

**Environmental Analysis  
USAID/Philippines Strategy for 2005-2009**

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# **ASSESSMENT OF CONSERVATION INITIATIVES OF TROPICAL FORESTS AND BIOLOGICAL DIVERSITY IN THE PHILIPPINES**

## **EXECUTIVE SUMMARY**

### **Introduction and Background**

The Philippines once possessed some of the richest biological diversity in the world. However, the country has undergone a catastrophic degradation of its natural resource base, resulting in one of the lowest rates of per capita forest cover in the tropics and the collapse of much of the country's mangrove and coral reef ecosystems. Indeed, the mega diversity of the Philippine tropical forests and marine and coastal resources is threatened and highly at risk. The main direct cause of this degradation has been over-exploitation and destruction of forest and coastal resources. Contributing factors include greed, rapid population growth, conversion of land to other uses, urbanization, pollution, and sedimentation from extensive land-based erosion. Although some progress has been made, extensive donor and Government of the Republic of the Philippines' (GRP) efforts to reverse these trends have not succeeded. Long-term improvements in resource management and protection of biodiversity will require successful parallel efforts by GRP and donors to address such critical development challenges as: (a) slowing the country's population growth rate; (b) creating viable economic alternatives for poor families that currently depend upon the destructive exploitation of forest and coastal resources to survive; (c) developing sustained sources of financing for investment in improved environmental management; and (d) strengthening the institutional capability to enforce environmental laws.

### **Legislative and Institutional Framework Affecting Biological Resources**

Over the past decade, the GRP has tried to reverse these trends, developing a comprehensive legal and institutional framework for sustainable natural resource management that promotes decentralized environmental management by local governments, indigenous groups and resource dependent communities. This framework of laws and executive orders include: National Integrated Protected Areas (NIPAS) Act, Executive Order 263 for Community-Based Forest Management (CBFM), Indigenous Peoples Rights Act (IPRA), Agriculture and Fisheries Modernization Act (AFMA), Clean Water Act, Fisheries Code, and Local Government Code (LGC) of 1991. This framework of laws is complemented by various Department Administrative Orders (DAOs) and specific implementing rules and regulations (IRRs) that clarify (or sometimes complicate) national policies and establish detailed implementing procedures. One key element of this framework is a variety of new tenure instruments that grant property rights of various kinds over public forest lands to local and indigenous communities. Another important feature is the establishment of a national system of protected areas.

Many donor organizations have supported interventions to improve natural resource management by strengthening the capacities of the Department of Environment and Natural Resources (DENR), Local Government Units (LGUs), non-governmental organizations (NGOs) and local communities, and supporting innovative partnerships among them. Foremost of these efforts are: Assistance of the USAID and Ford Foundation in institutionalizing participatory forest and uplands management at DENR (1981-1990), Asian Development Bank's and Japan Bank for International Cooperation's support in contract reforestation with various sectors (LGUs, communities, NGOs, private sector) from 1989 – 2003, USAID's and the German Technical Cooperation's (GTZ's) support for the protection of old growth forests, policies towards decentralization, devolution, and deregulation, and focus on strengthening community based forest and coastal zone management from 1991 – 1999, World Bank's and the Global Environment Facility's (WB/GEF) support on engaging LGUs in regional resource management, forest protection and enforcement, and protected area management (1995-2002; 1999-2006), the European Union's (EU) support in protected area management of selected biodiversity areas, and most recently, USAID efforts to promote improved environmental governance by local governments (especially in conflict-affected areas of Mindanao) and DENR (2001 – 2004).

### **Current Status of Tropical Forests and Biodiversity**

**Climate and Topography.** The Philippines is an archipelago composed of 7,107 islands, characterized by relatively high temperature, high humidity and abundant rainfall and is generally known as a tropical and maritime climate. The high moisture content of the atmosphere is a dominant climatic characteristic, with the two distinguishable seasons consisting of the rainy season (June to November) and the dry season (from December to May). The country has been significantly affected by the El Niño/Southern Oscillation (ENSO) phenomenon, which has contributed to drought episodes and violent weather patterns over the last few years, as well as the first mass-bleaching of coral reefs observed in the Philippines in 1998. The Philippines is characterized by narrow coastal plains which rise to moderately steep to very steep mountains, typical of islands formed by volcanic processes. Slightly less than half of the total landmass is considered lowland (48%). The Philippines has an impressive record of species diversity and endemism, with the flora of the Philippines forests including at least 13,500 species and representing 5% of the world's flora. The diversity of natural forest formations in the Philippines may be due to the strong influence of physical and climatic factors, e.g. soil type, rainfall, and altitude). There are at least six types of forests in the Philippines. Mangrove forests are found along the coast and tidal flats, beach forests occur in sandy coastal areas, molave forests are usually found in dry areas of rocky limestone substrate, dipterocarp forests are found in the lowland and uplands with relatively high level of precipitation, and mossy and pine forests are found at high elevations

