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1.0 BACKGROUND

Volume 4 presents the programs and projects that the PAMB will need to pursue in the establishment and ongoing management of the SBPA. The programs and projects listed in part are derived from the outlined PAMP strategies referred to in Volume 2, Chapter 6.

2.0 PROGRAM AND PROJECT FORMAT

The programs and projects are presented in common format providing summary advice on basic objectives, program content and project parameters. The headings used are as follows:

- Project name
- Type
- Location
- Geographic coverage
- Objectives
- Description
- Participants and beneficiaries
- Impacts and benefits
- Responsible organization for implementation
- Cost and time-frame

The presentation format ranges from one page per program/project, to several pages with additional project or task sub-headings.

3.0 LIST OF PROGRAMS AND PROJECTS

The programs included in this volume are listed below, in the order in which they appear in the text. The individual programs and projects are grouped under the main headings to which they relate.

Park Administration:

- Park administration headquarters and infrastructure

Forest Resource Management:

- Boundary delineation (forest protection and law enforcement)
- Organizational strengthening of multi-sectoral forest protection committees
- Organization of volunteer forest protection teams at Barangay level
- Deputation as forest officers and training on law enforcement
- Conduct of information, education and communication on forest protection
- Fire prevention and fire detection
- Information, education and communication on fire prevention

- No-fire incentive system
- Training fire fighters
- Strengthening institutional partnership
- Formation of community based forest management team
- Census of forest occupants
- Information, education and communication on community based forest management
- Community organizing and strengthening
- Issuance of tenure
- Formulation of management plan (community based forest management)
- Implementation of management plan
- Baseline survey of woody species
- Fire protection
- Releasing of woody species from competition (assisted natural regeneration)
- Supplementing planting
- Utilization of Bayto (research and development)
- Growth and yield study for Buho
- Ethno-botanical study
- Attitudinal and perception study
- Phenology of fruit bats' food plants

Marine Resource Management:

- Demarcating critical ecosystems and establishing mooring buoys in Subic Bay
- Integrated coastal management training for Subic Bay
- Determining fish population recovery in Subic Bay
- Coral reef monitoring in Subic Bay
- Tourist information drive

Research and Monitoring:

- Carbon sequestration
- Establishment of field research station

Livelihood Development:

- Improved production through utilization of appropriate technologies
- Product processing, product design and development
- Expanding marketing network
- Livelihood credit financing
- Vocational technical training
- Educational scholarships
- Capability enhancement and organizational development
- Social development
- Establishment of livelihood management information system, monitoring and evaluation system

PAMB Institutional Strengthening:

- Capability building of protected area management organization
- Education, information, communication

- Participatory planning and management
- Traffic management planning
- Institutionalization of Protected Area management systems and networking
- SPBA management and coordination
- Organizational refinement of Ecology Center for protected area
- Protected area management systems
- Resource mobilization and equipment support
- Advocacy studies
- Protected area management institutional advisory services
- Comprehensive training program on protected area management
- Preparation of a marketing plan for the Subic Bay protected area
- Technical assistance on the preparation of an investment promotion plan for Subic Bay protected area
- Development of marketing collaterals and investment promotion materials
- Technical assistance to Subic Bay Conservation Society
- Technical assistance on financial systems design and management

4.0 IMPLEMENTATION CONSIDERATIONS

The programs and projects range significantly in type, and hence also in scheduling for implementation; some will be needed as part of establishment, and others very shortly after. A number may be scheduled at varying times into the future, depending on the annual strategic planning of the PAMB, and the preference to proceed with individual initiatives. Hence, some are essential to the operations of the PAMB and implementation of the SBPA and should be viewed as mandatory. Others are discretionary in the meantime.

However, notwithstanding the above, it should be noted that all programs and projects are ‘outline’ in form and require refinement prior to implementation. This raises an important point –the SBMA should understand that, extensive and sophisticated though the PAMP documentation may be, there is a large step still to take before practical implementation of the PAMP can occur. This can be termed the ‘pre-implementation’ phase. This involves the process of ordering all priorities for action, and taking a closer look at intended actions.

5.0 PRE-IMPLEMENTATION REQUIREMENTS

The pre-implementation tasks for the ‘programs and projects’ therefore requires the following action to be taken.

- review the programs and projects, identify any further programs not included, and confirm them;

- identify the priority and timing for programs and projects, with particular reference to those required for the establishment of the PAMB, or vital to initial operational capability;
- review personnel and staffing requirements for implementation of programs and projects, and consider needs against overall PAMB staffing requirements;
- review financial estimates, with emphasis on urgent programs, and incorporate into current PAMB/SBMA budget planning; and
- secure necessary resources (staff and resources) to implement programs and projects.

6.0 STAKEHOLDER WORKSHOP PRIORITIZATION OF PROGRAMS AND PROJECTS

The following tables illustrate the stakeholder assessment of program and project priorities. This prioritization rating was undertaken in August 2001 during the Final PAMP Workshop (Workshop No. 5). A scoring system was undertaken using a weighting system that considered the positive outputs of each program in terms of environment, economic and social considerations (See Annex 1). The outputs of this exercise are included to assist the PAMB to undertake its own prioritization. It should be noted that in some instances the prioritization of technical and scientific experts may be different to that given by stakeholders with widely differing backgrounds. This should be kept in mind in considering the following table.

Table 1 Stakeholder Prioritization

List of Programs and Projects	Stakeholder Prioritization (1 = highest priority)
Park Administration:	
▪ Park administration headquarters and infrastructure	1
Forest Resource Management:	
▪ Boundary delineation (forest protection and law enforcement)	2
▪ Organizational strengthening of multi-sectoral forest protection committees	1
▪ Organization of volunteer forest protection teams at Barangay level	1
▪ Deputation as forest officers and training on law enforcement	2
▪ Conduct of information, education and communication on forest protection	2
▪ Fire prevention and fire detection	2
▪ Information, education and communication on fire prevention	1
▪ No-fire incentive system	4

List of Programs and Projects	Stakeholder Prioritization (1 = highest priority)
▪ Training fire fighters	3
▪ Strengthening institutional partnership	1
▪ Formation of community based forest management team	1
▪ Census of forest occupants	3
▪ Information, education and communication on community based forest management	1
▪ Community organizing and strengthening	1
▪ Issuance of tenure	2
▪ Formulation of management plan (community based forest management)	1
▪ Implementation of management plan	1
▪ Baseline survey of woody species	3
▪ Fire protection	1
▪ Releasing of woody species from competition (assisted natural regeneration)	2
▪ Supplementing planting	2
▪ Utilization of Bayto (research and development)	Not scored
▪ Growth and yield study for Buho	Not scored
▪ Ethno-botanical study	Not scored
▪ Attitudinal and perception study	Not scored
▪ Phenology of fruit bats' food plants	Not scored
Marine Resource Management:	
▪ Demarcating critical ecosystems and establishing mooring buoys in Subic Bay	3
▪ Integrated coastal management training for Subic Bay	1
▪ Determining fish population recovery in Subic Bay	5
▪ Coral reef monitoring in Subic Bay	4
▪ Tourist information drive	2
Research and Monitoring:	
▪ Carbon sequestration	1
▪ Establishment of field research station	2
Livelihood Development:	
▪ Improved production through utilization of appropriate technologies	2
▪ Product processing, product design and development	2
▪ Expanding marketing network	2
▪ Livelihood credit financing	2
▪ Vocational technical training	1
▪ Educational scholarships	1

Programs and Projects

List of Programs and Projects	Stakeholder Prioritization (1 = highest priority)
▪ Capability enhancement and organizational development	1
▪ Social development	1
▪ Establishment of livelihood management information system, monitoring and evaluation system	1
PAMB Institutional Strengthening:	
▪ Capability building of protected area management organization	1
▪ Education, information, communication	1
▪ Participatory planning and management	1
▪ Traffic management planning	1
▪ Institutionalization of Protected Area management systems and networking	1
▪ SPBA management and coordination	1
▪ Organizational refinement of Ecology Center for protected area	1
▪ Protected area management systems	1
▪ Resource mobilization and equipment support	1
▪ Advocacy studies	1
▪ Protected area management institutional advisory services	1
▪ Comprehensive training program on protected area management	1
▪ Preparation of a marketing plan for the Subic Bay protected area	Not scored
▪ Technical assistance on the preparation of an investment promotion plan for Subic Bay protected area	Not scored
▪ Development of marketing collaterals and investment promotion materials	Not scored
▪ Technical assistance to Subic Bay Conservation Society	Not scored
▪ Technical assistance on financial systems design and management	Not scored

A. PARK ADMINISTRATION

PROJECT BRIEF

1. Name of Project : **Park Administration Headquarters and Infrastructure**
Project Code : PA-1
2. Type : Park Administration
3. Objective/s : To establish a central PA ‘core area’ at the Nav Mag entry gate (Triboa Bay), where PA administration and support infrastructure is well represented, giving a strong visual prominence and status to the PA and the existence of the PAMB. It will provide a centralized point at which visitors can be monitored and controlled, and PA management response capabilities deployed with maximum efficiency.
4. Description : This program involves the restoration and redevelopment of the area in the vicinity of the northern gate of the Nav Mag area. This involves the removal of incongruous and unsightly activities (storage area and depot, manufacturing plant, etc) to more appropriate locations outside the PA, and converting the site to serve as the Parks Administration Headquarters and support infrastructure. This requires the preparation of a Design Concept, formulated in the context of the overall PA Management Plan Strategy, for use and development of the site. The Design Concept will serve as a vehicle for gaining approval from stakeholders, and attracting funds. This should be followed by the preparation of a Development Master Plan to provide a program for redevelopment in stages, as funds become available.

The uses of this node would include:

- Park HQ and offices
- Park equipment depot (ranger vehicles and equipment, fire fighting and emergency response equipment, etc)
- Research and education facility
- Car park and internal transport terminus
- Visitor information center

- Park amenities
 - Accommodations associated with research, education, workshop, conference, training functions (optional)
 - Other appropriate activities/facilities (e.g. Environmental NGO office, Aeta coordinating office, etc)
5. Participants/Beneficiaries : SBMA, PAMB, DENR
6. Impacts/Benefits :
 - Strong PAMB and PA administrative identity established
 - High visibility of the PA as an institutional entity
 - Easy access to PAMB
 - Opportunities for effective promotion of PAMB activities to desired audience
 - Centralized key visitor services (e.g. parking, information dissemination, internal park transport system, etc), and visitor surveillance
7. Responsible Implementing Agency : PAMB, SBMA, DENR, Local Government Jurisdictions
8. Estimated Cost : Php 93,081,201 for first 5 years (please see breakdown on succeeding pages).
9. Time Frame : Establish first stage within first three years of PAMB commissioning. Development in stages but completed within 10 years.

