | | |
| 2201 | Subcontract consultants for marine sanctuary network orientation on the framework of marine sanctuary network and planning meeting (2 days x \$70 @ 2 consultants @ 3 sites) (1.1.1) | 0 | | 0 | 0 | 280 | | 180 | 460 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 280 | 0 | 180 | 460 | | | | |
| 2202 | Initial assessment of potential additional marine sanctuaries/reserves (2 persons @ 10 days @ \$100) (1.3.2) | 0 | | 0 | 0 | 2,000 | | 0 | 2,000 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 2,000 | 0 | 0 | 2,000 | | | | |
| 2203 | Boat rental (10 days) (1.3.3) | 0 | | 0 | 0 | 360 | | 0 | 360 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 360 | 0 | 0 | 360 | | | | |
| 2204 | Assign Consultants to design and undertake benchmarking of coral and reef fish, submit report to local gov't. of Masinloc and Coral Reef Management Committee (2 consultants x \$200/day x 5 days) (1.3.4) | 0 | | 0 | 0 | 2,000 | | 5,300 | 7,300 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 2,000 | 0 | 5,300 | 7,300 | | | | |
| 2205 | Assign contractor to design, install and maintain mooring buoys at appropriate areas (\$10 @ 15 days @ 10 persons) (1.3.6) | 0 | | 0 | 0 | 1,500 | | 3,000 | 4,500 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 1,500 | 0 | 3,000 | 4,500 | | | | |

| | | | 2nd 2005 | | | 1st 2006 | | | 2nd 2006 | | | 1st 2007 | | | 2nd 2007 | | | Grand Total | | | | | |
|------|---|-------|----------|------------|---------|----------|-----|------------|----------|-------|-------|------------|---------|-------|----------|------------|---------|-------------|-------|------------|---------|-------|--------|
| | | | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | |
| | | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | |
| 2206 | Boat rental (15 days) (1.3.7) | 0 | | 0 | 0 | 540 | | 0 | 540 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 540 | 0 | 0 | 540 |
| 2207 | Subcontract for monitoring activities and prepare reports (2 persons x \$160 x 5 days/year) (1.4.1) | 1,280 | | 2,560 | 3,840 | 0 | | 0 | 1,280 | | 2,560 | 3,840 | 0 | | 0 | 1,280 | | 2,560 | 3,840 | 3,840 | 0 | 7,680 | 11,520 |
| 2208 | Boat rental (15 days) (1.4.2) | 180 | | 360 | 540 | 0 | | 0 | 180 | | 360 | 540 | 0 | | 0 | 180 | | 360 | 540 | 540 | 0 | 1,080 | 1,620 |
| 2209 | Boat Rental (5 days) (1.5.2) | 0 | | 0 | 0 | 180 | | 180 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 180 | 0 | 0 | 180 |
| 2210 | Boat rental (15 days @ \$36) (1.6.3) | 0 | | 0 | 0 | 0 | | 0 | 540 | | 0 | 540 | 0 | | 0 | 0 | | 0 | 0 | 540 | 0 | 0 | 540 |
| 2211 | Assign resource speakers for the training (2 speakers x \$100/day x 5 days) (1.8.1) | 0 | | 0 | 0 | 0 | | 0 | 1,000 | | 300 | 1,300 | 0 | | 0 | 0 | | 0 | 0 | 1,000 | 0 | 300 | 1,300 |
| 2212 | Boat rental (5 days @ \$36) (1.8.3) | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 180 | | 180 | 0 | | 0 | 0 | 180 | 0 | 0 | 180 |
| 2214 | Subcontract to train, design and undertake Participatory Coastal Resource Assessment (PCRA), and prepare report (2 persons x \$200/day x 5 days) (1.9.1) | 2,000 | 5,300 | | 7,300 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 2,000 | 5,300 | | 7,300 |
| 2215 | Assign finance and fund management specialist for scanning and cost revenue analyses, set-up business and sustainable financing plan (5 days x \$130/day per year) (1.10.1) | 500 | | 0 | 500 | 0 | | 0 | 500 | | 0 | 500 | 0 | | 0 | 500 | | 0 | 500 | 1,500 | 0 | 0 | 1,500 |
| 2216 | Contract people's organization to conduct training on enforcement skill activities (15 participants x \$22/day x 3 days) (2.1.1) | 0 | | 0 | 0 | 0 | | 0 | 990 | | 0 | 990 | 0 | | 0 | 0 | | 0 | 0 | 990 | 0 | 0 | 990 |
| 2217 | Conduct patrolling activities (2 persons @ \$10 @ 4 week @ 36 months) (2.1.2) | 384 | | 0 | 384 | 384 | | 0 | 384 | | 0 | 384 | 384 | | 0 | 384 | | 0 | 384 | 1,920 | 0 | 0 | 1,920 |
| 2218 | Boat rental for patrolling (144 days @ 30 months) (2.1.3) | | | 864 | 864 | | | 864 | 864 | | 864 | 864 | | | 864 | 864 | | 864 | 864 | | 0 | 4,320 | 4,320 |

