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### Acronyms and Abbreviations

|         |  |
|---------|--|
| CENRO   | Community Environment and Natural Resources Office   |
| cf.     | Latin: <i>confer</i> ; in binomial nomenclature (scientific name writing) denotes unconfirmed species identification but very similar to species indicated |
| CPPAP   | Conservation of Priority Protected Areas Project   |
| CR      | Critically Endangered  |
| DA      | Department of Agriculture  |
| dbh     | diameter at breast height  |
| DENR    | Department of Environment and Natural Resources  |
| DD      | Data Deficient   |
| DTI     | Department of Trade and Industry   |
| EN      | Endangered   |
| ER      | Encounter Rate   |
| FGD     | Focus Group Discussion   |
| GEF     | Global Environment Facility  |
| GIS     | Geographic Information System  |
| GA      | Government Agencies  |
| GPS     | Global Positioning System  |
| IBA     | Important Bird Area  |
| IEC     | Information, Education and Communication   |
| IP      | Indigenous People  |
| IPRA    | Indigenous People's Rights Act   |
| ISSG    | Invasive Species Specialist Group  |
| IUCN    | International Union for the Conservation of Nature   |
| KBA     | Key Biodiversity Area  |
| LC      | Least Concern  |
| LGU     | Local Government Unit  |
| MBCFI   | Mindoro Biodiversity Conservation Foundation, Inc.   |
| MENRO   | Municipal Environment and Natural Resources Office   |
| NA      | Not Applicable   |
| NGO     | Non-Government Organization  |
| NIPAS   | National Integrated Protected Area System  |
| NT      | Near Threatened  |
| PAWB    | Protected Areas and Wildlife Bureau  |
| PAWCZMS | Protected Areas, Wildlife and Coastal Zone Management Services   |
| RA      | Republic Act   |
| sp.     | In binomial nomenclature (scientific name writing) denotes an unidentified species   |
| spp.    | In binomial nomenclature (scientific name writing) denotes more than one species under the genus   |
| VU      | Vulnerable   |

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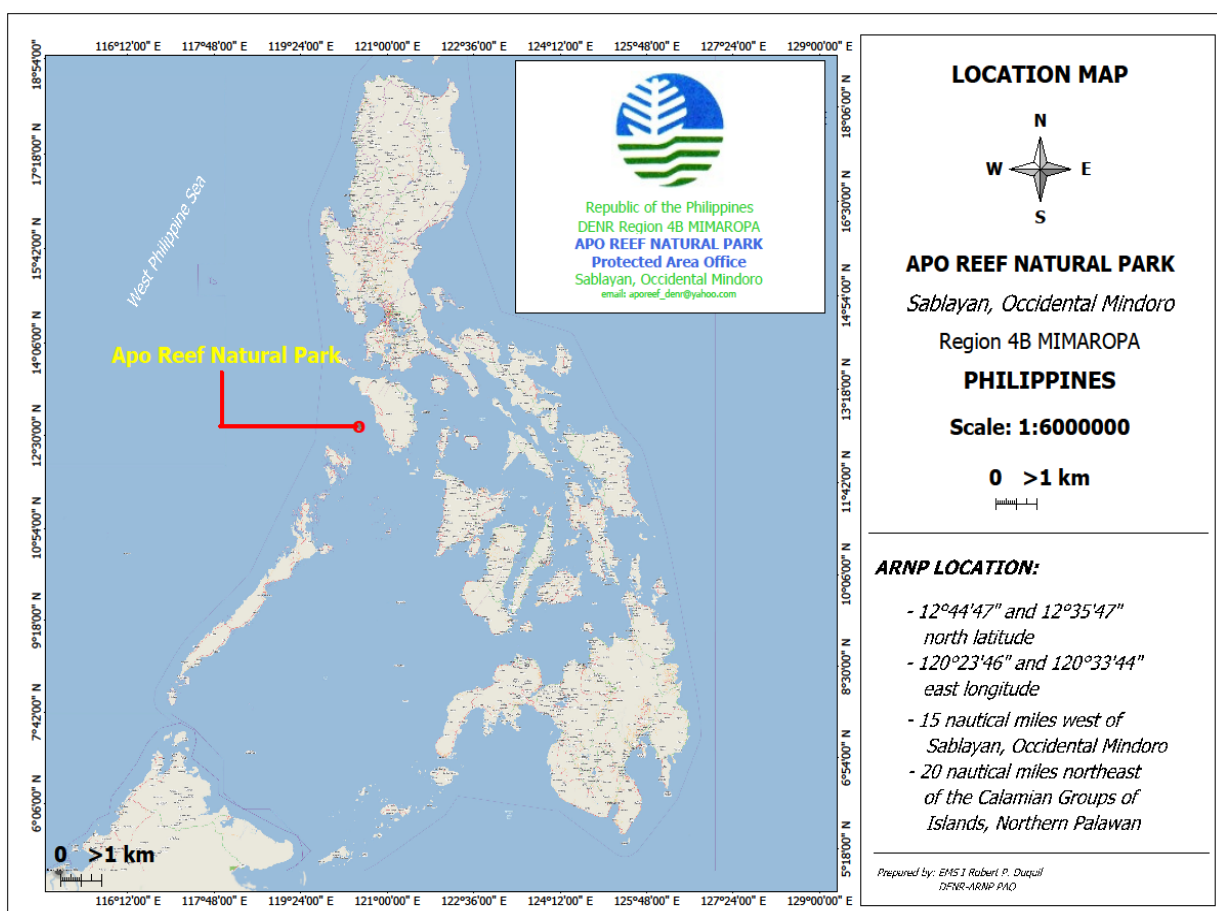
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# 1 Background

The Apo Reef Natural Park (ARNP) lies between the South China Sea and Sulu Sea Marine Biogeographic Areas adjacent to the municipal jurisdiction of Sablayan in the Province of Occidental Mindoro. The territorial jurisdiction of Sablayan, spanning a total area of 2,188.80 sq. km, is located between 12°45' and 13°10' latitude and 120°45' and 121°15' longitude. The ARNP is located at 12°44'47" and 12°35'47" north latitude and 120°23'46" and 120°33'44" east longitude. ARNP is approximately 15 nautical miles (27.8 km) due west of Occidental Mindoro and 21 nautical miles (38.9 km) northeast of Calamian Islands, Northern Palawan. It divides the marine waters between Mindoro and Palawan into Apo West and Apo East Pass (ARNP PAMP, 2001).

**Figure 1.** Location map of the Apo Reef Natural Park, Sablayan, Occidental Mindoro.



Source: DENR – Apo Reef Natural Park (ARNP) Protected Area Office

Apo Reef is one of the major natural areas in the Philippines endowed with significant marine resources and biodiversity. The Apo atoll-like reef complex is the largest of this type in the Philippines. The core area covers some 15,792 hectares, and the entire protected area (including the buffer zone) is 27,469 has. The main geographical features of ARNP are submerged except for three (3) islands, namely: Apo Island, Apo Menor Island (Binanggaan) and Cayos del Bajo (Tinangkapan) rising a few meters above sea level. The largest is Apo Island which harbors mangroves and beach

vegetation. Binanggaan is a rocky limestone island with patches of mangrove and beach forest vegetation; and Cayos del Bajo is a flat coralline rock formation with no vegetation.

The ARNP is proclaimed as a protected area under the National Integrated Protected Areas System (NIPAS) and is currently managed by a Protected Area Management Board (PAMB) composed of representatives of local and national stakeholders and organized by the Department of Environment and Natural Resources (DENR). The main implementer of the management is the Office of the Protected Area Superintendent (PASu) based in the town proper of Sablayan. A ranger station is also established in the main island of Apo Reef named Apo Island and is manned by PA staff and rangers.

In 2007, PAMB issued a series of resolutions declaring the whole park as a “no-take zone”. This means fishing within its boundaries is banned including zones which previously allowed subsistence fishing. However, it is noted that prior to the implementation of the policy, Barangays Buenavista and Ligaya were among the coastal communities dependent mainly on fishing at Apo Reef for their subsistence and income.

A major industry that has been utilizing the resources in Apo Reef is tourism. In fact, the major user-based funding source for the maintenance and management of the natural park comes from the park fees paid by the tourists that visit the area. It is a popular site for tourists, who bask in its fine white sand beaches, leisurely stroll along boardwalks within the mangrove area, or marvel at the extremely diverse coral species and other marine life that include sharks and sting rays (Libosada, *unpublished*).

However, there is an evident lack of a specific management plan that caters directly to sustainable tourism development and its related impacts. It should be noted that developing the ecotourism potential of the island is identified as one of the specific objectives indicated in the 2001 Apo Reef Management Plan.

## 2 Protected Area Profile

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Active participation of local communities and other stakeholders is an essential element in the effective protected area management and sustainable resource utilization in the Natural Park. Hence, a participatory approach of rapid site assessment and profile updating on the biophysical, socio-cultural, economic, and institutional components of the ARNP was conducted on April to May 2014 by Mindoro Biodiversity Conservation Foundation, Inc. (MBCFI) through the support and partnership of the DENR specifically the Protected Area Office.

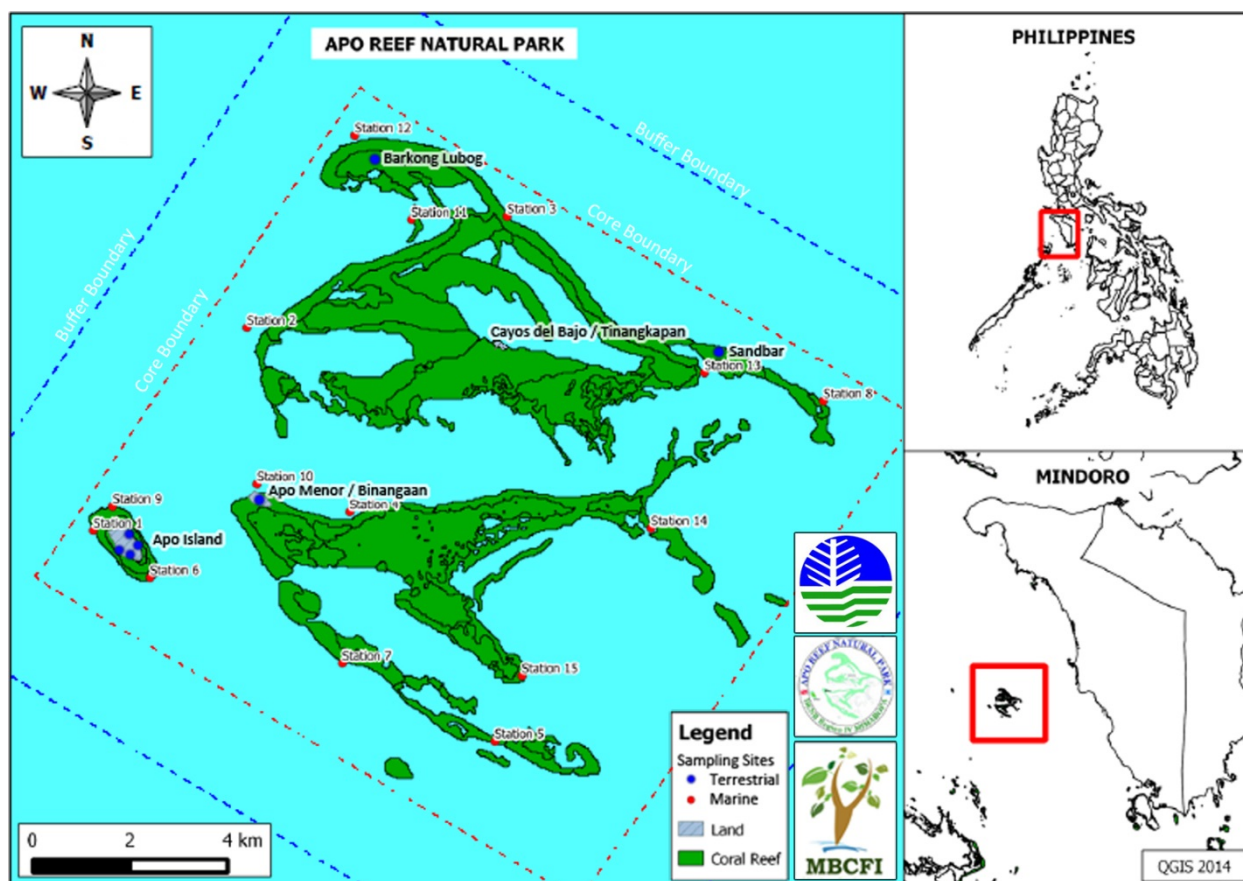
The biodiversity assessments in the ARNP were carried out to establish and update the database on the biodiversity and health status of marine and terrestrial flora and fauna. Furthermore, to achieve ARNP's resource management and conservation objectives, it is crucial for the PA decision-makers and managers to gain better appreciation and understanding of the diversity of stakeholders, their livelihood activities, resource use practices, and their dependence on the natural resources in ARNP.

The combination of biodiversity, socio-economic and institutional assessments is an initial step towards developing an appropriate management plan, which shall address the issues and concerns on the need to develop a tourism-focused management program designed to put emphasis on ecotourism, the related impacts of tourism, and the appropriate management strategies designed to enhance the ecotourism business viability and sustainable resource utilization of Apo Reef Natural Park.

### 2.1 Geo-Physical Characteristics

The Apo Reef Natural Park (ARNP) is located in 30 kilometers west of the municipality of Sablayan, Occidental Mindoro, between the South China Sea and Sulu Sea Marine Biogeographic Regions (Aliño and Gomez 1995) (**Figure 1**). It lies between the island of Mindoro and Busuanga Island in the province of Palawan. The ARNP is considered a conservation priority site for birds, reef fish and corals (Ong *et al.* 2000; Mallari *et al.* 2001; CI-Philippines *et al.* 2007). The ARNP is an atoll-like complex with three islands: Apo Island, Apo Menor Island (Binanggaan) and Cajos del Bajo (Tinangkapan). It is a sub-triangular atoll formation approximately 26 kilometers from north to south and 20 kilometers from east to west. Apo Island is the largest at 22.67 hectares with mangrove and beach forests; Binanggaan is a 2.63ha rocky limestone island with small patches of beach and mangrove vegetation; and Cayos del Bajo is a 0.28ha flat coralline rock formation with no vegetation (ARNP PAMP, 2001; MBCFI 2014).





**Figure 2.** Apo Reef Natural Park Protected Area Boundaries.

The ARNP is located just outside the 15km municipal water boundaries of Sablayan. It was declared as a protected area on 6 September 1996 through Presidential Proclamation No. 868 in accordance with Republic Act 7567 or the National Integrated Protected Areas System (NIPAS) Act of 1992. It has a total area of 27,469 hectares: the core zone covers 15,792 hectares and the buffer zone covers 11,677 hectares.

## 2.2. Terrestrial Biodiversity

### Flora

The main island of ARNP is dominated by a mangrove forest surrounding a lagoon. Mangrove tree species particularly *Sonneratia*, *Rhizophora* and *Xylocarpus* species dominate this habitat. While its beach forest is relatively dominated by Banasi (*Pouteria obovata*), Kalumpang (*Sterculia foetida*) and Balibago (*Talipariti tiliaceum*). Likewise, *Rhizophora* and *Xylocarpus* stands are relatively dense in the mangrove forests areas, while the beach forest is relatively populated by Pandan-dagat (*Pandanus tectorius*) and Banasi. While in most of the sampling plots throughout Apo Island, Balibago (*Talipariti tiliaceum*) and Bakawan (*Rhizophora* spp) are frequently observed. Vegetation on Binangaan Island is similar to Apo Island but is much more sparsely distributed. Clusters of mature mangrove trees such as *B. cylindrica*, *R. mucronata* and *S. alba* were found in the sandy/muddy parts of the island. Some seedlings, saplings and mature beach forest trees (Buri, Talisay and Banago) and shrubs (Beach Morning Glory and Tumble Weed) were also found in the

rocky and sandy shores of Binanggaan. No vegetation was found on Tinangkapan Island. Table 1 provides a list of floral species recorded.

**Table 1.** Floral species recorded on Apo Reef Natural Park.

| <b>FAMILY / Scientific Name</b>   | <b>Common Name</b>                           | <b>Residency Status</b> | <b>Conservation Status</b> |
|-----------------------------------|--|-------------------------|----------------------------|
| AIZOACEAE                         |  |                         |                            |
| <i>Sesuvium portulacastrum</i>    | Dampalit                                     | Native                  | Not yet assessed           |
| ARECACEAE                         |  |                         |                            |
| <i>Corypha utan</i>               | Buri   | Native                  | Least Concern              |
| ASPARAGACEAE                      |  |                         |                            |
| <i>Agave</i> sp                   | Century Plant                                | Introduced              | Least Concern              |
| ASTERACEAE                        |  |                         |                            |
| <i>Chromolaena odorata</i>        | Hagonoy                                      | Introduced              | Least Concern              |
| BORAGINACEAE                      |  |                         |                            |
| <i>Cordia subcordata</i>          | Banalo                                       | Native                  | Least Concern              |
| <i>Heliotropium foertherianum</i> | Octopus Bush                                 | Native                  | Least Concern              |
| CELASTRACEAE                      |  |                         |                            |
| <i>Salacia chinensis</i>          | Matang-ulang                                 | Native                  | Not yet assessed           |
| COMBRETACEAE                      |  |                         |                            |
| <i>Terminalia catappa</i>         | Talisay, Beach Almond                        | Native                  | Least Concern              |
| CONVOLVULACEAE                    |  |                         |                            |
| <i>Ipomea pes-caprae</i>          | Beach morning glory, katang-katang, lagayray | Native                  | Not yet assessed           |
| EBENACEAE                         |  |                         |                            |
| <i>Diospyros maritima</i>         | Sea persimmon                                | Native                  | Least Concern              |
| FABACEAE                          |  |                         |                            |
| <i>Abrus precatorius</i>          | Saga-saga                                    | Native                  | Least Concern              |
| <i>Erythrina variegata</i>        | Dapdap                                       | Native                  | Least Concern              |
| <i>Leucaena leucocephala</i>      | Ipil-ipil                                    | Introduced              | Least Concern              |
| <i>Milletia pinnata</i>           | Bani   | Native                  | Not yet assessed           |
| FLAGELLARIACEAE                   |  |                         |                            |
| <i>Flagellaria indica</i>         | Huag, Baling-uai                             | Native                  | Not yet assessed           |
| LAURACEAE                         |  |                         |                            |
| <i>Cassytha filiformes</i>        | Malabuhok, Kawad-kawad                       | Native                  | Not yet assessed           |
| LYTHRACEAE                        |  |                         |                            |
| <i>Pemphis acidula</i>            | Bantigi                                      | Native                  | Least Concern              |
| <i>Sonneratia alba</i>            | Pagatpat                                     | Native                  | Least Concern              |
| MALVACEAE                         |  |                         |                            |
| <i>Sterculia foetida</i>          | Kalumpang                                    | Native                  | Not yet assessed           |
| <i>Talipariti tiliaceum</i>       | Balibago                                     | Native                  | Least Concern              |
| <i>Thespesia populnea</i>         | Banago                                       | Native                  | Least Concern              |

|                               |                       |        |                  |
|-------------------------------|-----------------------|--------|------------------|
| MELIACEAE                     |                       |        |                  |
| <i>Xylocarpus moluccensis</i> | Piagao                | Native | Least Concern    |
| <i>Xylocarpus rumphii</i>     | Pigau                 | Native | Least Concern    |
| PANDANACEAE                   |                       |        |                  |
| <i>Pandanus tectorius</i>     | Pandan-dagat          | Native | Not yet assessed |
| POACEAE                       |                       |        |                  |
| <i>Spinifex littoreus</i>     | Tumble weed, Pagulong | Native | Not yet assessed |
| RHIZOPHORACEAE                |                       |        |                  |
| <i>Bruguiera cylindrica</i>   | Pototan, Busain       | Native | Least Concern    |
| <i>Rhizophora apiculata</i>   | Bakawan lalake        | Native | Least Concern    |
| <i>Rhizophora mucronata</i>   | Bakawan babae         | Native | Least Concern    |
| RUBIACEAE                     |                       |        |                  |
| <i>Guettarda speciosa</i>     | Tabon-tabon           | Native | Not yet assessed |
| SAPOTACEAE                    |                       |        |                  |
| <i>Pouteria obovata</i>       | Banasi                | Native | Least Concern    |
| VERBENACEAE                   |                       |        |                  |
| <i>Premna odorata</i>         | Alagao                | Native | Not yet assessed |
| <i>Vitex parviflora</i>       | Molave / Molawin      | Native | Vulnerable       |
| <i>Vitex trifolia</i>         | Lagundi               | Native | Least Concern    |

## Birds

A total of sixty four (64) species of birds from 30 families have been recorded in ARNP. Thirty one species are migratory while the rest are resident to the Philippines. Two species – Nicobar Pigeon (*Caleonas nicobarica*) and Mantanani Scops-owl (*Otus mantananensis*) are classified as Near Threatened species following the IUCN threatened species categories. Both Near Threatened species are small island specialists. Three species are reported as introduced – Eurasian Tree Sparrow (*Passer montanus*) and Barred Rail (*Gallirallus torquatus*) have naturalized (resident) population on ARNP while the feral Rock Dove / Domestic Pigeon (*Columba livia*) has been removed and is no longer present in the park. A comprehensive list of species is presented in Table 2.

**Table 2.** Bird species recorded on Apo Reef Natural Park.

| FAMILY / Scientific Name    | Common Name               | Residency Status | Conservation Status |
|-----------------------------|---------------------------|------------------|---------------------|
| SULIDAE                     |                           |                  |                     |
| <i>Sula leucogaster</i>     | Brown Booby               | R                | Least Concern       |
| FREGATIDAE                  |                           |                  |                     |
| <i>Fregata ariel</i>        | Lesser Frigatebird        | M                | Least Concern       |
| ARDEIDAE                    |                           |                  |                     |
| <i>Egretta sacra</i>        | Eastern Reef Egret        | R                | Least Concern       |
| <i>Egretta garzetta</i>     | Little Egret              | R                | Least Concern       |
| <i>Bubulcus ibis</i>        | Cattle Egret              | R                | Least Concern       |
| <i>Nyctiorax nycticorax</i> | Black-crowned Night-heron | R                | Least Concern       |

|                                |                          |          |                 |
|--------------------------------|--------------------------|----------|-----------------|
| ACCIPITRIDAE                   |                          |          |                 |
| <i>Haliastur indus</i>         | Brahminy Kite            | R        | Least Concern   |
| <i>Haliaeetus leucogaster</i>  | White-bellied Sea Eagle  | R        | Least Concern   |
| <i>Butastur indicus</i>        | Grey-faced Buzzard       | M        | Least Concern   |
| FALCONIDAE                     |                          |          |                 |
| <i>Falco tinnunculus</i>       | Eurasian Kestrel         | M        | Least Concern   |
| <i>Falco peregrinus</i>        | Peregrine Falcon         | M        | Least Concern   |
| PHASIANIDAE                    |                          |          |                 |
| <i>Megapodius cumingii</i>     | Tabon Scrubfowl          | R        | Least Concern   |
| RALLIDAE                       |                          |          |                 |
| <i>Gallirallus torquatus</i>   | Barred Rail              | R / Int? | Least Concern   |
| <i>Porzana fusca</i>           | Ruddy-breasted Crake     | R        | Least Concern   |
| <i>Amaurornis phoenicurus</i>  | White-breasted Waterhen  | R        | Least Concern   |
| CHARADRIIDAE                   |                          |          |                 |
| <i>Charadrius perorii</i>      | Malaysian Plover         | R        | Least Concern   |
| <i>Pluvialis fulva</i>         | Pacific Golden Plover    | M        | Least Concern   |
| <i>Tringa stagnatilis</i>      | Marsh Sandpiper          | M        | Least Concern   |
| <i>Tringa nebularia</i>        | Common Greenshank        | M        | Least Concern   |
| SCOLOPACIDAE                   |                          |          |                 |
| <i>Gallinago stenura</i>       | Pintail Snipe            | M        | Least Concern   |
| <i>Phalaropus lobatus</i>      | Red-necked Phalarope     | M        | Least Concern   |
| GLAREOLIDAE                    |                          |          |                 |
| <i>Glareola maldivarum</i>     | Oriental Pratincole      | M        | Least Concern   |
| RECURVIROSTRIDAE               |                          |          |                 |
| <i>Himantopus himantopus</i>   | Black-winged Stilt       | M        | Least Concern   |
| STERNIDAE                      |                          |          |                 |
| <i>Chlidonias hybridus</i>     | Whiskered Tern           | R        | Least Concern   |
| <i>Sterna anaethetus</i>       | Bridled Tern             | R        | Least Concern   |
| <i>Sterna sumatrana</i>        | Black-naped Tern         | R        | Least Concern   |
| <i>Sterna bergii</i>           | Great Crested Tern       | R        | Least Concern   |
| <i>Sterna fuscata</i>          | Sooty Tern               | M        | Least Concern   |
| <i>Anous minutus</i>           | Black Noddy              | R        | Least Concern   |
| COLUMBIDAE                     |                          |          |                 |
| <i>Ptilinopus leclancheri</i>  | Black-chinned Fruit-Dove | E        | Least Concern   |
| <i>Streptopelia bitorquata</i> | Island Collared-Dove     | R        | Least Concern   |
| <i>Ducula bicolor</i>          | Pied Imperial Pigeon     | R        | Least Concern   |
| <i>Caloenas nicobarica</i>     | Nicobar Pigeon           | R        | Near Threatened |
| <i>Columba livia</i>           | Rock Dove                | R / Int  | Least Concern   |
| CUCULIDAE                      |                          |          |                 |
| <i>Eudynamis scolopacea</i>    | Common Koel              | R        | Least Concern   |
| <i>Cuculus saturatus</i>       | Oriental Cuckoo          | M        | Least Concern   |
| STRIGIDAE                      |                          |          |                 |

|                                |                              |   |                 |
|--------------------------------|------------------------------|---|-----------------|
| <i>Otus mantananensis</i>      | Mantanani Scops-Owl          | R | Near Threatened |
| APODIDAE                       |                              |   |                 |
| <i>Collocalia vanikorensis</i> | Island Swiftlet              | R | Least Concern   |
| ALCEDINIDAE                    |                              |   |                 |
| <i>Alcedo atthis</i>           | Common Kingfisher            | M | Least Concern   |
| <i>Halcyon chloris</i>         | White-collared Kingfisher    | R | Least Concern   |
| <i>Halcyon coromanda</i>       | Ruddy Kingfisher             | M | Least Concern   |
| UPUPIDAE                       |                              |   |                 |
| <i>Upupa epops</i>             | Hoopoe                       | M | Least Concern   |
| MEROPIDAE                      |                              |   |                 |
| <i>Merops philippinus</i>      | Blue-tailed Bee-eater        | R | Least Concern   |
| HIRUNDINIDAE                   |                              |   |                 |
| <i>Hirundo rustica</i>         | Barn Swallow                 | M | Least Concern   |
| <i>Hirundo tahitica</i>        | Pacific Swallow              | R | Least Concern   |
| CAMPEPHAGIDAE                  |                              |   |                 |
| <i>Lalage nigra</i>            | Pied Triller                 | R | Least Concern   |
| ORIOIDAE                       |                              |   |                 |
| <i>Oriolus chinensis</i>       | Black-naped Oriole           | R | Least Concern   |
| CORVIDAE                       |                              |   |                 |
| <i>Corvus macrorhynchus</i>    | Large-billed Crow            | R | Least Concern   |
| TURDIDAE                       |                              |   |                 |
| <i>Turdus chrysolaus</i>       | Brown-headed Thrush          | M | Least Concern   |
| <i>Turdus obscurus</i>         | Eyebrowed Thrush             | M | Least Concern   |
| <i>Turdus poliocephalus</i>    | Island Thrush                | R | Least Concern   |
| <i>Monticola solitarius</i>    | Blue Rock-thrush             | M | Least Concern   |
| SYLVIIDAE                      |                              |   |                 |
| <i>Phylloscopus borealis</i>   | Arctic Warbler               | M | Least Concern   |
| <i>Cettia diphone</i>          | Oriental Bush-Warbler        | M | Least Concern   |
| MUSCICAPIDAE                   |                              |   |                 |
| <i>Terpsiphone atrocaudata</i> | Japanese Paradise-Flycatcher | M | Least Concern   |
| <i>Muscicapa griseisticta</i>  | Grey-streaked Flycatcher     | M | Least Concern   |
| <i>Cyornis ruficastra</i>      | Mangrove Blue-Flycatcher     | R | Least Concern   |
| <i>Rhipidura javanica</i>      | Pied Fantail                 | R | Least Concern   |
| <i>Terpsiphone paradisi</i>    | Asian Paradise-Flycatcher    | M | Least Concern   |
| MOTACILLIDAE                   |                              |   |                 |
| <i>Anthus hodgsoni</i>         | Olive Tree-Pipit             | M | Least Concern   |
| <i>Motacilla alba</i>          | White Wagtail                | M | Least Concern   |
| <i>Motacilla flava</i>         | Yellow Wagtail               | M | Least Concern   |
| <i>Motacilla cinerea</i>       | Grey Wagtail                 | M | Least Concern   |
| LANIDAE                        |                              |   |                 |
| <i>Lanius cristatus</i>        | Brown Shrike                 | M | Least Concern   |

|                             |                           |         |               |
|-----------------------------|---------------------------|---------|---------------|
| STURNIDAE                   |                           |         |               |
| <i>Sturnus philippensis</i> | Chestnut-cheeked Starling | M       | Least Concern |
| NECTARINIDAE                |                           |         |               |
| <i>Nectarinia jugularis</i> | Olive-backed Sunbird      | R       | Least Concern |
| <i>Nectarinia sperata</i>   | Purple-throated Sunbird   | R       | Least Concern |
| PLOCEIDAE                   |                           |         |               |
| <i>Passer montanus</i>      | Eurasian Tree Sparrow     | R / Int | Least Concern |

Note: R – Resident; M – Migrant; Int – Introduced

### Mammals

Only one native terrestrial mammal species was reported from ARNP. The Common Rousette (*Rousettus amplexicaudatus*) was reported seasonally feeding on *Terminalia catappa* fruits on Apo Island. Two alien invasive rodents – Common Brown Rat (*Rattus norvegicus*) and Oriental House Rat (*Rattus tanezumi*) were reported on Apo Island possibly introduced accidentally as stow-aways on boats ferrying humans and supplies to the park. Two other terrestrial mammals – Domestic Dog (*Canis familiaris*) and Domestic Cat (*Felis catus*) were previously reported on Apo Island. Fortunately these were extracted and are no longer observed in ARNP.

Five species of marine mammals have been recorded in ARNP. Pods of Melon-headed Whales (*Peponocephala electra*), Spinner Dolphins (*Stenella longirostris*) and Common Bottlenose Dolphins (*Tursiops truncatus*) are regularly observed in Apo East Pass and in ARNP. Short-finned Pilot Whales (*Globicephala macrorhynchus*) and Risso's Dolphins (*Grampus griseus*) have also been reported in ARNP.

**Table 3.** Mammal species recorded on Apo Reef Natural Park.

| FAMILY / Scientific Name         | Common Name               | Residency Status   | Conservation Status |
|----------------------------------|---------------------------|--------------------|---------------------|
| MURIDAE                          |                           |                    |                     |
| <i>Rattus norvegicus</i>         | Common Brown Rat          | Introduced         | Least Concern       |
| <i>Rattus tanezumi</i>           | Oriental House Rat        | Introduced         | Least Concern       |
| FELIDAE                          |                           |                    |                     |
| <i>Felis catus</i>               | Domestic Cat              | Introduced / Feral | Least Concern       |
| CANIDAE                          |                           |                    |                     |
| <i>Canis familiaris</i>          | Domestic Dog              | Introduced / Feral | Least Concern       |
| PTEROPODIDAE                     |                           |                    |                     |
| <i>Rousettus amplexicaudatus</i> | Common Rousette           | Native             | Least Concern       |
| DEPHINIDAE                       |                           |                    |                     |
| <i>Peponocephala electra</i>     | Melon-headed Whale        | Native             | Least Concern       |
| <i>Stenella longirostris</i>     | Spinner Dolphin           | Native             | Data Deficient      |
| <i>Tursiops truncatus</i>        | Common Bottlenose Dolphin | Native             | Least Concern       |
| <i>Grampus griseus</i>           | Risso's Dolphin           | Native             | Least Concern       |
| <i>Globicephala</i>              | Short-finned Pilot        | Native             | Data Deficient      |

|                      |       |  |  |
|----------------------|-------|--|--|
| <i>macrorhynchus</i> | Whale |  |  |
|----------------------|-------|--|--|

### Herpetofauna

Five terrestrial reptile species were reported to occur in ARNP – 2 gecko (Family Gekkonidae), 2 skink (Family Scincidae) and 1 tree snake (Family Colubridae). No amphibian species have observed within the park to date. This distribution is possibly influenced by the limited availability of freshwater on ARNP. The adaptations by reptilian species allow them to inhabit drier environments while amphibians generally require habitats in or near freshwater.