Table 2 Annual Personal Services Requirements for Protected Area Administration

Values In Philippine Pesos At Year 2001 Prices

Area	Position	1st 5 Yrs			Next 5 Yrs		
		No.	Rate	Amount	No.	Rate	Amount
1 Core Areas (T)	Ranger	5	120,000	600,000	10	120,000	1,200,000
2 Core Areas (M)	Coast Guard Ranger	5	120,000	600,000	10	120,000	1,200,000
→ 3 Sustainable Use (T)		7	120,000	840,000	15	120,000	1,800,000
4 Sustainable Use (M)				-		-	-
5 Habitat Protection (T)	Coast Guard	7	120,000	840,000	15	120,000	1,800,000
6 Habitat Protection (M)				-		-	-
7 Restoration (T)	Professional	2	270,000	540,000	4	270,000	1,080,000
8 Restoration (M)	Professional Professional	2	270,000	540,000	4	270,000	1,080,000
→ 9 Recreation (T)		3	270,000	810,000	5	270,000	1,350,000
10 Recreation (M)	Professional	3	270,000	810,000	5	270,000	1,350,000
11 Multiple Use				-		-	-
12 Special Use	Planner	1	270,000	270,000	3	270,000	810,000
13 Buffer Interface	Planner CD Specialist Ranger	1 2 1	270,000 270,000 120,000	270,000 540,000 120,000	2 4 2	270,000 270,000 120,000	540,000 1,080,000 240,000
14 Office Mgmt & Support	Office Support Guide Office Mgmt	10 2 3	166,000 120,000 450,000	1,660,000 240,000 1,350,000	15 4 5	166,000 120,000 450,000	2,490,000 480,000 2,250,000
TOTAL		54		10,030,000	103		18,750,000

Legend:

- T- Terrestrial
- M- Marine

Table 3 Annual MOOE Requirements For Protected Area Administration

Values In Philippine Pesos At Year 2001 Prices

Item	Rate	1st 5 Yrs.	Rate	Next 5 Yrs
		Amount		Amount
1 Regular MOOE	3% of Capital Outlay	1,042,800	5% of Capital Outlay	3,296,000
2 Helicopter Rental				
Flight Days per Year	5		10	
Rental Rate Per Hr	20,000		20,000	
Amount Per Year		800,000		1,600,000
TOTAL		1,842,800		4,896,000

Table 4 Capital Outlay Requirement For Protected Area Administration, By Period

Values In Philippine Pesos At Year 2001 Prices

Item			1st 5 Yrs			Next 5 Yrs		
			No.	Unit Price	Amount	No.	Unit Price	Amount
1	Transport & Patrol Equipment							
1.1	4 WD Vehicles		4	1,000,000	4,000,000	8	1,000,000	8,000,000
1.2	All Terrain Vehicles (ATVs)		4	200,000	800,000	8	200,000	1,600,000
1.3	2 WD Vehicles		2	700,000	1,400,000	4	700,000	2,800,000
1.4	Patrol Boat		1	600,000	600,000	2	600,000	1,200,000
2	Emergency Equipment				200,000			400,000
3	Firefighting Equipment							
3.1	Firefighting Modules		2	300,000	600,000	2	300,000	600,000
3.2	Fire Truck					1	3,000,000	3,000,000
4	Shelter & Park Related Facilities							
4.1	1 per	2,000 has.	6	250,000	1,500,000	12	250,000	3,000,000
4.2	1 per	1,000 has.	12	500,000	6,000,000	24	500,000	12,000,000
4.3	1 per	500 has.	25	100,000	2,500,000	50	100,000	5,000,000
4.4	1 per	1,000 has.	12	50,000	600,000	24	50,000	1,200,000
4.5	1 per	500 has.	25	10,000	250,000	50	10,000	500,000
4.6	1 per	1,000 has.	12	500,000	6,000,000	24	500,000	12,000,000
4.7	1 per	1,000 has.	12	500,000	6,000,000	24	500,000	12,000,000
5	Laboratory		1	10,000	10,000	2	10,000	20,000
6	Visitor Center & IEC Facilities		1	3,000,000	3,000,000	1	12,000,000	
7	Computers & Office Equipment				1,000,000			2,000,000
8	Communication Equipment		20	15,000	300,000	40	15,000	600,000
TOTAL					34,760,000			65,920,000

Table 5 Protected Area Administration Cost, By Item of Expenditure

Values In Philippine Pesos At Year 2001 Prices

Item/Yr.	1	2	3	4	5	6	7	8	9	10	Total
1 PS	10,030,000	10,030,000	10,030,000	10,030,000	10,030,000	18,750,000	18,750,000	18,750,000	18,750,000	18,750,000	143,900,000
2 MOOE	1,147,600	1,495,200	1,842,800	1,842,800	1,842,800	2,698,667	3,797,333	4,896,000	4,896,000	4,896,000	29,355,200
3 CO*	11,586,667	11,586,667	11,586,667			21,973,333	21,973,333	21,973,333			100,680,000
TOTAL	22,764,267	23,111,867	23,459,467	11,872,800	11,872,800	43,422,000	44,520,667	45,619,333	23,646,000	23,646,000	273,935,200

Note:

*Total capital outlay for the period is spread evenly during the first 3 years of the period

B. MARINE RESOURCE MANAGEMENT

PROJECT BRIEF

1. Name of Project : **Demarcating Critical Ecosystems And Establishing Mooring Buoys In Subic Bay**
Project Code : MR-1
2. Type : Marine
3. Objectives : To designate appropriate anchorage sites and to indicate sites off-limits to navigation and related activities.
4. Description : The practice of throwing anchors into the reef for the purpose of securing tourist and commercial vessels have caused serious physical damage to corals in the Bay. Although most of the people involved in the tourist ferry business are aware of how anchors impact on corals, they either are not aware of the ecological implications or ignore the problem.

The Halas Mooring Buoy System is a rather inexpensive technology that was designed to protect coral reefs from destruction. It requires a trained diver to drill a hole into the rocky bottom substrate and cement a pin into the hole. A rope is attached to the pin and a mooring buoy is deployed from it. Tourist vessels may “anchor” onto a line attached to the buoy.

The same system may be used to demarcate critical sites in the bay such as Sueste Pt and Grande Island.

In critical seagrass areas less expensive plastic buoys may be deployed with ropes secured from the bottom. The purpose of these buoys will be to delineate fish nursery sites and institute protective measures agreed upon or instituted by adapting local or national policies as recommended elsewhere in this document.
5. Participants/Beneficiaries : Watercraft operators/owners; SBFZ
6. Impacts/Benefits : To protect corals and seagrass areas from

destruction

- 7. Responsible Implementing Agency : Ecology Center
- 8. Estimated Cost : Php 19,875,000
- 9. Time Frame : 1 year

PROJECT BRIEF

1. Name of Project : **Integrated Coastal Management Training for Subic Bay**
Project Code : MR-2

2. Type : Marine

3. Objective/s : The overall objective of this exercise is to promote the equitable and sustainable use of coastal resources in Subic Bay through the development and implementation of integrated coastal management training tools. The main strategy of the project is to enhance national capacity building through training on integrated coastal management.

Specific objectives:

- To develop a pool of coastal managers and trainers in Subic Bay
- To support the conduct of training needs assessment and its presentation
- To assist in the development of ICM training courses relevant to Subic Bay
- To organize workshops on curriculum and manual development, implement integrated coastal zone management training seminars and trainers training for participating individuals and agencies

4. Description : Developing nations in Southeast Asia are experiencing similar problems regarding their nearshore coastal resources. Coastal ecosystems are largely threatened by over exploitation, use of destructive fishing practices, pollution and other development-related pressures. In varying magnitudes, issues common to these countries are: the lack of comprehensive information on the coastal zones, increasing populations, limited ability to ensure sustainable levels of resource use because of, deforestation, coastal erosion, destructive harvesting practices, urbanization, a lack of investments in environmental management and lack of a management plan. Collectively, these threats

have placed 55% of the world's coral reefs at risk (Bryant et al 1998).

The Philippine archipelago lies in the tropical-Indo Pacific with virtually the whole 18,000-km coastline dotted with reefs or coral communities. Most of the well-developed reefs are located on the general area southwest of the Philippines. The total reef area of the country is estimated at 44,096.54 sq km with various structures and types of coral and reefs present. Resources found in these coastal environments are coral reef, seagrass and seaweed, fish, soft bottom and mangrove communities. Such ecosystems have a vast potential for fish, shellfish and seaweed production. However, in this country most are heavily subject to extractive and non-sustainable uses. It was only in the last thirty years that the coastal environments received some consideration, which is not unusual considering that these nearshore environments have proven to be difficult to observe due to the extent of the coastline.

Today, several coastal management initiatives exist in the country, both at government department levels and non-government institutions. Among these are initiatives of the Department of Agriculture (Fisheries Sector Program, and Fisheries Research Management Program), and the Department of Environment and Natural Resources (Coastal Environment Program). Inter-organizational initiatives exist as well.

From these initiatives, the most pressing issues identified are:

- diminished fish production
- lack of awareness
- resource use conflict
- open access nature of exploitation of coastal resources
- apathy of some coastal residents
- poverty / poor quality of life in coastal areas

- displacement of fishermen; reduced access to resources
- weak institutional law enforcement and judicial support to enforcement
- overlapping functions between departments
- lack of political will
- lack of trained personnel

Subic Bay is about 50 km north of Manila Bay along the SW coast of Luzon. It indents the Zambales-Bataan shoreline approximately 12 km in a north-south direction. Its seaward limits lie between Sampaloc Point to the west and Mayagao Point 10 km to the ESE. The NW section of the Bataan Peninsula forms the southern half of the eastern shore of the bay, the rest being part of the Province of Zambales. Grande and its sister island Chiquita lie at the middle of the bay mouth. The water east of the islands is relatively shallow with rock and coral mound scattered across a generally sandy bottom. Port Olongapo and the Subic Bay Free Port Zone lie on the northern section of the bay.

Issues encountered at Subic Bay in the course of this survey overlap with the above but with varying comparative intensities and may possibly be complicated by intense sedimentation from land based sources.

Several approaches to coastal management have been initiated and implemented all over the country in attempts to appropriately and responsively manage this ecosystem. The Bureau of Fisheries and Aquatic Resources and the Department of Environment and Natural Resources have conducted nationwide bio-physical and social assessments and have contributed to drafting management plans for several regions. Several NGOs have initiated community development and empowerment programs with the goal of alleviating economic hardship in coastal communities. The aim is also to demonstrate the returns on such initiatives in protective and conservative action immediately before damage to coastal resources

in the Philippines becomes totally irreversible. To enable adoption of these approaches more widely in-country expertise must be enhanced. Plans and programs currently implemented must harmonize with in-country political direction, existing institutional set-ups and support systems, cultural peculiarities and actual socioeconomic conditions. The overall systems approach to managing coral reef degradation, and facilitating decision-making in coastal zone management is implicit to the projects approach.

In the Philippines, a successful collaborative training arrangement entitled the Broad-Based Coastal Management Training Program (BCMTP) was realized in the process of course development and implementation of the National Course on Integrated Coastal Management (NCICM). This resulted in the training of 198 coastal managers with the use of a UN accredited training manual developed in the course of designing this project. This training is quite appropriate to the Subic situation.

5. Participants/Beneficiaries :
 - Dive operators
 - Bay patrols
 - Boat owners and crew
 - Fishermen
 - Local NGOs
 - Members of implementing agencies
6. Responsible Implementing Agency : SBMA Ecology Center
7. Estimated Cost : Php 7,155,000
8. Time Frame : 2 years

PROJECT BRIEF

1. Name of Project : **Determining Fish Population Recovery In Subic Bay**
Project Code : MR-3

2. Type : Marine

3. Description : Surveys conducted attest to the heavy exploitation of fish resources within the bay. Both the number of species and the number of individuals were observed to be low, and fish populations were dominated by small individuals mostly juveniles or early adults. The viability of Subic bay to fishing has to be evaluated prior to reopening it to any form of extractive activity after the proposed three year moratorium.

One way in determining change in fish populations is to initiate a regular fish-monitoring program. By conducting fish visual census every quarter or at least three times a year a trend may be established to determine whether the size frequencies of target fish in the area have improved. Fish census is also one way to monitor the effects of protection and management.

Areas that should be monitored for changes in fish populations should include Sueste Pt., Chiquita and Grande, Camayan, NE Mayanga. Silanguin should likewise be monitored as the reef was unusually depauperate despite the “better” state of the corals.

4. Participants/Beneficiaries : Ecology Center
Task Force Baywatch
FARMCs

5. Responsible Implementing Agency : SBMA Ecology Center

6. Estimated Cost : Php 13,356,000

7. Time Frame : 3 years

PROJECT BRIEF

1. Name of Project : **Coral Reef Monitoring in Subic Bay**
Project Code : MR-4

2. Type : Marine

3. Description : Only the reefs of Sueste Pt., Silanguin and NW Chiquita seem to weather the impacts of a growing range of threats to the bay. Those reefs that border the landward zone, particularly along Triboa, have been reduced to their minimum. From observations and interviews, the likelihood that reefs in Subic have been subject to destructive forms of fishing is high.

A monitoring program in the bay designed to obtain spatial and temporal data should be useful in evaluating the effects of protection (or slip in protection) in the bay. This type of documentation will further input into the management plan and continuous revisions thereof.

Coral reef monitoring may be implemented by way of the line intercept method or modifications. To date, there are several reef monitoring programs designed for recreation divers such that they may be able to contribute to monitoring. One of these is the Aquanaut method for which a manual and training for non-scientists is available.

4. Participants/Beneficiaries : Ecology Center
Taskforce Baywatch
FARMCs

5. Responsible Implementing Agency : Ecology Center

6. Estimated Cost : Php 8,904,000

7. Time Frame : 2nd and 3rd years

PROJECT BRIEF

1. Name of Project : **Tourist Information Drive**
Project Code : MR-5

2. Type : (Marine)

3. Description : Tourists are drawn to beach areas that appear clean. They are attracted by the blue water and wide beaches for sun bathing. However, the density of tourists at times is the cause of the aesthetic deterioration of beaches.

There are several ways to involve the tourists in maintaining cleanliness in the bay. They can be involved in clean-up drives, through a tourist orientation program upon entry into SBMA. They may be provided with beach use guidelines such as seen in Annex 2.