**Land Classification, Tropical Forest Status and Management.** The Philippines has a total land area of 30 million hectares, of which 15.9 million hectares are classified as forestlands in the public domain. However, much of the “forestland” lacks forest cover. About 4 millions hectares of “forestland” are under agricultural production. The

Philippines' remaining old growth forests are declining as a result of continued logging activities (mostly illegal). Given sluggish economic growth, increasing population, land conversion, and complacency in addressing property rights, the remaining old growth forests will likely be completely decimated and the land planted to fast growing tree and agroforestry species, plantations of high value perennial crops such as rubber, coconut, coffee, durian and other fruit trees. The loss of natural forests will further threaten biodiversity in the remaining primary forests because of the reduce size and connection to other remaining natural forest habitats.

A variety of tenure and use rights agreements cover the remaining natural forests in the Philippines, including (a) protected areas and reserves, (b) allocations to migrant communities and indigenous peoples (Community-Based Forest Management Agreement and Certificate of Ancestral Domain Claim), and (c) Industrial Forest Management Agreements (IFMAs) and/or Timber License Agreements (TLAs). Each holder of a tenure or use rights instrument becomes an "accountability center" and is expected to plan, get funding support, and carry out activities that will protect and manage remaining forests or expand forest cover. Each holder is also expected to enforce property rights within their respective areas to achieve defined objectives.

**Cultivated Land and Land Tenure.** Areas not under any type of forest cover, despite being classified as forestlands, may be assumed to be under different forms of land use (upland farms, brush lands, grasslands, settlements, riparian zones, etc.). However, there is a major information gap at the national level for policy making, planning and monitoring. Given that the total area of forestlands is about 15.9 million hectares and the total forest cover area only 6.16 million hectares, the area of non-forest land uses appears to be almost 10 million hectares. More than 20 million Filipinos (including 6.3 million indigenous peoples) live primarily in areas that are categorized as protected areas and watershed reserves. This number is increasing because of population growth, widespread poverty in the lowlands that encourages upland migration, and declining employment opportunities in urban areas. DENR's community forestry program focused on providing upland communities with tenure security and use rights to forests as incentives to involve these communities in conserving the remaining forests. DENR's community forestry program (with extensive USAID support) achieved considerable success with communities actively protected forests from outside loggers and conversion of forests to agriculture. In 1998 the new leadership of DENR reversed their support for community forestry and illegal logging is now rampant throughout the country.

**Protected Areas, Watershed Reserves, Wilderness Areas, Game Refuge and Bird Sanctuaries.** There are 430 protected areas in the Philippines, part of the Philippines Protected Area Systems (PAS). The total area of reserves or set asides, such as watershed reserves, protected areas (PAs), wilderness areas, and game refuge and bird sanctuaries, is about 4.16 million hectares. At least 18% of these protected areas received

funding from the WB/GEF and the EU. The majority of protected areas are covered by DENR-issued documentation (78%), with at least a fifth of the total number proclaimed by the President. The legal status of the protected area has implications in terms of

funding support from the national government, local government, and private organizations. For example, a PA designated by the President and approved by Congress has its own line item in DENR's budget. Under DENR's leadership, multi-stakeholder Protected Area Management Boards (PAMBs) encourage a more decentralized and participatory management of PAs.

**Biodiversity Status and Management.** The management of biodiversity in the Philippines is pursued through the PAS and through regulations and guidelines outside the PAS. The DENR, in collaboration with the Department of Agriculture's Bureau of Fisheries and Aquatic Resources (DA/BFAR), provides overall technical guidance, direction, and management of protected areas considered as reserves or set asides. The passage of the Local Government Code of 1991 devolved management authority and implementation to LGUs of the 15-kilometer seaward of coastal waters. The DENR through its regional offices and staff bureaus and the National Commission on Indigenous Peoples (NCIP) have the responsibility to ensure biodiversity conservation in areas that are part of the PAS or in areas that are outside the system of protected areas in the Philippines. It also has responsibility for establishing biodiversity baselines, monitoring key biodiversity indicators over time, and reporting to local, regional, national, and international stakeholders under different international agreements.