In addition, 2 marine reptiles are also regularly observed in ARNP – Green Sea Turtle (*Chelonia mydas*) and Hawksbill Sea Turtle (*Eretmochelys imbricata*). Both sea turtle species are considered globally threatened in the IUCN and have been reported to nest on the beaches of Apo Island.

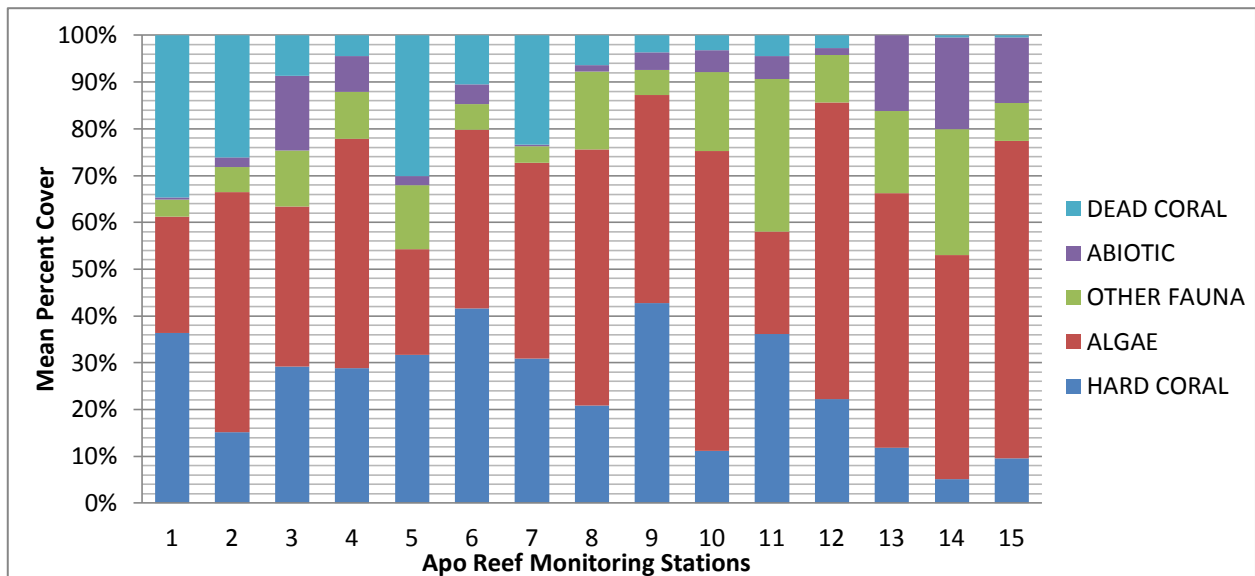
**Table 4.** Reptile species recorded on Apo Reef Natural Park.

| FAMILY / Scientific Name        | Common Name           | Residency Status | Conservation Status   |
|---------------------------------|-----------------------|------------------|-----------------------|
| GEKKONIDAE                      |                       |                  |                       |
| <i>Gekko gekko</i>              | Tocay gecko           | Native           | Not Assessed          |
| <i>Hemidactylus frenatus</i>    | Common House Gecko    | Native           | Least Concern         |
| SCINCIDAE                       |                       |                  |                       |
| <i>Eutropis cf multicaudata</i> | Many-keeled Skink     | Native           | Not Assessed          |
| <i>Emoia atrocostata</i>        | Mangrove Skink        | Native           | Not Assessed          |
| COLUBRIDAE                      |                       |                  |                       |
| <i>Dendrelaphis sp.</i>         | Bronzeback tree snake | -                | -                     |
| CHELONIIDAE                     |                       |                  |                       |
| <i>Chelonia mydas</i>           | Green Sea Turtle      | Native           | Endangered            |
| <i>Eretmochelys imbricata</i>   | Hawksbill Sea Turtle  | Native           | Critically Endangered |

### 3.3. Marine Biodiversity

#### Coral Reef Communities

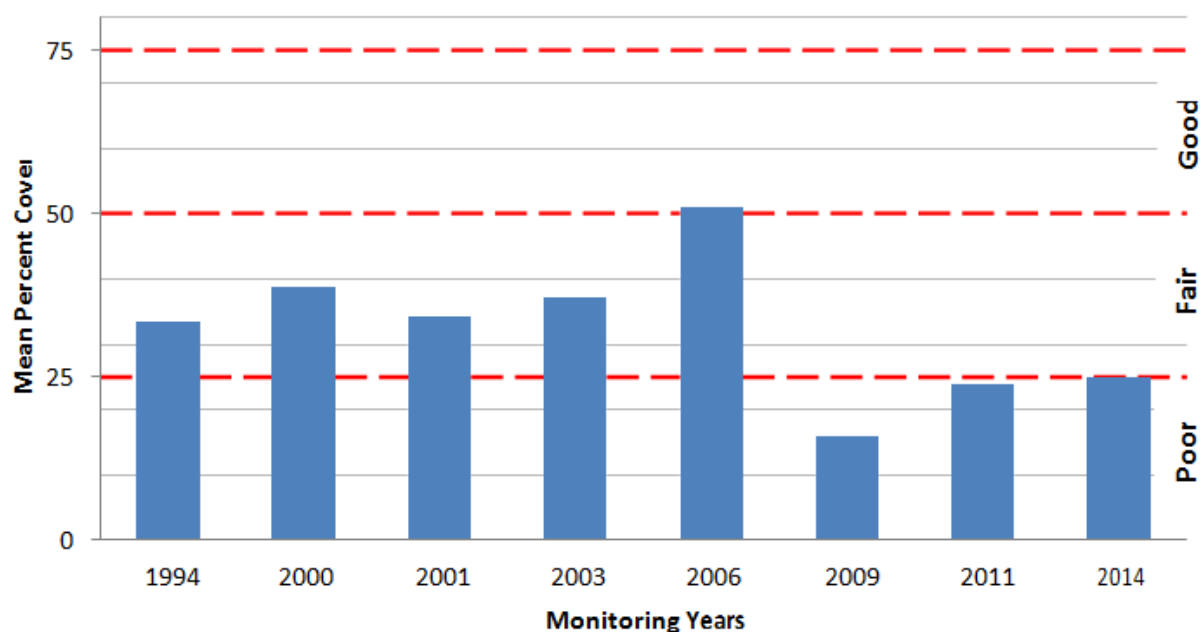
The 2014 survey by MBCFI recorded the overall coral reef status of the ARNP as poor with an overall mean live coral cover of 24.88% (**Figure 4**). The live coral cover was dominated by branching (9.01%) and massive corals (8.84%). Algae still has the highest cover with an overall mean cover of 45.39%. Algal cover was dominated by dead coral with algae with a mean percentage cover of 41.77%. The Other Fauna category had an overall mean cover of 12.53%. It was dominated by sponges (5.33%) and soft corals (6.29%). The Abiotic category had an overall mean cover of 6.59%. It was mainly dominated by sand with a mean cover of 3.68%. Dead coral cover had an overall mean cover of 10.60%.



**Figure 3.** Mean percent composition of the major benthic categories of reefs across the 15 monitoring stations at ARNP, Sablayan, Occidental Mindoro (MBCFI 2014).

The overall live coral cover of the ARNP still remains to be in “poor” condition based on the categories established by Gomez *et al* (1994) (**Figure 4**). The live coral cover may be slowly recovering since 2006. There were several factors attributed to the decline from 51.03% to 16% in 2009. These include crown-of-thorns (*Acanthaster planci*) infestation and Super Typhoon *Caloy* (International name Chancu). For this survey, only one individual of crown-of-thorns was observed in Station 8. The year 2006 recorded the highest mean percent live coral cover for the Apo Reef Natural Park. Between 2009 and the present survey, there was an increase in the mean percent cover of 8.91%. The algal component of the reef still remains to be relatively abundant across all 15 stations even with the abundance of herbivores such as some species of surgeonfishes (Acanthuridae), damselfishes (Pomacentridae) and parrotfishes (Scaridae).

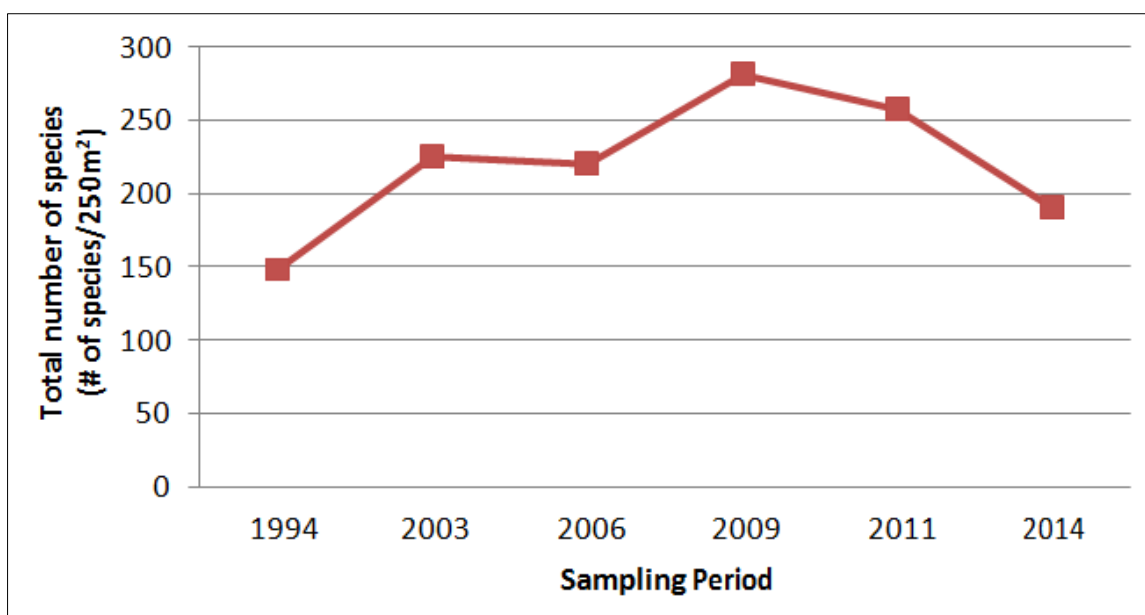




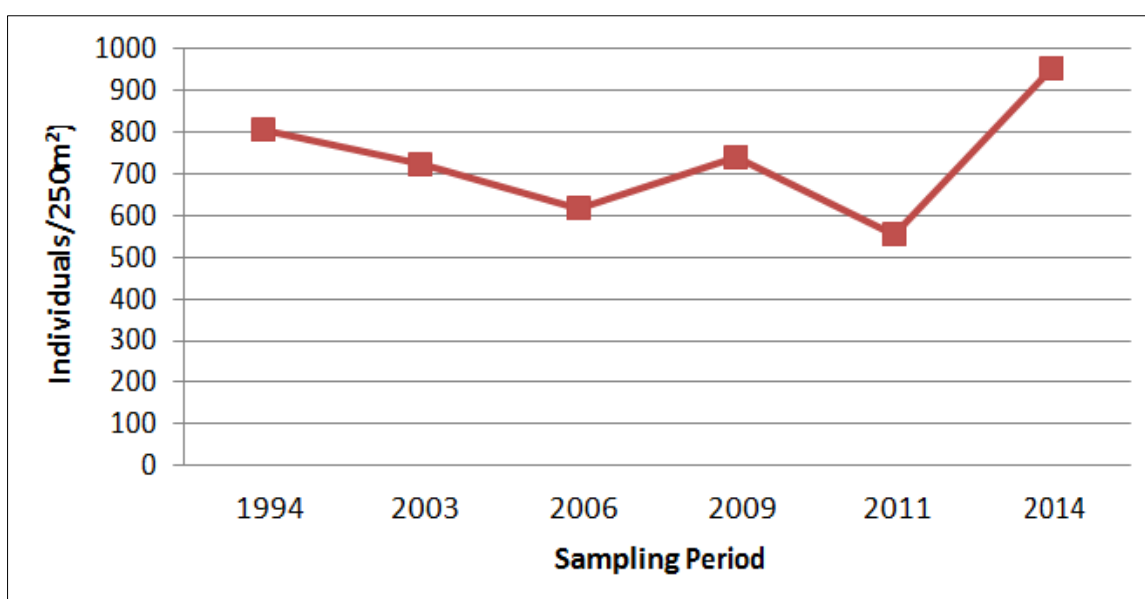
**Figure 4.** Mean percent live coral cover and coral cover categories (Gomez *et al* 1994) from 1994 to 2014 in the ARNP, Sablayan, Occidental Mindoro.

### Reef Fish Communities

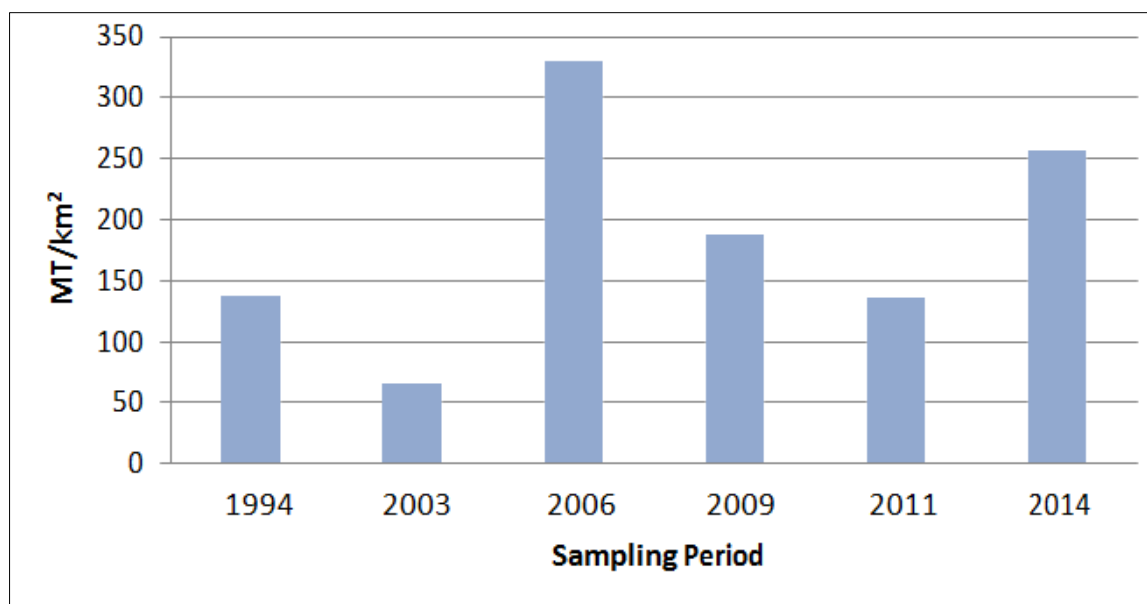
The changes in total number of species, abundance and biomass at the ARNP are shown in Figure 5, Figure 6, and Figure 7. There was a decrease in the total number of species observed between 2011 and 2014. It may be attributed to the minimum number of transects used (i.e. one transect per station) for the present survey. The total number of species declined from 257 species/250 m<sup>2</sup> in 2011 to 190 species/250 m<sup>2</sup> in the present survey. Conversely, the fish abundance and standing stock biomass increased from 2011 to the present study (Figure 5 and Figure 7). For the fish abundance, this was the highest recorded fish abundance since the ARNP was established, from 805 individuals/250 m<sup>2</sup> in 1994 to 952 individuals/250 m<sup>2</sup> (Figure 6). The abundance may be attributed to the schooling fishes observed such as the fusiliers (Caesionidae), anthias (Subfamily Anthiinae: Family Serranidae), some species of damselfishes (Pomacentridae) and surgeonfishes (Acanthuridae). The mean estimated fish biomass for the ARNP increased from 136 metric tons/km<sup>2</sup> in 2011 to 256 metric tons/km<sup>2</sup> in the present study (Figure 7). The estimated biomass for this survey is the second highest since 1994. The increase may be attributed to several large-bodies species including the dogtooth tuna (*Gymnosarda unicolor*), giant trevally (*Caranx ignobilis*), Bluefin trevally (*Caranx melampygus*) and whitetip reef shark (*Triaenodon obesus*) intercepted along the transects.



**Figure 5.** Changes in the total number of fish species at the ARNP, Sablayan, Occidental Mindoro (1994-2014). Total species taken from 15 transects in 1994 and 2006; 14 transects in 2003; 30 transects in 2009 and 2011; and 15 transects in 2014.



**Figure 6.** Changes in the mean estimated fish abundance at the ARNP, Sablayan, Occidental Mindoro (1994-2014).



**Figure 7.** Changes in the mean estimated standing stock biomass of fish (metric tons/km<sup>2</sup>) at the ARNP, Sablayan, Occidental Mindoro (1994-2014).

### 3.4. Socio-Cultural and Economic Profile

#### Demography and Settlements

The islands comprising the ARNP are uninhabited however, a total of 20 rangers were authorized to live temporarily on Apo Island in ten (10) man-team weekly shifts. This ranger team tasked with the protection of ARNP and conservation of its biodiversity is composed of field officers from DENR (7), LGU (7), PNP (2), and ARMY (4). Figure 4 shows the boundaries of Apo Reef including the peripheral waters that serve as buffer zone. The figure below also shows the location of the islands in ARNP. More than 30 fishing boats with an average of 15 crews that belong to 3 to 5 families per boat are seen within the area.

Although there is no permanent settlement in ARNP, transient fishermen from the coastal barangays of Sablayan and neighboring municipalities of Mindoro, Palawan and Bohol camp in the reef for about a week during fishing season. Fishermen coming from Romblon, Batangas, Cavite, Quezon, Zambales, Lapu-Lapu City, Cebu and Antique likewise visit ARNP. Indigenous Tagbanuas from Tara Island also frequent in the island during summer months to fish and gather ornamental shells.

#### Population Size and Growth Rate of ARNP Stakeholder Communities

Sablayan, which has jurisdiction over the ARNP has the second largest population share (approximately 20%) in the province of Occidental Mindoro. Based on 2010 NSO Census of Population and Housing, the total population of Sablayan is 76,153 while the total number of households is 16,284 with an average household size of 5. Meanwhile, the 2012 CBMS survey has recorded a total population of 80,152 with an average household size of 4.57. Males predominate the municipality's population posting 40,958 or 51.10%.

The population of Sablayan grows at 2.60% since year 2010. This is almost half more than the 1.46% municipal annual growth rate during the immediately preceding censal year. This annual growth rate is higher than that of the province and the region by a small fraction but significantly more than that of the national growth rate.

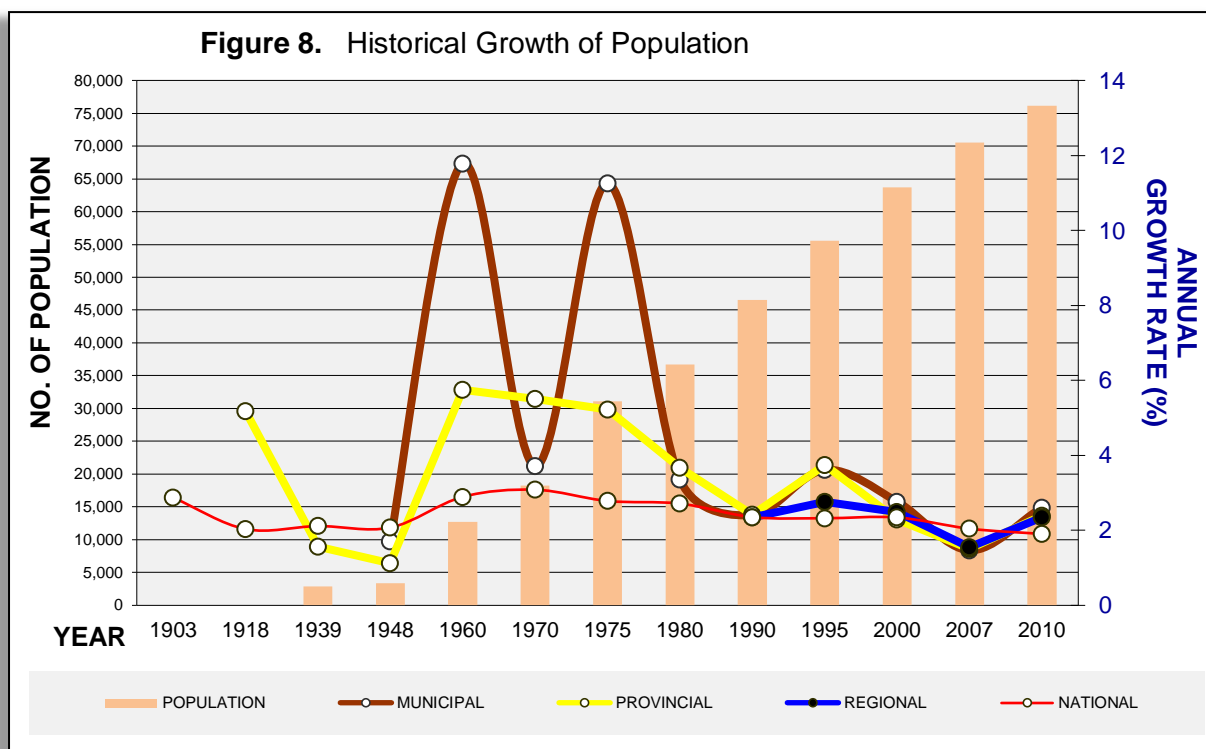
**Table 5:** Historical Annual Growth Rate of Sablayan

| Year | Population | Increase / Decrease | Annual Growth Rate (%) |            |          |          |
|------|------------|---------------------|------------------------|------------|----------|----------|
|      |            |                     | Municipal              | Provincial | Regional | National |
| 1903 |            |                     |                        |            |          | 2.87     |
| 1918 |            |                     |                        | 5.18       |          | 2.03     |
| 1939 | 2,861      | 2,861               |                        | 1.56       |          | 2.11     |
| 1948 | 3,332      | 471                 | 1.71                   | 1.12       |          | 2.07     |
| 1960 | 12,685     | 9,353               | 11.78                  | 5.74       |          | 2.89     |
| 1970 | 18,256     | 5,571               | 3.71                   | 5.50       |          | 3.08     |
| 1975 | 31,117     | 12,861              | 11.25                  | 5.22       |          | 2.78     |
| 1980 | 36,699     | 5,582               | 3.35                   | 3.67       |          | 2.71     |
| 1990 | 46,546     | 9,847               | 2.41                   | 2.42       | 2.34     | 2.35     |
| 1995 | 55,573     | 9,027               | 3.61                   | 3.74       | 2.76     | 2.32     |
| 2000 | 63,685     | 8,112               | 2.76                   | 2.29       | 2.49     | 2.34     |
| 2007 | 70,506     | 6,821               | 1.46                   | 1.50       | 1.55     | 2.04     |
| 2010 | 76,153     | 5,647               | 2.60                   | 2.39       | 2.35     | 1.90     |

Source: MPDO (NSO Census of Population)

The significant increase is due to natural means coupled with in-migration brought about by the establishment of two (2) state colleges in the municipality: Oriental Mindoro State College (OMSC) and Polytechnic University of the Philippines (PUP). Population growth rate beginning 1939 to present indicated unnatural increases particularly in years 1960 and 1975. Historically, these are the periods when migrants from Luzon and other provinces started to move into the town of Sablayan<sup>1</sup>.

<sup>1</sup> Draft Comprehensive Land and Water Use Plan 2014-2024 (unpublished), MPDO

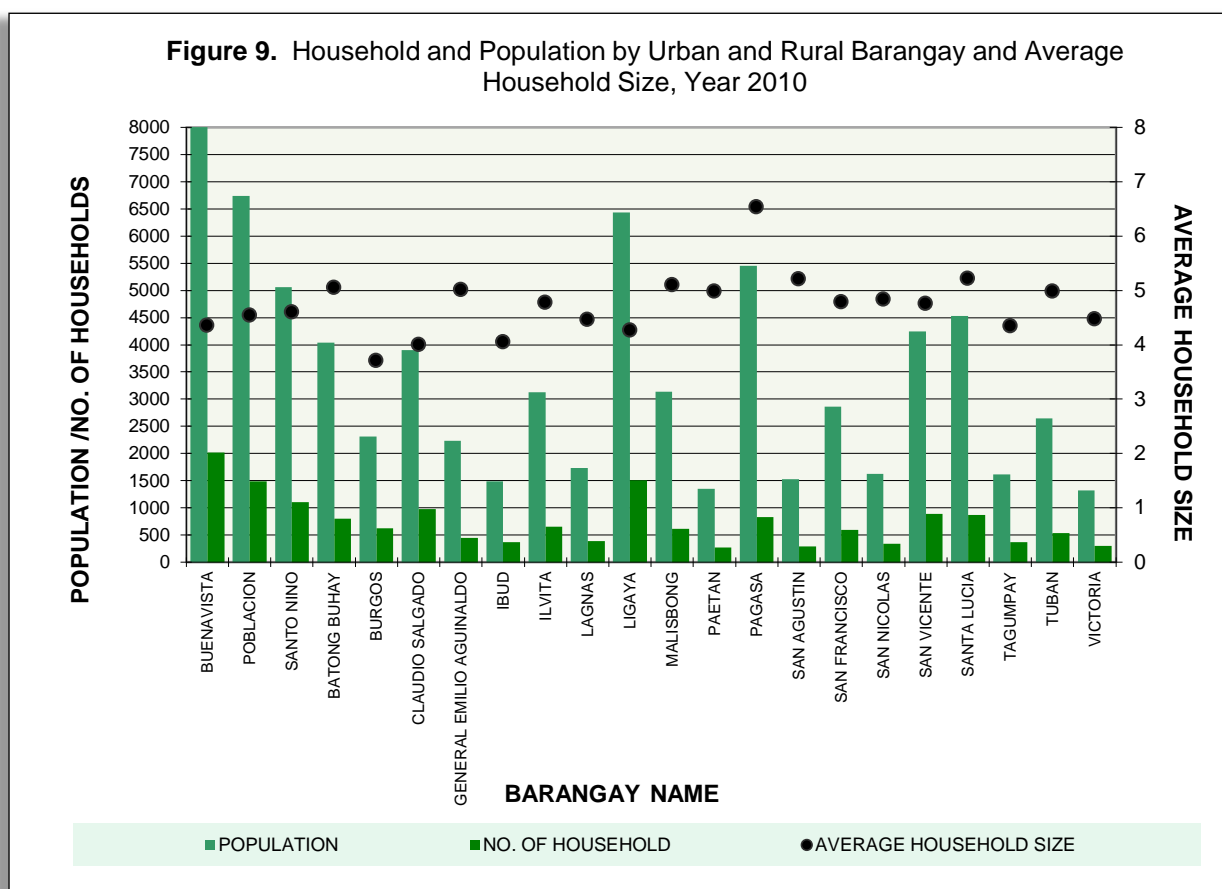


Source: MPDO, Sablayan

### Population Distribution of ARNP Stakeholder Communities

Sablayan is a first class municipality with a total land area of 2,188.80 km<sup>2</sup>. It has twenty two barangays, three (3) of which are classified as urban and nineteen (19) are rural barangays. Barangays Buenavista and Poblacion (Lumang Bayan) registered the most number of people residing in the municipality with 8,758 and 6,741 representing 11.50% and 8.85% of the municipality's total, respectively. Barangay Victoria has the least number of people residing with 1,323 representing 1.73% of the municipality's total (2010 NSO Census).

In 2010, Sablayan recorded an aggregate urban population of 20,563. This is almost 30% of the total number of population residing in the municipality. The rest resides in the rural areas. Most number of people chooses to reside in the urban areas due to proximity to various services such as health, institutional, commerce and trade.



Source: MPDO, Sablayan

Among the 22 barangays, ten (10) are located along the coastline and classified as “coastal,” as follows: Barangays Burgos, Ligaya, San Nicolas, General Emilio Aguinaldo, Sta. Lucia, Poblacion, Buenavista, Sto. Niño, Ibud, and Claudio Salgado. These coastal barangays in the Municipality of Sablayan are considered as major stakeholders and local marine resource users in ARNP. It is therefore imperative for the ARNP stakeholder communities to be part of the planning processes of ARNP to achieve effective protected area management and sustainable resource use.

**Table 6.** Population Size of ARNP Stakeholder Communities in Sablayan.

| Coastal Barangay                  | YEAR 2009           |               |               |                          | YEAR 2010           |                          |
|-----------------------------------|---------------------|---------------|---------------|--------------------------|---------------------|--------------------------|
|                                   | Population Size (a) |               |               | Number of Households (a) | Population Size (b) | Number of Households (b) |
|                                   | Total               | Male          | Female        |                          |                     |                          |
| 1. Buenavista                     | 8065                | 4054          | 4011          | 1821                     | 8,758               | 2,013                    |
| 2. Claudio Salgado                | 3758                | 1959          | 1799          | 817                      | 3,899               | 975                      |
| 3. General Emilio Aguinaldo (GEA) | 2131                | 1083          | 1048          | 408                      | 2,229               | 445                      |
| 4. Ibud                           | 1867                | 974           | 893           | 391                      | 1,488               | 368                      |
| 5. Ligaya                         | 6800                | 3,535         | 3,265         | 1421                     | 6,435               | 1,510                    |
| 6. Poblacion                      | 5927                | 3,008         | 2,919         | 1305                     | 6,741               | 1,486                    |
| 7. San Nicolas                    | 1681                | 890           | 791           | 299                      | 1,624               | 336                      |
| 8. Sta. Lucia                     | 3821                | 1,981         | 1,840         | 787                      | 4,528               | 868                      |
| 9. Sto. Niño                      | 5493                | 2791          | 2702          | 1229                     | 5,064               | 1,103                    |
| 10. Burgos                        | 2269                | 1164          | 1105          | 493                      | 2,316               | 625                      |
| <b>TOTAL</b>                      | <b>41,812</b>       | <b>21,439</b> | <b>20,373</b> | <b>8,971</b>             | <b>43,082</b>       | <b>9,729</b>             |

Source: (a) Barangay Development Plans of the 10 Coastal Barangays (CBMS, 2009)

(b) NSO Census of Population and Housing (2010)

The coastal barangays comprise almost 57% of the total population of Sablayan. Out of the ten, Buenavista and Poblacion are the coastal barangays with largest population size from 2009-2010.

### Population Projection of ARNP Stakeholder Communities

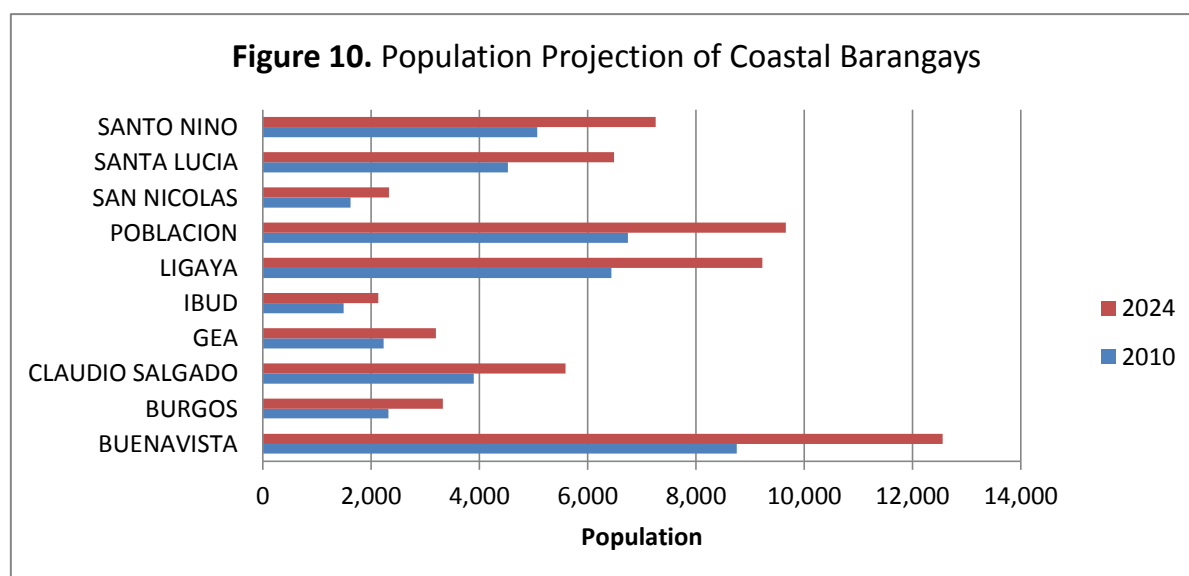
The total number of population by the year 2024 is projected to be 109,162 when allowed to grow at 2.60% annually beginning 2010. The table below shows more specific population projections for the ten coastal barangays in Sablayan.