In the same manner, orientation disks or CDs may be developed and distributed for a fee.

4. Participants/Beneficiaries : Ecology Center
Tourism Department
Task Force Baywatch
Beach and Dive Operators
FARMCs

5. Responsible Implementing Agency : SBMA Ecology Center and Tourism Department

6. Estimated Cost : Php 9,540,000

7. Time Frame : 3 years

C. FOREST RESOURCE MANAGEMENT

PROJECT BRIEF

1. Name of Project : **Boundary Delineation
Project Code : FR-1**
2. Type : Forest Protection and Law Enforcement
(Terrestrial)
3. Objective/s : The goal of this program is to protect existing forest resources through a more effective implementation of forest protection laws and regulations and greater participation of local communities and other sectors. The specific objectives are the following:
 - To protect existing forest resources from fire, illegal cutting, encroachment and other forms of destruction.
 - To strengthen multi-sectoral participation in forest resource protection, development and management.

Target/s:

 - PA and buffer zone boundaries delineated on ground.
 - Maps prepared.
4. Description : Boundaries are marked on the ground with any or combinations of the following: natural ground features such as rivers, creeks, ridges, stones; permanent structures such as roads, buildings, concrete monuments; fence, trees/other vegetation.
5. Participants/Beneficiaries : SBMA Ecology Center, PWTSG, LGUs
6. Responsible Implementing Agency : PA: SBMA/ Ecology Center.
Buffer: SBMA/ CENRO, LGU.
7. Estimated Cost : Php 530,000
8. Time Frame : Within first 2 years.

PROJECT BRIEF

1. Name of Project : **Organization/ Strengthening of Multi-Sectoral Forest Protection Committees**
Project Code : FR-2
2. Type : Forest Protection and Law Enforcement (Terrestrial)
3. Objective/s : The goal of this program is to protect existing forest resources through a more effective implementation of forest protection laws and regulations and greater participation of local communities and other sectors. The specific objectives are the following:
 - To protect existing forest resources from fire, illegal cutting, encroachment and other forms of destruction.
 - To strengthen multi-sectoral participation in forest resource protection, development and management.

Target/s:

 - MFPC within SBFZ formed.
 - To assist in law enforcement activities.
4. Description : DENR-CENRO and Ecology Center initiate formation of a MFPC from among representatives of the following sectors/agencies: DENR, SBMA-Eco. Center, LGUs, Media, NGOs, Military, other organizations.
5. Participants/Beneficiaries : Ecology Center, CENRO, LGUs
6. Responsible Implementing Agency : CENRO, SBMA, Olongapo, Subic, Morong, Dinalupihan LGUs, Media, NGOs, Military, OGAs
7. Estimated Cost : Php 106,000
8. Time Frame : Within 1st Year.

PROJECT BRIEF

1. Name of Project : **Organization of Volunteer Forest Protection Teams at Barangay Level**
Project Code : FR-3
2. Type : Forest Protection and Law Enforcement (Terrestrial)
3. Objective/s : The goal of this program is to protect existing forest resources through a more effective implementation of forest protection laws and regulations and greater participation of local communities and other sectors. The specific objectives are the following:
 - To protect existing forest resources from fire, illegal cutting, encroachment and other forms of destruction.
 - To strengthen multi-sectoral participation in forest resource protection, development and management.Target/s:
 - Barangay forest protection teams composed of barangay leaders/ residents organized.
4. Description : Volunteer forest protection teams will be organized from among officials and residents and assigned to specific patrol area.
5. Participants/Beneficiaries : Ecology Center, CENRO, LGUs
6. Responsible Implementing Agency : CENRO, Eco. Center, MFPC
7. Estimated Cost : Php 106,000
8. Time Frame : Within 2 years of plan implementation.

PROJECT BRIEF

1. Name of Project : **Deputation as Forest Officers and Training on Law Enforcement**
Project Code : FR-4

2. Type : Forest Protection and Law Enforcement (Terrestrial)

3. Objective/s : The goal of this program is to protect existing forest resources through a more effective implementation of forest protection laws and regulations and greater participation of local communities and other sectors. The specific objectives are the following:
 - To protect existing forest resources from fire, illegal cutting, encroachment and other forms of destruction.
 - To strengthen multi-sectoral participation in forest resource protection, development and management.

Target/s:

 - Rangers, MFPC members and volunteer forest protection team members are deputized as environment and natural resources officers (DENDRO), and properly trained.

4. Description : Deputation as Environment and Natural Resources Officers of rangers, and all members of MFPC and barangay forest protection teams in accordance with existing laws and regulations.

Training on forestry/environmental laws and enforcement will be conducted for these DENROs.

5. Participants/Beneficiaries : Ecology Center, LED Forest/Harbor Patrols

6. Responsible Implementing Agency : Ecology Center, DENR, SBMA, MFPC

7. Estimated Cost : Php 106,000
8. Time Frame : Within 2 years; training at least once every 2 years.

PROJECT BRIEF

1. Name of Project : **Conduct of Information, Education and Communication on Forest Protection**
Project Code : FR-5

2. Type : Forest Protection and Law Enforcement (Terrestrial)

3. Objective/s : The goal of this program is to protect existing forest resources through a more effective implementation of forest protection laws and regulations and greater participation of local communities and other sectors. The specific objectives are the following:
 - To protect existing forest resources from fire, illegal cutting, encroachment and other forms of destruction.
 - To strengthen multi-sectoral participation in forest resource protection, development and management.

Target/s:

 - Local communities, local government officials/leaders are informed of and have clear understanding of PA, Buffer zones, forest & natural resources conservation concepts, practices, guidelines in SBFZ, resulting in better support to and more active involvement in PA protection and management.

4. Description : This activity involves the formation of multi-agency IEC group, production of IEC materials, and actual dissemination of information, strategies, projects and guidelines on the SBFZ protected area system and environment and natural resources conservation. IEC campaigns include radio plugs, conduct of barangay assemblies, small meetings, house to house visits, photo exhibits and contests, special lectures to elementary and high school students, etc.

- 5. Participants/Beneficiaries : Ecology Center, Tourism Dept, Marketing & Promotions Dept., LGUs
- 6. Responsible Implementing Agency : SBMA, DENR, PIA, local media, NGOs, LGUs.
- 7. Estimated Cost : Php 1,590,000
- 8. Time Frame : Continuing activity, starting from Year 1.

PROJECT BRIEF

1. Name of Project : **Fire Prevention and Fire Detection
Project Code : FR-6**
2. Type : Fire Prevention and Control Program
(Terrestrial)
3. Objective/s : The over-all goal is to effectively manage forest fires in order to stop forest and habitat destruction caused by it. Specifically, this program aims to:
 - To prevent the occurrence of uncontrolled forest fires.
 - To strengthen capacity of SBMA and DENR in fire detection and control.
 - To generate sustained support of local communities in fire management.

Target/s:

 - Strengthen capability of SBMA & DENR in preventing and detecting forest fires.
4. Description : Organization and deployment of fire guards in fire prone areas.
Acquisition of communication, transportation and essential fire detection and fighting equipment. Construction and manning of fire towers in strategic areas.
Restricting entry of people inside fire prone areas during summer.
5. Participants/Beneficiaries : Ecology Center, LED, Fire Department, LGUs
6. Responsible Implementing Agency : SBMA, DENR, MFPC
7. Estimated Cost : Php 520,000
8. Time Frame : Within year 1.

PROJECT BRIEF

1. Name of Project : **Information, Education, and Communication on Fire Prevention**
Project Code : FR-7
2. Type : Fire Prevention and Control Program (Terrestrial)
3. Objective/s : The over-all goal is to effectively manage forest fire in order to stop forest and habitat destruction caused by it. Specifically, this program aims to:
 - To prevent the occurrence of uncontrolled forest fires.
 - To strengthen capacity of SBMA and DENR in fire detection and control.
 - To generate sustained support of local communities in fire management.Target/s:
 - Improved fire management by farmers, local communities
4. Description : Putting up of signage, posters on fire prevention in strategic places. Orientation of farmers on fire management associated with land clearing and other farm activities. Lectures on fire prevention and control in local schools.
5. Participants/Beneficiaries : Ecology Center, Promotions & marketing Department, Fire Department, Forest Rangers
6. Responsible Implementing Agency : SBMA, DENR, MFPC
7. Estimated Cost : Php 1,060,000
8. Time Frame : Yearly, continuing activity

PROJECT BRIEF

1. Name of Project : **No-Fire Incentive System**
Project Code : FR-8
2. Type : Fire Prevention and Control Program
(Terrestrial)
3. Objective/s : The over-all goal is to effectively manage forest fire in order to stop forest and habitat destruction caused by it. Specifically, this program aims to:
 - To prevent the occurrence of uncontrolled forest fires.
 - To strengthen capacity of SBMA and DENR in fire detection and control.
 - To generate sustained support of local communities in fire management.

Target/s:

 - To encourage local communities to protect forests from fire.
4. Description : Local communities or associations will be assigned an area to protect. Incentives will be given when no fire occurs in the area.
5. Participants/Beneficiaries : Ecology Center, LGUs
6. Responsible Implementing Agency : SBMA, DENR, MFPC, LGUs, NGOs
7. Estimated Cost : Php 1,060,000
8. Time Frame : Yearly

PROJECT BRIEF

1. Name of Project : **Training of Fire Fighters**
Project Code : FR-9
2. Type : Fire Prevention and Control Program
(Terrestrial)
3. Objective/s : The over-all goal is to effectively manage forest fire in order to stop forest and habitat destruction caused by it. Specifically, this program aims to:
 - To prevent the occurrence of uncontrolled forest fires.
 - To strengthen capacity of SBMA and DENR in fire detection and control.
 - To generate sustained support of local communities in fire management.

Target/s:

 - To improve skills of forest guards and rangers in fire prevention and control.
4. Description : Training to include physical fitness, fire detection and reporting, communication system, fire damage assessment, first aid.
5. Participants/Beneficiaries : Ecology Center, Fire Department, Forest Rangers, LGUs
6. Responsible Implementing Agency : SBMA
7. Estimated Cost : Php 795,000
8. Time Frame : Yearly

PROJECT BRIEF

1. Name of Project : **Strengthening Institutional Partnership
Project Code : FR-10**

 2. Type : Community Based Forest Management
(Terrestrial)

 3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - DENR, SBMA, LGU formalized partnership to pursue CBFMP in identified areas within the SBFZ

 4. Description : Meeting of concerned agencies is organized; orientation of CBFM is undertaken; agreements to pursue CBFMP in identified areas within the SBFZ is formalized through a MOA or similar instrument.

 5. Participants/Beneficiaries : SBMA, LGUs, NGOs, POs

 6. Responsible Implementing Agency : SBMA, DENR, LGU, PAMB

 7. Estimated Cost : Php 26,500

 8. Time Frame : 1st Year
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PROJECT BRIEF

1. Name of Project : **Formation of Community Based Forest Management Team**
Project Code : FR-11
2. Type : Community Based Forest Management (Terrestrial)
3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - CBFM Team is formed
4. Description : CBFM Team preferably composed of representatives of above named agencies is formed, trained and deployed to a CBFM Project area.
5. Participants/Beneficiaries : Ecology Center, LGUs
6. Responsible Implementing Agency : SBMA, DENR, LGU, PAMB
7. Estimated Cost : Php 53,000
8. Time Frame : 1st Year

PROJECT BRIEF

1. Name of Project : **Census of Forest Occupants**
Project Code : FR-12

2. Type : Community Based Forest Management
(Terrestrial)

3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - Potential CBFM sites and participants are identified.

4. Description : Review and analysis of census of forest occupants; mapping of areas occupied; analysis of socio-economic information of forest occupants.