**Assessment of Threats to Tropical Forests and Biodiversity.** The major threats to biodiversity and sustainability of resources in the Philippines include habitat destruction, over-exploitation, chemical (environmental) pollution, biological pollution (species level) and weak institutional and legal capacities. Habitat destruction often results from natural calamities and destructive and unsustainable practices. In many ways, the indecisiveness, unclear direction, and the limited institutional capacity of government and non-government institutions resulted in no management of many protected areas. This situation led to opportunistic and mercenary behavior among local communities and stakeholders. Thus, land conversion for the production of high value cash crops has steadily increased in the Mt. Apo, Mt. Kitanglad and Mt. Kanlaon national parks. Small scale illegal cutting, mining and bioprospecting also occur in several PAs.

Untreated domestic wastewater, improper disposal of solid waste, industrial effluents and agricultural run-offs are the major sources of water pollution in the country that contribute to the degradation of ground water, marine and coastal resources. While there is no information on the extent of water pollution at the national level, the World Bank calculates that domestic wastewater contributes 82% of total organic pollution.

## **Major Issues and Key Recommendations for Improving Biological Diversity and Forest Conservation in the Philippines**

Conservation experts in the Philippines have identified a large number of priority conservation sites. The challenge is how to effectively manage the identified 430 sites, 16 terrestrial biogeographic regions and 6 marine transition regions.

### **Key Technical Issues and Recommendations**

There is limited capacity to fully protect and manage existing protected areas. Thus, there is a need to re-assess the prioritized protected areas as a result of the Philippines Biodiversity Conservation Priorities Project (PBCPP) in 2001. DENR and LGUs should also take measures to protect the 96 priority areas not currently under any conservation management system. Meanwhile, there is a need for accepted guidelines to de-establish existing and proposed PAs that do not meet biodiversity conservation criteria.

Biodiversity conservation information of forests is not clearly disseminated and linked with their role in providing other environmental services such as water supply, carbon sequestration and maintaining cultural integrity. Conservation efforts should explore the development of water user fees to support the protection of forests with high biodiversity values. Efforts should also expand the many promising user fee or polluter fee systems in marine sanctuaries and other coastal areas.

The extensive use of exotic species for reforestation and rehabilitation in PAs might have long term negative impacts on the nature and extent of biodiversity resources. Forest plantation development efforts in and adjacent to PAs should consider planting indigenous species and assisting natural regeneration of secondary forests. DENR should determine to what extent communities can sustainably harvesting timber species from natural forests in buffer and multiple use zones. Therefore, PAMBs should establish a transparent and accountable process for managing natural forests surrounding protected areas.

Absence of commonly accepted and consistently implemented performance indicators in assessing improvements or decline of biodiversity resources in PAs remains a challenge. Key performance indicators for estimating or determining baseline and periodic improvements in biodiversity conservation efforts should be developed and implemented in each PA, including changes in forest cover at a minimum.

There have been mixed results for livelihood and enterprise interventions in PAs with regard to lessening threats to biodiversity conservation. While individual and community livelihood activities can help improve the lives of communities living in and adjacent to PAs, efforts should focus on encouraging communities to develop land outside of the PAs.

Promote low-cost affordable wastewater treatment systems in critical coastal areas to reduce coastal and marine resources degradation. The DENR should work with LGUs, private sector, local communities and other stakeholders to improve water quality management in biologically important coastal areas such as marine corridors identified in the national biodiversity conservation priority setting analysis.

### **Key Institutional Issues and Recommendations**

Broader and more equal stakeholder participation (from community and private sector, academic/research organizations) in PAMBs remains limited and PAMB is still perceived as a DENR extension in the protection and management of the PAs. Private sector groups should also be represented in PAMBs, especially, when there are clear indications that they are directly benefiting from environmental services provided by the PA. DENR should provide a mechanism that defines and facilitates functional coordination among DENR and other government entities and NGOs for protected areas management. More transparency and accountability is needed in terms of monitoring PAMB's performance in managing PAs, including measuring biophysical indicators and public presentations of financial expenditures.

Despite the more than 20 foreign-assisted projects supporting PA and biodiversity conservation, a national strategy for public information dissemination has not been fully integrated, implemented, and funded. There is a continuing need for focused, strategic, and constituent-oriented public awareness efforts to build public support and political will for conserving biological diversity.