**Table 7.** Population Projection of ARNP Stakeholder Communities in Sablayan, 2015-2024

| Barangay        | 2010<br>(Base) | Population |        |        |        |        |        |         |         |         |         |
|-----------------|----------------|------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
|                 |                | 2015       | 2016   | 2017   | 2018   | 2019   | 2020   | 2021    | 2022    | 2023    | 2024    |
| BUENAVISTA      | 8,758          | 9,965      | 10,224 | 10,490 | 10,762 | 11,042 | 11,329 | 11,624  | 11,926  | 12,236  | 12,554  |
| BURGOS          | 2,316          | 2,635      | 2,704  | 2,774  | 2,846  | 2,920  | 2,996  | 3,074   | 3,154   | 3,236   | 3,320   |
| CLAUDIO SALGADO | 3,899          | 4,436      | 4,552  | 4,670  | 4,791  | 4,916  | 5,044  | 5,175   | 5,309   | 5,447   | 5,589   |
| GEA             | 2,229          | 2,536      | 2,602  | 2,670  | 2,739  | 2,810  | 2,883  | 2,958   | 3,035   | 3,114   | 3,195   |
| IBUD            | 1,488          | 1,693      | 1,737  | 1,782  | 1,829  | 1,876  | 1,925  | 1,975   | 2,026   | 2,079   | 2,133   |
| LIGAYA          | 6,435          | 7,322      | 7,512  | 7,707  | 7,908  | 8,113  | 8,324  | 8,541   | 8,763   | 8,990   | 9,224   |
| POBLACION       | 6,741          | 7,670      | 7,869  | 8,074  | 8,284  | 8,499  | 8,720  | 8,948   | 9,179   | 9,418   | 9,663   |
| SAN NICOLAS     | 1,624          | 1,848      | 1,896  | 1,945  | 1,996  | 2,048  | 2,101  | 2,155   | 2,211   | 2,269   | 2,328   |
| SANTA LUCIA     | 4,528          | 5,152      | 5,286  | 5,423  | 5,564  | 5,709  | 5,857  | 6,010   | 6,166   | 6,325   | 6,491   |
| SANTO NINO      | 5,064          | 5,762      | 5,912  | 6,065  | 6,223  | 6,385  | 6,551  | 6,721   | 6,896   | 7,075   | 7,259   |
| Sub-Total       | 76,153         | 86,645     | 88,898 | 91,209 | 93,581 | 96,014 | 98,510 | 101,071 | 103,699 | 106,395 | 109,162 |

Source: NSO Census of Population and Housing (2010)

Rapid increase in population implies more demand and more pressure for the environment and its natural resources. The figure below illustrates the increase in population in the ARNP communities for the next ten years.





### Population Density/Residential Density in ARNP Communities

Since Sablayan has very large forest areas that do not accommodate population, it is not surprising that the population density recorded during the 2012 CBMS Survey is 0.37 persons per hectare<sup>2</sup>. Meanwhile the table below about the population density in the ARNP stakeholder communities was computed using the 2010 NSO Census data, shows that Buenavista is the most dense among the 22 barangays in the municipality with a gross density of 12 persons per hectare followed by Barangay Poblacion at 5 persons per hectare.

Furthermore, the urban density is computed at 5 persons per hectare and the built-up density is 107 persons per hectare. The densest area is Barangay Malisbong with 333 persons per hectare followed by Barangay San Francisco with 268 persons per hectare then by Barangay San Agustin with 225 persons per hectare. The least dense among these areas is Barangay Victoria with only 53 persons per hectare. See succeeding table and graphical presentations for more information.

**Table 8.** Population Density and Built-up Density of ARNP Communities in Sablayan, 2010

| Coastal Barangay         | Area in Hectares  | Population Density | Built-up Area in Has | Built-up Density |
|--------------------------|-------------------|--------------------|----------------------|------------------|
| <b>URBAN</b>             |                   |                    |                      |                  |
| BUENAVISTA               | 747.40            | 12                 | 79.5000              | 110              |
| POBLACION                | 1,242.00          | 5                  | 59.0200              | 114              |
| SANTO NINO               | 1,996.20          | 3                  | 54.9000              | 92               |
| <b>RURAL</b>             |                   |                    |                      |                  |
| BURGOS                   | 19,330.00         | 0                  | 18.3909              | 126              |
| CLAUDIO SALGADO          | 3,741.60          | 1                  | 25.2720              | 154              |
| GENERAL EMILIO AGUINALDO | 1,006.40          | 2                  | 39.0005              | 57               |
| IBUD                     | 1,278.00          | 1                  | 21.7271              | 68               |
| LIGAYA                   | 6,435.00          | 0                  | 66.9555              | 96               |
| SAN NICOLAS              | 822.00            | 2                  | 19.1475              | 85               |
| SANTA LUCIA              | 3,646.60          | 1                  | 32.8909              | 138              |
| <b>TOTAL</b>             | <b>218,880.00</b> |                    | <b>713.80</b>        | <b>107</b>       |

Source: MPDO - Sablayan

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<sup>2</sup> Capacity Development Executive Legislative Agenda 2014-2016, (MPDO)

### **Settlement Patterns in ARNP Communities**

The proliferation of informal settlements in Sablayan implies the influx of people migrating to the town. The population of these informal settlements is generally into fishing, which is their major source of income. Types of structures are generally made of indigenous materials, and a number of which are not in good physical state. A less significant number of houses, on the other hand, are made of concrete or permanent materials<sup>3</sup>.

Moreover, it is noted that the informal settlement families, which are concentrated within the urban core barangays of Sablayan, with houses commonly made of light materials were built along the coastal and low lying areas of Sitio Tabuk or at the mouth of Sabang rivers in Brgy Buenavista, and Sitio Katunggan and Pondohan in Brgy Poblacion. Meanwhile, the coastal communities in Ligaya and Sta. Lucia were recorded to have the highest number of informal settlers among the rural barangays. The coastline of Sablayan is the most prevalent dwelling areas for informal settlement families because it is where they can find food and livelihood (i.e. fishing). Hence, rapid growth in population coupled by the increase in the number of informal settlement families in the coastal barangays indicates upsurge in demand and competition for food, employment, and the like. Thus, the presence of informal settlers is anticipated to intensify environmental challenges such as unregulated resource extraction and unsustainable resource utilization.

Difficulty in accessing safe and potable water is an issue to many residents as revealed by CBMS 2012 with 1,674 households without access to potable water. The Level III water supply is served to the three (3) urban barangays and 2 rural barangays namely, Brgy. San Vicente and Brgy. Ligaya while Level II water systems are established in Brgy. Pag-asa and Brgy. Burgos. In terms of power supply, it is noted that the municipality has provided electricity but its supply is unreliable. On the other hand, the municipality faces the problem of lack of roads connecting the remote areas, and poor condition of roads and bridges<sup>4</sup>.

### **Indigenous Communities**

Mindoro Island is the original domain of the Mangyans. In 1987, the Mangyan population was estimated at 122, 101 persons or 15 % of the 1990 total population of the Mindoro BZ. At present, Mindoro province is a home to Tagalogs, Ilocanos, Visayans, Bicolanos, Pampangos, and other ethnic groups. Among the seven clans--Alangan, Buhid, Iraya, Hanunuo, Tadyaoan, Ratagnon and Batangan--occupying the land, Batangans and the Alangans inhabit Sablayan, a town in the mid-western portion of the island. The Alangan and Tau-Buid tribes of the Mangyan people are the original inhabitants of Sablayan. Their population posted 6,697 (CBMS 2009) or 9% of the total population of the municipality. They are nomadic in nature and are highly dependent on forest resources for subsistence. Means of livelihood are agriculture, fishing, hunting and handicraft. Their methods are still crude but some are now trying to employ modern techniques to improve their crafts. Housing pattern is nucleated and each nucleus represents a tribe. Homes are made of light materials and are

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<sup>3</sup> Comprehensive Land Use Plan of Sablayan 2001-2010

<sup>4</sup> Capacity Development Executive Legislative Agenda 2014-2016, MPDO

usually small; communal houses which could accommodate about 10 families are common to the more indigent tribes in the north<sup>5</sup>.

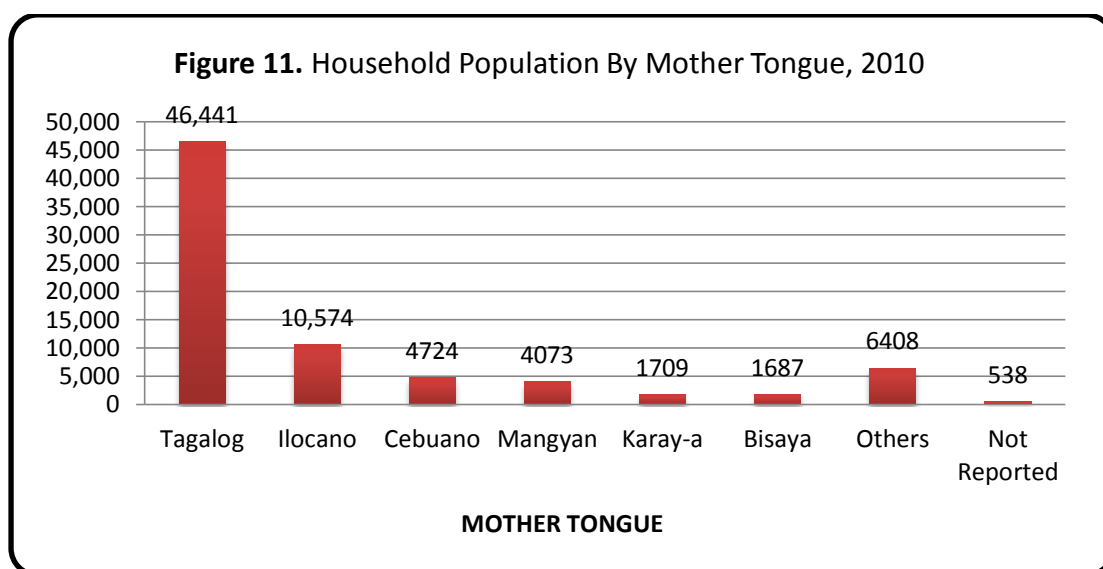
### Mother Tongue / Ethnicity

The municipality is dominantly a Tagalog speaking locale. The next dominant dialect is Ilocano, followed by Cebuano and Mangyan. The latter is a language belonging to the indigenous people of Mindoro Island.

**Table 9.** Household Population By Mother Tongue, 2010

| Mother Tongue | Household Number | % of Total Households |
|---------------|------------------|-----------------------|
| Tagalog       | 46,441           | 61                    |
| Ilocano       | 10,574           | 14                    |
| Cebuano       | 4,724            | 6                     |
| Mangyan       | 4,073            | 5                     |
| Karay-a       | 1,709            | 2                     |
| Bisaya        | 1,687            | 2                     |
| OTHERS        | 6,408            | 8                     |
| NOT REPORTED  | 538              | 1                     |
| <b>TOTAL</b>  | <b>76,154</b>    | <b>100</b>            |

Source: MPDO (Extrapolated from 2000 NSO Census of Population)



### Religious Affiliation

The results presented in this section are another extrapolation of NSO results from the 2000 Census of Population. Sablayeños are dominantly Roman Catholic believers. Refer to the succeeding table and graph for more information.

<sup>5</sup> Draft Comprehensive Land and Water Use Plan 2014-2024 (unpublished), MPDO

**Table 10.** Household Population by Religious Affiliation, 2010

| RELIGIOUS AFFILIATION                          | NO. OF PEOPLE | % OF TOTAL POPULATION |
|--|---------------|-----------------------|
| Catholics                                      | 54,229        | 71.21%                |
| Iglesia ni Cristo                              | 5,186         | 6.81%                 |
| Evangelicals                                   | 4,911         | 6.45%                 |
| Seventh Day Adventist                          | 3,623         | 4.76%                 |
| Tribal Religion                                | 1,437         | 1.89%                 |
| Lutheran Church in the Philippines             | 1,090         | 1.43%                 |
| OTHER PROTESTANTS                              | 720           | 0.95%                 |
| Jehovah's Witness                              | 651           | 0.85%                 |
| United Church of Christ in the Philippines     | 633           | 0.83%                 |
| United Methodist Church                        | 551           | 0.72%                 |
| Philippine Benevolent Missionaries Association | 143           | 0.19%                 |
| Philippine Episcopal Church                    | 109           | 0.14%                 |
| Other Methodists                               | 68            | 0.09%                 |
| OTHERS   | 2,802         | 3.68%                 |
| <b>TOTAL</b>                                   | <b>76,153</b> | <b>100.00%</b>        |

Source: MPDO (Extrapolated from 2000 NSO Census of Population)

### **Economic Characteristics and Poverty Levels**

Sablayan is traditionally an agriculture surplus area. It supplies the consumption requirements of neighboring Visayan Region and Metro Manila. Fishing follows, owing to the favorable location of the town. Most of the people or majority of the labor force is either farmers or fishermen. The municipal waters covering 753 square kilometers are a haven of more than 4,820 fishermen of the town<sup>6</sup>. Inland resources of swamp lands, fresh water and brackish and lakes and reservoirs are evidence of municipality's vastness of fishery resources.

The municipality being a coastal town has high potential for fishery given the necessary support facilities especially in marketing. The coastal areas of the municipality of Sablayan have considerable ecological and economic importance. The municipal waters, with its fish and other aquatic resources, are considered important elements in the livelihood and food security of the municipal population. The coral reefs especially those in the Apo Reef Natural Park (ARNP) provide habitat and food for wide variety of sea organisms and contribute to a large extent of fish propagation. The Municipal Resolution No. 1108 declared a Tourist Zone and Marine Reserve in 1983 in recognition of ARNP's importance to Sablayan.

On the other hand, the tourism sector remains to be one of the top contributors in the municipality's revenue. Based on statistical data from the tourism Office, there is a 300% increase in tourist arrivals in 2011 and continued an upward trend in the previous year. Apo Reef National Park remains to be

<sup>6</sup> Comprehensive Land Use Plan of Sablayan (2001-2010), MPDO

the premier tourist destination in the municipality, being one of the top driving destinations of the country drawing around 2,349 visitors annually and contributing PhP 1,910,913.23 in the local coffers<sup>7</sup>. Locals and foreigners visit the ARNP for SCUBA diving, snorkeling, research, photography, bird watching and other recreational activities.

The objective of understanding the economic characteristics and poverty levels of ARNP stakeholder communities is to gain a deeper understanding on the local economic base, occupational structure, and income sources which constitute the ARNP communities' complex livelihood systems, and establish what their dependence on marine resources is, as well as identifying zones of potential high impact (threats) on marine resources.

### Fisheries

Fishing is one of the prime means of livelihood (next to farming) in Sablayan. The local government has adopted an ordinance identifying fish sanctuaries in the municipal waters that covers an area of 750 square kilometers to protect spawning grounds of marine habitat. The table below shows the volume and value of fisheries production in Sablayan.

**Table 11.** Existing Fishing Grounds and Aquaculture Production, 2013

| Fishing Grounds  | Barangay        | Production      |                    | Product Market                    |                         |
|------------------|-----------------|-----------------|--------------------|-----------------------------------|-------------------------|
|                  |                 | Volume (MT)     | Value              | Local                             | Export/<br>Other Market |
| MUNICIPAL WATERS | Buenavista      | 3,444.40        | 344,440,000        | Manila<br>Batangas<br>Cavite      | Japan<br>Europe         |
|                  | Poblacion       | 2,323.66        | 232,366,000        |                                   |                         |
|                  | Ligaya          | 912.30          | 91,230,000         |                                   |                         |
|                  | Sta. Lucia      | 242.20          | 24,220,000         |                                   |                         |
|                  | Burgos          | 87.00           | 8,700,000          |                                   |                         |
|                  | Sto. Niño       | 598.50          | 59,850,000         |                                   |                         |
|                  | Claudio Salgado | 43.80           | 4,380,000          |                                   |                         |
|                  | GE Aguinaldo    | 56.30           | 5,630,000          |                                   |                         |
|                  | San Nicolas     | 59.20           | 5,920,000          |                                   |                         |
| Sub-Total        |                 | <b>7,767.36</b> | <b>776,736,000</b> |                                   |                         |
| FISH PONDS       | San Vicente     | 10.80           | 1,080,000          | Sablayan<br>Sta. Cruz<br>Mamburao |                         |
|                  | Paetan          | 1.20            | 120,000            |                                   |                         |
|                  | Tagumpay        | 0.92            | 92,000             |                                   |                         |
|                  | Pagasa          | 0.77            | 77,000             |                                   |                         |
|                  | Sto. Niño       | 1.30            | 130,000            |                                   |                         |
|                  | Poblacion       | 0.24            | 24,000             |                                   |                         |
|                  | Ibud            | 3.12            | 63,900             |                                   |                         |
|                  | Burgos          | 2.50            | 250,000            |                                   |                         |

<sup>7</sup> Capacity Development Executive Legislative Agenda 2014-2016, MPDO

|              |               |                 |                  |  |  |
|--------------|---------------|-----------------|------------------|--|--|
|              | San Francisco | 1.35            | 135,000          |  |  |
|              | Buenavista    | 0.27            | 27,000           |  |  |
|              | GE Aguinaldo  | 0.35            | 35,000           |  |  |
|              | Malisbong     | 0.71            | 71,000           |  |  |
| Sub-Total    |               | <b>23.53</b>    | <b>2,104,900</b> |  |  |
| LAKES        | Tuban         | 4.20            | 420,000          |  |  |
|              | San Agustin   | 1.80            | 126,000          |  |  |
|              | Sta. Lucia    | 1.08            | 75,600           |  |  |
| Sub-Total    |               | <b>6.48</b>     | <b>453,600</b>   |  |  |
| <b>TOTAL</b> |               | <b>1,885.10</b> |                  |  |  |

Source: Office of the Municipal Agriculturist

Meanwhile, there is a separate program for Apo Reef by the National Government through the DENR Protective Services for rehabilitation and protection of the protected area. Although Apo Reef is also protected by national laws and local ordinances, the protected area is still facing serious problems on fishing which might be attributed to inadequacy in manpower and patrol equipment and gears to cover its very vast water jurisdiction against illegal activities of transient fishermen.

### Tourism

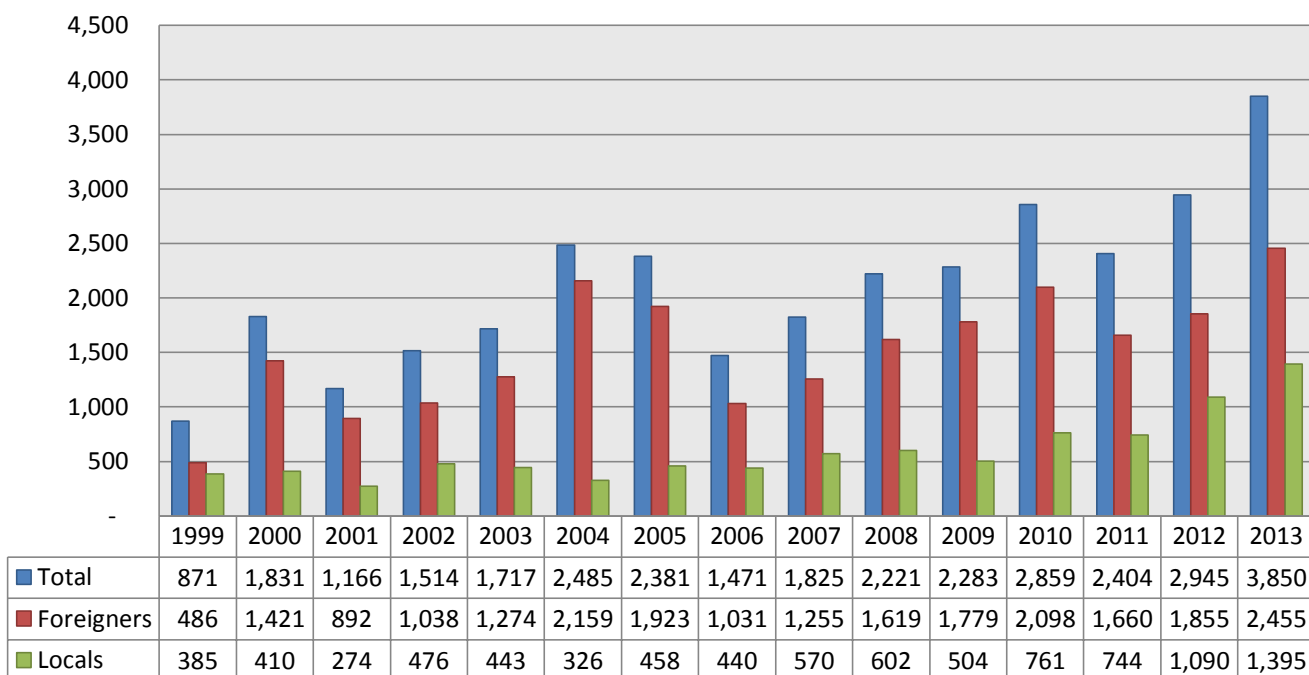
The Apo Reef Natural Park (ARNP) is one of the largest and best-preserved atoll-formed reefs in the Philippines. ARNP's atoll-like reef system is the largest in Asia and included in the Sulu-Sulawesi Marine Eco-region, the center of marine biodiversity in the world. Because of its rich coral and fish population, it is also one of the top dive sites in the world. Hence aside from its importance as habitat to marine species of biodiversity and economic importance, it is also the top-ecotourism destination in the province, providing jobs and businesses to the local coastal communities and revenue to the local government of Sablayan (see Table 22).

Apo Reef has three islands namely Apo Island, Apo Menor (Binangaan Island) and Cayos del Bajo. The white beaches and the physical attributes of these islands offer tourists a wholesome place for rest and recreation. The islands are accessible by motorized banca. Other resorts are in Calintaan, a town adjacent to Sablayan, owns the Apo Reef Club also provides tourist services in ARNP. Most tourism establishments are found in Barangay Buenavista and Poblacion. Four boat owners or Apo Reef transport service providers are from Buenavista, while two boat owners are from Poblacion. There is a wide diversity on the tourists of Apo Reef which come from Coron, Puerto Galera, Boracay, Cebu, and other adjacent areas.

It is clear that scuba diving or at least one segment of the activity which is the live aboard diving program, has firmly established itself as a major tourism user of ARNP. This seemingly exclusive market segment that dominates the area is brought about by the isolation of ARNP from any mainland area which requires a minimum of two hours travel time from the nearest take off point, which is the Sablayan town proper. Other potential ecotourism activities are not keenly practiced in the area. Some of these are birdwatching and recreational swimming.

Based on the statistics generated by the DENR IV B - Protected Area Office, tourism in ARNP has seen impressive growth. The figure below shows that from 1999 to 2013, the total number of visitors is highest in 2013, with more foreign tourists coming than local visitors.

**Figure 12. Total Number of Visitors (1999-2013)**



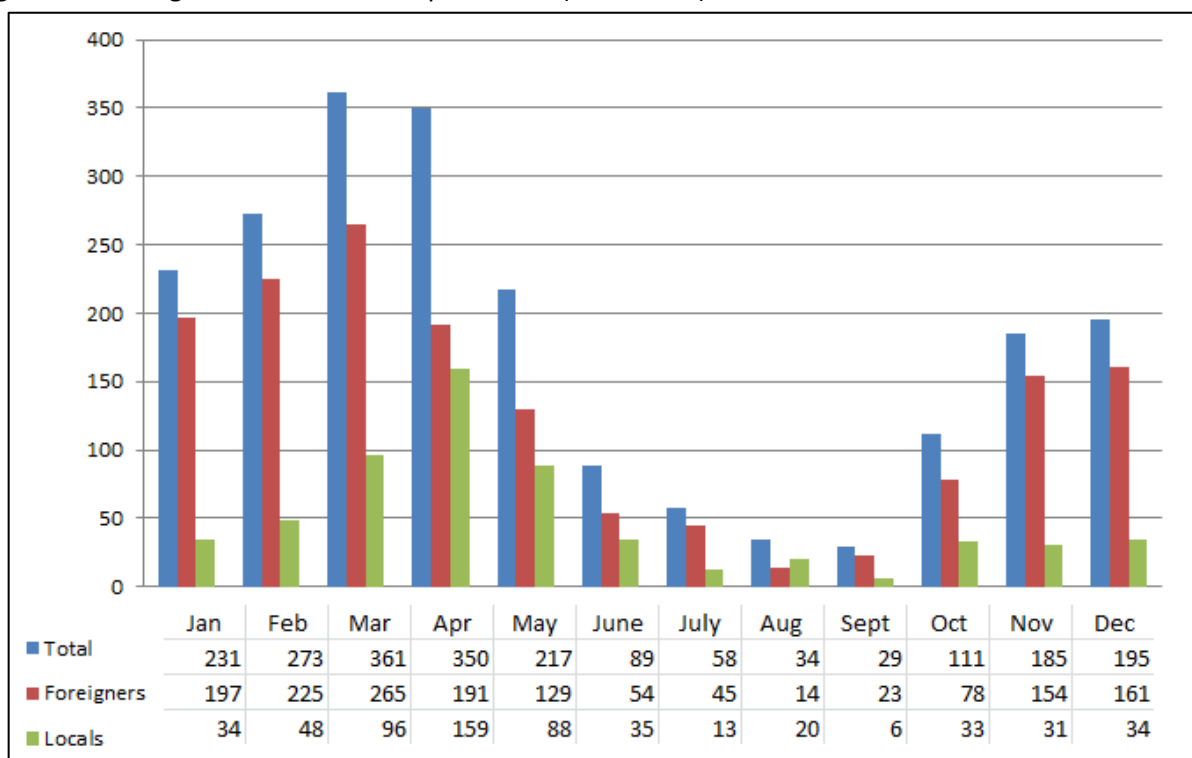
Source: DENR – Apo Reef Natural Park Protected Area Office

In 2013, a total of 3,850 tourist visitors are recorded, 2,455 of which are foreign tourists while 1,395 are local tourists. Tourists had visited the protected area mainly for SCUBA Diving and Snorkeling followed by Swimming and Island Hopping. Most of the visitors are scuba divers availing of the live-aboard tour packages offered by Manila-based tour operators.

Most of the tourists availing of live-aboard diving packages use Batangas City or Puerto Galera as their base or jump-off point. It should also be noted that majority of visitors are foreigners who can easily avail of such package. There is one Sablayan-based, foreign operated resort that caters to mostly European divers which also brings in visitors via Sablayan. It is also noted that the number of visitors for five (5) years (2009 to 2013) has an average increase of 16% yearly.

Meanwhile, the figure below shows the average number of visitors coming to ARNP per month from year 1999 to 2013. More visitors are coming during the first 5 months every year (January – May). The growth however is not significant from June to September (rainy season) as the numbers of visitors are declining due to changes in weather patterns.

**Figure 13.** Average number of visitors per month (1999-2013).



Source: DENR – Apo Reef Natural Park Protected Area Office

### Employment

Agriculture, fishing, tourism, commerce and industry are the main sources of income for Sablayan. The table below shows the list of livelihood activities in Sablayan as generated from focus group discussions and key informant interviews.

**Table 12.** Livelihood Activities and Resource Use Practices in Sablayan

| <b>Fisheries and Tourism<br/>(Direct Dependence on Coastal / Marine resources)</b>  | <b>Others<br/>(Agriculture, Trade and Services)</b>   |
|---|---|
| <ul style="list-style-type: none"> <li>• Fishing</li> <li>• Trading fish (fresh, dried, octopus, prawns)</li> <li>• Shell fishing (food)</li> <li>• Net menders</li> <li>• Boat builders</li> <li>• Water transport provider</li> <li>• Smoke Fish Making</li> <li>• Hotel and Resort Business</li> <li>• Mariculture</li> <li>• Aquaculture</li> <li>• Tour guide</li> </ul> | <ul style="list-style-type: none"> <li>• Crop Production: rice, corn, banana, coconut, cash crops, legumes, root crops, etc.</li> <li>• Upland Rice Farming</li> <li>• Animal husbandry and hog raising (chicken, goats, sheep, cows)</li> <li>• Charcoal making and trading</li> <li>• Bagoong Manufacturing/ Processing</li> <li>• Nipa shingles Weaving and Weaving mats</li> <li>• Copra Making</li> <li>• Bigasan (rice supplier)</li> <li>• Handicraft</li> </ul> |



|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• Lending</li> <li>• Wood cutting, wood trading and carving</li> <li>• Small businesses (bakery, food and restaurants, dry goods, sari-sari store)</li> <li>• Hair dresser and Tailor</li> <li>• Black smith and Masons</li> <li>• Carpenters and Builders</li> <li>• Bicycle menders</li> <li>• Trading general goods (mobile) &amp; clothes</li> <li>• Village representatives / Government-employed (teachers, nurses, police, day care workers, health workers)</li> <li>• Employed in private sector (Traditional Doctors)</li> </ul> |
|--|---|

The occupational structure showed that a wide variety of activities are carried out in the Sablayan. The first column shows the livelihood activities associated with marine resource use (they depend at least partly on marine resources for their livelihood) through fishing and trading (fish, crustaceans, holothurians, cephalopods and shells) and tourism-related activities.

The labor force population in Sablayan comprise the most number of individuals with 44,636 or 59% of the total population of the municipality followed by those dependents counting 34,302 or 45% while the school going age has a total number of 33,521 or 44%. Furthermore, it is projected that by the year 2024 those in the labor force accounts to 63,984<sup>8</sup>. The table below shows the total number of population in the labor force and their employment status in the ten coastal barangays of Sablayan identified as ARNP stakeholder communities.

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<sup>8</sup> Computed based on the latest NSO data on Household population by Age-group, MPDO

**Table 13.** Labor Force (15-59 yrs old) of ARNP Stakeholder Communities in Sablayan, 2009.

| Coastal Barangay   | Labor Force Population |              |              | No. of Employed |               |               | No. of Unemployed |             |             |
|--------------------|------------------------|--------------|--------------|-----------------|---------------|---------------|-------------------|-------------|-------------|
|                    | Total                  | Male         | Female       | Total           | Male          | Female        | Total             | Male        | Female      |
| 1. Buenavista      | 2645                   | 1748         | 897          | 2561            | 1703          | 858           | 84                | 45          | 39          |
| 2. Claudio Salgado | 1160                   | 900          | 260          | 1154            | 895           | 259           | 6                 | 5           | 1           |
| 3. GEA             | 310                    | 234          | 76           | 220             | 183           | 37            | 90                | 51          | 39          |
| 4. Ibud            | 695                    | 466          | 229          | 688             | 462           | 226           | 7                 | 4           | 3           |
| 5. Ligaya          | 1,727                  | 1,337        | 389          | 1,711           | 1,332         | 379           | 16                | 5           | 10          |
| 6. Poblacion       | 1,926                  | 1,289        | 637          | 1,879           | 1,263         | 616           | 47                | 26          | 21          |
| 7. San Nicolas     | 567                    | 435          | 132          | 561             | 430           | 131           | 6                 | 5           | 1           |
| 8. Sta. Lucia      | 1,100                  | 835          | 265          | 1,084           | 829           | 255           | 16                | 6           | 10          |
| 9. Sto. Niño       | 1797                   | 1213         | 584          | 1776            | 1205          | 571           | 21                | 8           | 13          |
| 10. Burgos         | 1212                   | 639          | 573          | -               | -             | -             | -                 | -           | -           |
| <b>TOTAL</b>       | <b>13,139</b>          | <b>9,096</b> | <b>4,042</b> | <b>11,634*</b>  | <b>8,302*</b> | <b>3,332*</b> | <b>293*</b>       | <b>155*</b> | <b>137*</b> |

*\*total excluding Burgos (no available data)*

*Source: Barangay development plans and MBCFI RSA 2014*

In terms of labor force population, it is noted that Buenavista (2645), Poblacion (1,926), Sto. Niño (1797) and Ligaya (1,727) remains to be at the top of the list. In general, there are more men than women in the labor force population. Needless to say, records show that in all coastal barangays, there are more employed men than employed women, which are manifested in the occupational structure and major economic base of Sablayan - agriculture (crop production) followed by fisheries, and tourism – that produces work for famers, fishermen, boatmen, tour guides, and the like.

### Poverty Levels

The impacts of demographic, economic and geographic factors were reflected on households' socio-economic status. Based on focus group discussion conducted during stakeholder workshops in Sablayan, households in the ten coastal barangays are mainly dependent on fishing as their most important source of income. Moreover, the rural barangays along the coast of Sablayan are the poorest of the 'marine dependent households'.