| | | | 2nd 2005 | | | 1st 2006 | | | 2nd 2006 | | | 1st 2007 | | | 2nd 2007 | | | Grand Total | | | | | | | |
|------|--|-------|----------|------------|---------|----------|-------|------------|----------|--------|--------|------------|---------|--------|----------|------------|---------|-------------|-------|------------|---------|--------|-------|---------|---------|
| | | | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | | | |
| | | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | | |
| 2219 | Subcontract to assess supplemental and complementary livelihood options and conduct alternative livelihood training for fishermen (3-day training) (3.1.2) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,800 | 1,800 | 0 | 3,600 | 0 | 0 | 0 | 0 | 0 | 0 | 1,800 | 1,800 | 0 | 3,600 | | | |
| 2220 | Contract livelihood centers to implement livelihood projects (30 households @ \$300; 580 households @ \$300) (3.3.1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 34,800 | 37,800 | 3,600 | 69,600 | 73,200 | 3,600 | 69,600 | 73,200 | 10,200 | 0 | 174,000 | 184,200 | | | | |
| 2221 | Subcontract product development and ecolabeling (market study and product development) (3.3.2) | 0 | 0 | 0 | 0 | 0 | 0 | 750 | 750 | 0 | 750 | 750 | 0 | 750 | 0 | 0 | 0 | 1,500 | 0 | 0 | 1,500 | | | | |
| 2222 | Assign contractors to design and produce brochures and posters (600 copies each) (4.2.1) | 0 | 0 | 0 | 2,000 | 0 | 2,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,000 | 0 | 0 | 2,000 | | | | |
| 2223 | Audit expenses 2.5 years (5.12) | 0 | 0 | 0 | 700 | 0 | 700 | 0 | 0 | 0 | 700 | 700 | 0 | 700 | 700 | 0 | 700 | 2,100 | 0 | 0 | 2,100 | | | | |
| 2299 | Total | 4,344 | 5,300 | 3,784 | 13,428 | 9,944 | 0 | 9,944 | 19,288 | 10,424 | 1,800 | 38,884 | 51,108 | 5,614 | 0 | 70,464 | 76,078 | 6,644 | 0 | 73,384 | 80,028 | 36,970 | 7,100 | 195,860 | 239,930 |
| 2999 | Component total | 4,344 | 5,300 | 3,784 | 13,428 | 9,944 | 0 | 9,944 | 19,288 | 10,424 | 1,800 | 38,884 | 51,108 | 5,614 | 0 | 70,464 | 76,078 | 6,644 | 0 | 73,384 | 80,028 | 36,970 | 7,100 | 195,860 | 239,930 |
| 3000 | Training component | | | | | | | | | | | | | | | | | | | | | | | | |
| 3200 | Group training | | | | | | | | | | | | | | | | | | | | | | | | |
| 3201 | Conduct orientation workshop (2 days x 45 participants x \$10/day) (1.1.2) | 0 | 0 | 0 | 450 | 0 | 450 | 900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 450 | 0 | 450 | 900 | | | | |
| 3202 | Undertake CRM planning workshops for integration (15 participants x \$30 per year) (1.2.1) | 450 | 0 | 450 | 0 | 0 | 0 | 0 | 450 | 0 | 450 | 0 | 0 | 0 | 450 | 0 | 450 | 1,350 | 0 | 0 | 1,350 | | | | |
| 3203 | Convene public consultations and hearings (25 participants x \$10/day x 3 days) (1.3.1) | 750 | 750 | 1,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 750 | 0 | 750 | 1,500 | | | | |
| 3204 | Participants cost (10 participants @ 5 days @ 10) (1.5.1) | 0 | 0 | 0 | 500 | 0 | 500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 500 | | | | |