5. Responsible Implementing Agency : CBFM Team

6. Estimated Cost : Php 159,000

7. Time Frame : 1st Year

PROJECT BRIEF

1. Name of Project : **Information, Education and Communication on Community Based Forest Management
Project Code : FR-13**

2. Type : Community Based Forest Management
(Terrestrial)

3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - Communities informed and become interested to participate in CBFM

4. Description : Production of IEC materials;
Initial conduct of IEC to prospective participants.

5. Participants/Beneficiaries : Ecology Center, LGUs

6. Responsible Implementing Agency : CBFM Team

7. Estimated Cost : Php 106,000

8. Time Frame : 1st Year

PROJECT BRIEF

1. Name of Project : **Community Organizing/Strengthening Project Code : FR-14**
2. Type : Community Based Forest Management (Terrestrial)
3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - Local communities organized.
4. Description : Organization of PO and registration with appropriate government agency.
5. Responsible Implementing Agency : CBFM Team
6. Estimated Cost : Php 159,000
7. Time Frame : 2nd Year

PROJECT BRIEF

1. Name of Project : **Issuance of Tenure
Project Code : FR-15**
2. Type : Community Based Forest Management
(Terrestrial)
3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - Tenurial instrument issued by DENR and PAMB to PO
4. Description : Perimeter survey and mapping of area; Preparation and submission of pertinent documents; processing and issuance of tenurial instrument.
5. Participants/Beneficiaries : Eligible Forest Occupants
6. Responsible Implementing Agency : CBFM Team, DENR, PAMB
7. Estimated Cost : Php 106,000
8. Time Frame : 2nd Year

PROJECT BRIEF

1. Name of Project : **Formulation of CBFM Management Plan
Project Code : FR-16**
2. Type : Community Based Forest Management
(Terrestrial)
3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - Community resource management plan prepared and approved.
4. Description : Resource survey and mapping; visioning and objective setting; Formulation of community resource management plan by community.
5. Participants/Beneficiaries : Affected Communities
6. Responsible Implementing Agency : CBFM Team, DENR, SBMA, PAMB, LGU
7. Estimated Cost : Php 212,000
8. Time Frame : 2nd Year

PROJECT BRIEF

1. Name of Project : **Implementation of CBFM Management Plan
Project Code : FR-17**
2. Type : Community Based Forest Management
(Terrestrial)
3. Objective/s : The goals of CBFM are to promote the socio-economic upliftment of forest dependent communities and to pursue sustainable management of forest resources. The specific objectives are as follows:
 - To provide security of tenure and empower local communities in the protection, development, rehabilitation and management of forest resources.
 - To protect existing forests from further destruction.
 - To reforest denuded areas and stabilize upland farms.
 - To provide alternative livelihood/ income to forest occupants.
 - To strengthen government and people partnership in the sustainable management of forest resources.

Target/s:

 - Management plan implemented
4. Description : Provision of technical, financial, legal, marketing, other assistance to PO; monitoring and evaluation of CRMP implementation.
5. Participants/Beneficiaries : Affected Communities
6. Responsible Implementing Agency : CBFM Team, DENR, SBMA, PAMB, LGU, other government agencies, NGOs
7. Estimated Cost : Php 848,000
8. Time Frame : 2nd Year; continuing

PROJECT BRIEF

1. Name of Project : **Baseline Survey of Woody Species
Project Code : FR-18**
2. Type : Assisted Natural Regeneration (ANR)
(Terrestrial)
3. Objective/s :
 - To speed up re-vegetation of grasslands/denuded forestlands with indigenous trees and other forest vegetation.
 - To conserve and promote biological diversity.
 - To improve basic ecological functions of forests important to sustainable land production.

Target/s:

 - To determine density and type of existing regeneration; to establish the need for supplemental planting; to have a baseline for monitoring purposes.
4. Description : Existing regeneration are surveyed. Sampling areas are marked for future use as monitoring points.
5. Responsible Implementing Agency : SBMA, DENR
6. Estimated Cost : Php 265,000
7. Time Frame : 1st Year

PROJECT BRIEF

1. Name of Project : **Fire Protection**
Project Code : FR-19
2. Type : Assisted Natural Regeneration (ANR)
(Terrestrial)
3. Objective/s :
 - To speed up re-vegetation of grasslands/denuded forestlands with indigenous trees and other forest vegetation.
 - To conserve and promote biological diversity .
 - To improve basic ecological functions of forests important to sustainable land production.

Target/s:

 - To prevent occurrence of fire in project area
4. Description : This may include construction of firelines around the project area and deployment of fire guards during the dry season.
5. Participants/Beneficiaries : Ecology Center, Fire Dept., Forest Rangers, LGUs
6. Responsible Implementing Agency : SBMA, DENR
7. Estimated Cost : Php 1,855,000
8. Time Frame : Every Summer, for 5 years

PROJECT BRIEF

1. Name of Project : **Releasing of Woody Species From Competition**
Project Code : FR-20
2. Type : Assisted Natural Regeneration (ANR)
(Terrestrial)
3. Objective/s :
 - To speed up re-vegetation of grasslands/denuded forestlands with indigenous trees and other forest vegetation.
 - To conserve and promote biological diversity .
 - To improve basic ecological functions of forests important to sustainable land production.

Target/s:

 - To release trees and other woody vegetation from suppression in order to accelerate growth.
4. Description : Depressing of grasses; cutting of vines,; thinning and application of other silvicultural methods as appropriate.
5. Responsible Implementing Agency : SBMA, DENR
6. Estimated Cost : Yearly, for 3 Years
7. Time Frame : Php 477,000

PROJECT BRIEF

1. Name of Project : **Supplemental Planting
Project Code : FR-21**
2. Type : Assisted Natural Regeneration (ANR)
(Terrestrial)
3. Objective/s :
 - To speed up re-vegetation of grasslands/denuded forestlands with indigenous trees and other forest vegetation.
 - To conserve and promote biological diversity .
 - To improve basic ecological functions of forests important to sustainable land production.

Target/s:

 - To reforest areas with no existing woody regeneration.
4. Description : Planting of indigenous trees and other woody species in areas devoid of regeneration.
5. Responsible Implementing Agency : SBMA, DENR
6. Estimated Cost : Php 477,000
7. Time Frame : Yearly, for 3 Years

PROJECT BRIEF

1. Name of Project : **Utilization Studies of Bayto**
Project Code : FR-22
2. Type : Research and Development
(Terrestrial)
3. Objective/s :
 - To identify commercial use(s) of bayto (*Schizostachyum* spp) that could provide alternative sources and income for the local communities.
 - To determine the growth and yield of buho (*S. lumampao*) as basis for formulating sustainable harvesting regimes.
 - To identify and document the medicinal, food and other economic plants being used by the Aetas.
 - To define the attitudes and perceptions of local communities on the conservation, protection and management of the protected areas including buffer zones, as basis for designing IEC campaign.
 - To describe the phenology of important food plants of fruit bats as basis for improving conservation strategies of this ‘critical’ species.

Target/s:

 - Physical and chemical properties of species, commercial uses.
4. Description : Study will be conducted in cooperation with FPRDI and/or UPLBCFNR to determine the potential uses of bayto.
5. Responsible Implementing Agency : SBMA, FPRDI/UPLBCFNR
6. Estimated Cost : Php 318,000
7. Time Frame : 1st to 3rd Years

PROJECT BRIEF

1. Name of Project : **Growth and Yield Study for Buho**
Project Code : FR-23
2. Type : Research and Development
(Terrestrial)
3. Objective/s :
 - To identify commercial use(s) of bayto (*Schizostachyum* spp) that could provide alternative sources and income for the local communities.
 - To determine the growth and yield of buho (*S. lumampao*) as basis for formulating sustainable harvesting regimes.
 - To identify and document the medicinal, food and other economic plants being used by the Aetas.
 - To define the attitudes and perceptions of local communities on the conservation, protection and management of the protected areas including buffer zones, as basis for designing IEC campaign.
 - To describe the phenology of important food plants of fruit bats as basis for improving conservation strategies of this 'critical' species.

Target/s:

 - Growth and yield of buho;
 - Harvesting and management regimes
4. Description : A 3-5 years study will be conducted on the growth and yield of buho, and formulating sustainable management and harvesting regimes for the species.
5. Responsible Implementing Agency : SBMA, ERDB, UPLBCFNR
6. Estimated Cost : Php 318,000
7. Time Frame : 1st to 5th Years

PROJECT BRIEF

1. Name of Project : **Ethno-Botanical Study**
Project Code : FR-24
2. Type : Research and Development
(Terrestrial)
3. Objective/s :
 - To identify commercial use(s) of bayto (*Schizostachyum* spp) that could provide alternative sources and income for the local communities.
 - To determine the growth and yield of buho (*S. lumampao*) as basis for formulating sustainable harvesting regimes.
 - To identify and document the medicinal, food and other economic plants being used by the Aetas.
 - To define the attitudes and perceptions of local communities on the conservation, protection and management of the protected areas including buffer zones, as basis for designing IEC campaign.
 - To describe the phenology of important food plants of fruit bats as basis for improving conservation strategies of this 'critical' species.

Target/s:

 - Economic plants of Aetas in the SBFZ.
4. Description : More in-depth study be conducted to identify and document plants used by the Aetas for medicinal, food, ritual and other purposes including preparation and application of these plants.
5. Responsible Implementing Agency : SBMA, DOST, Phil Museum
6. Estimated Cost : Php 477,000
7. Time Frame : 1st to 3rd Years

PROJECT BRIEF

1. Name of Project : **Attitudinal and Perception Study**
Project Code : FR-25
2. Type : Research and Development
(Terrestrial)
3. Objective/s :
 - To identify commercial use(s) of bayto (*Schizostachyum* spp) that could provide alternative sources and income for the local communities.
 - To determine the growth and yield of buho (*S. lumampao*) as basis for formulating sustainable harvesting regimes.
 - To identify and document the medicinal, food and other economic plants being used by the Aetas.
 - To define the attitudes and perceptions of local communities on the conservation, protection and management of the protected areas including buffer zones, as basis for designing IEC campaign.
 - To describe the phenology of important food plants of fruit bats as basis for improving conservation strategies of this 'critical' species.

Target/s:

 - Baseline information on attitudes and perceptions of local communities about the protected area, natural resources conservation and management.
4. Description : Design and pre-testing of survey instruments;
Actual surveys;
Analysis of data & report preparation (to include recommendations on design and conduct of IEC)
5. Responsible Implementing Agency : SBMA, DOST, local university
6. Estimated Cost : Php 159,000
7. Time Frame : 1st to 2nd Years

PROJECT BRIEF

1. Name of Project : **Phenology of Fruit Bats' Foodplants**
Project Code : FR-26
2. Type : Research and Development
(Terrestrial)
3. Objective/s :
 - To identify commercial use(s) of bayto (*Schizostachyum* spp) that could provide alternative sources and income for the local communities.
 - To determine the growth and yield of buho (*S. lumampao*) as basis for formulating sustainable harvesting regimes.
 - To identify and document the medicinal, food and other economic plants being used by the Aetas.
 - To define the attitudes and perceptions of local communities on the conservation, protection and management of the protected areas including buffer zones, as basis for designing IEC campaign.
 - To describe the phenology of important food plants of fruit bats as basis for improving conservation strategies of this 'critical' species.

Target/s:

 - Flowering and fruiting of important plant/food of fruit bats.
4. Description : Review of literature on important plant species of food of bats;
Locating specimens in SBFZ;
Recording of phenological characteristics such as bud formation, flowering and fruiting.
5. Responsible Implementing Agency : SBMA
6. Estimated Cost : Php 159,000
7. Time Frame : 1st to 3rd Years

D. RESEARCH AND MONITORING

PROJECT BRIEF

1. Name of Project : **Carbon Sequestration
Project Code : RM-1**
2. Type : Research and Monitoring
3. Objective/s : Funding forest restoration and protection by marketing the carbon sequestration value of the forest to polluters
4. Description : A carbon-generating industry can lower its negative impact on the environment by using a mechanical scrubber, or it can buy a “green” scrubber, such as a regenerating forest. Thus the economic value of carbon sequestration can be added to other values of regenerating wildlands and agroforests such as ecotourism and biodiversity prospecting. The payment for carbon scrubbing services can be achieved through forest restoration and establishment of woody plantations can be “the capital investment that sets the living factory in place (Janzen 1997). Later, other goods and services can generate sufficient income for the community or protected area for maintenance of the forest and favorable competition with other crops that store less carbon and are of less ecological value. Because the paying polluter has an assurance that the carbon will remain sequestered, it provides an additional rationale for maintaining the sustainable use of the forest. This project should be coordinated with the WWF effort currently underway with the SBMA Ecology Center.
5. Participants/Beneficiaries : Local communities, including Pastolan (Aeta) within the PA and in buffer zones, PA (for projects within the PA jurisdiction)
6. Impacts/Benefits : The program can provide some additional funding for initiating forest restoration. It must be integrated with other programs to achieve restoration, to provide economic value to the implementing communities and ecological value to flora, fauna, and the PA.

- 7. Responsible Implementing Agency : SBMA Ecology Center, LGUs
- 8. Estimated Cost : Php 2,120,000
- 9. Time Frame : Initiate process in year 1; develop contractual arrangements with industry by year 3.