**Table 14.** Social Status and Poverty Incidence in the ARNP Stakeholder Communities in Sablayan.

| COASTAL BARANGAY | NUMBER OF HOUSEHOLDS | Households with Income below Poverty Threshold |            |
|------------------|----------------------|--|------------|
|                  |                      | Magnitude                                      | Proportion |
| Buenavista       | 1821                 | 880  | 48.33%     |
| Claudio Salgado  | 817                  | (571)  | ~70%       |
| GEA              | 408                  | 375  | 91.91%     |
| Ibud             | 391                  | 142  | 36.32%     |
| Ligaya           | 1421                 | 1138   | 80.08%     |
| Poblacion        | 1305                 | 406  | 31.11%     |
| San Nicolas      | 1681                 | 245  | 81.94%     |
| Sta. Lucia       | 3821                 | 546  | 76.70%     |

|              |               |               |        |
|--------------|---------------|---------------|--------|
| Sto. Niño    | 5493          | 409           | 34.11% |
| Burgos       | 2269          | (1475)        | ~65%   |
| <b>TOTAL</b> | <b>19,427</b> | <b>6,187*</b> |        |

*\*Estimate (without exact values from Claudio Salgado and Burgos)*

*Source: Barangay development plans and MBCFI RSA 2014*

The table above shows that in terms of socio-economic status and poverty incidence rate of the ARNP stakeholders in the coastal communities, Barangay General Emilio Aguinaldo (91.91%), San Nicolas (81.94%), Ligaya (80.08%) and Sta. Lucia (76.70%), respectively, are four rural barangays that recorded the highest number of households with income below poverty threshold. This can be an indicator to the kind of livelihood activities and degree of marine resource utilization and extraction that may take place in the identified coastal areas.

In 2013, a total of 23 fishermen were apprehended for their illegal entry in ARNP and fishing without permit. They also used a total of 12 motorized boats without permit. Almost all of the fishermen are from Sitio Tabuk in Barangay Buenavista while few of them are from Barangay Poblacion. It is interesting to note that most of the apprehended fishermen are from Sitio Tabuk, Buenavista, is a known dwelling place of poor informal settlement families who are struggling to make a living.

On the other hand, it is noted that boat ownership and the type of boat reflects the wealth of fishing households. A total of only six boats are registered in Sablayan, four of which are from Buenavista and two are from Poblacion, which are two urban barangays in the municipality. Therefore, it is safe to conclude that the socio-economic status is positively linked to the diversity of the households' portfolio of livelihood activities. The most vulnerable households were found to be households dependent solely on one activity for their livelihood, and the most vulnerable of all are those who depend solely on marine resources for their livelihood.

## **RESOURCE USE PRACTICES**

Apparently, the Apo Reef Natural Park is a major asset in Sablayan and its municipal population. Countless socio-economic values and benefits are being experienced with the presence and proper management strategies in the protected area. The foremost benefit is the conservation of biodiversity especially that the protected area serves as a habitat for rare, endangered or endemic species. Not only is it responsible for the increasing income and revenue generation in Sablayan through providing direct and indirect ecotourism services, but also for opening doors for more employment opportunities on the tourism sector. It may also provide major sources of livelihood for local people as managers, rangers, divers/ surveyors for biodiversity monitoring, tourist guides, transport service providers (boat men) and. Such employment can also sometimes provide additional education opportunities.

Furthermore, protected areas such as ARNP are increasingly being recognized as important places to promote physical and mental health and also as major recreational resources. It can be used to develop knowledge and education through formal and informal dissemination of information and by providing sites for ecological research and monitoring.

In terms of Climate Change Adaptation and Mitigation (CCAM) and Disaster Risk Reduction and Management (DRRM), although there are still a need for further studies on the vulnerability and risk assessment of ARNP, it is clear that Apo Reef as a protected area can play a role in both sequestering carbon and ameliorating local climate change impacts.

In July 2007 Apo Reef was closed to any and all forms of fishing activity by virtue of the Protected Areas Management Board (PAMB) Resolution No. 05, Series of 2007 and reiterated through PAMB Resolution No. 009, Series of 2010. These resolutions effectively declared the total closure of Apo Reef Natural Park to any fishing activity (no-take-zone policy). However, it is noted that prior to the implementation said policy, Barangays Buenavista and Ligaya are among the coastal communities and are dependent mainly on fishing at Apo Reef for their subsistence and income.

The resolution was complemented by the rules of implementation, under PAMB Ordinance No. 001, Series of 2007, which declared the “temporary suspension of the issuance of permits to undertake fishing and fishery related activities at the sustainable-use zone of the Apo Reef Natural Park”, as amended through PAMB Ordinance No. AR07-001-1, Series of 2011, “declaring the banning of any fishing or fishery related activities in ARNP”. The declaration of the entire Apo Reef complex as a no-take zone entails a greater level of effort in terms of patrolling and management.

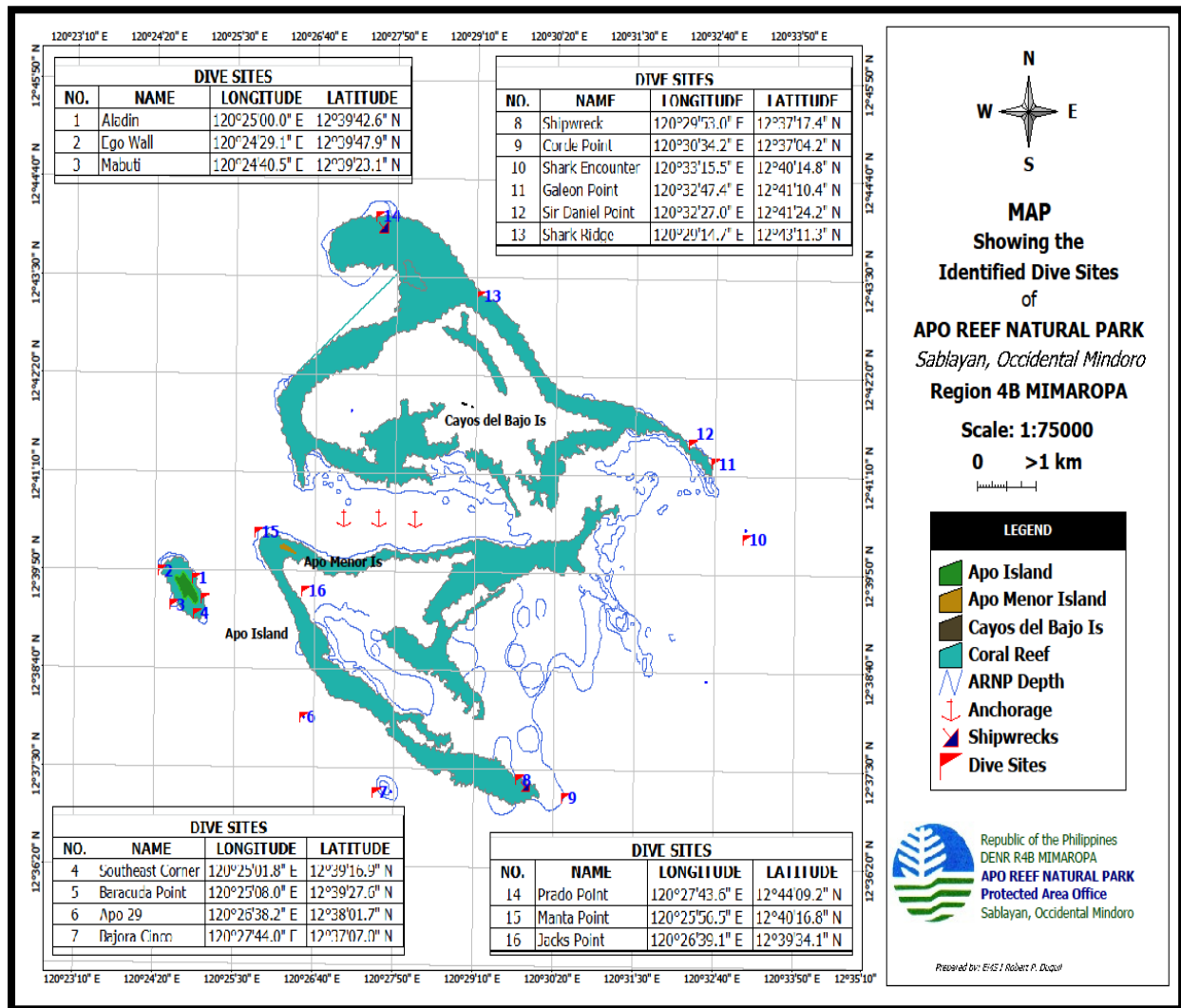
| ALLOWED ACTIVITIES  | CONTROLLED ACTIVITIES   | RESTRICTED ACTIVITIES  |
|---|---|--|
| <ul style="list-style-type: none"> <li>• Recreational swimming</li> <li>• Scuba Diving</li> <li>• Snorkeling</li> <li>• Sightseeing</li> <li>• Sun bathing</li> <li>• Photography</li> <li>• Glass bottom boat</li> <li>• Kayaking</li> <li>• Birdwatching</li> <li>• Dolphin watching</li> </ul> | <ul style="list-style-type: none"> <li>• Nesting Turtle watching</li> </ul> | <ul style="list-style-type: none"> <li>• “No-Take-Zone Policy” Implemented since 2007</li> </ul> |

## Marine Activities in Apo Reef Natural Park

### Scuba Diving

SCUBA diving is becoming popular in ARNP. However, Due to the distance of the Apo Reef from the mainland of Sablayan, live aboard dive boats do not have to make a call to the mainland area for protocol purposes. Communication and the presence of park rangers in area should be able to compensate for such protocol. Specific anchoring sites were also identified to prevent environmental and safety hazards. The figure below shoes the diving sites in Apo Reef Natural Park.

**Figure 14.** Location of Identified Diving Sites in Apo Reef Natural Park



Source: DENR – Apo Reef Natural Park Protected Area Office

### Snorkeling

Uncontrolled snorkeling activities could create damage to coral reefs in ARNP. However, snorkeling can be done in the area provided that enough protection and safety measures are implemented. Some of the existing measures include: (a) Before snorkelers are allowed into any snorkeling site, they should be determined first whether they are doing the activity for the first time; (b) First-time snorkelers should be advised to practice first in a sandy bottom area then proceed to hard coral area (to be identified by PAMB/PASU); (c) There should be anchoring buoys in boat-based snorkeling sites. Snorkeling sites shall be identified and evaluated for different types of users. First-time snorkelers shall be given access only to areas with very little chance of damage from users. Anchoring buoys shall also be established in snorkeling sites.

## Island Activities and in Apo Reef Natural Park

### Birdwatching

ARNP serves as a major bird shelter in the area. The presence of impressive migratory and resident birds in Apo Island makes the area an ideal birdwatching site. Areas ideal for birdwatching are the lagoon site, the ranger station, karst area, and the first level of the lighthouse.

### Exploration and Sightseeing

Due to its size, Apo Island offers limited activities to the tourists. Exploration and sightseeing sites shall include the lagoon area, the ranger station, and the lighthouse.

### Picnic Area in Apo Island

All visitors to ARNP may opt to visit Apo Island for rest and more recreation. The existing picnic area serves as the main activity area where tourists can swim in the nearby waters, play beach activities, eat their meals, and rest underneath the shades of trees.

### Resource Mapping

Based on focus group discussions and key informant interviews, there are two main resource uses that affect the Apo Reef Natural Park. Tourism Activities are considered as direct resource use while fishing of fisher folks from coastal barangays is an indirect resource use caused by spill-over effect of marine resources in Apo Reef.

## Direct and Indirect Resource Uses in Apo Reef Natural Park and Coast of Sablayan



The resource use patterns investigation focused on the primary stakeholders: fisher folks and tourists of Apo Reef Natural Park. Key findings from FGDs, informal interviews, and literature reviews, also identified four coastal barangays (Buenavista, Poblacion, Ligaya, and Sta. Lucia) as the most dependent villages on marine resources (highest number of fishers, and/or highest proportion of households involved in marine resource and tourism-associated activities).

Based on focus group discussions and literature review, fishing came out as one of the most important source of livelihood and income for the sea front villages. Temporal pattern in overall

fishing effort in Sablayan municipal waters is highest between March and May. Furthermore, the peak in fishing effort coincides with the inter-monsoonal period during the summer.

| Resource Use Practices & Livelihood Activities             | Particulars (Who, When, Where, How)   |
|--|---|
| <b><i>Fisheries in Sablayan (for Coastal Villages)</i></b> |   |
| Longline Fishing   |   |
| Sailing PSGR Vessel  | Princess KC in Apo Reef   |
| Giant Squid, Flying Fish, and Bagnet Fishing               |   |
| Aquaculture and Mariculture                                |   |
| Tuna Fishing   | -Municipal/ Commercial Fisherfolk<br>-Marginalized Fisherfolk & Pangulong Owner       |
| Fishing in Payao's   | Payao's "fish aggregating device"   |
| Hook & Line Fishing  | Marginalized Fisher Folks   |
| <b><i>Tourism in Apo Reef Natural Park</i></b>             |   |
| Diving   | Local & International Tourists; All Year Round<br>Filming in Pandan Island & Apo Reef |
| Bird Watching  |   |
| Trekking   | Discovery / Ligaya Reef   |
| Snorkeling   | Oct- June thru Tourism Office & DENR  |
| Island Hopping Camping                                     |   |
| Picnicking/ Rafting/ Swimming                              |   |
| Sunset Viewing   | During Summer time in Apo Reef & Parola Park  |
| Dolphin & Whale Watching                                   | Jan-May and Sept-Dec in Apo Reef  |

Source: Focus Group Discussions and Key Informant Interviews

There are positive and negative Impacts of these identified resource use practices. The positive impacts include increased employment and revenue generation for Sablayan, which is also a source of funding for the maintenance and operations in the Apo Reef Natural Park. Meanwhile, some of the negative impacts include overfishing, improper waste disposal particularly by shipping vessels passing thru Apo Reef, exposure to possible contagious diseases both from local and/or international tourists, and possible disturbance of biodiversity.

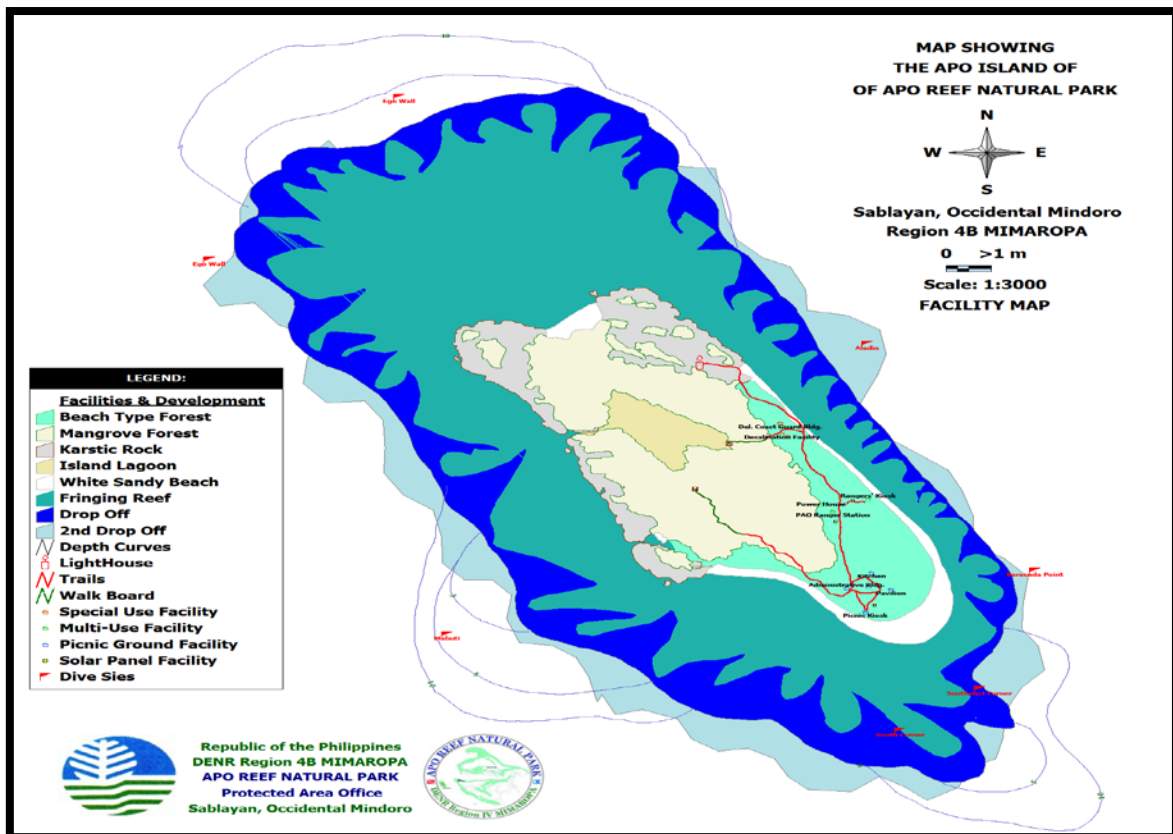
### **Basic Services and Facilities**

The high environmental sensitivity of the area did not allow the introduction of medium to large-scale tourist facilities in the area. Even the 22-hectare Apo Island would not be able to absorb medium development. Compounding the concern is the great distance of the protected area (approximately 33 km) from any mainland and the extreme lack of freshwater in Apo Island.

The only tourist facilities in ARNP are located in Apo Island which has a picnic area, toilet, boardwalk leading to the lagoon, and the ranger station (DENR Building). There are no utilities like water and electricity that can service large numbers of visitors. Thus, no overnight facilities were established in the area to prevent any environmental and tourism operational setbacks that may happen. Visitors that spend the night in the area were making use of their boats (whether live-aboard boats or big

bancas) or bring their own tents and necessary provisions. The only tourist facilities that were being maintained and or developed are the rest rooms, the water pump, the picnic facilities, mangrove boardwalk, souvenir shack, and a scuba diving concession.

**Figure 15: Facility Map of Apo Island in ARNP**



Source: DENR – Apo Reef Natural Park Protected Area Office

### Infrastructure

A lighthouse complex built in 1906 is among the structures present in ARNP. The lighthouse complex has five-room building (old PCG Bldg.), three kitchens, and equipment and generator shed (dilapidated), a 250-ft above sea level (asl) steel tower lighthouse and a cistern with a 250-ton capacity. The 250-ft asl tower lighthouse built in 1906 had already been demolished in 1998, which replaced by the 261-ft asl new tower lighthouse constructed in 1998-1999.



## Ranger Station



The Apo Reef CPPA Project through the Protected Area Office had constructed the 100 m<sup>2</sup> two-storey ARNP-CPPAP Building in 1996. This building houses all site-based personnel and project staff since early 1997 who previously held office at the old coast guard building in early 1995 to early 1997. The PA Office had also constructed the Look Out Tower and Ranger Station at Binangaan

Island in 1997, Powerhouse beside the CPPAP Building in 1998, and a Nipa Hut in the recreational zone at Apo Island in 1999.

In 2010-2012, construction of Administration Building is undertaken by the PTA, through the Prismatic Construction, at Apo Reef Island, under the Phase 2 projects, in the improvement of tourism facilities of the Grand Apo Reef Natural Park, Sablayan, Occidental Mindoro. The current construction/improvement of tourism facilities at Apo Reef Island constrained the PAMB to enact a policy, under PAMB Resolution No. 007, Series of 2010, declaring that no other additional permanent structures shall be constructed after the construction of the Phase II project of the PTA except for the repair and rehabilitation of the existing permanent structures in the protected area. The declaration of such policy is to avoid further disturbance to the fragile ecosystems of ARNP.





### Power Supply

The only available electricity in the island is the solar panels which is used to charge the radar and communication equipment used for monitoring and patrolling the area.



### Water Supply

Difficulty in access to potable water is being experienced in Apo Island. There is a groundwater pump in the picnic area, freshwater is often mixed with saltwater after several days of intermittent extraction. To help the park rangers cope with the lack of freshwater, rainwater is collected and stored in a tank near the ranger station. Park ranger would usually bring in their supply of freshwater from the mainland when visiting the area.

In 2009-2010, the Philippine Tourism Authority (PTA), as implemented by the Department of Public Works and Highways (DPWH), had constructed and installed desalination facilities composed of mechanism house, overhead tank and water source well at Apo Reef Island, under Phase 1, as the priority projects in the improvement of tourism facilities of the Grand Apo Reef Natural Park, Sablayan, Occidental Mindoro. A desalination plant was present in Apo Island. Desalination is a process of removing salt and other minerals from saline water in order to produce fresh water suitable for human consumption.

**Construction and Installation of Desalination Facilities implemented by PTA through the DPWH**  
(Not Operational)



**Health and Sanitation**

The lack of potable sources of water as well as the presence of menacing insects is among the main problems in the ARNP. The island has six (6) comfort rooms (toilets) for the rangers and the tourists, four (4) of which needs renovation / rehabilitation.

**Waste Management**

Maintaining a pristine beach and clean island will greatly enhance and promote the success of the ecotourism operations in the area. Consequently, managing waste and water use is the most challenging and critical priorities in the island. A zero-waste policy was established in the protected area. Each visiting boat shall be equipped with a trash receptacle, which will be used by visitors to dispose of any trash generated while at sea or on the island. Even biodegradable trash shall not be left on the island to prevent unwanted benefits to feral animals such as rats and cats. Further, the beaches and the picnic area shall be kept clean of non-natural debris.

**Communication and Transportation Services**

Apo Reef is readily accessible from the west through Occidental Mindoro. It takes a 45-minute flight from Manila to San Jose and another two to three hours by passenger jeep or bus to Sablayan. By land, buses ply the route from Manila to the Batangas City Pier. Ferries then bring in travelers from Batangas City to the town of Abra de Ilog in Mindoro Occ. Buses and jeepneys service the 3 – 3.5 hour route between Abra de Ilog and Sablayan. From Sablayan Poblacion, Apo Reef can be reached by motorized boat within two to three hours, depending on the speed of the vessel and sea condition. Communication can be done using the radio stationed in the DENR Bldg.



Furthermore, two (2) high speedboats were acquired by DENR for transportation to and from ARNP. These are also used for regular patrolling and monitoring operations. According to one deputized ranger in the island, patrolling is being conducted once or twice a week.

Despite the improvement and development in the facilities and services in the island, the issue on inadequate equipment and facilities for the regular operations and maintenance for the protection and conservation of Apo Reef Natural Park remains true. The table below contains the list of the existing and the proposed facilities and equipment that needs to be secured in the island in order to achieve effective management and protection of ARNP.

**Table 15.** Summary of Existing and Proposed Facilities and Equipment in Apo Island

| EXISTING   | No. | PROPOSED  | No. |
|--|-----|---|-----|
| 1) PAO Building (For Renovation)                         | 1   | 1) Glass Bottom Flatboat                              | 1   |
| 2) Power House   | 1   | 2) Snorkeling Equipment                               | 20  |
| 3) Comfort Rooms   | 6*  | 3) Life Jackets                                       | 50  |
| 4) Kiosks (For Repair)                                   | 2   | 4) Tourist Boats                                      | 1   |
| 5) Lighthouse Complex                                    |     | 5) Tents  | 10  |
| - Coast Guard Bldg. (dilapidated subject for Demolition) | 1   | 6) Multi-Media (Laptop, LCD, PAS & other accessories) | 2   |
| - Lighthouse   | 1   | 7) Additional Binoculars                              | 5   |
| - Cistern (For Repair)                                   | 2   | 8) Floating Raft                                      | 1   |
| 6) Solar Panel   | 5   | 9) Additional Moorings                                | 5   |
| 7) Charge Controller (for replacement)                   | 1   | 10) Navigational Equipment (Compass, GPS, etc)        | 3   |
| 8) Inverter (for replacement)                            | 1   | 11) Mobile Radios VHF                                 | 4   |
| 9) Patrol Boat   | 2   | 12) Air Compressor for SCUBA                          | 1   |
| 10) VHF Mobile Radios                                    | 2   | 13) Additional SCUBA Gears                            | 5   |
| 11) Handheld Radios                                      | 3   | 14) Digital Camera with Casing                        | 1   |

| EXISTING  | No. | PROPOSED                             | No. |
|---|-----|--------------------------------------|-----|
| 12) Binoculars  | 2   | 15) Digital Video Camera with Casing | 1   |
| 13) SCUBA Gears (for repair)  | 5   | 16) Chase/Speed Boat                 | 1   |
| 14) Mooring Buoys (For enhancement & replacement of its lines, buoys & other accessories) | 10  | 17) Fiberglass Paddle Boat (10 pax)  | 1   |
|   |     | 18) Kayak (Double)                   | 4   |
|   |     | 19) Kayak (Single)                   | 4   |

*\*Updated*

Source: ARNP Management Plan (2001)

## INSTITUTIONAL ARRANGEMENT AND GOVERNANCE

### History and Legal Basis

|             |  |
|-------------|--|
| <b>1905</b> | <ul style="list-style-type: none"> <li>American Forces constructed a lighthouse and the old Coast Guard Building</li> <li>The Old Coast Guard Building and Cisterns (already been dilapidated, subject for replacement).</li> </ul>  |
| <b>1914</b> | <ul style="list-style-type: none"> <li>1.34 hectare of the Apo Island where the lighthouse is presently located was designated as reservation area through Executive Order No. 118</li> </ul>  |
| <b>1980</b> | <ul style="list-style-type: none"> <li>Apo Reef was designated as Marine Reserve (Presidential Proclamation No. 1801)</li> </ul>   |
| <b>1983</b> | <ul style="list-style-type: none"> <li>Apo Reef was declared a Tourist Zone and Marine Reserve (Municipal Resolution No. 1108)</li> </ul>  |
| <b>1990</b> | <ul style="list-style-type: none"> <li>ARNP was chosen to be among the 10 priority sites of the Integrated Protected Areas System</li> </ul>   |
| <b>1992</b> | <ul style="list-style-type: none"> <li>Apo Reef was included in the initial listing of IPAS sites all over the country pursuant to RA7586, also known as the National Integrated Protected Areas System (NIPAS) Act</li> </ul>   |
| <b>1994</b> | <ul style="list-style-type: none"> <li>Apo Reef became part of the Conservation of Priority Protected Areas Project (CPPAP). The CPPAP officially ended on June 30, 2002</li> </ul>  |
| <b>1996</b> | <ul style="list-style-type: none"> <li>Apo Reef was declared as a Protected Area under the category of Natural Park (Presidential Proclamation 868) and its surrounding waters as Buffer Zone pursuant to RA 7586.</li> <li>The DENR Protected Area Office Building was constructed in Apo Island (in need of repair)</li> </ul>   |
| <b>1997</b> | <ul style="list-style-type: none"> <li>The DENR Ranger Station was constructed in Apo Menor Island (already been dilapidated).</li> </ul>  |
| <b>1998</b> | <ul style="list-style-type: none"> <li>The old lighthouse was demolished and a new one was constructed (DOTC)</li> </ul>   |
| <b>2001</b> | <ul style="list-style-type: none"> <li>In October 18, 2001, a Memorandum of Agreement (MOA) by and between the DENR (Region IV) and the Municipality of Sablayan (LGU) was made and entered, wherein the LGU of Sablayan is tasked to initiate, manage and supervise a low impact, environmentally-sound and community-participatory ecotourism program consistent with the ARNP Management Plan.</li> </ul> |
| <b>2004</b> | <ul style="list-style-type: none"> <li>A marine law enforcement team for Apo Reef and Municipal Waters of Sablayan, locally known as the "Task Force Marine and Apo Reef Law Enforcement for Nature (TF MARLEN)", was established on September 24, 2004</li> </ul>   |
| <b>2006</b> | <ul style="list-style-type: none"> <li>The TF MARLEN was officially created and organized on July 28, 2006, under the Office of the Mayor of the Municipality of Sablayan, by virtue of Executive Order No. 02, Series of 2006.</li> </ul>   |
| <b>2007</b> | <ul style="list-style-type: none"> <li>The Protected Area Management Board (PAMB) declared the "NO-TAKE-ZONE POLICY" of Apo Reef, by virtue of PAMB Ordinance No. 001, Series of 2007</li> </ul>   |
| <b>2008</b> | <ul style="list-style-type: none"> <li>The Pavilion was constructed within the recreational zone at Apo Island in support to the Ecotourism Development of the PA (LGU Sablayan)</li> </ul>  |
| <b>2010</b> | <ul style="list-style-type: none"> <li>The Desalination Facilities (e.g., Mechanism House, Overhead Tank, Machines) was constructed/ installed by the Philippine Tourism Authority through the Department of Public Works and Highways.</li> </ul>   |

Source: DENR IV-B Protected Area Office

### Organization and Management Structure

The ARNP as a Protected Area is under the control and administration of DENR, specifically the Biodiversity Management Bureau (BMB) or formerly known as PAWB. At the regional level, the ARNP Protected Area is under the jurisdiction of Region IV, specifically the Protected Areas and Wildlife Division (PAWD). At the site level, the ARNP is under the control and administration of the DENR through the Protected Area Management Board (PAMB) and Office of the Protected Area Superintendent (PASu), which shall exercise authority in overseeing the operations of the PAMB to

ensure that it is acting within the scope of its powers and functions. The local government of Sablayan serves as co-managers with DENR in the protection and tourism development in ARNP.

### **Stakeholder Mapping, Profiling, and Analysis**

The various local stakeholders identified in the Apo Reef Natural Park are summarized in Table 13 below. In addition to these, however, other stakeholders at the national level, as well as tasked with the implementation include: (a) Department of Environment and Natural Resources (DENR) is the government agency that administers the NIPAS; (b) Protected Area Management Board (PAMB). The PAMB is the site policymaking body formed under the NIPAS law; (c) Office of the Protected Areas Superintendent (PASu). The implementing arm of the PAMB, it is the administrator of the PA.

### **Protected Area Management Board (PAMB)**

The NIPAS Act provided for the creation of PAMB, a multi-sectoral policy-making and permit-granting body who shall by a majority vote, decide matters relating to planning, resource protection and general administration in ARNP, promulgate rules and regulations to promote development programs and projects on biodiversity conservation and sustainable development, delineate and demarcate protected area boundaries and buffer zones, and other functions and powers prescribed by law. It decides on allocation of funds and all issues regarding management of the PA. The PAMB convenes at least once per quarter each year.

ARNP PAMB membership in accordance with the NIPAS Act, is composed of the following: (a) the DENR Regional Executive Director of Region IV as Chairperson, (b) the Provincial Planning and Development Officer of Occidental Mindoro; (d) the Mayor of the municipality of Sablayan or his duly designated representative in this case the Municipal Agriculturist; (e) Liga ng mga Barangay representative from among the coastal barangays of Sablayan; (f) World Wildlife Fund (WWF)-Philippines – a Non-Government Organization (NGO) operating in Sablayan; (g) Philippine Coast Guard Auxiliary; (h) Parish Pastoral Council; (i) Philippine Coast Guard; (j) Sta Lucia Fisherfolk Producers Cooperative (SLUFIPCO); and (k) Municipal Fisheries and Aquatic Resources Management Council (MFARMC).

### **The Protected Area Superintendent (PASu)**

The PASu, who serves as the Chief Operating DENR Officer of the PA, is appointed by the DENR. The PASu performs and executes powers and functions set forth in the NIPAS Act and its Implementing Rules and Regulations and other functions as the PAMB may assign. The PASu is directly responsible to the RED and PAMB. The PASu is the Chief Operating DENR Officer of the protected area. Currently, the PASu has ten regular technical staff, three of which are detailed personnel from CENRO Sablayan while the seven are park rangers and boatmen in ARNP.

### **Cooperatives**

With the continuous support of the government primarily of the Office of the Municipal Agriculture, DTI and LBP during the CPPA Project, cooperatives gained remarkable development. Leading cooperatives such KAPANTAY, SAMVEMCO and SANIFAMCO are able to manage multi-million equities which now stands as great influence and encouragement for the people to be more active in



this industry. These cooperatives caters to agriculture and entrepreneur services, such as multi-purpose loans, technical assistance, mini-van/bus services, as savings account crop insurances and medical assistance and other benefits to its members. However, it is noted that after the CPPA project, these cooperatives were not sustained and are now inactive.