| | | | 2nd 2005 | | | 1st 2006 | | | 2nd 2006 | | | 1st 2007 | | | 2nd 2007 | | | Grand Total | | | | | | | |
|------|---|-------|----------|------------|---------|----------|-----|------------|----------|-------|-------|------------|---------|-------|----------|------------|---------|-------------|-------|------------|---------|--------|-------|--------|--------|
| | | | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | | | |
| | | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | | |
| 3205 | Pilot restocking activities in marine sanctuaries of sea urchins (1.6.2) | 0 | | 0 | 0 | 0 | | 0 | 900 | | 3,600 | 4,500 | 0 | | 0 | 0 | 0 | 0 | 900 | 0 | 3,600 | 4,500 | | | |
| 3206 | Conduct training on coral reef rehabilitation methods (10 participants x 5 days x \$30/day) (1.8.2) | 0 | | 0 | 0 | | 0 | 0 | 1,500 | | 3,750 | 5,250 | 0 | | 0 | 0 | 0 | 0 | 1,500 | 0 | 3,750 | 5,250 | | | |
| 3207 | Training course on legislation (2 per year @ 40 participants @ \$5/day) (2.2.1) | 500 | | 0 | 500 | 0 | | 0 | 500 | | 0 | 500 | 0 | | 0 | 0 | 500 | 500 | 1,500 | 0 | 0 | 1,500 | | | |
| 3208 | Assign contractors to conduct training for livelihood option/s (20 participants x \$25/day x 3 days) (3.1.1) | 0 | | 0 | 0 | 0 | | 0 | 1,500 | | 0 | 1,500 | 0 | | 0 | 0 | 0 | 0 | 1,500 | 0 | 0 | 1,500 | | | |
| 3209 | Conduct training on supplemental and complementary livelihood and stewardship for fishermen (10 participants x 3 days x \$40/day) (3.2.1) | 0 | | 0 | 0 | 0 | | 0 | 1,200 | 1,640 | | 2,840 | 0 | | 0 | 0 | 0 | 0 | 1,200 | | 1,640 | 2,840 | | | |
| 3210 | Conduct training on business management (15 participants x \$25/day x 3 days) (3.2.2) | 0 | | 0 | 0 | 0 | | 0 | 1,500 | | 0 | 1,500 | 0 | | 0 | 0 | 0 | 0 | 1,500 | 0 | 0 | 1,500 | | | |
| 3211 | Assign contractors to make bulletin boards e.g., fisheries administrative ordinances etc. (5 notice boards @ \$200; 15 notice boards @ \$400) (4.2.2) | 1,000 | | 6,000 | 7,000 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 1,000 | 0 | 6,000 | 7,000 | | | |
| 3213 | Subcontract radio station to broadcast knowledge of coral reef ecosystem on local radio (4.3.1) | 200 | 200 | | 400 | 200 | 200 | | 400 | 200 | 200 | | 400 | 200 | 200 | | 400 | 400 | 1,000 | 1,000 | | 2,000 | | | |
| 3214 | Transportation and hotel for the participants (2 times a year @ 7 participants X 2 days X 2.5 years X \$30) (5.6.1) | 420 | | | 420 | 420 | | | 420 | 420 | | 420 | 420 | | | | 420 | 420 | 2,100 | 0 | 0 | 2,100 | | | |
| 3299 | Total | 3,320 | 200 | 6,750 | 10,270 | 1,570 | 200 | 450 | 2,220 | 8,170 | 1,840 | 7,350 | 17,360 | 620 | 200 | 0 | 820 | 1,570 | 200 | 0 | 1,770 | 15,250 | 1,000 | 16,190 | 32,440 |