Reference: Janzen, D. H. 1997. The Carbon Crop Science, 277:883.

PROJECT BRIEF

- 1. Name of Project : **Establishment of Field Research Station
Project Code :RM-2**

- 2. Type : Research and Monitoring

- 3. Objective/s : To establish at least one research facility funded by outside research agencies or universities within the PA

- 4. Description : The protected area at SBMA encompasses both tropical rain forest and marine ecosystems. These ecosystems contain habitats of high biodiversity (coral patch reefs), harbor keystone species of high ecological and economic value (giant fruit bats), and provide habitat for threatened plants and animals, many of which are endemic to the Philippines. These natural ecosystems are subject to harmful impacts ranging from unsustainable rates of permitted uses to external stresses such as degraded water quality resulting from management practices or lack of controls of catchments outside of the PA.

Only a small fraction of the biodiversity of the forest has been investigated for its genetic and pharmaceutical potential. Existing Philippine law (find ref. In our files) regulate this use, which could provide financial support to the PA and its indigenous inhabitants.

In order to sustainably manage resources within these ecosystems, more information will be needed on specific areas and species, and a monitoring program established. Additionally, the monitoring program should monitor the ecosystem health in general, and the well-being of its components down to selected species, physical conditions and potential stressors on the ecosystem (e.g., water quality), and direct human effects on these ecosystems (e.g., tourists and other users).

Establishment of a field station at the Subic Bay

Protected Area would bring scientists and students to the area on a regular basis. The data collected on basic physical parameters, terrestrial plants and animals, and/or marine biota would provide a valuable source of information for PA management and monitoring. A variety of possible arrangements could be developed in order to attract field workers/researchers to the area including the provision of free (or low cost) housing, secure facilities, and the ability to conduct research in an area with long-term stability.

Research institutions associated with specific universities in the Philippines, consortia of Philippine and international universities with outside support (e.g., the International Long Term Ecological Research Program of the U. S. National Science Foundation), private foundations, and commercial enterprises (e.g., pharmaceutical firms) are potential institutions to be involved. A variety of models exist on how these institutions could interface with SBMA, the PA managers, the public, and each other.

Program implementation would consist of first identifying institutions with the potential interest and funding capability, systematically approaching each to explore potential interest, then entering into long term arrangements for the establishment and maintenance of an agreed upon field facility. Field stations could support a variety of research efforts including basic and applied science to medical and genetic bio-prospecting.

5. Participants/Beneficiaries : SBMA Ecology Center, PAMB, universities and/or research institutions involved, researchers, students, indigenous people (Aeta), people of the Philippines and the world
6. Impacts/Benefits :
 - ◆ Increased basic knowledge of ecological resources of the PA
 - ◆ Decreased cost of acquiring information needed for management and monitoring the

PA

- ◆ Increased visibility, public awareness, and educational value of the PA
- ◆ Source of support for training, education, and communication of PA messages

- 7. Responsible Implementing Agency : SBMA Ecology Center
- 8. Estimated Cost : Php 4,770,000
- 9. Time Frame : Initiate in year 1; continue a reasonable level of effort for 2-3 years or until successful or out of potential institutions

E. LIVELIHOOD DEVELOPMENT

PROJECT BRIEF

1. Name of Project : **Improved Production Through Utilization of Appropriate Technologies**
Project Code : LD-1
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s : This project aims to increase production yield in specific livelihood activities such as (1) agricultural/cash crops production, (2) agro-forestry, (3) livestock/poultry raising, (4) Bee culture/honey production processing, and other income generating projects.
4. Description : This project involves the utilization of environment-friendly technologies to improve production.

It focuses on the conduct of the following activities:

- Identification of production and technology-related needs and issues experienced by affected communities.
- Establishment of linkages and referral system with appropriate technology centers to facilitate assistance including dissemination of information materials (DOST, PCARRD, DA-NAFC, Mango Information Network (MIN) etc.)
- Reproduction of technology materials (i.e. Mango production/Management, Pest and Disease Control, etc. for distribution.
- Conduct of appropriate technology training on various livelihood activities, from agriculture/cash crops to fruit tree production.
- On-site visit to areas where appropriate technology utilization are being undertaken

for possible replication.

- Follow-up and monitoring visits to groups provided with assistance to assess results and further assistance needed.

5. Participants/Beneficiaries : Upland Families, Women and Youth
6. Impacts/Benefits :
 - Enhanced non-extractive livelihood activities
 - Increased production yield
 - Increased income
 - Improved access to basic needs (food, clothing, education, health, shelter, etc.
 - Empowerment of women
7. Responsible Implementing Agency : LES* Ecology Center, LGUs, Project participants/beneficiaries
- Resource Agencies: DOST, PCARRD, DA-NAFC, DAR, MIN (Mango Information Network)
8. Estimated Cost : Php 3,180,000
9. Time Frame : 3 Years/Continuing Follow-Up with Resource Agencies

* LES - Proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Product Processing, Product Design and Development**
Project Code : LD-2
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s : This project intends to strengthen existing processing activities of various raw materials such as food/fruit processing, forest products processing (buho, bamboo, rattan, tiger grass) and herbal processing (banana leaves, cogon roots, etc.)
4. Description : This involves the use of appropriate technology to improve product design and development, processing as well as packaging of finished products to generate added value to raw materials available in the uplands.

Specifically, the following activities will be undertaken;

- Establishment of linkages with resource groups and agencies for assistance in technology for food and forest products processing including product design and development (TLRC, DOST, LIVE COR, DA-NAFC, PCARRD, Design Center Philippines, etc.)
- Conduct of workshops on processing and other related activities to strengthen skills of livelihood participants.
- Reproduction of simple materials and easy guide on some food processing procedures (jams, jelly, fruit candies and dried fruits) for household consumption/sale.
- Establishment of quality controls and standards for processed products through the help of technical consultants and resource groups.

5. Participants/Beneficiaries : Households/Individuals
6. Impacts/Benefits :
 - Value added to raw materials
 - Improved quality of finished product
 - Increased demand for products
 - Increased income
 - Improved quality of life
7. Responsible Implementing Agency : LES* Ecology Center, LGUs, concerned agencies; DOST, etc.

(Resource Groups) DOST, TLRC, DA-NAFC, Design Center Phil., PCARRD
8. Estimated Cost : Php 3,180,000
9. Time Frame : 3 Years/Continuing Activity

* LES - Proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Expanding Marketing Network
Project Code : LD-3**
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s : To expand and improve marketing distribution
and outlets for both local and export markets.
4. Description : This sub-project aims to expand and improve
current distribution mechanism of affected
communities. This entails the identification of
centers and outlets that will ensure effective
marketing their produce and of finished
products.

This entails the conduct of the following activities:

- Monitoring and establishment of data on the volume of goods and products produced by upland/lowland residents and current outlets.
- Conduct of feasibility study in organizing association/cooperative for marketing agricultural/forest products.
- Conduct of feasibility study in identifying areas where processed foods and fruits could be marketed. The concept of “Pasalubong Centers” could be explored where varied processed products will be displayed. (Hotels, restaurants, beach resorts, public markets, roadside, SBMA Duty Free Shops, etc.)
- Exploration of potential for export market specifically for novelty/Christmas decors, fixtures, furnitures, and others.
- Promotion of exhibits/trade fairs inside SBMA/and other sites.

5. Participants/Beneficiaries : Households/Individuals Engaged in Livelihood Activities
6. Impacts/Benefits :
 - Increased number of distribution centers and outlets for raw materials/finished products
 - Increased income
 - Improved opportunities/access to basic amenities and quality of life
7. Responsible Implementing Agency : LES* Ecology Center, LGUs, Agencies DTI, DA-NAFC
Resource Groups: CITEM and other Trade Exhibition Groups, TLRC, etc.
8. Estimated Cost : Php 5,300,000
9. Time Frame : 5 Years and Continuing

* LES - Proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Livelihood Credit Financing
Project Code : LD-4**
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s : To provide credit/loan assistance to current and prospective livelihood groups/individuals.
4. Description : Livelihood credit assistance is a crucial input in assisting groups or individuals who need to start a new enterprise or expand existing one. This includes the micro, small and medium enterprises. Support will primarily focus on production assistance.

The following activities will be conducted:

- Establishment of mechanism, policies and procedures in the provision of credit and loan assistance to participating individuals or groups.
 - Establishment of referral system with financial institutions such as LANDBANK, DBP and government agencies that provide financing to enterprises.
 - Promotion of savings activities among interested groups/cooperatives that would serve as their equity or counterpart to proposed projects and eventually to finance their own activities.
5. Participants/Beneficiaries : Households/Individuals Engaged In Livelihood Activities
 6. Impacts/Benefits :
 - Availability of credit/loan assistance for upland/lowland groups
 - Increased capacity to engage in livelihood activities
 - Increased income
 - Increased access to opportunities and basic activities

7. Responsible Implementing Agency : LES* Ecology Center, LGUs, Agencies DTI, DA-NAFC
- : Resource Groups: LAND BANK, DBP, Rural Banks, Cooperatives, NGOs, etc.
8. Estimated Cost : Php 21,200,000 (may be sourced from various sectors and groups including LGUs, etc.)
9. Time Frame : 5 Years and until financial stability is achieved

* LES - Proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Vocational/Technical Training Project
Project Code : LD-5**
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s :
 - To provide technical skills to unemployed or underemployed youths and individuals who are qualified.
 - To provide opportunities for individual/youths for employment in the formal sector or for self-employment.
4. Description : Many upland/coastal residents near the SBMA and within the buffer and protected areas have not been able to access job opportunities due to their low level of educational attainment and lack of technical skills. Pastolan residents for instance, remained to be maintenance crews or as laborers and grass cutters at SBMA.

Vocational/Technical Training will be provided to youths to qualify for technical jobs that provide higher compensation.

Graduates could be further trained in entrepreneurship, business management, etc. to cater to the needs of the SMBA and the local industries.

The following activities will be undertaken:

- Assessment of the needs and job requirements of industries within SBMA and nearby Subic and Olongapo.
- Development of technical and vocational training programs that will be responsive to the needs of industries within and outside SMBA.
- Tapping of resources of government agencies including private institutions in the

provision of such training programs.
(TESDA, DSWD, DTI, TLRC, etc.)

- Development of a mechanism whereby potential students could “Study Now and Pay Later”.
- Establishment of a trust fund for this undertaking that could be sourced from LGUs and civic organizations.
- Follow-up activities after graduation such as (a) job placement, (b) assistance for setting up their own business and (c) loan repayment.

5. Participants/Beneficiaries : Households, women, out-of-school youth, unemployed adult
6. Impacts/Benefits :
 - Technical skills acquisition
 - Increased employment opportunities
 - Increased income and economic opportunities
7. Responsible Implementing Agency : LES* Ecology Center, LGUs, concerned agencies (TESDA, etc.)

(Resource Groups) DTI, TLRC, MERALCO Foundation, and other local technical Colleges
8. Estimated Cost : Php 5,300,000
9. Time Frame : 5 Years

* LES - Proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Educational Scholarship Program**
Project Code : LD-6
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s : To provide high school graduates the opportunity to continue their studies in college.
4. Description : This could be provided to deserving high school graduates who have earned high grades. This option is to provide students with better opportunities after college graduation, to seek greener pastures elsewhere and consequently, balance population growth in the uplands/lowland communities.
 - Promote a “Study Now, Pay Later” scheme for deserving and academically qualified students.
 - Establish a package that will be appropriate for the needs of the students including tuition fees, books or living allowances and counterpart from the students’ family.
 - Tap civic organization (Jaycees, Rotary, scholarship foundations, etc.) to provide grants/funds for the program.
 - LGUs and other agencies could be mobilized for additional support and assistance in setting up the program.
 - Establish a trust fund with initial funding sourced from civic organizations, foundations, individuals, and LGUs.
5. Participants/Beneficiaries : High school graduates with high scholastic grades
6. Impacts/Benefits :
 - Improved opportunity for students for higher education.
 - Increased employment opportunities in the

formal sector.

- Enhanced capacity to compete for quality and more secure jobs.

7. Responsible Implementing Agency : LES* Ecology Center, LGUs, NGOs, concerned agencies DECS, Commission on Higher Education, etc.

Resource Groups: DSWD, Jaycees, Rotary Clubs, etc.