### **Civil Society Organizations (CSOs)**

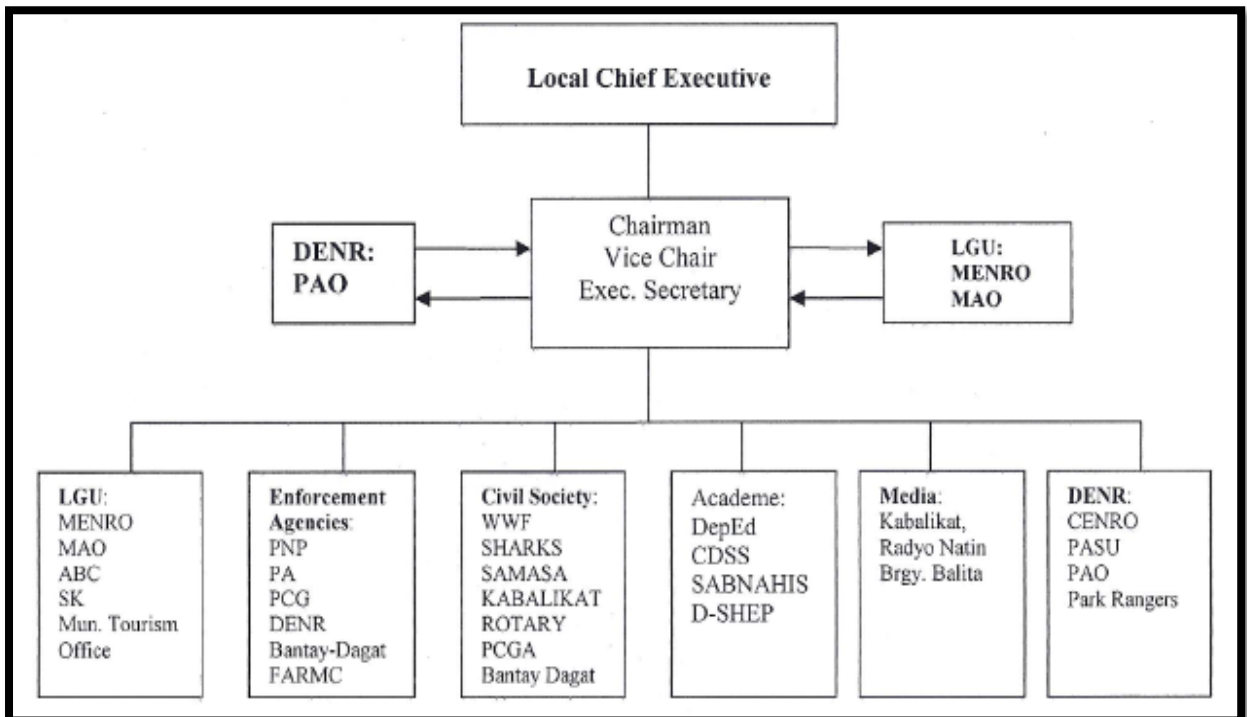
CSOs particularly the Non-Government Organizations (NGOs) play a prominent role in tourism development. In Sablayan, many NGOs are involved in either: protection of biodiversity and the environment; or sustainable development for local people. NGOs usually lead research on best practices, guide training, regional planning and stakeholder meetings, community development, protected area management, and targeted conservation initiatives.

Furthermore, NGOs often work to ensure that ecotourism is developing in a manner that is consistent with national and international conservation and sustainable development priorities, including: developing their own ecotourism programmes; and implementing the grassroots ecotourism initiatives focused on the conservation of local resources that can benefit from ecotourism's economic and educational potential. International and local NGOs are very supportive to Apo Reef including WWF-Philippines, Mindoro Biodiversity Conservation Foundation, Inc., Kabang Kalikasan ng Pilipinas Foundation, Inc. (KKPFI), GIZ, and the like.

### **Task Force MARLEN (Marine and Apo Reef Law Enforcement in Nature)**

The Task Force is a Multi-Sectoral Marine Law Enforcement Team created to undertake law enforcement and related activities within the Municipal Waters of Sablayan and Apo Reef Natural Park. It was initially organized on September 24, 2004 and is composed of the following: (a) LGU Sablayan (*Park Rangers, boatman & other staff*); (b) Philippine Army (*76<sup>th</sup> Infantry Battalion*); (c) Philippine National Police - PNP (*Sablayan Municipal Police Station & Regional Public Safety Battalion*); (d) Philippine Coast Guard (PCG); and (e) WWF Philippines. The figure below shows the organizational structure of Task Force MARLEN.

**Figure 16.** Organizational Structure of Task Force MARLEN



Source: Task Force MARLEN Operations Manual, DENR IV-B ARNP Protected Area Office

It was officially organized and created on July 26, 2006, by virtue of Executive Order No. 02, Series of 2006, issued by the Local Chief Executive of Sablayan. The TF MARLEN Manual of Operation, entitled as “BATAYANG GABAY ng TAGAPAGPATUPAD NG BATAS PAMPANGISDAAN (Task Force MARLEN)” was produced, completed and approved on June 20, 2006 through the initiative of WWF-Philippines in collaboration with the LGU Sablayan and DENR-ARNP PAO. This Manual of Operation serves as guide of the TF MARLEN and the Bantay Dagat in the execution of their important task in the enforcement of laws for the conservation and protection of the marine resources of Sablayan, Occidental Mindoro.

**Table 16.** Stakeholder Analysis

| Local Stakeholder Groups  | Interests and Roles   | Importance of Stakeholder | Degree of Influence |
|---|---|---------------------------|---------------------|
| DENR IV-B<br>- PAMB<br>- ARNP PAO   | <ul style="list-style-type: none"> <li>• Protection &amp; conservation</li> <li>• Implementation of ecotourism related programs</li> <li>• IPAF Users' fee collection</li> </ul>  | 5                         | 4                   |
| Provincial Government of Occ. Mindoro   | <ul style="list-style-type: none"> <li>• Primary stewardship over ARNP</li> <li>• Promotes mainstream ARNP tourism as part of province-wide tourism promotion package</li> </ul>  | 3                         | U                   |
| Task Force MARLEN   | <ul style="list-style-type: none"> <li>• Strengthening of marine law enforcement</li> <li>• Regular patrolling and monitoring in ARNP</li> </ul>  | 5                         | 4                   |
| Municipal Government of Sablayan and its offices: <ul style="list-style-type: none"> <li>• MPDO</li> <li>• OMA</li> <li>• Tourism</li> <li>• MENRO</li> </ul> | <ul style="list-style-type: none"> <li>• Promote awareness (IECs) and formulate policies &amp; programs on conservation and protection</li> <li>• Develop tourism-related livelihood opportunities</li> <li>• Implement marketing of municipal-wide tourism programs and activities</li> <li>• Partner in the development and implementation of Ecotourism Program at ARNP</li> <li>• Partner in the protection and conservation program Provider of technical, logistical, financial, and manpower support</li> <li>• Training of tour guides in coordination with the DOT.</li> <li>• Packaging tours at ARNP and other ecotourism sites</li> </ul> | 5                         | 3                   |
| Hotel and Resort Owners   | <ul style="list-style-type: none"> <li>• Generates profit</li> <li>• Provides packages &amp; itinerary for tourists</li> <li>• Job opportunities</li> </ul>   | 5                         | 3                   |
| Dive Operators  | <ul style="list-style-type: none"> <li>• Profit from dive tours</li> <li>• Main source of dive tourist</li> <li>• Promoters of diving industry</li> <li>• Controls itinerary of dive tourists</li> <li>• Orient divers on diving ethics</li> <li>• Orient dive boat operators on the protocols in ARNP</li> </ul>   | 5                         | 3                   |

|                                   |  |   |   |
|-----------------------------------|--|---|---|
| Divers                            | <ul style="list-style-type: none"> <li>• Recreation</li> <li>• Reef research and conservation</li> <li>• Promoters of diving industry</li> <li>• Source of revenue (user's fees)</li> </ul>  | 5 | 3 |
| Non-Divers                        | <ul style="list-style-type: none"> <li>• Recreation and research</li> <li>• Source of revenue (user's fees)</li> <li>• Snorkeling, island hopping</li> </ul>   | 5 | 4 |
| Fisher folks                      | <ul style="list-style-type: none"> <li>• Derive sustenance and income from spill-over effect of marine resources in ARNP</li> <li>• Representation in PAMB</li> <li>• Partner in implementing protection &amp; conservation</li> <li>• Potential leaders for sustainable community development and ARNP conservation</li> <li>• Control over commercial fishermen</li> <li>• Potential guardians of ARNP resources from illegal fishers from outside Sablayan</li> </ul> | 4 | 4 |
| Cooperatives                      | <ul style="list-style-type: none"> <li>• Livelihood opportunities</li> <li>• Support to PA Managers</li> </ul>   | 3 | 3 |
| NGOs/ CSOs (MBCFI, WWF, GIZ, KKP) | <ul style="list-style-type: none"> <li>• Research, support protection &amp; conservation</li> <li>• Provision of financial, technical and logistical support to development and protection of ARNP</li> </ul>  | 5 | 4 |
| Shipping vessels passing ARNP     | <ul style="list-style-type: none"> <li>• Disposing solid and liquid wastes along east and west passage in Apo Reef</li> <li>• International navigation</li> </ul>  | U | U |

Source: Literature Reviews, Focus Group Discussion, Key Informant Interviews

Note: *Stakeholder Importance*: U- Unknown, 1-Little or No Importance, 2- Some Importance, 3-Moderate Importance, 4-Very Important, 5-Critical Player; *Degree of Influence*: U- Unknown, 1- No Influence, 2- Some Influence, 3-Moderate Influence, 4-Significant Influence, 5-Very Influential

The ratings were identified during the stakeholder consultation workshop. It is noted that aside from the PA Managers (DENR and LGU), the primary stakeholders that were given a high score on its importance and degree of influence are the private sector groups (resort owners, dive operators), the tourists (divers and non-divers), the fisher folks (from the coastal villages of Sablayan), and then the CSOs/ NGOs and cooperatives. The need for better coordination between the DENR and the LGU was also highlighted in the FGD. The assessment shows that continuous support from LGU in terms of assignment of park rangers, expand tourism promotion activities, development of alternative livelihood, and addressing the problem of informal settlements in coastal areas (conclusively has the most number of illegal fishers ins Sablayan, excluding those from other nearby towns).

The presence of technical and financial support from various NGOs was proven to be helpful and effective in the area of research development and implementation of ARNP programs. However, the need for organizing fisher folks and other community stakeholders is recognized as key to active participation and sustainable protected area management. From the focus group discussions and informal interviews conducted in Sablayan, it is noted that there are no functional and fully-organized cooperatives and fisher folk associations left ever since the CPPA Project has ended. Additionally, the challenges brought about by shipping vessels passing through the east west passage of Apo Reef contributed greatly to solid and liquid wastes observed in the area. Furthermore, the minimal support from the Provincial government has been attributed to political conflicts and lack of clear avenues for partnership. Nevertheless, the participation of these identified stakeholders in planning and implementation of protection and ecotourism programs in ARNP is necessary for successful and effective PA management and sustainable ecotourism development.

### Current Management Structures and Capabilities for Management

The table below summarizes the presence of absence of basic facilities in Apo Island and financial support in the management of Apo Reef Natural Park.

**Table 17.** Management Capabilities in Apo Reef Natural Park

|   | Presence   | Absence  |
|---|--|--|
| Infrastructures, facilities inside the PA                   | <ul style="list-style-type: none"> <li>▪ Administration Building / Ranger Station (Semi-Concrete) Power House Dilapidated Coast Guard Building at Apo Island (for rehabilitation)</li> <li>▪ The Lighthouse at Apo Island</li> <li>▪ Four (4) Kiosks (made up of local materials)</li> <li>▪ Floating Raft and Bamboo Trails at the island lagoon and mangrove forest.</li> <li>▪ The Ranger Station (Concrete) at Binangaan Island.</li> <li>▪ Patrol/Service Boat</li> </ul> | <ul style="list-style-type: none"> <li>▪ Additional Patrol Boat</li> <li>▪ Ecotourism Boat</li> <li>▪ Dive Shop e.g., SCUBA Gears for rental, Air refilling station for SCUBA Divers.</li> <li>▪ Glass Bottom Flatboat for non-swimmers for appreciation of the underwater world.</li> </ul> |
| Financial Institutions Supporting the operation of Apo Reef | <ul style="list-style-type: none"> <li>▪ DENR</li> <li>▪ IPAF</li> <li>▪ WWF/KKP</li> <li>▪ LGU Sablayan</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Provincial Government – Can be tapped to support the Apo Reef Protection, Conservation and Ecotourism Program</li> </ul>  |

|             | Presence   | Absence   |
|-------------|--|---|
| Tour Guides | <ul style="list-style-type: none"> <li>▪ The LGU Sablayan in coordination with the DOT had already trained tour guides</li> <li>▪ There are two (2) Park Rangers who successfully completed the training.</li> <li>▪ The LGU, WWF and DENR-ARNP are available Dive Guides <i>(Please Take Note that dive guide is different from dive master).</i></li> </ul>  | <ul style="list-style-type: none"> <li>▪ The number of tour guides are not enough given the increasing number of tourists</li> <li>▪ There are some tour guides without training that accompanies tourists and forgets to conduct briefing and orientation</li> </ul> |
| Trainings   | <ul style="list-style-type: none"> <li>▪ Enhancement Training for the accredited/certified tour guides is requisite for better appreciation of tourists. Some other ecotourism related trainings for Apo Reef are the following: <ul style="list-style-type: none"> <li>▪ First Aide and Rescuers Training</li> <li>▪ SCUBA Divers Training: Advance Open Water Diver, Rescue Diver, First Aide Diver and Dive Master Training Courses; Equipment Specialist Training</li> <li>▪ Tour Packaging and Handling of Visitors</li> <li>▪ Dive and BMS training</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>▪ Trainings conducted per year are limited</li> <li>▪ Only a few people were able to attend and participate in the trainings</li> </ul>  |

Source: DENR IV-B ARNP Protected Area Office and Focus Group Discussions

**USER FEES<sup>9</sup>****1. Vessel Entry Fees**

| DESCRIPTION         | RATES (in pesos) | CONDITIONS         |
|---------------------|------------------|--------------------|
| a. 3 GT and below   | 200.00           | Per Boat per visit |
| b. 3.1 GT to 20 GT  | 350.00           | Per Boat per visit |
| c. 21 GT to 100 GT  | 500.00           | Per Boat per visit |
| d. 101 GT to 200 GT | 750.00           | Per Boat per visit |
| e. 201 GT and above | 1,000.00         | Per Boat per visit |

**2. Visitor Entry Fees**

| DESCRIPTION        | RATES (in pesos) | CONDITIONS           |
|--------------------|------------------|----------------------|
| NON-DIVING:        |                  |                      |
| a. Sablayeño       | 50.00            | Per person per visit |
| b. Local Tourist   | 175.00           | Per person per visit |
| c. Foreign Tourist | 350.00           | Per person per visit |
| d. Tour Guide      | 100.00           | Per person per visit |
| DIVING:            |                  |                      |
| a. Local Tourist   | 1,050.00         | Per person per visit |
| b. Foreign Tourist | 1,300.00         | Per person per visit |
| c. Dive master     | 100.00           | Per person per dive  |

*(Per Visit is equivalent to 48 hours or less from arrival to departure)*

**3. Other Park Fees Exclusive of the Entrance Fees**

| DESCRIPTION   | RATES (in pesos) | CONDITIONS |
|---|------------------|------------|
| a. Filming / Video Taping                             | 1,500.00         | Per day    |
| b. Filming for the production of movies & commercials | 3,000.00         | Per day    |
| c. Kiosk/Bed Room Rental                              | 200.00           | Per day    |

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<sup>9</sup> DENR IV-B ARNP Protected Area Office

**Table 18.** Assessment on the Guidelines and Restrictions in ARNP

| Guidelines in ARNP   | Remarks   |
|--|---|
| 1. Visitor entry permit shall be secured from the Protected Area Office (PAO) in the mainland Sablayan prior to the visit in the area.   | Harmonize the numerous registration systems including in the Tourism Office and Philippine Coast Guard.       |
| 2. Register at the PAO Building/Ranger Station at Apo Island, Apo Reef Sablayan upon entry and prior to any activities to be undertaken.   |   |
| 3. Strictly follow the guidelines and restrictions in the protected area per PAMB Ordinance No. 2005-001 and 2007-001, as amended.   | There are not enough number of park rangers who can monitor if the visitors are following the code of conduct |
| 4. Strictly follow the code of conduct at Apo Reef Natural Park  |   |
| 5. Violations of any rules and regulations in the protected area are grounds for the cancellation of permits, administrative Adjudication and/or filing of necessary charges in court. | Fines and other sanctions shall be executed as well.  |

**Existing Initiatives in ARNP Management**

The table below shows the existing programs in ARNP in various areas. The following table discusses the effects of such initiatives in the management of the protected area.

**Table 19.** Existing Initiatives in Apo Reef Natural Park

| PROGRAM  | ACTIVITIES   |
|--|--|
| <b><i>Biodiversity Protection and Conservation</i></b>   |  |
| Protection and Law Enforcement                           | <ul style="list-style-type: none"> <li>• Patrolling, apprehensions, filing of cases</li> <li>• Coordination and linkage with the PNP &amp; other law enforcement agencies</li> </ul>   |
| Community Based Protection                               | <ul style="list-style-type: none"> <li>• Maintenance and operation of the TF MARLEN (Task Force Marine and Apo Reef Law Enforcement for Nature)</li> <li>• Tapping concerned fisher folks and dive operators as source of reliable information</li> </ul>  |
| Information, Education and Communication (IEC) Campaigns | <ul style="list-style-type: none"> <li>• Production and distribution of brochures/pamphlets/flyers pertaining to Apo Reef biodiversity values and features, policies and guidelines, and effects of destructive practices.</li> <li>• Orientation of tourists/visitors, dialogues/meetings with the fisher folks for the sustainable use of Apo Reef.</li> </ul> |
| Biodiversity Monitoring System (BMS)                     | <ul style="list-style-type: none"> <li>• Setting up of BMS plots.</li> <li>• Regular conduct of BMS activities by the PA Staff with assistance from the community and other volunteers.</li> </ul>   |
| Resource Management Program                              | <ul style="list-style-type: none"> <li>• Resource Monitoring System</li> <li>• Regulation (volume, type of resource + type of extraction)</li> </ul>   |
| Eco-tourism  | <ul style="list-style-type: none"> <li>• Monitoring the activities, volume and destinations of tourists/visitors guided by</li> </ul>  |



| PROGRAM  | ACTIVITIES  |
|--|---|
| Management Program   | <p>designated carrying capacity and geared towards education and conservation in the park.</p> <ul style="list-style-type: none"> <li>Establishment of low impact facilities for PA visitors (avoid infrastructures).</li> <li>Development of user fee system to support conservation efforts.</li> </ul> |
| <b>Strengthening of Institutional Capability for Biodiversity Conservation &amp; Sustainable Use</b> |   |
| PA Gazette & Management Planning   | <ul style="list-style-type: none"> <li>Lobbying for the enactment of Apo Reef PA Bill</li> <li>Implementation of the Management Plan</li> </ul>   |
| PAMB Operation   | <ul style="list-style-type: none"> <li>Assistance to PAMB Operation</li> <li>Policy Development for Apo Reef</li> </ul>   |
| IPAF Operation   | <ul style="list-style-type: none"> <li>Collection of Entrance and Users Fee</li> </ul>  |
| Project Management and Institutional Strengthening   | <ul style="list-style-type: none"> <li>Maintenance and Hiring of PA personnel</li> <li>Seminar, training for PA personnel, PAMB and stakeholders</li> <li>Regular performance and effectiveness review of the DENR-ARNP Office and PAMB with corrective actions</li> </ul>                                |
| Networking and Linkages  | <ul style="list-style-type: none"> <li>Networking and linkage with various agencies and other stakeholders for technical and financial support.</li> </ul>  |

Source: DENR IV-B ARNP Protected Area Office

**Table 20.** Effects of Existing Programs, Projects and Activities in the ARNP

| PROJECT NAME   | IMPLEMENTOR   | COMPONENTS/ ACTIVITIES   | AREA OF COVERAGE  | EFFECTS  |
|--|---|--|---|--|
| Conservation of Priority Protected Areas Project (CPPAP) (1995-2001) | <i>National level:</i> DENR, NIPA<br><br><i>Site level:</i> DENR-PASu, NIPA | a) Community Organizing<br>b) Mgt. Planning<br>c) PA Gazetting<br>d) IEC<br>e) Resource protection and law enforcement<br>f) Biodiversity monitoring<br>g) Boundary demarcation<br>h) Management zoning<br>i) Resource Inventory | The entire protected area with a total area of 27,469.0 hectares, ARNP Boundary (15,792.0 ha) and Buffer Zone (11,677.0 ha) | <ul style="list-style-type: none"> <li>Protection of reefs and their associated habitats</li> <li>Empowerment of fishers-stakeholders empowered to conserve and manage the environment while enjoying satisfactory incomes</li> <li>Reduction of unregulated/illegal activities</li> <li>An increase in number of visiting divers</li> </ul> |
| Maintenance and Operation of RP                                      | DOTC with the Philippine Coast  | <ul style="list-style-type: none"> <li>Maintenance and operation of RP Lighthouse as aid to navigation</li> </ul>  | The NE part of Apo Island containing an area of   | <ul style="list-style-type: none"> <li>Lighthouse now serves as navigational guide for mariners that pass through the Apo West</li> </ul>  |

| PROJECT NAME                        | IMPLEMENTOR  | COMPONENTS/ ACTIVITIES   | AREA OF COVERAGE   | EFFECTS   |
|-------------------------------------|--|--|--|---|
| Lighthouse                          | Guard (PCG)  |  | 1.33440 ha per E.O.No.118, dated 9Dec1914                    | and East Pass<br>▪ Lighthouse now serves as tourist attraction  |
| Lighthouse Construction (1998-1999) | John Holland Construction Philippine, Inc.               | <ul style="list-style-type: none"> <li>▪ Demolition of old lighthouse built in 1904</li> <li>▪ Construction of new lighthouse</li> </ul> | Old lighthouse and surroundings on Apo Island                | <ul style="list-style-type: none"> <li>▪ A 30-50% drop in turtle nesting due to disturbance caused by the lighthouse construction</li> <li>▪ Introduction of rats in the island from the boat</li> <li>▪ hauling the construction materials</li> <li>▪ Damage of corals due to the sacks of gravel &amp; sand dropped &amp; scattered along the reef crest/slope</li> </ul> |
| Coral Reef Rehabilitation (2000)    | CPPAP-PCU in coordination with John Holland Construction | <ul style="list-style-type: none"> <li>▪ Coral Transplantation</li> </ul>  | The Restoration Zone (marine) in the north and south lagoons |   |
| Rat Eradication (2000)              |  | <ul style="list-style-type: none"> <li>▪ Eradication of Rats</li> </ul>  | Apo Island   |   |

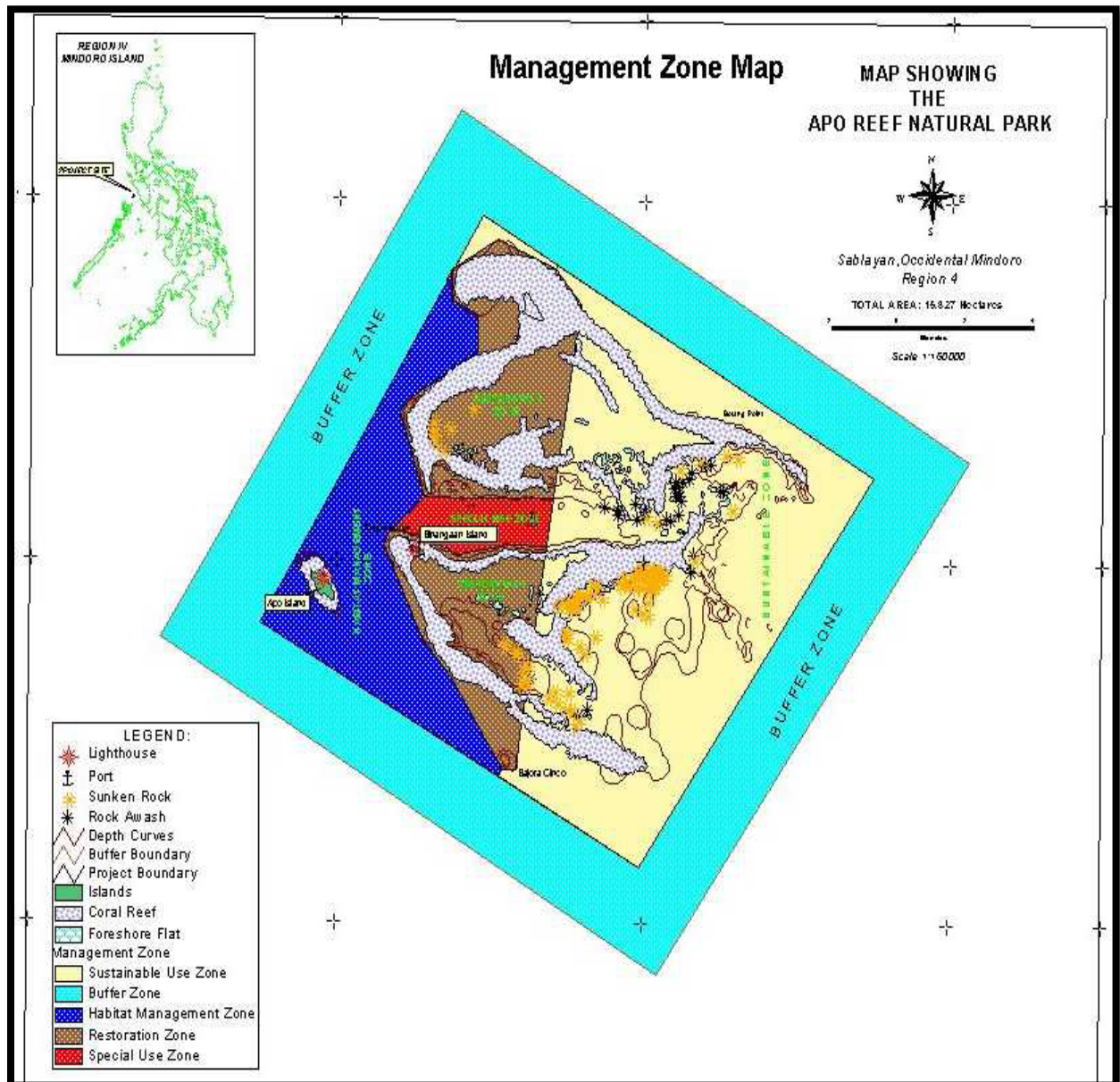
Source: DENR IV-B ARNP Protected Area Office

**Existing Management Zones**

One of the significant strategies in protected area (PA) and buffer zone management as provided for in the NIPAS Act is the categorization of these areas into management zones which includes; (1) Strict Protection Zone, (2) Sustainable-Use Zone, (3) Multiple Use Zone and others such as Cultural Zone, Recreation/Eco-Tourism Zone and Special Use Zone. The zoning categories were followed in the 2001 ARNP Management Plan.

In 2008, the Revised Implementing Rules and Regulations (IIRR; DAO 2008-26) of the NIPAS Act recommended the reclassification to only 2 zones in the subsequent iteration of the management plan. The (1) Strict Protection Zone (SPZ) which shall comprise natural areas with high biodiversity value, closed to all human activities except for scientific studies and/or ceremonial or religious use by the ICCs/IPs. While all other identified zones shall be recognized and shall form part of the (2) Multiple-Use Zone (MUZ).

**Figure 17.** Management Zone Map of Apo Reef Natural Park



Source: DENR – Apo Reef Natural Park Management Plan 2001

### **Strict Protection Zone**

- This zone covers areas with a high biodiversity value and shall be closed to all human activity except for scientific studies. It represents the core area where all forms of exploitations are prohibited. This zone includes the mangrove forest in Apo Island including karst areas, which are inhabited by the migratory, endemic and endangered species of birds (i.e. Nicobar Pigeon). This also covers the Apo Menor (Binangaan) Island including surrounding waters up to 100m away from the outer edge of the karstic island and the two small islets in Cayos del Bajo (Tinangkapan) Island including surrounding waters up to 50m away from the outer edge of the islet, which are habitat and sanctuaries of migratory birds. Strict Protection covers an area of 33.72 has.

### **Restoration Zone**

- This zone covers areas with degraded habitats with the long-term goal of restoring natural habitats with its associated biodiversity and to rezone the area into a strict protection level.
- Terrestrial areas covered by this zone shall include the beach forest in Apo Island located in between the Nipa Hut in the southern part, CPPAP Building and the Apo Reef Lighthouse Complex with an area of 3.41 hectares.
- The vegetation of Apo Island is delineated by a strip of ecotone, the ecotype mangrove forest and beach type forest. The presence of exotic species such as ipil-ipil, agave, tamarind tree, etc. and the degradation of natural vegetation were brought about by human interventions.
- Marine areas covered by this zone shall include the western side of the north and south atoll-like reefs including Barkong Lubog and Bajora Cinco, with an area of 3,902.54 hectares, excluding Apo Menor (Binangaan) Island and areas covered by Special Use Zones.
- In relation to larval dispersal and recruitment processes, the northeast monsoon wind occurs from December to April, the time when corals disperse eggs. The interaction of wind, tidal and currents with the coral reef morphology retains a high number of planktonic larvae in this zone giving great chance for fertilization. Fertilized eggs will develop into young corals in the area. During the Southeast Monsoon rain, the unfertilized planktonic larvae will be carried back to the eastern side of the reef for fertilization.

### **Habitat Management Zone**

- This zone covers areas with significant habitat and species values. The management practices are required periodically to maintain the specific habitat types or conditions required by native, rare, threatened or endangered species.
- Terrestrial areas covered by this zone are the turtle nesting sites on the southern, eastern and northern beaches of Apo Island, with an area of 1.05 hectare, excluding areas covered by recreational and special use zones. Marine areas covered by this zone start at the reef flat up to the edge of the drop-off of Apo Island and surrounding waters and extending to the western side of the restoration zone in the north and south atoll-like reefs. It shall exclude areas covered by recreational, multiple use and special use zones and has an area of 2,839.01 hectares. This area is habitation, breeding ground, sanctuaries and playground for marine wildlife (i.e., marine turtles, dolphins, whales, sharks, etc.).
- This zone (0.40 hectare) covers the Protected Area Office Complex including the CPPAP Building, powerhouse and other development areas, as well as the beach area.

### **Sustainable Use Zone**

- This zone shall be reclassified under the Multiple Use Zone (MUZ) following DAO 2008-26.
- This zone covers natural areas where habitat and its associated biodiversity shall be conserved. Members of the fisher community of Sablayan who migrate to Apo Reef seasonally for traditional fishing and other activities were previously allowed to collect and utilize the natural resources in this area provided that they use traditional sustainable

methods that are not in conflict with biodiversity conservation requirements. Research can be undertaken and park visitors may be allowed for limited use. This zone, with an area of 8,496.98 hectares, shall cover the eastern side of the north and south atoll-like reefs including the largest islet of Cayos del Bajo (Tinangkapan) Island, Parolang Putol and San Antonio Point. The largest islet of Cayos del Bajo in its western side shall form part of this zone for the fishers utilizing the area for their subsistence activities and refuge against unfavorable weather conditions.

- The PAMB Ordinance No.001 of 2007 has declared a “No-Take-Zone Policy” throughout ARNP restricting fishing activities in all areas of the park including the sustainable use zone.

#### **Recreational Zone**

- This zone shall be reclassified under the Multiple Use Zone (MUZ) following DAO 2008-26.
- These cover areas of high recreational, tourism, educational, or environmental awareness values where sustainable eco-tourism, recreational, conservation education and public awareness activities may be allowed as prescribed in the management plan. (a) Terrestrial: The picnic ground including the Nipa Hut to the beachfront with an area of 1.56 hectare; and (b) Marine: This is the reef area (reef flat up to the second drop-off) adjacent to PA Office and Picnic ground with an area of 6.44 hectares.