| | | 2nd 2005 | | | 1st 2006 | | | 2nd 2006 | | | 1st 2007 | | | 2nd 2007 | | | Grand Total | | | | | | | | |
|-------------|--|--------------|------------|--------------|---------------|--------------|------------|--------------|--------------|--------------|--------------|--------------|---------------|------------|------------|------------|--------------|--------------|------------|--------------|--------------|---------------|--------------|---------------|---------------|
| | | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | | | | |
| | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | | | |
| 3300 | Meeting/conference | | | | | | | | | | | | | | | | | | | | | | | | |
| 3301 | Conduct of consultation meetings for public awareness (1 per year @ 40 participants x \$5/day) (4.1.1) | 200 | | 200 | 400 | 0 | | 0 | 0 | 200 | | 200 | 400 | 0 | | 0 | 0 | 200 | | 200 | 400 | 600 | 0 | 600 | 1,200 |
| 3302 | Co-funding from participation of the management board meeting (15 participants @ 3 days @ 5 meetings @ 2 meetings @ \$30) (5.6.2) | 0 | | 900 | 900 | 0 | | 900 | 900 | 0 | | 900 | 900 | 0 | | 900 | 900 | 0 | | 900 | 900 | 0 | 0 | 4,500 | 4,500 |
| 3399 | Total | 200 | 0 | 1,100 | 1,300 | 0 | 0 | 900 | 900 | 200 | 0 | 1,100 | 1,300 | 0 | 0 | 900 | 900 | 200 | 0 | 1,100 | 1,300 | 600 | 0 | 5,100 | 5,700 |
| 3999 | Component total | 3,520 | 200 | 7,850 | 11,570 | 1,570 | 200 | 1,350 | 3,120 | 8,370 | 1,840 | 8,450 | 18,660 | 620 | 200 | 900 | 1,720 | 1,770 | 200 | 1,100 | 3,070 | 15,850 | 1,000 | 21,290 | 38,140 |
| 4000 | Equipment component | | | | | | | | | | | | | | | | | | | | | | | | |
| 4100 | Expendable equipment | | | | | | | | | | | | | | | | | | | | | | | | |
| 4101 | Purchase of sea urchins | 0 | | 0 | 0 | 0 | | 0 | 0 | 9,720 | | 0 | 9,720 | 0 | | 0 | 0 | 0 | | 0 | 0 | 9,720 | 0 | 0 | 9,720 |
| 4199 | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,720 | 0 | 0 | 9,720 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,720 | 0 | 0 | 9,720 |
| 4200 | Non-expendable equipment | | | | | | | | | | | | | | | | | | | | | | | | |
| 4201 | Install mooring buoys for sanctuaries and navigation markers (45 buoys @ \$35) (1.3.5) | 0 | | 0 | 0 | 900 | | 0 | 900 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 900 | 0 | 0 | 900 |
| 4202 | Communication equipment such as handheld radio (2.1.4) | 360 | | 0 | 360 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 360 | 0 | 0 | 360 |
| 4203 | Purchase 2 binoculars (2.1.5) | 50 | | 0 | 50 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 50 | 0 | 0 | 50 |
| 4204 | Patrol light (superlight) (2.1.6) | 50 | | 0 | 50 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 50 | 0 | 0 | 50 |
| 4205 | Mask and snorkel (10 sets) (2.1.7) | 300 | | 0 | 300 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 300 | 0 | 0 | 300 |
| 4206 | One (1) LCD Projector (5.8.1) | 1,500 | | 0 | 1,500 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1,500 | 0 | 0 | 1,500 |
| 4207 | One (1) Notebook computer with accessories (5.8.2) | 1,500 | | 0 | 1,500 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1,500 | 0 | 0 | 1,500 |
| 4208 | One (1) Desktop computer (5.8.3) | 750 | | 0 | 750 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 750 | 0 | 0 | 750 |
| 4209 | One (1) printer (5.8.4) | 150 | | 0 | 150 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 150 | 0 | 0 | 150 |