8. Estimated Cost : Php 5,300,000

9. Time Frame : 5 Years and Continuing

*LES - Proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Capability Enhancement and Organizational Development**
Project Code : LD-7
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s : To strengthen personal efficacy, project management, and organizational skills of residents toward greater production efficiency.
4. Description : There is a need to enhance the appropriate attitudes, values, knowledge and skills of residents to ensure viability and sustainability of their projects. There is also a need to strengthen existing organizations or to establish new ones. Further intervention will focus on Entrepreneurship Development, Project/Business Management, Bookkeeping and Recording, Financial Management, including Organizational Development (OD) techniques.

The following activities will be undertaken:
 - Conduct assessment of training needs of target groups.
 - Design training program and modules including appropriate training materials.
 - Coordinate with possible resource agencies for facilitators or resource persons.
 - Conduct exposure visits to organizations/cooperatives that are operational and successful.
 - Conduct follow-up and monitoring to assess impact of training activities.
5. Participants/Beneficiaries : Participants of Livelihood Activities/Leaders of Associations/Cooperatives

6. Impacts/Benefits :
 - Improved individual and group capacity to manage business/IGP activities
 - Enhanced productivity including quality standards
 - Increased viability and sustainability of projects.
7. Responsible Implementing Agency : LES* Ecology Center/LGUs
(Resource Groups) NGOs/POs, DSWD, DTI, TLRC and other Foundations
8. Estimated Cost : Php 3,180,000
9. Time Frame : 3 Years and Continuing

*LES - proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Social Development Program**
Project Code : LD-8
2. Type : Integrated Livelihood Assistance Program
(Upland/Lowland/Coastal Communities)
3. Objective/s :
 - To strengthen existing social services and other support services to upland/lowland communities.
 - To generate support from within and outside their communities to improve social and health status.
4. Description : This project focuses on providing appropriate social services to communities that are within or outside the protected area and the buffer zone. This includes the provision of health and sanitation, population and FP programs, water supply, day care and other services that will improve the quality of life of affected communities.

The following activities will be conducted:
 - Identification of priorities and needs of communities through the help of a social development staff.
 - Tap appropriate agencies for the provision of such services.
 - Organize groups to serve as volunteers for various social projects and to deal with NGOs/POs.
5. Participants/Beneficiaries : Household Residents/Communities
6. Impacts/Benefits :
 - Improved social and health status
 - Enhanced productivity and economic opportunities of communities (road construction/water supply, etc.)
 - Enhanced quality of life of residents.

- 7. Responsible Implementing Agency : LES* Ecology Center, LGUs, NGOs/POs, concerned agencies

Resource Groups: DSWD, DPWH, DOH, NGOs/Pos
- 8. Estimated Cost : Php 5,300,000
- 9. Time Frame : Continuing Activity

*LES - proposed Livelihood and Enterprise Section

PROJECT BRIEF

1. Name of Project : **Establishment of Livelihood Management Information System/Monitoring and Evaluation System**
Project Code : LD-9
2. Type : Integrated Livelihood Assistance Program (Upland/Lowland/Coastal Communities)
3. Objective/s :
 - To provide appropriate information and data base for strategic planning and management decision-making.
 - To develop effective technical intervention strategies for individuals/group engaged in IGP/livelihood projects.
 - To assess progress, milestones including efficiency and effectivity of project assistance and intervention.
 - To evaluate benefits to and impact of assistance to livelihood participants and their communities.
4. Description : This project focuses on the establishment of a data base system for livelihood projects that will ensure assistance will be appropriate and effective. Relevant information and indicators will be drawn as basis for monitoring progress and evaluation activities.

The following activities will be conducted;

- Set-up monitoring and evaluation framework and mechanisms as well as performance indicators.
- Development of appropriate program/software to be used in data processing and retrieval.
- Conduct monitoring and follow-up on on-going livelihood assisted projects.

- Conduct periodic evaluation reviews to assess impact of project to participants and their communities.
 - Create an MIS/monitoring evaluation group to monitor programs and status of livelihood projects.
5. Participants/Beneficiaries : Project Staff/Livelihood Participants
6. Impacts/Benefits :
 - Improved assistance to project participants through appropriate intervention and support.
 - Timely feedback on progress, program status, issues, needs and problems of livelihood participants.
 - More viable and sustainable livelihood enterprises for participants.
7. Responsible Implementing Agency : LES* Ecology Center, LGUs
8. Estimated Cost : Php 1,060,000
9. Time Frame : 1 Year, but monitoring and evaluation will be continuous

F. INSTITUTIONAL STRENGTHENING

PROJECT BRIEF

1. Name of Project : **Capability Building of Protected Area Management Organization (PAMO)**
Project Code : IS-1
2. Type : Institutional Strengthening
3. Objective/s : The objective is to create a Protected Area Management Organization (PAMO) with appropriate operational/organizational characteristics, staffed by personnel capable of successfully administering the Protected Area Management Plan and various related statutory responsibilities in the context of a rapidly changing land use, socio-economic and political setting.

Specific Objective 1 (Organizational Structure)

- To establish an appropriate organizational structure and function for the PAMO, including the following actions or elements.

Specific Objective 2 (Human Resources)

- To set in place an approach to capability strengthening that results in a PAMO competent staff resource of appropriately trained and qualified individuals capable of multiple tasks in a rapidly changing work environment.

Specific Objective 3 (Equipment)

- To provide an appropriate level of equipment and resources to allow the staff of the PAMB to carry out the functions of the PAMO

Specific Objective 4 (Procedures/Capabilities)

- To establish and implement technical and functional procedures/capabilities that allow the functions of the organization to be carried out in a proficient and effective

manner.

Procedures

- Map required functions and procedures and identify all logistical requirements and support services and equipment needs.
- Undertake a gap analysis of processes and procedures and organizational capabilities.
- Evaluate adopted approaches and determine which are outmoded and in conflict with 'open organization' objectives.
- Develop 'manual' procedures, especially in consideration of funding limitations for high-technology based processes (information management systems, archiving, monitoring and research, etc).
- Ensure all due-diligence procedures are suitably in place to protect both organization and staff interests.
- Focus on effective data and information gathering, use and sharing (timeliness, openness, accuracy, validation, recording/archiving, retrieval, etc).
- Arrange for appropriate skill capabilities in team/group arrangements, and provide for easy transfer, multi-skilling, on an adaptive/needs basis.
- Implement staggered programs for staff training/capability strengthening.
- Establish activities and procedures that are client/resource management focussed.

4. Description : (Organizational Structure)

- Employ a theory or model as a basis for diagnosing organization and capacity needs, for deciding how to proceed, and for evaluating progress.
- Identify and examine the values of the organization and its member parts (including stakeholder memberships).
- Build a climate of truth and trust within the organization itself and the key member/stakeholder groups that form part of the overall structure.

- Work through the existing power structures, internal and external power structures to incorporate local power dynamics.
- Take account of and integrate existing management structures.
- Generate energy for change through shared goal setting and progressive achievement of goals.
- Use action research teams to resolve problems and make changes.
- Establish a staff of 'open system' managers.

(Human Resources)

- Develop a suitable recruitment policy for the needs of the organization, addressing the appropriate skills and training.
- Undertake the recruitment of suitably trained professional and technical staff capable of meeting the challenges of managing the SB PA.
- Formulate and implement an ongoing training program for staff including short-term technical courses and long-term training.
- Develop procedures that allow staff to participate fully in contributing to operational and technical innovation in the functions of the organization, particularly with respect to advising on the need for new techniques and operational approaches.
- Develop procedures that ensure staff are aware of the interests and needs of all external stakeholder and 'member' organizations.
- Provide staff with appropriate equipment and technical support of a standard suitable for meeting the responsibilities of the organization.
- Establish procedures that encourage staff to contribute ideas to the overall management of the PAMB.

(Equipment)

- Provide all staff with office accommodation

and related equipment that enables effective carrying out of all prescribed duties.

- Provide all field staff with appropriate field equipment that allows them to undertake their prescribed roles, with particular reference to:
 - Vehicles and four wheel drives
 - Pursuit and rescue marine craft
 - Underwater diving equipment and support equipment
 - fire fighting equipment
 - survival and emergency rescue equipment
 - surveillance and law enforcement equipment
 - directional and pathfinding equipment (e.g. GPS, satellite navigational aids)
 - appropriate maps and geographic data
- Establish and implement an appropriate Business Management System (BMS) and quality assurance procedures, with staff involvement, which facilitate and assist work functions.

- 5. Participants/Beneficiaries : Management and staff of the PAMB/SBMA
- 6. Impacts/Benefits : Improved performance of the PAMB; Contribution to achieving the objectives of PA management.
- 7. Responsible Implementing Agency : Depending on the outcome of institutional arrangements: SBMA, PAMB
- 8. Estimated Cost : Php 750,000
- 9. Time Frame : Planning, and implementation to commence following establishment of the PAMB. Staggered time frames for ongoing processes to be prescribed in early stages of PAMB commissioning, and to continue on as scheduled.

PROJECT BRIEF

1. Name of Project : **Education, Information, Communication Project Code : IS-2**
(Interpretation and education center, public relations, etc)
2. Type : Institutional Strengthening
3. Objective/s : The objective is to develop information, education and communication practices that will benefit the community through all effective modes of communication, the maximum amount of information possible concerning its activities undertaken by the PAMO.

Specific Sub-objective

- To prepare and implement a comprehensive information, education and communications strategy that focuses on the various key areas of PAMP activity and functional objectives.
- To recruit and maintain (or contract) specialist staff in the areas of public relations, science education, interpretation, field extension, and negotiations.
- To recruit and maintain (or contract) specialist staff in the areas of information systems technology and computer science.
- To recruit and maintain specialist staff in the areas of ranger duties, surveillance, enforcement, visitor control/guidance, and crisis communications.
- To acquire and maintain essential equipment to support the information, education and communications strategy/functions of the PAMB.

4. Description : The success of the PAMO in carrying out its duties is highly dependent on its ability to gather and use information, educate the community, and communicate effectively to the widest audience possible. The central message content should be the nature of the resource assets contained within the PA, the opportunities they offer, and their importance.

An informational website and newsletter could help maintain stakeholder interest and support. Stakeholders such as the Subic Bay Chamber of Commerce could provide expertise and support. This includes effectively ‘marketing’ the PA to a wide range of existing and potential users, and establishing a constituency of supporters for the PA. These should include the local community, the national community of the Philippines, and the wider international community. This is important in administrative, fiscal and political terms.

5. Participants/Beneficiaries : Staff of the PAMB, PAMB operational effectiveness, SBMA, DENR, various stakeholders, the general community
6. Impacts/Benefits :
 - Enhanced PAMB operational effectiveness
 - Increased community awareness
 - Changed community values
 - Promotion and marketing of SBFZ
 - Regional tourism expansion
 - International recognition
7. Responsible Implementing Agency : SBMA/PAMB, and where appropriate private contractor organizations engaged to undertake specific information, education and communications functions.
8. Estimated Cost : Php 750,000
9. Time Frame : Establishment aspects of the program will occur immediately following the establishment of the PAMB, and continue as funds become available. This includes both recruitment and acquisition of equipment.

Implementation programs for information management, education, and communications will be dependent on the formulation of detailed programs, to be formulated at the commencement of PAMB operations.

Information management will be ongoing. Education will be programmed into staggered time frames on a need basis – the outcome of

education program strategies to be developed.

Communications will be ongoing following establishment of the PAMB.

PROJECT BRIEF

1. Name of Project : **Participatory Planning and Management
Project Code : IS-3**
2. Type : Institutional Strengthening
3. Objective/s : To develop a comprehensive approach to participatory planning and management, in order to engage a wide selection of stakeholder and community interests participation in the development, management and protection of the PA, and gain the most positive outcomes possible from participatory/consultative procedures.
4. Description : The PAMB will need, from the outset, to engage stakeholders in the objectives and operational programs associated with the PAMP. In so doing it will be necessary to undertake stakeholder participation and consultation according to accepted principles of consultation, participation and community/stakeholder involvement. Programs of consultation will use a series of steps (as appropriate) based on model consultation procedures. To assist the PAMB undertake a systematic participation planning and process, such as the Planning Grid approach, in order to engage stakeholders and various types of project participants (joint partners, etc) in joint projects.
5. Participants/Beneficiaries : PAMB, SBMA, stakeholders, general community
6. Impacts/Benefits :
 - Increased participation of stakeholder interests in the PA
 - Attraction of external funding sources and capabilities to support the operation of the PA
 - Better PAMB relations with external interests and the general community
7. Responsible Implementing Agency : PAMB and stakeholder groups

8. Estimated Cost : Php 750,000
9. Time Frame : Participatory planning and management should commence following establishment of the PAMB. Ongoing participatory programs yet to be prescribed will be undertaken as required.