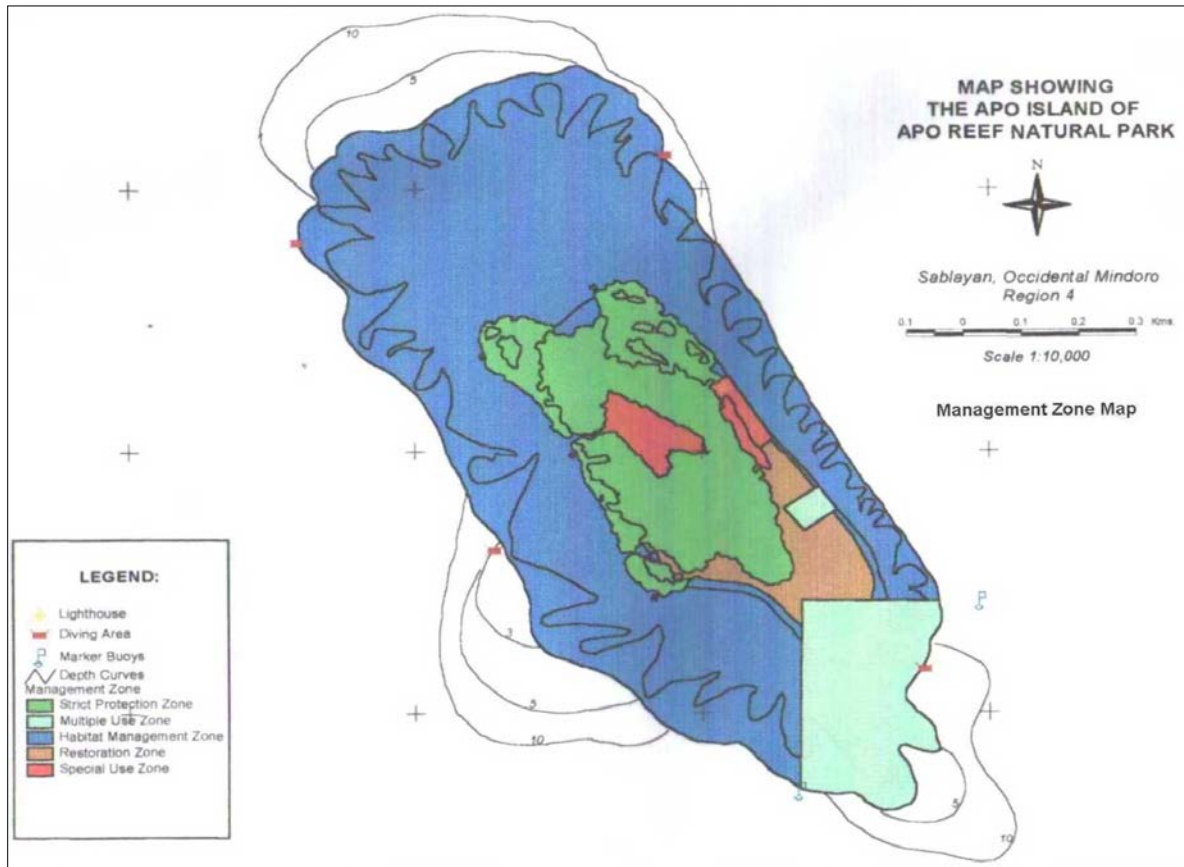
#### **Special Use Zone**

- This zone shall be reclassified under the Multiple Use Zone (MUZ) following DAO 2008-26.
- This zone covers areas containing physical installations of national significance. (a) Terrestrial: All development areas, which include the lighthouse complex, access trails, the lagoon in Apo Island with a total area of 2.13 hectares. The island lagoon shall form part of this zone to permit guided tours such as bird watching and education of visitors. (b) Marine: The passages of boats between the north south atoll like reefs, the boat anchorage/passage near and going to Binanggaan Island and the entire designated dive sites outside the recreational and sustainable use zones with a total area of 508.36 hectares.

#### **Buffer Zone**

- The zone peripheral to the protected area, around 2 km from the PA boundary, with an area of 11,677.00 has, serves as extra layer of protection preventing encroachment into PA.

**Figure 18.** Management Zone Map of Apo Island in ARNP



Source: DENR – Apo Reef Natural Park Management Plan 2001



## Tourist Management

Tourists, particularly divers, may damage corals through different recreational activities such as scuba diving and snorkeling. Influx of tourists, if not regulated, could result in the destruction and increased contamination of terrestrial and marine habitats. Furthermore, tourists would inevitably bring in and generate garbage. Hence, the anticipated influx of tourists in the protected area for the coming years requires the tourist management strategies and rehabilitation of existing facilities.

Based on the 2001 ARNP Management Plan, the Carrying Capacity of Apo Island is 104 persons per day. Apo Reef is recommended only for a day destination and visitor management is necessary to avoid pressure on the island and reef. However, overnight are allowed for guided tour with proper briefing and orientation for visitors. Meanwhile, the table below shows the carrying capacity for the identified zones in ARNP. Carrying Capacity refers to the maximum number of individuals that an area's resources can sustain indefinitely without significantly depleting or degrading those resources.

**Table 21:** Carrying Capacity for Various Zones in ARNP<sup>10</sup>

| Management Zones  | Carrying Capacity (CC)  | Potential Carrying Capacity (PCC) | Real Carrying Capacity (RCC) |
|---|---|-----------------------------------|------------------------------|
| <b>Recreational Zone</b>  |   |                                   |                              |
| *Terrestrial - 1.56 hectare<br><i>Picnic Ground, Pavilion, Public Toilet, Kiosk &amp; Administrative Building</i> | 104 person per day  | 166 person per day                | 35 person per day            |
| *Marine - 6.44 hectares<br><i>Dive Spots, Snorkeling Site, Mooring facilities</i>                                 | 129 person per day  | 258 person per day                | 49 person per day            |
| <b>Special Use Zone</b>   |   |                                   |                              |
| *Terrestrial – 0.8 hectare<br><i>Trails, boardwalk and lagoon</i>   | 53 person per day   | 212 person per day                | 40 person per day            |
| *Terrestrial – 1.33 hectare<br><i>Lighthouse Complex and Desalination Facilities</i>                              | 44 person per day   | 176 person per day                | 33 person per day            |
| *Marine - 508.36 hectares<br><i>Anchorage/Mooring Areas and Boat Passage</i>                                      | 10 mooring buoys/ anchorage area x 1.7 = 17 tourist boats per day |                                   |                              |
| <b>Dive Spots</b>   |   |                                   |                              |
| *Marine 5.5 hectares<br><i>[eleven (11) pre-identified dive sites (5,000 m<sup>2</sup>/site)]</i>                 | 275 person per day  | 490 person per day                | 93 person per day            |

<sup>10</sup> Draft Enterprise Development Plan of ARNP (DENR, 2011)



## **Financial Management**

One of the critical elements of the NIPAS Act is the creation and administration of a trust fund, known as the Integrated Protected Areas Fund (IPAF) intended to finance the projects of the system. The law allows PAs to solicit, receive donations, endowments, and grants in the form of contributions that will form part of the IPAF (sec 16, NIPAS Act). All incomes earned by the protected areas are deposited to the National Treasury as a trust fund, with seventy-five percent (75%) of the IPAF being deposited to the PA Sub-Fund for the use of the PA generating the fund and 25% to a PA Central Fund for use of non-income generating PAs and the IPAF Governing Board.

In 2013, RA 10629 was passed amending portions of the NIPAS Act providing for 75% of revenue generated through the IPAF to be retained on site for disbursements solely for the protection, maintenance, administration, management of the park and other duly approved projects endorsed by the PAMB in the amounts authorized by the DENR.

Income sources include: (i) taxes for the permitted sale and export of flora, fauna, and other resources; (ii) proceeds from the lease of multiple use areas, including tourism concessions; (iii) contributions from industries and facilities directly benefiting from the PA; (iv) fines and fees, including PA entry fees collected and derived from the operation of the PA; (v) contributions, donations, endowments and grants from any source; and (vi) such other revenues as may be derived from the operation of the PA<sup>11</sup>.

Given the co-management scheme of DENR and LGU Sablayan, it is noted that from the total income of the Apo Reef Natural Park, 66.66% goes to the IPAF (25% of which goes to the central IPAF and 75% goes back to DENR ARNP Office) and 33% to LGU Sablayan, which also uses the collected revenue for the protection and conservation programs in the protected area as well as in the implementation of ecotourism development projects.

The revenues of the Apo Reef Natural Park under IPAF are being collected by the PAMB through the DENR-ARNP Protected Area Office. It is the 2/3 or the 66.66% of the total revenue collection (*user's fee under IPAF by the PAMB/DENR + Environmental Fee by the LGU Sablayan*) at ARNP.

The environmental fee collected by the Local Government Unit (LGU) of Sablayan was not part or under the IPAF prescribed fees. The Environmental Fee being collected by LGU Sablayan is the 1/3 or the 33.33% of the total revenue collection and is only effective for 48-hour or 2 days use.

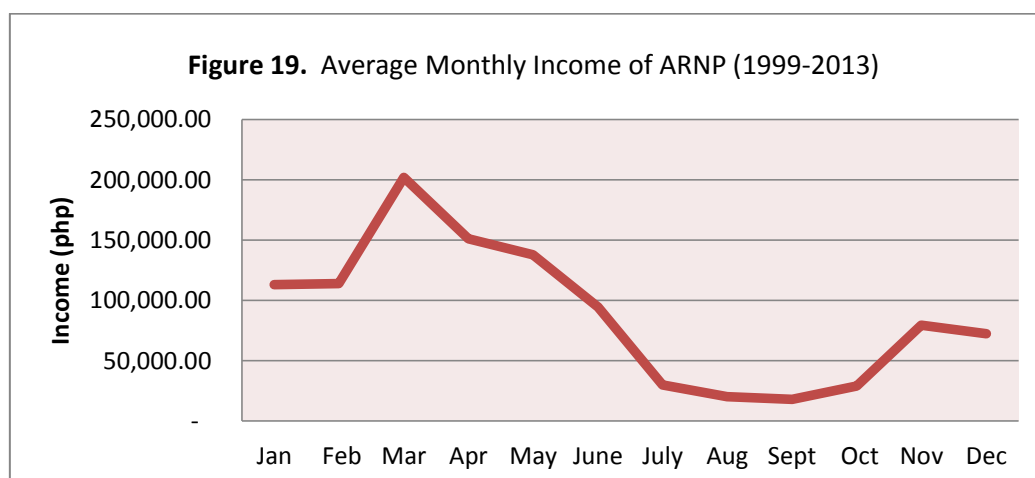
## **IPAF Collections**

Figure 17 shows the average monthly income of ARNP from 1999 to 2013 as generated only from the IPAF collection of DENR-ARNP Protected Area Office. Needless to say, the total income is directly proportional to the number of tourists visiting Apo Reef. Tourists had visited the protected area

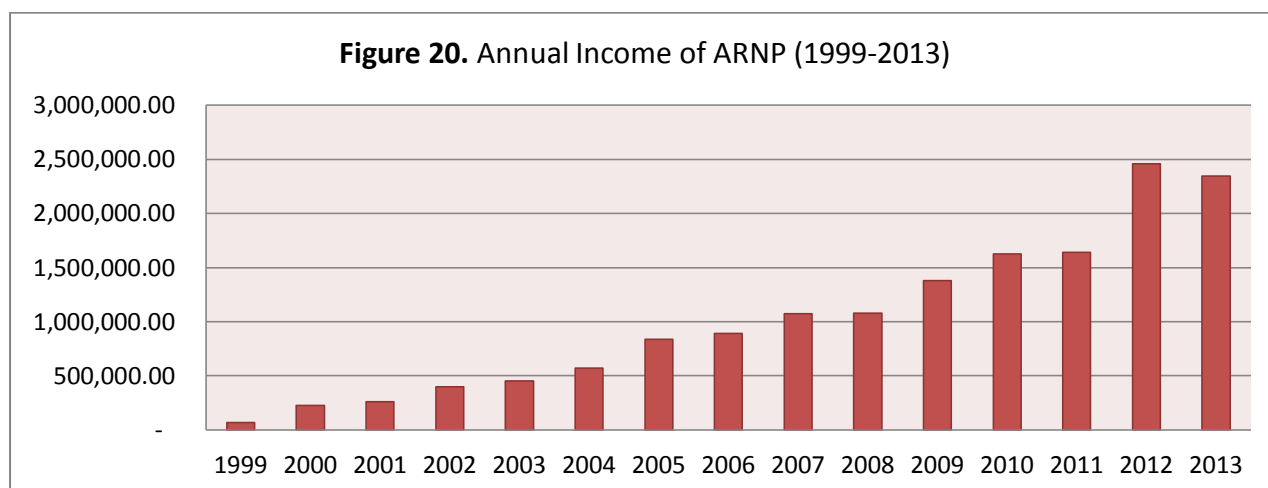
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<sup>11</sup> Bagadion, Benjamin C. and Soriano, Ma. Edna A. "Opportunities and Challenges in Managing Protected Areas of the Philippines" Asian Institute of Management, June 2013

mainly for SCUBA Diving and Snorkeling followed by Swimming and Island Hopping. Figure 17 shows that the average monthly income is highest during the summer months (March to May).



On the other hand, Figure 21 shows that the increasing trend of the total annual income of ARNP from 1999 to 2013 (based on total revenues collected by DENR- ARNP PAO from IPAF only). Although, the records shows that number of visitors in 2011 declined by 16% compared to the number of visitors in 2010, the number of visitors is still increasing when records from 2009 to 2013, excluding 2011, are compared. The decline in 2011 is attributed to the strong northeast monsoon and typhoons that prevents the tourists to go to the protected area.



### **Administrative and Operational Expenses**

The PASu facilitates the development of the Annual Work and Financial Plan appropriate budget allocation for the PAMB Capability Enhancement Program. The IPAF PA-Sub Fund is the 75% of the total IPAF Collection from the protected area. The PASu allocates at least 20% of the Sub-IPAF for (a) Administrative Expenses including PAMB operations (supplies and materials) and sundry expenses like traveling allowance, meal allowance, hiring of contractual staff, and honoraria; and (b)

Operational Expenses including procurement of equipment, repair and maintenance of equipment/ vehicles, supplies, gasoline expenses, and other maintenance and operating expenses.

Meanwhile, the user's fee under IPAF (collected by DENR) refers to fees collected from diving, non-diving (snorkeling, swimming, and camping), Dive Master/ Tour Guide, Vessel Entry Fee, Others include rentals/ donations/ administrative fines, filming/ air fill. The table below shows the percent of the total expenses of DENR / PAMB in Apo Reef Natural Park relative to the total income of the protected area from IPAF collection of DENR. The breakdown of expenses of LGU Sablayan funded from their revenue share / Environmental Fee collections were not included in the computation.

**Table 22.** Percent of Total Expenses against Total Income of ARNP<sup>12</sup>

| <b>TOTAL EXPENSES (in PhP)</b>                                    | <b>2009</b>      | <b>2010</b>      | <b>2011</b>         | <b>2012</b>      | <b>2013</b>         |
|---|------------------|------------------|---------------------|------------------|---------------------|
|   | <b>809,475</b>   | <b>1,032,825</b> | <b>1,220,000</b>    | <b>1,230,000</b> | <b>-</b>            |
| <b>Administrative Expenses</b>                                    | <b>460,800</b>   | <b>498,000</b>   | <b>564,000</b>      | <b>668,000</b>   | <b>-</b>            |
| PAMB Operations   | 48,000           | 54,000           | 72,000              | 72,000           |                     |
| Travel Expenses   | 48,000           | 60,000           | 60,000              | 60,000           |                     |
| Hiring of Contractual Staff                                       | 364,000          | 384,000          | 432,000             | 536,000          |                     |
| <b>Total Admin Expense as a % of Revenue on IPAF (DENR)</b>       | <b>33.5%</b>     | <b>30.6%</b>     | <b>34.3%</b>        | <b>27.1%</b>     | <b>-</b>            |
| <b>Operational Expenses</b>                                       | <b>348,675</b>   | <b>534,825</b>   | <b>656,000</b>      | <b>562,000</b>   | <b>-</b>            |
| Procurement of Equipment  | -                | 50,000           | 50,000              | -                |                     |
| Repair and Maintenance of Equipment and Vehicles                  | 60,000           | 60,000           | 60,000              | 60,000           |                     |
| Supplies  | 29,600           | 60,000           | 60,000              | 60,000           |                     |
| Gasoline/ Diesoline, Oil and other lubricants                     | 249,600          | 336,000          | 456,000             | 432,000          |                     |
| Other Maintenance and Operating Expenses                          | 9,475            | 28,825           | 30,000              | 10,000           |                     |
| <b>Total Operational Expense as a % of Revenue on IPAF (DENR)</b> | <b>25.3%</b>     | <b>32.9%</b>     | <b>40%</b>          | <b>22.9%</b>     | <b>-</b>            |
| <b>TOTAL REVENUE</b>  | <b>2,065,650</b> | <b>2,440,650</b> | <b>2,462,655.50</b> | <b>3,689,262</b> | <b>3,521,754.75</b> |
| <b>Environmental Fee (LGU)</b>                                    | <b>688,550</b>   | <b>813,550</b>   | <b>820,888.50</b>   | <b>1,229,754</b> | <b>1,173,918.25</b> |
| <b>IPAF collection (DENR)</b>                                     | <b>1,377,100</b> | <b>1,627,100</b> | <b>1,641,777</b>    | <b>2,459,508</b> | <b>2,347,836.50</b> |

<sup>12</sup> Figures obtained from DENR – Apo Reef Natural Park Protected Area Office

|  |              |              |              |            |            |
|--|--------------|--------------|--------------|------------|------------|
| Entrance Fees:   |              |              |              |            |            |
| Diver  | 1,154,400    | 1,265,600    | 1,291,267    | 2,064,918  | 1,956,193  |
| Non-Diver  | 167,100      | 154,050      | 153,577      | 219,252    | 238,495.50 |
| Dive Master  | 33,100       | 35,700       | 33,200       | 45,850     | 43,500     |
| Rentals/ Donations   | 2,500        | 8,600        | -            | 2,000      | -          |
| Administrative Fines   | 20,000       | 50,000       | 50,000       | -          | -          |
| Vessel Entry Fees  | -            | 113,150      | 113,733      | 127,488    | 109,648    |
| <b>TOTAL Expenses as a % of Revenue from IPAF collection</b> | <b>58.8%</b> | <b>63.5%</b> | <b>74.3%</b> | <b>50%</b> | <b>-</b>   |

From 2009-2011, almost more than half of the IPAF collected total revenue of DENR was used for administrative and operational expenses until it was reduced to only 50% in 2012. The highest source of expenditure is the salary for contractual staff and gasoline expenses, which almost increases annually. Likewise, the bulk of the IPAF collection was generated from visitor entrance fees, which also increases annually with a slight decrease in 2013.

The data for 2013 expenses is not available because the PA Sub-fund utilization under the Special Budget Request (SBR) for CY 2013 was not approved nor released by the Department of Budget and Management (DBM). It is also noted that the total of the PA-Sub Fund of the previous year collection and the reserved unprogrammed balance of the previous year are utilized for the current year. For instance, the total of PA Sub-fund (75% of the collection in 2008) and the reserved unprogrammed by 2008 was utilized in CY 2009. Furthermore, the Administrative and Operational Expenses of DENR – Apo Reef Natural Park (ARNP) Protected Area Office (PAO) for CY 2013 were charged against the National Ecotourism Strategy (NES) budget of the DENR for Apo Reef Natural Park. Additionally, the Environmental Fees (LGU) shown in the table above are just estimated based on 2/3 (66.66%) and 1/3 (33.33%) sharing basis of the DENR/PAMB and LGU Sablayan. An increasing trend in the revenue collected from environmental fees was also observed.

**Table 23:** Comparative Matrix of Protected Area Profiles in the Philippines<sup>13</sup>

| INDICATORS/<br>VARIABLES                   | PROTECTED AREAS                        |  |  |   |  |   |
|--|--|--|--|---|--|---|
|  | Tubbataha Reefs Natural Park (Palawan) | Puerto Princesa Subterranean River National Park (Palawan) | Apo Island Protected Landscape & Seascape (Negros Or.) | Olango Island Wildlife Sanctuary (Cebu) | Rajah Sikatuna Protected Landscape (Bohol) | Apo Reef Natural Park (Occidental Mindoro)        |
| Area (hectares)                            | 97,030                                 | 22,209   | 681  | 1,030                                   | 10,452                                     | 27,469  |
| Number of in-situ staff*                   | 13                                     | 60   | 50   | 4                                       | 3  | 14 (DENR-7; LGU-&)                                |
| Ratio of Staff to area (in hectares)       | 1:7,436                                | 1:370  | 1:14   | 1:257                                   | 1:3,484                                    | 1:1,962   |
| Main tourist activities                    | Diving                                 | River / Cave Tour  | Diving, Snorkeling                                     | Bird Watching                           | Bird Watching, Camping                     | Diving, Snorkeling, Island Hopping, Bird Watching |
| Year started using charging user fees      | 2000                                   | 1993   | 1999   | 1996                                    | 1999                                       | 1999  |
| Visitor entry fee*+                        | PhP 3,000                              | PhP 275  |  |   |  |   |
| Non-diving                                 |  |  | PhP 100  |   |  |   |
| Local tourist                              |  |  |  | PhP 20                                  | PhP 20                                     | PhP 270   |
| Foreign tourist                            |  |  |  | PhP 100                                 | PhP 100                                    | PhP 540   |
| Diving                                     |  |  | PhP 300  |   |  |   |
| Local tourist                              |  |  |  |   |  | PhP 1,650   |
| Foreign tourist                            |  |  |  |   |  | PhP 2,040   |
| Annual Receipts from Tourism 2010: 2013*+* | PhP 4.4 M                              | PhP 16.5 M   | PhP 3.9 M  | PhP 0.163 M                             | PhP 0.207 M                                | PhP 2.3 M   |
| Tourism receipts as % of total budget *+*+ | 37%                                    | 139%   | Unavailable  | 39%                                     | 50%  | 84%   |
| Annual Budget 2010: 2014 *+*+*             | PhP 14M                                | PhP 11.8 M   | < PhP 3.9 M  | PhP 0.41 M                              | PhP 0.407 M                                | PhP 3.3. M  |

\*Number excludes the PASu & staffs detailed from PENRO/CENRO and contractual staff doing clerical functions

\*+Other fees were charged; prices as of 2013

\*+\*It is the users' fees collected by the DENR/PAMB for CY 2013 under IPAF. The Environmental Fee collected by LGU for CY 2013 was not included.

\*+\*+It is the allocated budget from the PA Sub-Fund (75%) of the total IPAF collection of CY 2012 & CY 2013 + the reserved unprogrammed balance for CY 2012.

\*+\*+\*The IPAP PA Sub-Fund allotment under the Special Budget Request for CY 2014 + the Regular Fund from the DENR.

<sup>13</sup> Profile of Select Protected Areas in the AIM Management Case Study, 2010

### 3 Ecotourism Issues and Concerns

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In developing the ecotourism potentials of Apo Reef, issues and challenges shall first be identified and properly addressed. The following are the ecotourism concerns identified from the validated results of the RSA and through the outputs of the participatory planning workshop on ecotourism management conducted on 20 August 2014.

#### 3.1 Habitat Destruction

- **Alien Invasive Species.** AIS such as rodents (*Rattus norvegicus* and *R.tanezumii*), cat (*Felis catus*), dog (*Canis familiaris*) and birds (*Passer montanus*) have been recorded on ARNP. In view of the potential negative impacts such as predation and competition for resources with native biodiversity, total elimination of these introduced species is strongly recommended. Proper waste management must also be strictly implemented to eliminate ready food source for most of these introduced species. Non-native plant species such as giant ipil-ipil (*Leucaena leucocephala*), hagonoy (*Chromolaena odorata*) and century plants (*Agave* sp.) must also be eliminated as these species compete with native flora. However, some non-native plants species already present on Apo Island may provide some benefits to temporary human inhabitants (ie. Fuelwood for park rangers). In such cases, the continued existence of such species may be allowed in specified controlled areas and growth or expansion into other zones should be continuously monitored.
- **Human Disturbance.** Natural habitats on ARNP serve as critical habitats (nesting, feeding and nursery areas) for terrestrial and marine wildlife including endangered marine turtles (*Chelonia mydas*, *Eretmochelys imbricata*) and near-threatened bird species (*Caloenas nicobarica*, *Otus mantananensis*). Human disturbance in these critical areas must be minimized. Strict implementation of visitor and park management zone regulations such as access to strict protection zones particularly of visitors/tourists must be regulated by park staff and enforcers. Use of designated trails and walkways, picnic areas must be enforced. Visitor access to other ecotourism spots in or through strict protection zones must be accompanied by park staff as guide.
- **Unregulated Infrastructure Development.** Although park structures and facilities support tourism and park management operations, the construction and operation inevitably causes direct and indirect impacts to native biodiversity particularly in fragile small island ecosystems such as on Apo Island. As such, their design, construction and operation must adhere to established guidelines, zones and plans (DAO 2009-09, ARNP GMP) to minimize or mitigate negative impacts.
- **Wildlife Poaching.** Reports filed by the park rangers and Task Force MARLEN indicate that poaching through spearfishing are still being done by tourists, particularly divers. Guest may or may not have known of that the site is a protected area and its corresponding regulations. It is recommended that on-board inspection be conducted for all newly arrived dive boats.

Proper orientation about the protected area and its regulations must be provided for boat captains, tour operators and guests.

- *Destructive Tourism Activities.* Tourists visiting the ARNP, particularly divers, damage corals through different recreational activities such as scuba diving and snorkeling. Influx of tourists, if not regulated, could result in the destruction and increased contamination of terrestrial and marine habitats. Tourists would inevitably bring in and generate garbage. The influx of tourists may also require the construction of additional facilities.

### **3.2 Loss of Biodiversity**

- Apo Reef is known as a habitat for various species including turtles. A 30% to 50% drop in turtle nesting has been observed and verbally reported by PA staff and rangers due to habitat disturbance and pests (i.e rats, cat, etc.). Loss of coral cover can also be attributed to high impact diving practices, destructive anchoring, and improper ways of boarding boats and unregulated entering of vessels.
- Since ARNP serves as critical habitat of both terrestrial and marine biodiversity, regular surveys must also be conducted to assess the status of both terrestrial and marine biodiversity. The DENR has a manual for conduct of biodiversity monitoring in 2001 but its implementation in many protected areas including ARNP has been hampered by lack of equipment, financial support and technical capability of park staff. Previous surveys on ARNP have been successfully conducted with the assistance of academic institutions (UPLB) or non-government organizations (WWF). However, the support of these institutions are not always available thus park rangers and staff need to be equipped with technical knowledge, skills and equipment to conduct these monitoring surveys themselves. Highly technical monitoring tools may need to be simplified while species identification skills, proficiency in survey methods and data analysis skills need to be enhanced. During the recent survey of coral reef sites, 2/3 of the concrete blocks which mark transect stations could no longer be located. The loss could be attributed to wave & current action during strong weather disturbances. Marine and terrestrial transect stations may need to be re-established with appropriate markers to ensure fidelity of sampling stations.

### **3.3 Encroachment of Displaced Fishermen and Informal Settlers**

- High poverty incidence and poor socio-economic conditions in coastal villages resulting to increased pressure on marine resources (illegal fishing, dwindling mangrove areas, waste heaps and pollution along coastlines, unregulated quarrying). Dwindling fish catch due to degradation of municipal waters (mainly affecting families who are solely dependent on fishing for livelihood) was recorded.

- Several poaching incidents involving local fishermen were recorded for the past years (proliferation of informal settlement families in urban coastal communities). Some poachers are equipped with sophisticated equipment (e.g. speedboats, communication/navigational facilities) and even firearms. Also local poachers are entering the protected area for the collection of prohibited species (e.g., smooth top shell, giant clams, sea cucumber)
- Unsustainable and inadequate employment opportunity / lack of alternative livelihood for displaced fishermen of ARNP. Past efforts to generate employment for the displaced fishermen of ARNP were not sustained such as the creation and organization of cooperatives under the Conservation of Priority Protected Areas Project (CPPAP). While the efforts of LGU in providing livelihood opportunities are being recognized, these are still insufficient to provide income and livelihood to displaced fishing households, thus the continuous increase in pressure, demand, and threat for marine resource extraction.
- The uncontrolled resource extraction in Apo Reef is mainly due to encroachment of transient and displaced fishermen. The loss of coral cover can also be attributed to high impact diving practices, destructive anchoring, and improper ways of boarding boats and vessels. The unregulated entering of vessels in the area poses the problem of anchorage damage caused by fishermen and tourists' boats.
- Despite of the declaration of "no-take-zone policy" in 2007, several poaching incidents involving local fishermen were recorded for the past years. Based on DENR records, some fishermen diverted their fishing activities from reef fishing inside the protected area to tuna fishing (pagtutuna) and squid fishing (pamumusit) at Sablayan Waters, which is outside the boundaries of ARNP and its peripheral buffer zone. It was observed that poaching by locals is rarely observed at Apo Reef when tuna fishing and squid fishing are efficient and profitable outside the protected area. However, local poaching is a big threat in the protected area when these alternative fishing methods became unprofitable. With the dwindling fish catch due to degradation of municipal waters, coupled with poor socio-economic conditions in the coastal villages, proliferation of informal settlers in coastal areas, and lack of alternative livelihood opportunities for displaced fishermen, food security is threatened and an increase in the demand and pressure to marine resources of Apo Reef and intensified resource extraction resulting to increase in poaching incidences is highly anticipated.

### **3.4 Poor Access to Basic Services**

- Challenge on support infrastructure system and delivery of basic services and utilities (water, power, transportation, communication) needed to improve quality of life in vulnerable coastal areas.
- There are logistical constraints in law enforcement and biodiversity monitoring. Apo Reef is also challenged with poor communication facilities, lack of fresh water source, limited power supply, long travel time, poor accessibility, and inadequate operational equipment and facilities for monitoring.



- Task Force MARLEN's patrolling is being conducted only once or twice a week and is not being practiced regularly as it was supposed to, due to insufficient speedboats and inadequate manpower / park rangers.
- Government facilities in Apo Island were barely maintained. Visitors need to bring their own water for drinking since the desalination facility that was supposed to address the problem on potable water has been non-operational.

### **3.5 Pollution and Improper Waste Management**

- Improperly discarded waste reduces the aesthetic value or attractiveness of the park as well as introducing additional hazard for both human visitors and wildlife. Food wastes also serves as ready but inappropriate food source for wildlife which may become pests. Alien invasive rodent populations are also sustained by this food source thereby endangering native wildlife.
- Apo Reef is also faced with high risks from pollution caused by ship-generated activities and international vessels passing in the Apo Reef east and west channels that usually causes oil spills, disposal of bilge water and solid waste within coastal and territorial waters.
- Inadequate sewage treatment systems for hotel and resort owners and waste disposal facilities are primary sources of sewage contamination to coastal waters. Abnormal effluent discharge implies increased nutrient loading that would lead to eutrophication of water bodies. These changes in the environmental conditions along with over fishing can lead to coastal resource degradation in Sablayan. Degradation of coral reefs will result in reduced habitat for fishes, erosion of the coastline and also limited attractions for snorkelers and divers. Solid waste collection and disposal systems in Sablayan and its environs are inadequate; hence the disposal of garbage into rivers and coastal water drains leading into the ARNP. Garbage in the coastal areas are potentially harmful to humans and marine life and also has negative impacts on coastal aesthetics reducing the attractiveness of the site to potential tourists (snorkelers, divers and picnic-goers).

### **3.6 Management Issues and Concerns**

- Funding sustainability for the management of the PA. After the CPPAP term in 2002, the management of the ARNP rested on the PAMB through the PASu. Although ARNP is categorized as a self-sustaining protected area, through the IPAF collection and utilization, serious problems of funding and personnel allocation are still inevitable. The IPAF is currently not enough to sustain the funding requirements of the protected area wherein collection is heavily dependent on the number of tourist visiting the area. There is a need to ensure a sustainable funding mechanism from the national government. Other avenues for funding must also be explored and the users' fee collection under must be strengthened. The sustainability of financing has been a major challenge for ARNP managers. Sustainable

and efficient financing is a necessary condition for effective implementation of conservation programs. The IPAF is currently being accessed by the ARNP PAMB but takes a long time for the budget to be released (approximately six months). The delayed release of PA sub-fund due to bureaucratic system of fund utilization causes inadequacy for funding the regular operations of the Task Force MARLEN.