| | | 2nd 2005 | | | 1st 2006 | | | 2nd 2006 | | | 1st 2007 | | | 2nd 2007 | | | Grand Total | | | | | | | | |
|-------------|--|---------------|--------------|---------------|---------------|---------------|------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|------------|---------------|---------------|---------------|------------|---------------|----------------|----------------|--------------|----------------|----------------|
| | | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | GEF | Co-funding | | Total | | | | |
| | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | In-kind | In-cash | | | | | |
| 4210 | One (1) Digital camera (5.8.5) | 500 | | 0 | 500 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 500 | | |
| 4211 | One (1) Underwater housing (for camera) (5.8.6) | 300 | | 0 | 300 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 300 | 0 | 0 | 300 | | |
| 4212 | Office expendable supplies (5.9) | 240 | | 0 | 240 | 240 | | 0 | 240 | 240 | | 0 | 240 | 240 | | 0 | 240 | 240 | 0 | 240 | 1,200 | 0 | 0 | 1,200 | |
| 4299 | Total | 5,700 | 0 | 0 | 5,700 | 1,140 | 0 | 0 | 1,140 | 240 | 0 | 0 | 240 | 240 | 0 | 0 | 240 | 240 | 0 | 240 | 7,560 | 0 | 0 | 7,560 | |
| 4300 | Premises | | | | | | | | | | | | | | | | | | | | | | | | |
| 4301 | Operation and maintenance of office 500 @ 30 months (5.10) | 0 | | 3,000 | 3,000 | 0 | | 3,000 | 3,000 | 0 | | 3,000 | 3,000 | 0 | | 3,000 | 3,000 | 0 | | 3,000 | 0 | 0 | 15,000 | 15,000 | |
| 4399 | Total | 0 | 0 | 3,000 | 3,000 | 0 | 0 | 3,000 | 3,000 | 0 | 0 | 3,000 | 3,000 | 0 | 0 | 3,000 | 3,000 | 0 | 0 | 3,000 | 0 | 0 | 15,000 | 15,000 | |
| 4999 | Component total | 5,700 | 0 | 3,000 | 8,700 | 1,140 | 0 | 3,000 | 4,140 | 9,960 | 0 | 3,000 | 12,960 | 240 | 0 | 3,000 | 3,240 | 240 | 0 | 3,000 | 3,240 | 17,280 | 0 | 15,000 | 32,280 |
| 5000 | Miscellaneous component | | | | | | | | | | | | | | | | | | | | | | | | |
| 5200 | Reporting costs | | | | | | | | | | | | | | | | | | | | | | | | |
| 5201 | Monitoring and evaluation of the project (5.7) | 0 | | 0 | | 0 | | 0 | 4,500 | | 0 | 4,500 | 0 | | 0 | 4,500 | | 0 | 4,500 | 9,000 | 0 | 0 | 9,000 | | |
| 5299 | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,500 | 0 | 0 | 4,500 | 0 | 0 | 0 | 4,500 | 0 | 0 | 4,500 | 9,000 | 0 | 0 | 9,000 | | |
| 5300 | Sundry | | | | | | | | | | | | | | | | | | | | | | | | |
| 5301 | Telephone/Fax (5.11.1) | 300 | | 0 | 300 | 300 | | 0 | 300 | 300 | | 0 | 300 | 300 | | 0 | 300 | 300 | | 0 | 300 | 1,500 | 0 | 0 | 1,500 |
| 5302 | Postage/Freight (5.11.2) | 120 | | 0 | 120 | 120 | | 0 | 120 | 120 | | 0 | 120 | 120 | | 0 | 120 | 120 | | 0 | 120 | 600 | 0 | 0 | 600 |
| 5399 | Total | 420 | 0 | 0 | 420 | 420 | 0 | 0 | 420 | 420 | 0 | 0 | 420 | 420 | 0 | 0 | 420 | 420 | 0 | 0 | 420 | 2,100 | 0 | 0 | 2,100 |
| 5999 | Component total | 420 | 0 | 0 | 420 | 420 | 0 | 0 | 420 | 4,920 | 0 | 0 | 4,920 | 420 | 0 | 0 | 420 | 4,920 | 0 | 0 | 4,920 | 11,100 | 0 | 0 | 11,100 |
| 9999 | Project Total | 20,900 | 5,500 | 16,874 | 43,274 | 21,560 | 200 | 20,434 | 42,194 | 41,490 | 3,640 | 52,574 | 97,704 | 13,160 | 200 | 76,604 | 89,964 | 20,890 | 200 | 79,724 | 100,814 | 118,000 | 8,100 | 247,850 | 373,950 |
| | | | | | | | | | | | | | | | | | | | | | | | | | 373,950 |

ANNEX VI ARRANGEMENTS FOR CO-ORDINATION AND MANAGEMENT

Coral Reef Management Council

The Coral Reef Management Council (CRM Council) shall have authority and responsibility for the conduct of activities at the demonstration site as a **Management Board**. The composition of this body, its terms of reference and powers shall be clearly defined in a set of terms of reference that shall be eventually be part of the demonstration site proposal outcome of activities.