PROJECT BRIEF

1. Name of Project : **Traffic Management Planning
Project Code : IS-4**
2. Type : Institutional Strengthening
3. Objective/s : To plan and implement a transport and traffic plan for the PA that provides a low impact, environmentally compatible access and parking for park visitors/users, and that addresses the long term requirements for intra- and inter-regional through traffic.

Specific Objectives:

- To prepare a PA access plan that incorporates strategic control points, allowing control over both visitor and through traffic, for the purposes of monitoring, ‘user pays’ fee collection, and traffic management and emergency response, as described above.
 - To prepare a traffic circulation strategy plan, based on a number of options, particularly in the Nav Mag area, as described and explained above.
 - To prepare a PA parking and transport strategy for a ‘park and ride’ system for visitors to the major recreation zones in the PA.
 - Identify and recommend on the strategic options to provide for long-term regional ‘through traffic’ needs, based on the options of minimum existing highway upgrade in the short term, and an ecological/landscape based (tunnel and bridge) option in the long term.
4. Description : This prescribed program is involved with devising an appropriate rationalized road system and traffic management system for the PA that addresses the issues associated with the conflicting transport needs of visitors, facility/service operators, and through-traffic. The work is expected to be contracted out to a

- leading national or international consultant with expertise in both transport planning and tourism/regional park design and planning.
5. Participants/Beneficiaries : PAMO, SBMA, DENR, local jurisdictions, participating stakeholder interests, general community
6. Impacts/Benefits :
7. Responsible Implementing Agency : PAMB, SBMA, local authority jurisdictions.
8. Estimated Cost : Php 750,000
9. Time Frame : Commence within the first two years of establishment of the PAMB

PROJECT BRIEF

1. Name of Project : **Institutionalization of PA Management Systems and Networking**
Project Code : IS-5
2. Type : Institutional Strengthening
3. Objective/s : The principal objective for the institutionalization of Protected Area management systems and networking is for the establishment of a comprehensive process of administration and control that is capable of undertaking the required functions of a PAMO in an orderly and accountable manner.
4. Description : This involves the process of getting the functions of the PAMB operational in such a way that the operational procedures are accepted by all users and are followed and applied as intended. Various tools and applications are critical to establishing these functions. They include setting in place a Business Management System (BMS), quality assurance procedures, due diligence procedures, and duty of care procedures. It also requires mechanisms for communicating, verifying and auditing these various procedures – in effect a ‘chain of custody’ and decision making documentation to ensure that the organization can account for its actions and internal authorizations, and decisions.

To make all these procedures work requires an internal decision-making structure of responsibilities/duties for various prescribed units/teams, management authority/responsibility, and committees with delegated decision making powers on behalf of the PAMB. A critical operational aspect of this system is that reporting and communication protocols exist and are in place.
5. Participants/Beneficiaries : SBMA, PAMB, DENR
6. Impacts/Benefits : • Competent operational structure and

procedures for the PAMB

- Effective integration with the new structure and administration of the SBMA
- Flexible and adaptive structure capable of dealing with the operational requirements in a rapidly changing institutional environment

7. Responsible Implementing Agency : SBMA, DENR, PAMB
8. Estimated Cost : Php 1,250,000
9. Time Frame : To be established prior to the commissioning of the PAMB, and to be further developed and refined in the first 6 months of operations.

An essential feature of the development of institutionalization and establishing internal operating procedures is for ongoing flexibility and adaptability to meet both internal and external change.

PROJECT BRIEF

1. Name of Project : **SBPA Management and Coordination Project**
Project Code : IS-6
2. Type : Institutional Strengthening
3. Description : This project will define in detail the hierarchical differentiation of roles and functions of the entities involved in the SBPAMP implementation. Subsequently, the project will install, operationalize, and maintain the defined management and coordination structures for the SBPAMP. It will also mobilize and provide financial and logistical support to the staff and resources of the various management councils, committees, and offices in support of their assigned PA responsibilities.
4. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, concerned LGUs, DENR, NGOs, private business groups, indigenous people.
5. Impacts/Benefits : Institutionalization of an effective and efficient protected area management mechanism for the Subic Bay Free Port Zone.
6. Responsible Implementing Agency : SBMA Ecology Center as lead. Participating offices include SBMA Planning Office, Legal Office, Engineering Department, Law Enforcement Department, Financial Planning and Budget Department; DENR; concerned LGUs; NGOs; people's organizations; indigenous peoples
7. Estimated Cost : Php 3,000,000
8. Time Frame : Continuing, 1st to 5th years

PROJECT BRIEF

1. Name of Project : **Organizational Refinement of Ecology Center for Protected Area
Project Code : IS-7**
2. Type : Institutional Strengthening
3. Description : The project will assist the Ecology Center and its Protected Area Division perform its mandated tasks on protected area management as defined in the SBPAMP. The activities will include the following:
 - Detailed review of the staffing pattern and personnel complement vis-à-vis the requirements of the SBPAMP;
 - Definition of staff authorities and responsibilities;
 - Organizational adjustments;
 - Staff orientation on roles and responsibilities; and
 - Operations and maintenance support.
4. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, concerned LGUs, DENR, NGOs, private business groups, indigenous people.
5. Impacts/Benefits : Institutionalization of an effective and efficient protected area management mechanism for the Subic Bay Free Port Zone.
6. Responsible Implementing Agency : SBMA Ecology Center as lead. Participating offices include : SBMA Planning Office, Legal Office, Engineering Department, Law Enforcement Department, Financial Planning and Budget Department; DENR; concerned LGUs; NGOs; people's organizations; indigenous peoples
7. Estimated Cost : Php 2,500,000
8. Time Frame : Continuing, 1st to 5th years

PROJECT BRIEF

1. Name of Project : **Protected Area Management Systems Development Project**
Project Code : IS-8
2. Type : Institutional Strengthening
3. Description : The effective and efficient implementation of the protected area plan and the relevant institutional arrangements and coordination mechanisms will require the development, installation, and operationalization of management support systems and procedures. The project will ensure that these systems and procedures are suitable, responsive, and cost effective and will facilitate the policy and decision-making processes, plan implementation, coordination, monitoring, and evaluation.
4. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, concerned LGUs, DENR, NGOs, private business groups, indigenous people.
5. Impacts/Benefits : Institutionalization of an effective and efficient protected area management mechanism for the Subic Bay Free Port Zone.
6. Responsible Implementing Agency : SBMA Ecology Center as lead. Participating offices include : SBMA Planning Office, Legal Office, Engineering Department, Law Enforcement Department, Financial Planning and Budget Department; DENR; concerned LGUs; NGOs; people's organizations; indigenous peoples
7. Estimated Cost : Php 3,000,000
8. Time Frame : 1st to 3rd years

PROJECT BRIEF

1. Name of Project : **Resource Mobilization and Equipment Support Project**
Project Code: IS-9
2. Type : Institutional Strengthening
3. Description : The project will entail the generation of financial support including the procurement of the required equipment and facilities for protected area management. These equipment and facilities will help improve the operational capability of the SBMA and its departments, particularly the Ecology center, and other concerned agencies and entities in managing and protecting the biodiversity of natural resources in the Subic Bay Free Port Zone.
4. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, concerned LGUs, DENR, NGOs, private business groups, indigenous people.
5. Impacts/Benefits : Institutionalization of an effective and efficient protected area management mechanism for the Subic Bay Free Port Zone.
6. Responsible Implementing Agency : SBMA Ecology Center as lead. Participating offices include : SBMA Planning Office, Legal Office, Engineering Department, Law Enforcement Department, Financial Planning and Budget Department; DENR; concerned LGUs; NGOs; people's organizations; indigenous peoples.
7. Estimated Cost : Php 20,100,000
8. Time Frame : 3rd to 5th years

PROJECT BRIEF

1. Name of Project : **Advocacy Studies**
Project Code : IS-10
2. Type : Institutional Strengthening
3. Objectives : To secure the support of relevant institutions in policy and institutional changes.
4. Description : The implementation of the SBPAMP will involve not only the acquisition of substantial funds and resources but will also require a number of policy and institutional changes. This will require the support of SBMA higher management and oversight government agencies like the Congress, the Department of Budget and Management, the Civil Service, and support agencies such as the National Economic and Development Authority, the Department of the Interior and Local Government and the DENR.
5. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, concerned LGUs, DENR, NGOs, private business groups, indigenous people.
6. Impacts/Benefits : Institutionalization of an effective and efficient protected area management mechanism for the Subic Bay Free Port Zone.
7. Responsible Implementing Agency : SBMA Ecology Center as lead. Participating offices include: SBMA Planning Office, Legal Office, Engineering Department, Law Enforcement Department, Financial Planning and Budget Department; DENR; concerned LGUs; NGOs; people's organizations; indigenous peoples.
8. Estimated Cost : Php 1,000,000
9. Time Frame : 1st to 2nd years

PROJECT BRIEF

1. Name of Project : **Protected Area Management Institutional Advisory Services**
Project Code : IS-11
2. Type : Institutional Strengthening
3. Description : The project will provide institutional development experts to assist the SBMA Ecology Center formulate policies and develop management systems and procedures supportive of the SBPAMP implementation. These experts will also assist in the installation and operation of the different management and coordination mechanisms for plan implementation.
4. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, concerned LGUs, DENR, NGOs, private business groups, indigenous people.
5. Impacts/Benefits : Institutionalization of an effective and efficient protected area management mechanism for the Subic Bay Free Port Zone.
6. Responsible Implementing Agency : SBMA Ecology Center as lead. Participating offices include : SBMA Planning Office, Legal Office, Engineering Department, Law Enforcement Department, Financial Planning and Budget Department; DENR; concerned LGUs; NGOs; people's organizations; indigenous peoples.
7. Estimated Cost : Php 5,100,000
8. Time Frame : 1st to 3rd years

PROJECT BRIEF

1. Name of Project : **Comprehensive Training Program on Protected Area Management**
Project Code : IS-12
2. Type : Institutional Strengthening
3. Objectives :
 - To upgrade the capability of the concerned staff of the SBMA and other government instrumentalities including stakeholders in protected area management and plan implementation.
 - To provide the officers and staff of SBMA and concerned agencies and entities the necessary knowledge and skills to manage, protect, and develop the Subic Bay Protected Area.
 - To install a mechanism for a continuing capability building, review, and feedback mechanism to ensure the provision of qualified staff for protected area management on a sustained basis.
4. Description : The program will consist of formal training sessions, seminars, workshops, and study and observation tours. The component activities of the training program will include the following:
 - Function-actual job matching assessment
 - Training needs assessment
 - Training plan and design development
 - Training plan implementation
 - Monitoring and evaluation
5. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, concerned LGUs, DENR, NGOs, private business groups, indigenous people.
6. Impacts/Benefits : Institutionalization of an effective and efficient protected area management mechanism for the Subic Bay Free Port Zone.
7. Responsible Implementing Agency : SBMA Human Resource Management Department as lead. Participating agencies

include : concerned SBMA departments (Ecology Center, planning, Law Enforcement, Legal, Tourism, Public Works, Finance), LGUs, concerned DENR units, concerned people's organizations, NGOs

8. Estimated Cost : Php 10,000,000
9. Time Frame : Continuing, 1st to 5th years

PROJECT BRIEF

1. Name of Project : **Preparation of a Marketing Plan for the Subic Bay Protected Area**
Project Code : IS-13
2. Type : Institutional Strengthening
3. Objectives : To come up with a Marketing Plan for the Subic Bay Protected Area that will guide all the marketing activities for the protected area.
4. Description : This will involve the preparation of a Marketing Plan to tap the *wide range* of tourist products that will capture different segments of the tourism market. The Plan will help create the image of the Subic Bay Protected Area as a world-class natural attraction.
5. Participants/Beneficiaries : SBMA concerned agencies (Tourism, Ecology)
6. Impacts/Benefits : The Subic Bay Protected Area will be recognized as a world-class nature tourism site. This will translate to economic benefits to the local economy in general and to the local communities in particular.
7. Responsible Implementing Agency : SBMA Tourism Office as lead agency.
8. Estimated Cost : Php 3,000,000
9. Time Frame : 1st year