- Coordinative linkages among institutional stakeholders. Coordination is conducted regularly with the concerned agencies and organizations in the government and private sectors (e.g., LGU Sablayan, PNP, Philippine Army, Philippine Coast Guard, Department of Justice, and WWF Philippines). However, policies or clear manifestation on coordinative linkages among institutional stakeholders vis-à-vis TF MARLEN operations and co-management are inadequate. The coordinative linkages among institutional stakeholders must be strengthened. Local Government Units must play a critical role in this aspect. While the co-management scheme between DENR (PAMB) and LGU Sablayan in the planning and implementation of ecotourism programs have been effective, there is generally weak coordinative linkages of DENR with other institutional stakeholders such as Municipal Environment and Natural Resources Office (MENRO), Municipal Planning and Development Office (MPDO), and Municipal Engineering Office. The poor coordination between the ARNP Protected Area Office and the Provincial Government thru the Provincial Environment and Natural Resources Office (PENRO) was also identified as a major weakness in the management of ARNP. Furthermore, it is noted that the Municipal and Barangay Fisheries and Aquatic Resource and Management Council (MFARMC and BFARMC) as well as the Bantay Dagat group are not organized and functional. Despite being represented in the Task Force MARLEN, the presence of the Philippine Coast Guard was not maximized.
- Security of Tenure of Protected Area Personnel. There is no security of tenure for the contractual personnel of the ARNP Protected Area Office due to unsustainable funding and thereby resulting to fast turnover of park personnel. After the CPPAP term, only two (2) hired contractual personnel are absorbed into the regular workforce of the DENR and detailed at ARNP PA Office. It was observed that most of the park personnel trained during and after the implementation of CPPAP is no longer in the project. In the implementation of Biodiversity Monitoring System (BMS), some methods were not fully conducted and sometimes regular or quarterly monitoring were not conducted due to the lack and frequent turnover of trained personnel for this purpose. Frequent turnover of personnel are attributed to the lack of security of tenure of personnel. The frequent turnover requires conduct of trainings every now and then for newly hired personnel to do the monitoring.
- The MOA by and between the PAMB/DENR and LGU Sablayan has not yet been updated since 2001. The bill for Apo Reef Natural Park has also not yet been enacted into a Law due to some political issues. The PA Bill has been filed / re-filed during the 11th to 15th Congress. The passage of the law and the updating of the MOA will empower the institutions for effective and better management of ARNP.

- Poor appreciation and prioritization of Barangay LGUs towards CRM Programs and the difficulty in getting support from barangays or the communities due to the replacement of political leaders is also a challenge in achieving full stakeholder participation and commitment.
- There are no legal advisor other than the public prosecutor in the filing and monitoring of cases in courts. There is no legal retainer or lawyer to cater the defense of law enforcers when special lawsuits are filed against them by violators
- The need for developing technical competencies for PA managers (PAMB, Task Force MARLEN, DENR-Protected Area Office and LGU) is necessary to oversee the protected area. In addition to the gaps in skills, their workload and the inadequacy in manpower and financial resources constrained their efficiency and effectiveness. The outdated Coastal Resource Management Plan of Sablayan, absence of data base on coastal marine ecosystem and poor monitoring and evaluation of the Coastal and Marine Protection and Conservation Programs in Sablayan also limits the efforts to achieve sustainable resource utilization in ARNP. Furthermore, there is a need to develop a more strategic and effective procedure of tour packaging.
- The possible boundary conflict between Calintaan and Sablayan and the lack of a visible boundary demarcation in Apo Reef may cause further disputes.

### **3.7 Poor Tourism Management**

- There are few tour guides, only three small hotels/ traveler inns, poor roads, and limited power supply in Sablayan. The limited number of tour guides is insufficient relative to the increasing population of tourists and guests. Sometimes, there are tour guides without training who accompany tourists to the park but forget to conduct briefing and orientation.
- The lack of information on PA values and systems results to unsustainable resource use practices among the guests. Aside from the poor competency of tourist guides, the lack of DOT accreditation on hotels, resorts, and tourist service providers as well as the insufficient boat paraphernalia (i.e. life jackets) are affecting the effectiveness and quality of management in Apo Reef Natural Park. Moreover, the need for inspection & monitoring of dive boats and other tourists entering the PA is recognized due to inaccuracies of tour operators in declaring the total number of visitors.
- Expensive user fee is identified by most of the local tourists and Sablayan residents; however, it doesn't seem to be a problem for foreign tourists. The souvenir shop in Apo Island sells expensive t-shirts and items. The rental of diving equipment is made available in Apo Island while snorkeling gears are rented in mainland Sablayan. The policy is unclear for who can apply as concessionaires.

## 4 Ecotourism Vision Statement

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A vision statement for the ecotourism development of Apo Reef Natural Park was drafted through a participatory workshop attended by various stakeholder representatives of the protected area. It is based on the vision and mission statements of the ARNP General Management Plan drafted and approved in 2001.

***ARNP General Management Plan Vision and Mission:***

*"We envision Apo Reef with natural bountiful, peaceful environment  
and nature on account of unified citizenry"*

*"We the stakeholders dedicating and committing in the management, protection  
and development of Apo Reef to restore its natural features and conditions for  
the progress of the society and future of the youth and integrity of the country"*



***ARNP Ecotourism Development Plan Vision Statement:***

*"We envision Apo Reef Natural Park as a haven for conservation of natural  
resources, world renowned dive site and ecotourism destination deeply loved by  
the community as a special gift from God bringing national pride."*

## 5 Ecotourism Development Plan

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### 5.1 Habitat Management

#### MANAGEMENT ZONES AND PRESCRIPTIONS

The prescriptions are dynamic measures to enhance the objectives for which a zone has been identified. They are inputs for better and holistic management of the zone. They can be amended depending on the progress of the management objectives for the zone. These are zone specific in nature thus enriching the applicable standards and guidelines.

#### **A. Strict Protection Zone**

This zone covers areas with a high biodiversity value and shall be closed to all human activity except for scientific studies. This zone represents the core area where all forms of exploitations are prohibited. This zone includes the mangrove forest in Apo Island including karst area, which are inhabited by the migratory, resident and endangered species of birds (i.e. Nicobar Pigeon). This also covers the Apo Menor (Binanggaan) Island including surrounding waters up to 100 meters away from the outer edge of the karstic island and the two small islets in Cayos del Bajo (Tinangkapan) Island including surrounding waters up to 50 meters away from the outer edge of the islet, which serve as habitats and sanctuaries of migratory birds. This zone covers an area of 33.72 has and represents the core area where all forms of exploitations are prohibited due to its sensitivity to human activities. The zone is strictly prohibited to be accessed by people with exceptions on scientific research and monitoring activities. Management efforts are concentrated mostly on protection and conservation as they are critical in enhancing or maintaining the ecological processes that are important to the downstream economic and social activities. The following are the management prescriptions for the zone:

- Develop specific nature trails within these areas to lessen human disturbance during the conduct of scientific research and monitoring activities. The frequency and number of persons that will be allowed to enter this zone for scientific research and monitoring activities shall be determined and regulated.
- Distinctively mark the boundary of this zone.
- In areas near the zone, install warning signs. These will detail reasons for the prohibitions, the importance of the zoning, and the regulations that control the activities within it.
- Ensure that each entrance to the zone is within the sight of a ranger station.

#### **B. Sustainable Use Zone**

This zone covers natural areas where habitat and its associated biodiversity shall be conserved. Activities may be allowed in this area provided that these are not in conflict with biodiversity conservation requirements. Research can be undertaken and park visitors may be allowed for limited use. This zone, with an area of 8,496.98 hectares, shall cover the eastern side of the north and south atoll-like reefs including the largest islet of Cayos del Bajo (Tinangkapan) Island, Parolang Putol and San Antonio Point. The largest islet of Cayos del Bajo in its western side shall form part of this zone for the fishers utilizing the area for refuge against unfavorable weather conditions. The following are the minimum management prescriptions for the zone:

- Secure a permit from the respective authority (i.e. PASu) prior to entering the zone.
- Strictly prohibit harvesting, breaking and collecting corals or other attached living marine organisms whether dead or alive.
- Strictly prohibit all types of fishing - blasting, spear fishing with motorized compressor and other destructive fishing methods. Commercial fishing (fishing with the use of boats of more than 3 gross tons) is also prohibited.
- Traditional and sustainable fishing methods are regulated in this zone. Permits for such activity are secured from DENR through the PA office. However, since 2007 the PAMB has passed an ordinance which declared the whole park as a “no take zone” and prohibited all types of fishing including traditional and sustainable fishing throughout ARNP.

- Regularly patrol the area to monitor the activities within the zone. Establish patrol routes especially in the areas where illegal activities are reported to be rampant.
- Establish baseline data by assessing the percent coral cover and the populations of the fish stock to effectively manage the zone.
- Conduct quarterly monitoring to ensure the status of the resources therein.

### **C. Restoration Zone**

This zone covers areas with degraded habitats. The long-term goal will be to restore natural habitat with its associated biodiversity and to rezone the area into a strict protection level.

*Terrestrial areas:* Covered by this zone shall include the beach forest in Apo Island located in between the Nipa Hut in the southern part, CPPAP Building and the Apo Reef Lighthouse Complex with an area of 3.41 hectares.

*Marine areas:* Covered by this zone shall include the western side of the north and south atoll-like reefs including Barkong Lubog and Bajora Cinco, with an area of 3,902.54 hectares, excluding Apo Menor (Binanggaan) Island and areas covered by Special Use Zones. The following minimum prescriptions are to be observed:

- Study the history and cause of degradation of the area to be restored both in the identified terrestrial and marine ecosystem.
- Develop restoration program following the DENR approved guidelines on site restoration and the standards and guidelines described in this plan.
- Determine cost of restoration for budgeting purposes.
- Prioritize the areas to be restored following a set of criteria to be approved by the PAMB.
- Coordinate with other agencies for possible assistance in restoration works, particularly where agency stake is prominent.
- Do not attempt to disrupt natural habitats within the restoration zone, such as the natural openings.

### **D. Habitat Management Zone**

This zone covers areas with significant habitat and species values. The management practices are required periodically to maintain the specific habitat types or conditions required by native, rare, and threatened species.

*Terrestrial areas:* Covered by this zone are the turtle nesting sites on the southern, eastern and northern beaches of Apo Island, with an area of 1.05 hectare, excluding areas covered by recreational and special use zones.

*Marine areas:* Covered by this zone start at the reef flat up to the edge of the drop-off of Apo Island and surrounding waters and extending to the western side of the restoration zone in the north and south atoll-like reefs. It shall exclude areas covered by recreational, multiple use and special use zones and has an area of 2,839.01 hectares. This area is habitation, breeding ground, sanctuaries and playground for marine wildlife (i.e., marine turtles, dolphins, whales, sharks, etc.). The following minimum management prescriptions are required periodically to maintain the specific habitat types or conditions required by native, rare, and threatened species:

- Conduct a biological study and establish a baseline data on the frequency and temporal patterns of nesting of the turtles, percent survival of the hatchlings, and population.
- Identify and demarcate the specific nesting grounds and install warning signs to avoid or minimize human disturbances.
- Develop a rearing program that will increase the survival of the hatchlings following the PAWB or other experts approved protocol. This could result in the increase in the population of the endangered turtle species.
- Coordinate with other agencies and experts for possible assistance in habitat management as well as turtle eggs and hatchling rearing.
- Determine the cost of the program and source out funds if possible.
- Eradicate alien rodent pests that prey on the eggs and hatchlings of native species.

#### **E. Multiple Use Zone**

The multiple use zone cover areas which provide leeway for any developmental programs consistent with the management plan. Preferably, the protected area office and dormitory of PA personnel must be located within this zone. This zone, with an area of 0.40 hectare, covers the Protected Area Office Complex including the CPPAP Building, powerhouse and other development areas, as well as the beach area. The CPPAP Building serves as office and dormitory for PA personnel and the whole area was established as leeway to any developmental programs consistent with the management prescriptions. The following are the minimum prescriptions for this zone:

- Locate the administration buildings in this zone. The buildings may include but not limited to: 1) nature center; 2) administrative office; 3) powerhouse and 4) cistern and overhead tank.
- Any infrastructure development in this and any other zone must adhere to established guidelines (DAO 2009-09).
- Secure a permit from the respective authority (i.e. PASu) prior to entering the zone.
- Regularly patrol the area to monitor the activities within the zone.

#### **F. Recreational Zone**

This zone cover areas of high recreational, tourism, educational, or environmental awareness values where sustainable eco-tourism, recreational, conservation education and public awareness activities may be allowed as prescribed in the management plan.

*Terrestrial:* The picnic ground including the Nipa Huts to the beachfront with an area of 1.56 hectare.



*Marine:* This is the reef area (reef flat up to the second drop-off) adjacent to PA Office and picnic ground with an area of 6.44 hectares.

The following are the minimum prescriptions for this zone:

- Locate the recreational facility in this zone. The facilities include, at the minimum: 1) nipa hut; 2) food station; 3) first aid and monitoring station and 4) camping grounds. See map for the proposed sketch of the zone.
- Allow only nature-based recreational activities to be promoted in the reserve.
- Allow only authorized guides to attend to visitors' touring needs.
- Install interpretive signs to guide visitors.
- Maintain cleanliness within the zone.
- Install proper waste disposal and management systems.
- Ensure food stations follow a standard of cleanliness and design
- Prepare a recreation program to give activity options to visitors.

#### **G. Special Use Zone**

This zone covers areas containing physical installations of national significance.

*Terrestrial:* All development areas which include the lighthouse complex, access trails and the lagoon in Apo Island with a total area of 2.13 hectares. The island lagoon shall form part of this zone to permit guided tours such as birdwatching and education of visitors.

*Marine:* The passages of boats between the north and south atoll like reefs, the boat anchorage/passage near and going to Binangaan Island and the entire designated dive sites outside the recreational and sustainable use zones with a total area of 508.36 hectares. The following are the prescriptions for this zone:

- Employees utilizing the PCG building and operating the lighthouse should be aware of the rules and regulations about zoning and should understand the importance of PA management in promoting biodiversity conservation.
- The frequency and number of persons that will be allowed to enter the Apo Island lagoon for guided tours shall be determined and regulated.
- Strictly prohibit collection of threatened species
- Control establishment of exotic/introduced species
- Zero Waste Management
- Strictly prohibit introduction of polluting/radioactive materials/substances within the zone
- Strictly prohibit fishing, collection/harvesting of resources
- Strictly prohibit additional infrastructure without EIA & PAMB Approval
- Allow guided tours and non-destructive/non-polluting aquasport are allowed (regulated).

#### **H. Buffer Zone**

The zone peripheral to the protected area, around 2 km from the PA boundary, with an area of 11,677.00 hectares. It serves as extra layer of protection preventing encroachment into PA by outsiders. . The following are the prescriptions for this zone:

- Secure a permit from the respective authority (i.e. PASu) prior to entering the zone.
- Regulate the number of fishermen visiting the buffer zone
- Strictly prohibit the use of destructive fishing gears such as trawl, muro-ami, fine mesh nets, blast fishing, and poisoning.
- Strictly prohibit the gathering and hunting of marine turtles, corals, and birds within the buffer zone.
- Frequently patrol this zone to monitor illegal activities. Establish patrol routes especially in the areas where illegal activities are reported to be rampant.
- Commercial fishing may only be allowed for harvesting the "payaos" installed within the Buffer Zone and the PA Boundary.

## **MANAGEMENT STANDARDS AND GUIDELINES**

The management standards and guidelines for the protected area are reserve-wide rules and regulations that have to be observed in the area's administration. They are subject to revision to further enhance the attainment or approximation of goals, objectives and expected outputs. The standards and guidelines are likewise sensitive to the zoning regime. Where they are not applicable to a zone, the PASu must see to it that zone managers are aware of such restrictions. The standards and guidelines are by themselves activities that the PASu will undertake. Some of them are policy matters that will be implemented on a per zone basis if warranted. Below are the minimum standards and guidelines covering the various fields vis-a-vis the protected area management:

### **A. Biodiversity Management**

Introduction of exotic wild fauna is prohibited. Introduction of exotic wild flora and fauna is allowed only if the species to be used have been scientifically proven to cause no significant harm to the ecology of the reserve. Reforestation project that is designed to improve a marginal forest land must use indigenous species and must follow uneven-age and random distribution pattern to approximate the succession stage usually occurring in a typical rainforest ecosystem. No commercial collection of wildlife is allowed unless results of studies on their population and distribution show the practicability of engaging in the sustainable management and development of the economically important species.

Scientific studies are allowed in the project area following the system of control established by DENR. At the minimum, trails and patrol routes are to be located and constructed where there would be least damage on soil, biodiversity-rich habitats and where the best scenic areas are located. Commercial or sports hunting is prohibited unless otherwise scientifically determined to be appropriate following the specific management prescriptions, and after results of studies on population and distribution within the protected area is not allowed. Commercial fishing is periodically allowed only in the buffer zone areas depending on the volume of fish stocks and upon the discretion of the PASu. But the priority to utilize this area will always be granted to the adjacent coastal communities of Sablayan, Occidental Mindoro. Encourage scientific studies with priority on the identification of management indicator species per zone or habitat type.

### **B. Recreation**

- Recreational activities and tourism are allowed only in designated areas.
- Rules on recreational activities and tourism are to be strictly observed, particularly following the carrying capacity of the site.
- Visitors are required to undergo an ecotourism orientation to be conducted by the protected area staff for the purpose of informing them of the rules and regulations within the protected area.
- Recreational activities and tourism areas must be secured from dangerous elements.
- Recreational activities and tourism areas must be maintained following prescribed quality standards.
- Design of facilities, interpretive signs and infrastructures must follow a set of standards.

**C. Site Rehabilitation**

- Enrichment planting in mangrove forest and beach forest and coral transplantation in coral reef is allowed only if it is ecologically significant, and only if cost is insignificant to compete with the rehabilitation needs of other degraded sites.
- Assisted Natural Regeneration (ANR) of degraded sites for the purpose of restoration of original micro-ecosystem (induced succession) is to be the priority over enrichment planting.
- An approved site-specific rehabilitation plan is required prior to actual work implementation.
- Fishing sites and zones must be segregated.

**D. Project Development**

- Proposed projects outside of those included in the approved management plan for the protected area following the GMPS planning process have to go through the environmental impact assessment (EIA) process.
- Critical projects included in the approved management plan have to go through the EIA process.
- The PAMB shall designate a protected area planning team to be led by the PASu. The planning team shall coordinate all matters pertaining to the development of specific projects prior to action by PAMB.
- Existing projects of the government and private institutions that are using the resources of the protected area must enter into contract/agreement with the PAMB.
- The PASu and PAMB offices shall establish linkage with both the local and provincial executives.

**E. Protected Area**

- Boats and designated trails or boardwalks shall be the preferred means of transportation by the protected area rangers in the conduct of their routine and related works.
- Only officially designated trails or boardwalks are to be maintained by the protected area management. Illegal trails are to be closed using vegetative controls along approaches.
- Officially designated protected area rangers shall use a standard uniform for identification purposes and to establish authority.
- Deputized rangers are required to carry with them identification papers.
- All personnel involved in the protection program are required to pass a training course on protected area management.

**F. Wildlife/Fisheries Management**

- Identify management indicator species (MIS) which will serve as planning constraints in conservation planning.
- Identify featured species (FS) which will serve as planning constraints in economic planning.
- Conduct research on the natural interspersions of the various habitat types.
- Maximize habitat (structural) diversity in rehabilitation sites.

- There shall be designated wildlife viewing areas where wildlife watchers are allowed to stay following certain rules and regulations.
- Monitor species richness and diversity following a standard monitoring scheme.

#### **G. Protected Area Administration**

- The PASu being the chief executive officer of the DENR vis-a-vis protected area management shall assist the PAMB in developing the management plan for the area.
- The PASu shall guide the PAMB in developing protected area wide policies, ensuring that such policies are consistent with national statutes on protected area administration and environmental management.
- The PASu shall implement the policies adopted by the PAMB.
- A decision flow following the protected area organizational set-up must be developed for the guidance of personnel and administrators.
- The protected area infrastructures are to be developed with utmost regard for: 1) security and safety of personnel and visitors; 2) durability of facility; 3) cost of maintenance; 4) cost of construction; and 5) environmental compatibility.

#### **H. Livelihood and Economic Development**

- The utilization of natural resources of the reserve vis-a-vis designated multiple use and buffer zones must be subjected to the EIA process.
- The harvesting of renewable resources (both in marine and terrestrial) are to be limited to supply the domestic requirements of those communities which are dependent on the reserve in gathering such products.
- Alternative sources of livelihood in the nearby vicinity are to be developed to lessen the pressure on the PA.
- Strengthen the implementation of Community-based Resources Management Program (CRMP), and related types in the buffer zone and similar area for purposes of increasing the economic productivity. Observe the basic principle of “food security” while applying sustainable development of resources with the application of appropriate technology as defined in the Philippine Strategy for Sustainable Development (PCSD).
- The computation of the estimated income derivable from the use of the facilities or resources of the reserve by external entities must be prioritized by protected area management. The computed value will be used in developing cooperative agreement between the reserve and the user.

#### **I. Information, Education and Communication**

- The production and use of information, education and communication (IEC) materials must be based on their practicability in terms of simplifying and conveying conservation message to as many individuals and groups as possible.
- The development of IEC program and materials must take into consideration the real needs of the communities in appreciating any invitation to participate actively in protected area conservation and management.

- For self-recognition, historical and anthropological information must be included in the IEC program.

#### **J. Waste Management**

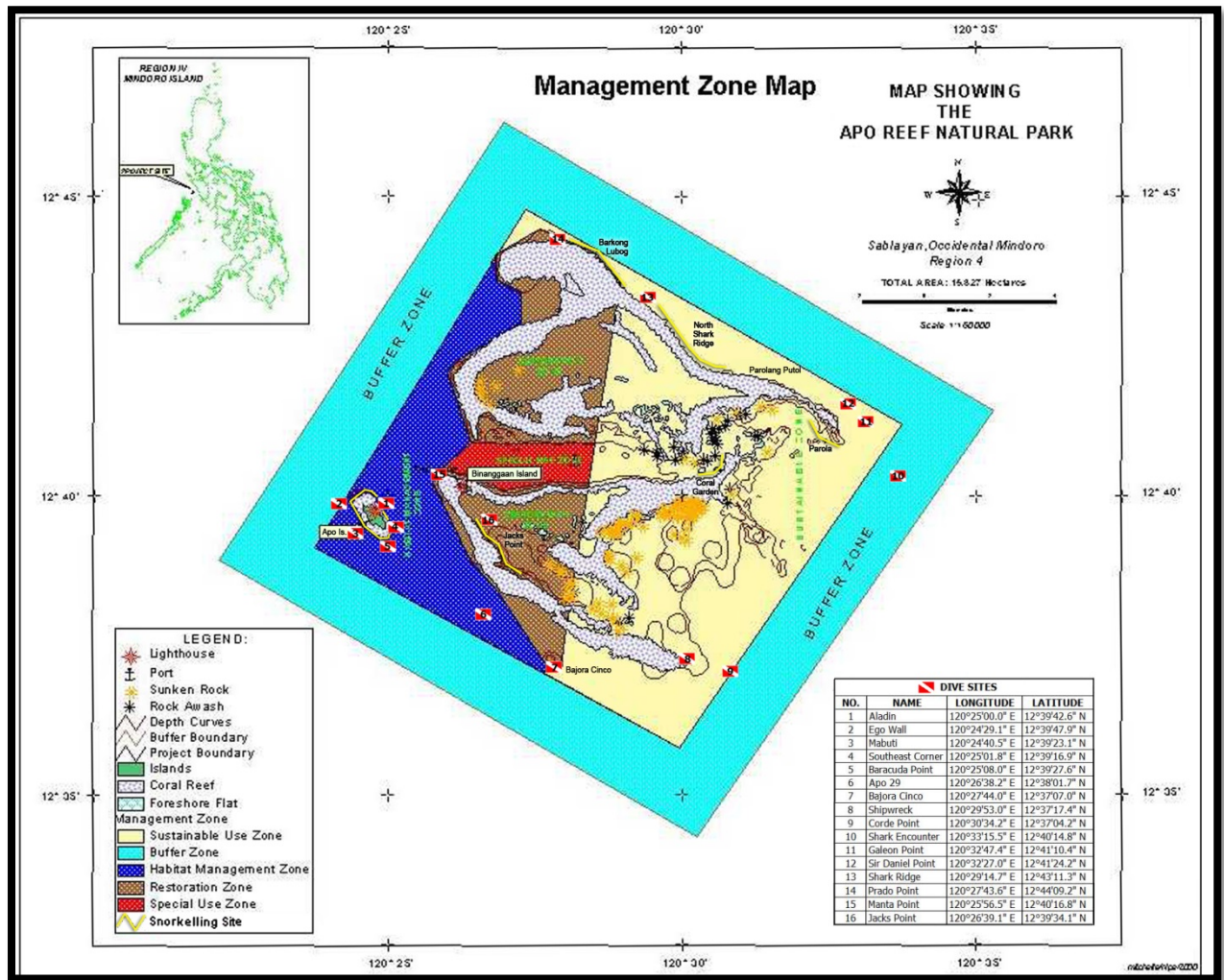
- Solid and liquid waste management program shall be developed and approved by the PAMB within the PA.

### **SITE DEVELOPMENT**

Because of several major considerations like the lack of appropriate tourist facilities, needed utilities, environmental fragility of the area and limited carrying capacity for visitors, Apo Reef Natural Park shall be promoted as a day destination to any tourist who wishes to visit the island. Overnight stay, however, shall not be restricted as the islands can actually host night staying visitors, PROVIDED that they bring their own tents, fresh water, and other basic needs. Recreational visitors may stay only for one night in the area.

- Recreation and management zones identified in the ARNP Management Plan (2000) will continue to be maintained, specifically, the picnic zone, the existing park ranger facility, and the lighthouse.
- The lagoon has also been identified in said management plan as a controlled tourist area (tourists are allowed to visit, provided park rangers accompany the visitors). The mangrove boardwalks shall be maintained and other activities like birdwatching and kayaking would be allowed in the area.
- Existing dive and snorkeling sites shall continue to be utilized for related tourism activities. Anchoring buoys are to be established in areas where appropriate (specifically in identified snorkeling sites and regularly used dive sites).
- Other sensitive areas such as turtle nesting beaches not previously identified but found within recreational sites must be considered for regulated visitor use.
- There is a further need to survey the marine area and identify more potential dive spots that can be opened to visitors in order to implement a more effective visitor flow control which will allow more divers to visit the area but would not create heavy traffic.

**Figure 21: ARNP Management Zone and Dive Sites**



## 5.2 Ecotourism Activities

Tourism activities identified may be classified into three types - allowed, controlled and restricted activities. Allowed activities are considered to have minimal impact in the area and are widely accepted in terms of environmental and social concerns. Activities initially identified as controlled activities have been conducted in other areas with minimal impacts to biodiversity, but after careful consideration by the PAMB were reclassified as restricted activities. Although they may be benign if done with proper planning and care, they may still create social and management concerns that may backfire on the park's ecotourism program. Restricted activities, although done in more touristic areas, are not allowed in ARNP as they would create not only unacceptable environmental impacts, but social backlash as well. An example is spearfishing where local fishermen may view recreational spearfishers as direct competitors to their livelihood.

**Table 24.** Allowed and restricted tourism activities (stakeholders' workshop output)

| <b>Allowed Activities</b>   | <b>Restricted Activities</b>  |
|---|---|
| Recreational swimming<br>Scuba Diving<br>Snorkeling<br>Sightseeing<br>Sun bathing<br>Photography<br>Glass bottom boat<br>Kayaking<br>Bird watching<br>Dolphin and whale watching<br>Whale shark interaction | Game fishing<br>Nesting Turtle watching<br>Spearfishing<br>Compression Diving<br>Wildlife collection<br>Sand collection<br>Coral and shell collection<br>Fish feeding<br>Jet Ski<br>Banana Boat |



**Table 25.** Ecotourism Activity Mapping (stakeholders' workshop output)

| Ecotourism Activities & Sites   | Possible Issues / Concerns  | PROPOSED STRATEGIES/POLICY OPTIONS TO ADDRESS THE ISSUES   |
|---|---|--|
| <b>Marine</b>   |   |  |
| (1) SCUBA Diving<br>• 16 Identified Dive Sites  | Wildlife poaching /<br>Spearfishing<br>Damage to coral reefs (from<br>divers & boat anchor) | Intensive inspection for incoming and<br>outgoing vessels / guest luggage<br><br>Training and certification of TF<br>MARLEN as boarding officers   |
| (2) Snorkeling / Swimming<br>• Recreational Area at<br>Southeast tip of Apo<br>Island | Damage to coral reefs (from<br>swimmers & boat anchor)                                      | Enhance presence / visibility of tourist<br>police (TF MARLEN & rangers)<br><br>Dress code for law enforcers<br><br>Orientation for Dive Masters & close<br>monitoring of underwater activities by<br>rangers<br><br>Installation & maintenance of mooring<br>buoys<br><br>Strict implementation of park policies,<br>regulations and management zones |
| (3) Dolphin & Whale<br>watching   | Noise & crowding disturbance<br>to marine mammals   | Proper orientation of guides &<br>boatmen on marine mammal approach<br>procedures (see Tan 1995. A Field<br>Guide to Whales and Dolphins in the<br>Philippines)  |
| <b>Terrestrial</b>  |   |  |
| (1) Picnic & Camping<br>• Recreational Area at<br>Southeast tip of Apo<br>Island      | Solid & liquid waste<br>pollution   | Strict implementation of "BRING YOUR<br>OWN TRASH POLICY"<br><br>Container for PET bottles outside the<br>comport room<br><br>2 Garbage bin for CR<br><br>Provision of segregated waste<br><br>To minimize bottles, 1 guest 1 bottle   |

|  |   |  |
|--|---|--|
|  |   | <p>policy</p> <p>PAMB resolution imposing penalties &amp; fees (re: littering)</p> <p>Re-usable water container</p> <p>Souvenir shop &amp; refilling c/o tourism office</p> <p>Dive equipment for rent c/o tourism</p> <p>Basic necessities store c/o tourism</p> <p>Prohibiting bonfire</p> |
| <p>(2) Exploration and Sightseeing</p> <ul style="list-style-type: none"> <li>• Rafting at lagoon</li> <li>• Mangrove boardwalk</li> <li>• Lighthouse</li> <li>• Ranger Station</li> <li>• Recreational Area at Southeast tip of Apo Island</li> </ul> | <p>Disturbance to wildlife &amp; habitats</p> <p>Solid &amp; liquid waste pollution</p> | <p>Well trained tour guides</p> <p>Strict implementation of guidelines</p> <p>Review (guidelines)</p>  |
| <p>(3) Birdwatching</p> <ul style="list-style-type: none"> <li>• Trail to Ranger Station &amp; Lighthouse</li> <li>• Mangrove boardwalk &amp; lagoon</li> <li>• Recreational Area at Southeast tip of Apo Island</li> </ul>                            | <p>Disturbance to wildlife &amp; habitats</p> <p>Solid &amp; liquid waste pollution</p> | <p>Well trained tour guides</p> <p>Strict implementation of guidelines</p> <p>Review (guidelines)</p>  |

### 5.3 Product Development

There are indeed other outstanding ecotourism products that can be developed in both ARNP and mainland Sablayan. With proper guidance and stakeholder support, these new products can actually help sustain the overall development of the tourism industry in the municipality.

**ARNP:** The main new ecotourism product that will be promoted in ARNP would be Apo Island and the surrounding shallow reefs. Included in the island are the mangrove and beach areas, and the lagoon. Some surrounding shallow reefs will then be zoned as part of the multiple use zone where recreation activities like snorkeling and glass-bottom boat tours can be done.

**Sablayan Mainland:** The primary area that would be developed for ecotourism would be the coastal zone that includes both the Pandan Islands and some reef areas. The major program that would be undertaken would be the identification and delineation of marine protected areas in or around Pandan Pequeno Island and the reefs fronting the barangay of Burgos and San Nicolas.