The Management Board shall be composed of representatives of all major stakeholders having an interest in and deriving benefit from the coral reef and resources within the defined limits of the demonstration site. Initially the membership shall include:

- 1) Specialized Executing Agency (SEA, University of the Philippines – Marine Science Institute)
- 2) Site Manager (Secretary)
- 3) Provincial Office of Administration
- 4) Protected Area Management Board (PAMB) - Representative (Regional Office III)
- 5) DENR-Coastal and Marine Management Division (Regional Office III)
- 6) Bureau of Fisheries and Aquatic Resources (Regional Office III)
- 7) Local Government Unit (LGUs) – Coastal Resource Management Officer
- 8) Municipal Agriculture Office (LGU-MAO)
- 9) Municipal Fisheries and Aquatic Resources Management Council (FARMC)
- 10) Bantay Dagat (Head Officer)
- 11) Samahang Pangkaunlaran ng San Salvador (SPSS)
- 12) National Power Corporation (NPC) – Masinloc Coal Fired Thermal Power Plant
- 13) Nagkakaisang Mamamayan para sa Kalikasan ng Bani (NMKB)

Additional representatives may be added to the membership of the Board by simple decision of the Board.

The frequency of the meetings:

The Management Board shall meet semi-annually.
The local Sanctuary and Reserves meet no less than monthly
Local Government Unit (LGU) meets quarterly

Functions:

The Management Board shall be responsible for:

- 1) Selection of the demonstration site manager
- 2) Review and approval of the stakeholder analysis, and financial plans regarding the generation of revenue streams;
- 3) Development and implementation of a Business plan for the site designed to result in financial independence and sustainability following expenditure of the GEF grant funds;
- 4) Development and implementation of a management plan for the site, which shall detail the approved uses and their levels, procedures for approval of activities at the site (including *inter alia*: issuance of permits and licenses; maintenance of financial and other records; public awareness raising activities; and the methods through which control shall be exercised by the competent authorities;
- 5) Review proposals for the harmonisation of existing legislation regarding conservation and sustainable use of marine and coastal resources, and submit to the appropriate authority for approval;

- 6) Provide financial control and oversight of income and expenditures in accordance with the approved business plan;
- 7) Approval of the draft programme of public awareness, education and training activities, to be conducted at the site, and clearance for publication of appropriate educational and awareness materials;
- 8) Approval of the draft proposed programme of activities that will be provided at the site for exchange personnel over a defined time frame of between two and six months;
- 9) Timely reporting on activities to the National Committee or Sub-committee responsible for the relevant sub-component of the project, and through the Specialized Executing Agency to the National Technical Focal Point and Focal Ministry for the UNEP/GEF South China Sea Project.

The Masinloc Demonstration Site Management Board shall appoint a **Demonstration Site Manager** whose responsibility will be to report to the Focal Point for Coral Reefs. The Site Manager shall be considered a full member of the Philippine National Coral Reef Committee.

The Demonstration Site Manager should have responsibility for managing, the activities at the demonstration site, under the direction of **Protected Area Management Board** (PAMB), which is under the Protected Area Wildlife Bureau (PAWB) of the Department of Environment and Natural Resources (DENR).

Specifically the Demonstration Site Manager shall take responsibility for:

- 1) Executing the work plan taking into account any amendments that shall be agreed by the Management Board;
- 2) Planning, and managing on a day to day basis identified in the implementation plan, including preparation and supervision of annual work plan and timetables;
- 3) Financial responsibility for the approved budget within clearly defined limits set by the management body, including keeping proper books of account and preparing financial reports for the management body;
- 4) Responsibility for execution of the activities in accordance with the work plan and timetable and schedule of expenditures, initially defined by the demonstration site proposal and amended from time to time by the management body;
- 5) Responsibility for acting as Secretary to the meetings of the Management Board;
- 6) Reporting on activities and outcomes, to the management body, the focal point of the SEA, and the National Technical Focal Point according to an agreed schedule;
- 7) Preparing inputs to the six-monthly expenditure reports, six monthly progress reports and cash advance requests to be submitted to the Project Co-ordinating Unit (PCU), through the focal point of the responsible Specialized Executing Agency (SEA);
- 8) Preparing and submitting to the PCU, through the focal point of the SEA, technical reports in accordance with the defined outputs of the demonstration site; and,
- 9) Attending such national and regional meetings as shall be determined on an individual basis.

Coordination Framework of Masinloc Demonstration Site