PROJECT BRIEF

1. Name of Project : **Technical Assistance on the Preparation of an Investment Promotion Plan for the Subic Bay Protected Area**
Project Code : IS-14
2. Type : Institutional Strengthening
3. Objectives : To come up with an Investment Promotion Plan for the Subic Bay Protected Area that will identify, promote, and guide preferred investments in the area.
4. Description :
 - Identification of specific preferred sustainable development-oriented projects/investments consistent with the guiding principles of the PAMP.
 - Drawing up of incentives that will attract investors to do sustainable development-oriented business in the Subic Bay Protected Area and its environs.
 - Provide incentives to the following:
 - Joint ventures between the communities and investors;
 - Community- owned and managed enterprises; and
 - Enterprises that provide profit sharing to the community.
5. Participants/Beneficiaries : Investors, local communities
6. Impacts/Benefits : The coming of development-oriented projects/investments to the area is expected to bring in economic benefits to the local communities.
7. Responsible Implementing Agency : Protected Area Management Zones Investment Promotion Sub-Group as Lead. Cooperating groups include: SBMA Business Group, SBMA Ecology Center, SBMA Board
8. Estimated Cost : Php 3,000,000
9. Time Frame : 1st year

PROJECT BRIEF

1. Name of Project : **Development of Marketing Collaterals and Investment Promotion Materials**
Project Code : IS-15
2. Type : Institutional Strengthening
3. Objectives :
 - To come up with marketing and promotional materials for the Subic Bay Protected Area.
 - To come up with investment promotion materials to guide prospective investors in the Subic Bay Protected Area.
4. Description : The project will provide technical assistance in the development of materials providing information on Subic Bay, the Protected Area, the communities, and preferred investments that would be useful for visitors and prospective investors. These may specifically include as follows:
 - Fact Sheet on the Subic Bay Metropolitan subregion
 - List of preferred investments
 - Investment incentives offered
 - Primer on the natural resources of the Protected Area (can be culled from the various technical studies on flora and fauna)
 - Primer on the culture of the Aeta communities showcasing their indigenous knowledge in forest management
5. Participants/Beneficiaries : Ecology Center and other SBMA concerned departments, visitors, and investors.
6. Impacts/Benefits : Availability of a coherent package of marketing promotional materials and investment promotion materials for the Subic Bay Protected Area.
7. Responsible Implementing Agency : SBMA Ecology Center as lead. Participating offices include SBMA Planning Office, Tourism Office, Legal Office.
8. Estimated Cost : Php 8,000,000

9. Time Frame : 1st to 3rd years

PROJECT BRIEF

1. Name of Project : **Technical Assistance to Subic Bay Conservation Society**
Project Code : IS-16
2. Type : Institutional Strengthening
3. Objectives : To equip the members of SBMA Board with the necessary knowledge and skills effectively perform its important roles in: a) building intra- and inter-governmental linkages as well as private-public sector partnerships, b) developing agile management approaches, c) nurturing community groups, d) participating in environmental activities, and e) contributing to the articulation of environmental priorities and strategies.
4. Description : This will involve the provision of technical assistance and capability building activities designed to assist the Board in its tasks as well as strengthen its capability along the following areas:
 - Developing fund-raising strategies;
 - Managing and strengthening governing boards;
 - Understanding and working with international organizations;
 - Developing an asset management strategy and engaging an effective assets manager;
 - Assistance in mobilizing resources from external and in-country sources;
 - Assistance in strategic planning; and
 - Assessing resource values and developing indicators for measuring the effectiveness and impact of project implementation.
5. Participants/Beneficiaries : SBMA Board members
6. Impacts/Benefits : The capability building of the SBMA Board will lead to a better managed fund in the short term and an effective management of the Protected Area in the long term.

7. Responsible Implementing Agency : SBMA Protected Area Management Board
8. Estimated Cost : Php 6,000,000
9. Time Frame : 1st to 3rd years

PROJECT BRIEF

1. Name of Project : **Technical Assistance on Financial Systems Design and Management**
Project Code : IS-17
2. Type : Institutional Strengthening
3. Objectives : To develop compatible system for managing funds for the SBPA with current fund management system of the SBMA.
4. Description : This will involve the provision of technical assistance on the design and development of a financial management system for the Subic Bay PA compatible with the current fund management system of the SBMA.
5. Participants/Beneficiaries : SBMA concerned agencies (Accounting, Financial Planning) Subic Bay Board
6. Impacts/Benefits : The project is expected to result in a better-managed Subic Bay Heritage Fund.
7. Responsible Implementing Agency : SBMA Accounting Department as lead. Participating entities include SBMA Financial Planning Group, Subic Bay Board
8. Estimated Cost : Php 3,000,000
9. Time Frame : 1st year

Annex 1. PROJECT PRIORITIZATION PROCESS

Instructions :

1. **Rate each projects using three (3) criteria : economic, environment, and social impact with corresponding weights as shown in Table 6.**

A. Environmental

✓ Use a simple **Resource Compatibility Checklist** as shown in Table 7 in evaluating the environmental effect of the project.

- If the project **negatively** affects a particular resource, rate the impact as (-);
- If the project helps **conserves** or even **add** to the resource, rate the impact as (+)
- If the effect is **neutral**, rate the impact as **0**
- Sum up all the negative and positive impacts.

✓ Rating:

- If the number of negative impact is greater than the number of positive ones (project is environmentally **harmful**), rate the project as **0**.
- If the number of negative impact is equal to the number of positive ones (project is environmentally **benign**), rate the project as **1**.
- If the number of negative impact is less than the number of positive ones (project **improves** existing environmental conditions), rate the project as **2**.

B. Economic

✓ Is the project financially and economically viable from a private or enterprise-level viewpoint? Can the project yield sufficient economic benefits which outweigh potential economic costs?

✓ Economic benefits could include the following:

- Increase in foreign exchange earnings
- Employment generation valued at current wages
- Increase in tax revenues

✓ **Rating:**

- If the project costs are greater than the benefits, rate the project as **0**.
- If the project benefits are just equal to costs, rate the project as **1**.
- If the project benefits are greater than the costs, rate the project as **2**.

C. Social Impact✓ **Displacement Effect**

- If the project displaces people or communities, rate the project as **0**.
- If the project does not result in any significant displacement of people and communities, rate the project as **1**.
- If the project improves the living conditions of people and communities without moving them, rate the project as **2**.

Socio-cultural Value Effect

- If the project results in a deterioration of socio-cultural values, rate the project as **0**.
- If the project is socio-culturally benign, rate the project as **1**.
- If the project strengthens socio-cultural values, rate the project as **2**.

✓ **Leadership and Solidarity Effect**

- If the project undermines the either political/traditional leadership or community solidarity, rate the project as **0**.
- If the project does not have any significant effects on the political/traditional leadership or community solidarity, rate the project as **1**.
- If the project strengthens political/traditional leadership or community solidarity, rate the project as **2**.

2. For each criterion, multiply the rating by the weight to get the score for each criterion. Then add all the scores for each criterion to get the Social Desirability Index. See example in Table 8.
3. Rank the projects by giving the project with the highest Social Desirability Index with Rank 1, the second highest index with Rank 2, and so forth. In case some projects have the same Social Desirability Indices, give them the same rank. For example, two projects may be Ranked 1 if they have the highest and the same index.

Table 6. Social Desirability Index

Type :

Project Title	Economic Impact (30%)	Environmental Impact (40%)	Social Impact			Social Desirability Index (Add Rating x Weight)	Rank
			Dislocation (10%)	Socio-Cultural (10%)	Leadership/Solidarity (10%)		

Table 7. Resource Compatibility Checklist

Project :

Resource	Impact (+) or (-)
Air	
Water	
Agricultural land	
Forest land	
Endangered flora	
Endangered fauna	
Scenic resources	
Human resource	
National heritage or monuments incl. historic quarters, religious sites, tribal villages	
Total Number of (+) Impact	
Total Number of (-) Impact	

Table 8. Sample Project Prioritization Sheet

Type : Park Administration

Project Title	Econ Impact (.3)	Envi Impact (.40)	Social Impact			Social Desirability Index (Add Rating x Weight)	Rank
			Dislocation (.10)	Socio- Cultural (.10)	Leadership/ Solidarity (.10)		
Project A	0 x 0.3	1 x 0.4	0 x 0.1	1 x 0.1	0 x 0.1	0.50	3
Project B	1 x 0.3	2 x 0.4	1 x 0.1	0 x 0.1	0 x 0.1	1.20	2
Project C	2 x 0.3	2 x 0.4	2 x 0.1	2 x 0.1	1 x 0.1	1.90	1

Annex 2 Illustrations of Information Drive Materials

The real responsibility for sustaining our coral reefs falls on all of us. Here are 25 things we can all do to save our coral reefs.

1. Support reef-friendly businesses. Ask what your dive shop, boating store, tour operators, hotel, and other coastal businesses are doing to save the coral reefs. This is especially important in coastal areas with reefs. Let them know you are an informed consumer and care about reefs.
2. Don't use chemically enhanced pesticides and fertilizers. Although you may live thousands of miles from a coral reef ecosystem, these products end up in the watershed and may ultimately impact the waters that support coral.
3. Volunteer for a reef cleanup. You don't live near a coral reef? Then do what many people do with their vacations: visit a coral reef. Spend an afternoon enjoying the beauty of one of the world's treasures while helping to preserve it for future generations.
4. Learn more about coral reefs. How many different species live in reefs? What new medicines have been discovered in reef organisms. Participate in training or educational programs that focus on reef ecology. When you further your own education, you can help others understand the fragility and value of the world's coral reefs.
5. Become a member of your local aquarium or zoo. Ask what they are doing and what your donation can do toward saving the world's coral reefs. The answer may pleasantly surprise you.
6. When you visit a coral reef, help keep it healthy by respecting all local guidelines, recommendations, regulations, and customs. Ask local authorities or your dive shop how to protect the reef.
7. Support conservation organizations. Many of them have coral reef programs, and your much-needed monetary support will make a big difference.
8. Spread the word. Remember your own excitement at learning how important the planet's coral reefs are to us and the intricate global ecosystem. Sharing this excitement gets everyone you speak with involved.
9. Be an informed consumer. Consider carefully the coral objects that you buy for your coffee table. Ask the store owner or manager from what country the coral is taken and whether or not that country has a management plan to insure that the harvest was legal and sustainable over time.
10. Don't pollute. Never put garbage or human waste in the water. Don't leave trash on the

beach, boats, and from land is correctly treated. The nutrients from sewage feed growing algae that can smother and kill corals.

11. Recycle. This is the first step each of us can take to make a change. Recycle anything and everything. If your community doesn't have a program, do it anyway, and get one started.
12. Conserve water. The less water you use, the less runoff and wastewater that eventually finds its way back into our oceans.
13. Report dumping or other illegal activities. Environmental enforcement cannot be everywhere, and your involvement can make a big difference.
14. Keep it clean. You may be in the habit of picking up your own trash. You may even participate in an organized cleanup. But have you considered carrying away the trash that others have left behind?
15. Only buy marine aquarium fish if you know they have been collected in an ecologically sound manner. In some areas, marine fish harvested for the pet trade are stunned with sodium cyanide so that capturing them is easier.
16. Surf the net! Many different addresses exist to link you to information about coral reefs and what you can do to become involved. A good starting point is at <http://www.publicaffairs.noaa.gov/coral-reef.html>
17. Don't start a live rock aquarium. Although this living rock is still harvested legally in some places, its collection is devastating to the reef organisms habitat.
18. Hire local guides when visiting coral reef ecosystems. Not only do you learn about the local resources, but you will be protecting the future of the reef by supporting a non-consumptive economy around the reef.
19. Don't anchor on the reef. If you go boating near a coral reef, use mooring buoy systems when they are available.
20. If you dive, don't touch! Take only pictures and leave only bubbles! Keep your fins' gear, and hands away from the coral, as this contact can hurt you and will damage the delicate coral animals. Stay off the bottom because stirred-up sediment can settle on coral and smother it.
21. Participate in the Great American Fish Count. What better way to enjoy your vacation time than snorkeling or diving in America's coral reefs and helping scientists better understand reef fish populations?
22. Volunteer. Volunteer and community coral reef monitoring programs are very important. If you do not live near a coast, get involved in your local save the river (bay, lake, or other estuarine environment) program. Remember, all watersheds affect the

- oceans and eventually the coral reefs.
23. Support the creation and maintenance of marine parks and reserves. Encourage your friends to get involved with projects to protect special areas.
 24. Be a wastewater crusader! Make sure that sewage from your boat, from others' boats, and from land is correctly treated. The nutrients from sewage feed growing algae that can smother and kill corals.
 25. Inform yourself. Find out about existing and proposed laws, programs, and projects that could affect the world's coral reefs.

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