**Table 26.** Institutional Development Component for ecotourism development per sector

| SECTOR                    | OBJECTIVES   | RECOMMENDED POLICIES   |
|---------------------------|--|--|
| LGU                       | Encourage investment<br>Regulation<br>Initial Operation    | Tax incentives<br>Ordinances (tourism)<br>Provision of other basic services (streetlights)<br>Zoning and development standard guidelines |
| Transport                 | Quality services   | Adopt uniform rates<br>Moral values/hospitality  |
| Community                 | Know-how<br>Involvement                                    | Information dissemination<br>Moral values/hospitality<br>Participatory involvement<br>Sanitation   |
| Law Enforcement           | Maintain peace and order                                   | Polite and Honest enforcement of law   |
| Business                  | Quality service<br>Availability<br>Global<br>Knowledgeable | Adopt promotional materials<br>Personnel hospitality<br>Systematic business operation<br>Good housekeeping                               |
| NGO                       | Conservation/protection                                    | Strict implementation<br>Community participation<br>IEC and coordination to all agencies   |
| Communication             | Reliable communication services                            | Provision of facilities  |
| Media                     | Promotion, information drive and campaign                  | Collaboration with all other sectors   |
| Municipal Tourism Council | Policy Formulation   |  |

**Table 27.** Institutional Development Component for ecotourism development per stakeholder

| <b>Stakeholder</b>                             | <b>Objectives</b>   | <b>Recommended Policy</b>  |
|--|---|--|
| DENR   | Law enforcement<br>Admin Concern – IPAF<br>Institutionalization of PA                     | Strict enforcement of NIPAS Act/Amendment of NIPAS Act<br>Decentralization<br>Review/Revise general management plan  |
| LGU  | Co-management   | Secondment/Trust fund  |
| Stakeholders                                   | Participatory management  | Strengthening of ecotourism  |
| PAMB   | Management and supervision of PA  | Regionalization (PAMB members appointed to be done by RED)   |
| NGOs   | Partnership   | Transparency   |
| Motorboat operator<br>PCG Law enforcement      | To transport tourists to destination (Pandan Island to Apo) with security and convenience | Registration and licensing (MARINA, LGU)<br>SOLAS – passenger ferry boat<br><br>Passenger safety ordinance<br>wearing of lifevests<br>daytime navigation<br>PCG clearance<br>Authorized number of passenger and crew (well-trained)<br><br>Tourist service boat<br>Fixed rates<br><br>Motorboats to be operated by cooperatives and resort operators |
| LGU/Tourism Office                             | To give visitors orientation  | Tourist registration system (passenger manifest)<br>tour guide<br>briefing/orientation   |
| PAMB – LGU                                     | To regulate visitor activities  | Monitoring system  |
| LGU-Tourism – ARNP – Pandan Island Management. | To strengthen linkages in marketing and packaging   | Tie-up system  |

**Table 28.** Training needs for ecotourism development

| TRAININGS   | OBJECTIVES   | TARGET PARTICIPANTS   |
|---|--|---|
| Tour guiding  | To have accredited and knowledgeable tour guides         | Interested and qualified applicants (Brgy. representatives, site reps, students, etc.)<br>ARNP crew/rangers |
| Dive guiding  | Safety   | Park rangers and interested applicants  |
| Rescue and First Aid  | Safety   | Tour guides, dive guides and interested<br>PCG<br>PNP   |
| Trainors' training on courtesy and hospitality (values formation) | For massive IEC campaign                                 | Women's group, elderly, LGU, youth, Pos, coops, transport   |
| IEC on solid waste management                                     | Environmental protection and health/sanitation           | All stakeholders<br>22 barangays  |
| IEC on cultural and coastal management                            | Sustainable development                                  | Minorities  |
| Souvenir items, handicraft making, packaging                      | Livelihood   | Women's groups<br>Interested investors<br>SPPF (penal)  |
| Food and food handling  | Quality food and services                                | Restaurant and resort operators; caterers, etc.   |
| Cultural show and presentation                                    | Appreciation of Philippine culture and for entertainment | Schools, LGU, interested groups   |
| Homestay/housekeeping   | Additional facilities; income generation                 | Interested parties  |
| Zoning and development standards and guidelines                   |  | LGU and stakeholders  |

### **Facility Development**

- To support the ecotourism program in ARNP, appropriate facilities should be included in the development program. Specifically, there is a need to develop a visitor service boat to ferry tourists from mainland Sablayan to Apo Reef; a speedboat to service on-site visitors, the park rangers, and for emergency reasons; and a glass-bottomed boat to add to the quality of experience of visitors.
- Although very minimally, tourist facilities would be allowed in ARNP. These are the picnic tables and shed, a souvenir shack, a dive concession, and toilets. Said facilities shall be established only in the existing picnic area.
- A diving concession area would be allowed to encourage non-live aboard divers to stay longer in Apo Reef. Generators and compressors shall also be allowed to be operated in the area.
- The existing ranger station shall be refurbished to also serve as a visitor control point where briefings shall be conducted, a first aid facility, and emergency shelter.
- The trail leading to the lagoon shall be maintained. The improvised landing at the lagoon shall also be maintained and allowed to be able to hold at least three kayaks.
- Only the existing trails between the picnic area, the ranger station and the lighthouse and the lagoon shall be maintained and kept free of vegetation.
- No other visitor facility shall be established in other parts of Apo Island.
- Repair and maintenance of existing tourism facilities such as picnic huts and tables, toilets, lagoon boardwalk and the administrative building cum ranger station;
- Installation of informative and directional signages;
- Strict enforcement of no site-accommodation policy
- No additional construction of facilities
- Demarcation of Protected Area Boundaries and its management zones in the marine and terrestrial area in order to maintain the integrity of the existing state of its natural resources.

### **Potential Tourist Itinerary**

- There are no other tourist itineraries for Apo Reef SCUBA diving visitors except the municipal-controlled Pandan Island who also offer diving tour and kayaking in its fringing reef. Furthermore, Pandan Island has a fine dining restaurant and an excellent accommodation where tourist can stay before and after visiting ARNP.
- On the other hand, birdwatching and sightseeing aficionados, trekkers and nature trippers can visit other spectacular areas and protected areas in the Province of Occidental Mindoro. Among those recommended are Mts. Iglit-Baco National Park, known for its flagship species – the Tamaraw, Mt. Calavite Wildlife Sanctuary also a Tamaraw habitat and the locale of the known cleanest river-the Calawagan River Sytem, Mt. Paragpagan, Mt. Siburan and others.

### Product Clustering Strategies

- The programs and product clustering strategy that is being eyed viable is the tapping and linkaging with the jump-off point resort and tour service providers and local dive outfit. This will help to contend with the market largely dominated by live aboard diving program eventually optimizing the ecotourism advantage of ARNP for the benefit of the local community. This in turn would give extra employment and source of livelihood for the coastal barangays of Sablayan thereby creating less pressure on ARNP's biodiversity and aesthetics.
- The site will be developed as a prime tropical marine diving destination in the country with the same theme offered by Tubbataha Reefs in Palawan and Apo Island in Negros Oriental. Since Apo Reef has a reputation of being the site with the best coral diversity, this would not be very difficult to achieve.
- *Tourism Development in Sablayan.* To attain optimum tourism development for ARNP, Sablayan the lone tourism service area for Apo Reef, should be the first to be improved. This can be done by, (1) improving the road network from and to the take-off points (San Jose and Abra de Ilog), (2) encourage the local investors to venture to tourism related businesses such as hotel, resort and restaurants establishment, (3) invest in the local dive tour program, Apo Reef as the primal destination and lastly (4) advertising of the site in local and international markets thru mass media and the worldwide web.
- *Livelihood Development.* Simultaneous with the development of ARNP and Sablayan as potent tourist area is the involvement of the local community in tourism related businesses. The primary purpose of this plan is to optimize tourism advantage of the site for the benefit of local community, eventually encouraging them to join in the crusade for the conservation and management of ARNP. Lack of clear incentives to pursue and join enforcement activity is the main issue that hinders community participation.

### 5.4 Visitor Management

This section on visitor management and estimation of carrying capacity was based on a draft ecotourism management plan prepared by Dr. Carlos Libosada, Jr. – a renowned ecotourism expert in the Philippines.

All visitors who wish to visit Apo Island shall land in front of the picnic area. The beach area in front of the ranger station shall only be used by the park ranger boats and for emergency purposes. Those wishing to stay overnight on the island will have to stay in the picnic area. During the night, no one should also venture outside the picnic area without park ranger/s to guide and control the visitors. Nocturnal visitor movement in the beach area must be strictly controlled to prevent creating impacts to possible turtle nesters. From the docking area, all visitors must proceed to the ranger station for proper



briefing. Afterwards, the visitors can spread to recreational areas specifically the picnic area, the first level of the lighthouse, the open beach areas, and the lagoon.

**Carrying Capacity:** Estimation of the Carrying Capacity (CC) shall be based on the Bullon Model which indicates that:

$$CC = \frac{\text{Total Tourist Area}}{\text{Average Individual Standard}}$$

The basis for the estimation of the carrying capacity shall be based only on the identified tourist zone which is the picnic site with an area of 1.56 hectares. At this point, it is nearly impossible to estimate the carrying capacity of the dive spots because of the lack of established mathematical models.

The estimated carrying capacity shall also be based only on the physical component due to the absence of local communities and biological information that may be used to determine the capacity.

The average individual standard shall be set at 150 square meters per person in order to provide ample spaces between visitors and ensure that the picnic site shall not be crowded by people.

Water as a limiting factor shall not be accounted because it is assumed that visitors will bring in their own supply of fresh water. Given the formula, the estimated carrying capacity of Apo Island is: **104 persons per day.**

The 104-person capacity of Apo Island shall have a mix of divers and non-divers. Although the number may seem high, it should be noted that it is the carrying capacity of the island. It does not mean that said number should be pursued. It must be ensured that the capacity should not be reached or at least maintained in order to prevent creating environmental problems.

## 5.5 Institutional Development

- *Networking.* The PAMB could not take on all the roles that would include the tourism operation and marketing of ARNP. Thus proper networking with the LGU, the local, regional and national tourism offices, and the private sector will have to be undertaken. The finalization of the ecotourism management plan will have to be undertaken with the participation of the local government unit, tourism office and the existing and potential suppliers. The PAMB will have to appreciate the full value of ecotourism and the need to further develop the island appropriately. The LGU, the tourism units and the private sector will have to understand the need to limit the development of the area in order not only to maintain its environmental condition of the reef and the islands, but also to maintain the over-all tourism value of the site. Said tourism value

and consequent sustainable utilization will only be realized if the island is maintained as a pristine and high quality destination.

- *Deputation of local guides as ancillary park rangers.* Given that the existing park rangers already have their hands full in policing the park, using them as park guides would entail administrative and operational concerns, especially when the park starts receiving regular large numbers of visitors. Thus, there is a need to develop more Sablayan-based local guides to help bring the people into the area and ensure that their visit would be consistent with the management plan of the area. Said guides would be deputized as ancillary park rangers and shall be trained by the PAMB for such matters.
- *Orientation of Visitors.* There is always a need to properly orient the tourists visiting a protected area. Multi-media presentation such as CD players and televisions would be most ideal. However, there is always the concern for funding. And said funding may only be realized after some government alignment or outside support. These may have to take time. In the meantime, the cheapest alternative is to set up informational signages in the picnic and ranger station areas. Signages may also be set up in mainland Sablayan in order to help the locals appreciate the ecotourism value of ARNP. Park rangers and deputized local guides, given the proper training in tour commentary and visitor handling could also relate much value to inform the visitors the value of the park and the need for proper conduct while in the park.
- *Accommodation.* The very fragile environment of the only big island in Apo Reef which is Apo Island would not allow for any permanent tourist habitation facilities. Building of tourist accommodation facilities would create unacceptable environmental impacts that may be more serious compared to the tourism receipts that may be gained. Furthermore, the establishment of tourist facilities may lessen the tourism value of the site as a pristine, or frontier destination. Visitors wishing to stay overnight in the area, both for experience and practicality (due to its distance from any jump-off point) should not be discouraged. However, they must bring their own provisions should they decide to stay overnight on the island. Since the beach area is also used by nesting sea turtles, the picnic area may not be an ideal site even for tented accommodation. In this case, the most practical overnight site would be the vicinity of the DENR building where dense vegetation and elevated land profile form a solid barrier between the beach and the DENR building site. Another issue that must be dealt with by the visitors wishing to stay overnight on the island is the presence of sand flies (niknik) in the area. An overnight option for the visitors is to stay in their own or rented boats docked at the designated mooring areas near the island. In this way, potential impacts to the island and inconvenience to the visitors are greatly lessened.
- *Linkages with the Jump Off Points.* It is recommended that a memorandum of agreement between the PAMB and the LGU's Ecotourism Office be made indicating that the tourism office

will serve as the main information center for any inquiry about ARNP. Booking arrangements can also (but not exclusively) be made with the tourism office. Direct and active coordination must be made between PAMB/PASu and the tourism office. This will greatly unburden the load of PAMB and PASu with regards the tourism coordination and marketing and give them enough focus to effectively manage the site.

## **5.6 Policy Development**

*It is important that appropriate policies be given focus in order to realize the full environmental and socio-economic significance of ecotourism in ARNP. Should there be a lack of significant present policies, consideration must be given in order to provide for new policies designed to help promote, operationalize, and protect ecotourism in the area.*

**Table 29.** Strategic Ecotourism Action Plan for Biodiversity Conservation

| Areas of Concern          | Existing Interventions  | Strategies and Proposed PPAs  | Implementing Agency / Office (Responsible Stakeholders)           | Schedule of Implementation                                  | Estimated Budget  | Fund Source  |
|---------------------------|---|---|---|---|---|--|
| Ecotourism Development    | Irregular orientation<br><br>Installation of wooden rain catcher                          | Proper orientation of Tour Guides<br><br>Installation of Rain Catchers or Solar Desalination Facility                                   | PAO and Tourism Office<br><br>DENR/LGU                            | Quarterly<br><br>2015                                       | P6,000 / quarter<br><br>P1M                               | Tourism Office<br><br>DENR/LGU                               |
| Park Conservation         | Trapping<br>Poisoning<br>Uprooting<br>Pruning<br><br>2012 Capacity Building/ BMS Training | Poison Trapping<br>Population Control (AIS)<br><br>Capacity Building of Personnel<br><br>Establishment of Solid Waste Management System | PAO and Task Force MARLEN<br><br>DENR and LGU<br><br>DENR and LGU | Monthly<br>Quarterly<br><br>Once a year<br><br>Twice a year | P500/month<br>P1,400/month<br><br>P 25,000<br><br>P12,000 | DA<br>DENR/IPAF<br><br>DENR/ LGU/ WWf/MBC FI<br><br>DENR/LGU |
| Institutional Development | 2001 Management Plan and 2014 ecotourism plan   | Updating of management plan<br><br>Lobbying for MOOE Support and  | DENR and LGU<br><br>DENR PAWB                                     | 2014 Present<br>2019<br>3rd quarter of every year           | P 100,000<br>P100,000<br><br>P30,000<br>P30,000           | DENR<br><br><br>DENR and LGU                                 |

**APO REEF NATURAL PARK**

Ecotourism Management Plan \* 2014 - 2019



|  |                         |  |  |          |                               |  |
|--|-------------------------|--|--|----------|-------------------------------|--|
|  | Planting<br>along trail | security of<br>tenure of<br>rangers<br><br>Installation<br>of signages<br>and<br>delineation<br>using natural<br>fence | PAO and<br>Tourism<br>Task Force<br>MARLEN | Annually | P10,000<br>per year<br>P6,000 |  |
|--|-------------------------|--|--|----------|-------------------------------|--|

**Table 30.** Strategic Ecotourism Action Plan for Socio-economic Development

| Areas of Concern          | Existing Interventions  | Strategies and Proposed PPAs   | Implementing Agency / Office (Responsible Stakeholders)     | Schedule of Implementation                                      | Estimated Budget   | Fund Source |
|---------------------------|---|--|---|---|--|-------------|
| Livelihood Development    | BFAR (Payao, Gill Nets, Engines, Hook and Line)<br><br>DOLE (released funds amounting to 200,000) | Conduct Trainings:<br><ul style="list-style-type: none"> <li>• Goal Oriented Planning</li> <li>• Project proposal preparation</li> </ul> Concrete and sustainable livelihood programs                    | LGU / Provincial Government<br><br>LGU, DOLE, DA, PSWD, DTI | 3RD QUARTER OF 2015<br>1ST QUARTER 2016<br><br>3RD QUARTER 2016 | 5,000 / COASTAL BARANGA Y<br>10,000 / COASTAL BARANGA Y<br><br>500,000 / COASTAL BARANGA Y |             |
| Park Conservation         | MBCFI, WWF, UP MSI, LGU   | Installation of marker bouys / mooring bouys   | DENR – ARNP PAO   | 2ND QUARTER 2015  | 500,000.00   |             |
| Institutional Development | Provincial Government (Rope for payaos amounting to 320,000)                                      | Community organizing (focus on coastal areas):<br><ul style="list-style-type: none"> <li>• Community assessment</li> <li>• Coastal Resource Planning</li> <li>• Creation of technical working</li> </ul> | OMA, OPA, MENRO, BFAR                                       | 1ST QUARTER 2015<br><br>3RD QUARTER 2015<br><br>1ST QUARTER     | 10,000 / COASTAL BARANGA Y<br>10,000 / COASTAL BARANGA Y<br><br>5,000.00                   |             |

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|  |  |   |                                  |                  |           |  |
|--|--|---|----------------------------------|------------------|-----------|--|
|  |  | group   |                                  | 2015             |           |  |
|  |  | Conduct Trainings:  |                                  |                  |           |  |
|  |  | • Leadership Training   |                                  | 4TH QUARTER 2015 | 20,000.00 |  |
|  |  | • Values Formation  |                                  | 1ST QUARTER 2016 | 20,000.00 |  |
|  |  | Proper coordination with tourism office, DENR, MENRO, BFAR etc. | DENR<br>PAMB<br>TF MARLEN<br>LGU | 2015 – 2019      |           |  |
|  |  | Strict implementation on laws and policies.                     |                                  | 2015 – 2019      |           |  |
|  |  | Organized Communities must be closely monitored and sustained   |                                  | 2015 – 2019      |           |  |

**Table 31.** Strategic Ecotourism Action Plan for Institutional Development

| Areas of Concern       | Existing Interventions                           | Strategies and Proposed PPAs   | Implementing Agency / Office (Responsible Stakeholders) | Schedule of Implementation | Estimated Budget | Fund Source                    |
|------------------------|--|--|---|----------------------------|------------------|--------------------------------|
| Ecotourism Development | Recruitment of potential tour guide.             | Conduct tour guide and capacity building   | Tourism office<br>Service Providers/PAO-DENR            | Sept- Dec 2014             | 300,000.00       | Tourism office/PAO-DENR        |
|                        | Hotel and resort assessment and evaluation       | SB Ordinance/Resolution requiring new and old hotels/resorts to comply with DOT accreditation and guidelines | Tourism office  | Sept-Dec 2014              | 20,000.00        | Tourism                        |
|                        | Update of Tourism code                           | Strict and implementation of coastguard policies on all boats going to Apo Reef                              | Coastguard  | Jan- Dec every year        |                  |                                |
|                        | Monitoring of passenger list                     |  |   |                            |                  |                                |
| Livelihood Development | Provide assistance for tour guiding, boat rental | Develop ecotourism activities and tour packages that generate livelihood                                     | Private sector  | Jan- Dec every year        | 500,000.00       | PAO-DENR, DOT and LGU Sablayan |
| Park Conservation      | Organize but in active                           | Re-organization of M/BARMC   | OMA/LGU   | Jan-Dec. 2015              | 100,000.00       | OMA-LGU                        |
|                        |  | Request 3  | Coastguard  | Jan-Dec. 2015              |                  |                                |



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|                                      |   |  |                |                       |                |                |
|--------------------------------------|---|--|----------------|-----------------------|----------------|----------------|
|                                      | 2<br>Coastguard<br>personnel                    | additional<br>coastguard<br>personnel thru<br>PAMB Resolution.   |                |                       |                | PAMB-<br>ARNP  |
|                                      | Old CRM<br>plan on<br>going and<br>updating     | Formulate data<br>base on CRM to<br>protect municipal<br>water<br><br>Funding allocation<br>purchase of<br>equipment for<br>patrolling<br><br>Request support<br>for higher<br>authorities on<br>water pollution | OMA &<br>MENRO | Jan-Dec every<br>year | 500,000.<br>00 | OMA &<br>MENRO |
|                                      | Internation<br>al shipping<br>vessel<br>passage |  | PAO-PAMB       | Sept Dec<br>2014      |                |                |
| Institutiona<br>l<br>Developme<br>nt | PAMB<br>Resolution                              | Need to revisit the<br>financial scheme  | PAMB           | Sept- Dec<br>2014     |                |                |
|                                      | PAMB<br>Resolution<br>creating<br>committees    | Constant<br>coordination<br>among agencies<br><br>Wait for<br>rationalization/hir<br>e additional<br>staff/park rangers  | PAMB           | Sept – Dec<br>2014    |                |                |
|                                      |   | Creation of<br>oversight<br>committee who<br>will handle the<br>M&E of ARNP  | PAO/PAMB       | Sept – Dec<br>2014    |                |                |

|  |  |  |                      |                |  |  |
|--|--|--|----------------------|----------------|--|--|
|  |  | Ensure that Apo Reef Tourism plan be integrated in Sablayan Eco-tour plan and CLUP | Tourism office & PAO | Sept- Dec 2014 |  |  |
|--|--|--|----------------------|----------------|--|--|

## 6 Implementing Structure

To help realize the sustainability of ecotourism as a management tool for ARNP, there is a need to develop appropriate operation or ecotourism management of the area.

Given its legal mantle, the PAMB shall continue to develop management plans and programs for ARNP, with the PASU as the implementing body. It must, however be willing to delegate or pinpoint other functions that can best be performed by other stakeholders given their expertise and respective mandates. The table below indicates the roles of several stakeholders for the appropriate operation of ecotourism in the area.

| Stakeholder                  | Role   | Key Result Area  |
|------------------------------|--|--|
| PAMB/ PASU                   | Management and regulation of ARNP<br><br>Development of management programs specifically aimed at optimizing the ecotourism potential of ARNP<br><br>Ensuring active coordination with the LGU and other tourist suppliers as regards visitor access to ARNP | Environmental quality and sustainability maintained or improved.<br><br>Appropriate development of trails and tourist facilities in the Apo Island<br><br>Identification, opening, and regulation of dive and snorkeling sites<br>Training of local guides as ancillary park rangers |
| LGU and Local Tourism Office | Ensure that ARNP is marketed as a quality nature destination.<br>Market other ecotourism activities<br>Act as a major information center for people wishing to visit ARNP<br>Develop support activities for visitors   | Maintained or increased number of scuba divers to the area.<br>Increased number of people not engaged in scuba diving but other activities like sightseeing and birdwatching.  |

## **7 Monitoring and Evaluation**

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Creation of a **Monitoring and Evaluation Committee** by the **PAMB**.

### **7.1 Biodiversity Monitoring**

The biophysical monitoring will be undertaken once a year by 2 teams composed of LGU, DENR and some members of the TF MARLEN. The teams: (1) terrestrial biodiversity monitoring team trained in terrestrial wildlife identification and (2) marine biodiversity team composed of licensed SCUBA divers trained on coral lifeform and reef fish species identification. The results of the monitoring shall be reported to the PAMB, Local Chief Executive, municipal council, MPDO, MAO and community through the midyear meeting.

### **7.2 Ecotourism and Institutional Performance Monitoring**

To gather feedback from the key stakeholders, a performance monitoring will be undertaken. Results will be discussed on the year-end PAMB meeting.

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## 9 Appendices

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### 9.1 Photodocumentation

#### Photographs during Stakeholder Workshop for ARNP Ecotourism Management Plan at Sablayan



## 9.2 Presidential Proclamation No. 868 series of 1996.

**MALACAÑANG  
MANILA**

**BY THE PRESIDENT OF THE PHILIPPINES**

**PROCLAMATION NO. 868**

**AMENDING PRESIDENTIAL PROCLAMATION NO. 1801, SERIES OF 1980, BY DECLARING CERTAIN PARCELS OF LAND OF PUBLIC DOMAIN AND REEF AREAS COVERING APO REEF SITUATED IN THE MUNICIPALITY OF SABLAYAN, PROVINCE OF OCCIDENTAL MINDORO AS PROTECTED AREA UNDER THE CATEGORY OF NATURAL PARK**

Upon recommendation of the Secretary of Environment and Natural Resources, and pursuant to the powers vested in me by law, I, FIDEL V. RAMOS, President of the Philippines, do hereby set aside and declare certain parcels of land of the public domain and reef areas covering Apo Reef situated in the municipality of Sablayan in the province of Occidental Mindoro, as Protected Area under the category of Natural Park and its surrounding waters as Buffer Zone, subject to ground verification.

The technical description provided hereunder is based on a table survey and therefore subject to ground survey and verification to be conducted by the DENR, for which additional funds are to be requested for the purpose from the Department of Budget and Management.

**The Apo Reef Natural Park**

| Control Points | CM (°) | LATITUDE (°, ') | LONGITUDE (°, ') | NORTHINGS (METRES) | EASTINGS (METRES) |
|----------------|--------|-----------------|------------------|--------------------|-------------------|
| 1              | 123    | 12-44-47        | 120-27-22        | 1410356.242        | 223773.809        |
| 2              | 123    | 12-41-11        | 120-33-44        | 1403605.487        | 235240.033        |
| 3              | 123    | 12-35-47        | 120-29-57        | 1393709.839        | 228292.637        |
| 4              | 123    | 12-39-18        | 120-23-46        | 1400336.616        | 217153.893        |

containing an approximate area of FIFTEEN THOUSAND SEVEN HUNDRED NINETY-TWO (15,792) hectares.

**The Buffer Zone**

| CONTROL POINTS | CM (°) | LATITUDE (°, ') | LONGITUDE (°, ') | NORTHINGS (METRES) | EASTINGS (METRES) |
|----------------|--------|-----------------|------------------|--------------------|-------------------|
| 1              | 123    | 12-46-14        | 120-27-00        | 1413043.227        | 223151.990        |
| 2              | 123    | 12-41-32        | 120-35-19        | 1404229.656        | 238121.888        |
| 3              | 123    | 12-34-20        | 120-30-16        | 1391042.803        | 228863.890        |
| 4              | 123    | 12-38-57        | 120-22-12        | 1399689.788        | 214329.441        |

containing an approximate area of ELEVEN THOUSAND SIX HUNDRED SEVENTY-SEVEN (11,677) hectares.

The said area shall be known as the "APO REEF NATURAL PARK" and its surrounding waters, as the Buffer Zone. These areas shall be under the administrative jurisdiction of the Department of Environment and Natural Resources (DENR) and shall be administered by the Protected Area Management Board (PAMB) as constituted pursuant to R.A. No. 7568 otherwise known as the NIPAS Act of 1992 and its implementing rules and regulations.

The purpose for the establishment of the Natural Park is to protect and conserve the ecological, biological, scientific and educational features of the area. The peripheral Buffer Zone is established to serve as an extra layer of protection for the Park.

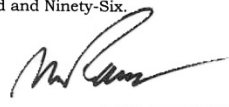

Insofar as the rules and regulations over national parks are consistent with the provisions of the NIPAS Act, they shall continue to apply until Congress shall otherwise declare. All other applicable laws shall remain in full force and effect.

The DENR shall prioritize the implementation of the General Management Planning Strategy (GMPS), boundary relocation and the appointment of the Protected Area (PA) Staff in the area covered.


The Protected Area Management Board (PAMB) appointed by the Secretary shall perform such powers and duties as specified in the NIPAS Act and as delegated to it by the Secretary under such Act. All decisions made pursuant to these rules and regulations shall have the force and effect of acts of a final PAMB under the NIPAS Act.

**IN WITNESS WHEREOF**, I have hereunto set my hand and caused the seal of the Republic of the Philippines to be affixed.

**DONE** in the City of Manila, this 6<sup>th</sup> day of September in the year of Our Lord, Nineteen Hundred and Ninety-Six.

  
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**RUBEN D. TORRES**  
Executive Secretary



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Ecotourism Management Plan \* 2014 - 2019



### 9.3 Participants during the Participatory Workshop for the ARNP Ecotourism Management Plan

| <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>Republic of the Philippines<br/>Department of Environment and Natural Resources<br/>Region IV-B (MIMAROPA)<br/><b>APO REEF NATURAL PARK</b><br/>So. Bahud, Brgy. Sto. Nifio, Sablayan, Occidental Mindoro<br/>E-mail: <a href="mailto:aporeef_denr@yahoo.com">aporeef_denr@yahoo.com</a></p> </div> </div> |                              |                |           |
|---|------------------------------|----------------|-----------|
| <div style="text-align: center;"> <p><b>ECOTOURISM MANAGEMENT PLANNING WORKSHOP</b><br/>Siburan Hall, Municipal Building, Sablayan Occidental Mindoro<br/>August 20, 2014; 8:00 A.M. – 5:00 P.M.</p> </div>   |                              |                |           |
| Full Name   | Group / Organization         | Contact Number | Signature |
| 1. PE M. BAGUNION   | DENR - PAD                   | 0927 987 9596  |           |
| 2. MARIO MACAYON  | WWF -                        | 09263172532    |           |
| 3. ALVIN SANCIA   | DENR                         | 09092367417    |           |
| 4. MAJ JOHMY V GASCON   | 761B, PA                     | 09166888046    |           |
| 5. CPT Fernando B. Dacan  | 761B, PA                     | 09946901342    |           |
| 6. POL WIRA D CASTILLA  | DNP                          |                |           |
| 7. PIMP JOSEPA MACAPAES   | PDP                          | 09062171738    |           |
| 8. JANE M. CULPINE  | Tourism                      | 09984259898    |           |
| 9. Norma P. Pajamar   | SCUF/PGO/Choir               | 09269199093    |           |
| 10. PAULINO L. FORANERO   | CHIA/OLIVE MASTER            | 09209486354    |           |
| 11. FERDINAND B. LAGANO   | MENDO STAFF/DM               | 09075086364    |           |
| 12. Sylvia T. Salasido  | Tourism office               | 09069194319    |           |
| 13. DA Gerff Tabardanza   | MBCFI                        | 0949 890 6922  |           |
| 14. KYLE CIELO  | MBCFI                        | 0909 999 7299  |           |
| 15. ANGEL FRANCISCO   | MBCFI                        | 09175662305    |           |
| 16. Euphonia D. Anand   | PGO - Sub office Sabayan     | 09217628992    |           |
| 17. Anub Ritchelle D. Hicanor   | Actmun. Aide VI - ARNP - PAD |                |           |
| 18. Muriel M. Raquining   | MPDO                         |                |           |

| <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>Republic of the Philippines<br/>Department of Environment and Natural Resources<br/>Region IV-B (MIMAROPA)<br/><b>APO REEF NATURAL PARK</b><br/>So. Bahud, Brgy. Sto. Nifio, Sablayan, Occidental Mindoro<br/>E-mail: <a href="mailto:aporeef_denr@yahoo.com">aporeef_denr@yahoo.com</a></p> </div> </div> |                       |  |  |
|---|-----------------------|--|--|
| <div style="text-align: center;"> <p><b>ECOTOURISM MANAGEMENT PLANNING WORKSHOP</b><br/>Siburan Hall, Municipal Building, Sablayan Occidental Mindoro<br/>August 20, 2014; 8:00 A.M. – 5:00 P.M.</p> </div>   |                       |  |  |
| 19. Katherine Buerasfor   | MENDO                 |  |  |
| 20. JACUUS BORABO   | 761B                  |  |  |
| 21. CLAYTON KMOCH   | 761B                  |  |  |
| 22. LIGANOR MA-LOUROPS  | 12W JOLE CANALIG RES. |  |  |
| 23. Pich N Caboteja   | 761B                  |  |  |
| 24. Beaunila Gungah   | MORERO                |  |  |
| 25. Odoloh Danguos  | ARNP - PAD            |  |  |
| 26. Grace Bulmante  | MBCFI                 |  |  |
| 27. ROBERT R. DULAC   | DENR                  |  |  |
| 28. AD BELLER   | QZ                    |  |  |
| 29. Rodolfo M. de Lemos   | 7711                  |  |  |
| 30. ROCHELLE H. ORDENEZ   | MENDO                 |  |  |
| 31.   |                       |  |  |
| 32.   |                       |  |  |

## **9.4 Apo Reef Natural Park Ecotourism Declaration**



**MBCFI**  
Mindoro Biodiversity  
Conservation  
Foundation, Inc.



### **APO REEF NATURAL PARK ECOTOURISM DECLARATION**

We, the members of Apo Reef Natural Park Protected Area Management Board, local government units, government line agencies, peoples' organizations and the private sector declare a common vision of sustainable management and promotion of ecotourism in the Apo Reef Natural Park.

We acknowledge tourism as a significant contributor to local and national development, having social, economic and environmental implications to various sectors. In the context of sustainable development, efforts to promote and develop the tourism industry must be in-line with the objectives of inclusive growth, poverty eradication and job creation, while preserving the environment.

We recognize the growing interest in travelling to natural areas, as reflected in the increasing number of global and local tourists visiting the Philippines.

We understand that there is a need to manage natural resources efficiently for equitable allocation and sustainable use, crosscutting among sectors, in order to maintain the present gains being experienced by the tourism sector.

We acknowledge that ecotourism can contribute in making overall tourism sustainable, by providing valuable economic opportunities for local communities, who are actively contributing to the conservation of natural resources and cultural integrity of their respective areas, and increasing awareness of travellers towards conservation of natural and cultural heritage.

We are aware that funding for the conservation and management of biodiverse and culturally rich protected areas is needed and ecotourism can provide potential source of revenue for these areas.

We also recognize the need to properly plan and develop ecotourism products in order to prevent impending threats from deterioration of ARNP's natural landscapes, wildlife and water resources.

We affirm that managing resources entails strong collaboration in terms of sharing of resources among stakeholders and we pledge our joint efforts in this undertaking.

Finally, we pledge our commitment to promote and support efforts in developing and managing ecotourism in ARNP and making it a premier tourist destination in the Philippines.

Done this 20<sup>th</sup> day of August 2014, Sablayan, Occidental Mindoro.