### **Financing Issues and Recommendations**

There is inadequate funding to carry out core activities to achieve effective protected area management. Support is needed to fund budgets for personnel (core technical, support staff), logistics (mobility, transport, communication, etc.), construct or maintain needed infrastructures (towers, monitoring stations, etc.), information dissemination, regular meetings and feedbacks, data gathering and analysis of biodiversity indicators, delineation of boundaries and addressing property rights claims. Given the government's budgetary constraint, there is an urgent need to broaden sources of funds for PA management and to help shift conservation thinking from the three traditional P's to "preserve, prohibit and punish" to a more modern and encouraging approach to "protect, participate and profit." Efforts should focus on supporting the management of the new endowment established under the Tropical Forest Conservation Act for the Philippines in order to demonstrate that funds can be used well and provide a basis for increasing this endowment.

The establishment and institutionalization of Integrated Protected Area Funds (IPAF) in all PAs needs to be accelerated. There are now 123 PA sites with established IPAFs. Identifying potential sources of environmental or users' fees could increase these funds.



There is no assurance of funding, even for newly enacted specific laws for certain protected areas. Even for the six PAs that are now covered by Republic Acts, there is no assurance of funding for the implementation of their Protected Area Management Plans. More attention is needed to expand endowments to fund protected area management.

### **Key Policy Issues and Recommendations**

There are overlaps and conflicts of institutional mandates between the Local Government Code, NCIP, Mining Law, and NIPAS Act with respect to resource-use permitting, environmental requirements, and collection of fees, land use development and enforcement. Resolution of this conflict needs to consider community property rights in buffer and multiple use zones, natural resource sharing arrangements and social infrastructure support from LGUs.

There is also a brewing issue of conflict between mining and biodiversity conservation objectives. This is going to intensify as the government presses to identify new and immediate sources of revenues to address a worsening fiscal deficit (ESSC, 2003; Malayang, 2003). National and local governments, NGOs, private sector and other stakeholders need to agree on acceptable trade-offs and environmental standards in order to generate jobs and income while conserving biological diversity. The NCIP's procedures for Free and Prior Information Consent (FPIC), DENR resource use rights issuance and permitting, issuance of Environmental Compliance Certificates (ECCs) within PAs, and bioprospecting requirements need to have simple, clearly defined guidelines to minimize illegal entries, harvesting, bioprospecting, and collusion arrangements.

There is also a need to harmonize national and local policies for penalties, incentives, rewards, disincentives for communities in the uplands, fisher folks, private investors, and DENR PASU staff. For instance, some LGUs would pass ordinances on penalties for illegal fishing in municipal waters that are much lesser than what the Fisheries Code requires because of collusion, patronage culture, and corruption at the local level.

There is a need to consider increasing budgetary support through the internal revenue allotment for LGUs whose area covers large portions of a national protected area as an incentive for the LGUs to actively participate in protected area management. There could be other forms of incentives for LGUs to actively participate in protected area management.

### **USAID's Current Actions**

The USAID/Philippines supports a broad range of activities to conserve biological diversity. Activities include on-the-ground efforts to strengthen the ability of national and local organizations to protect and use wisely forests, water and coastal resources. Tools for effective law enforcement have been introduced to reduce illegal and destructive practices. Several projects, e.g., Coastal Resources and Fisheries Conservation, Environmental Governance, and the Fisheries Improved for Sustainable

Harvest (FISH) projects, include efforts to reduce the flow of garbage that pollutes coastal and marine resources. The establishment of a Tropical Forest Conservation Foundation (TFCF) paved the way for new funding to arrest the destruction of the country's remaining forests. The FISH Project incorporates "planning for healthy families" as part of the overall approach to balance commercial and municipal fishing pressure with sustainable harvesting rates of fish stocks. The Mission also supports mapping of population levels nationwide to help identify potential pressure on biological diversity.

The Mission consistently applies the Agency's Initial Environmental Examination (IEE) procedures. Clearances by the Mission Environment Officer are required on project activities that may have an impact on biodiversity and natural resources. Economic activities such as USAID-funded road building projects, post harvest facilities, livelihood and enterprise activities are thoroughly reviewed prior to implementation.

### **USAID's Planned Actions**

USAID plans to continue and expand efforts to conserve tropical forests and biological diversity by strengthening the capability of local governments and communities to manage forests and biological diversity, improve policies and build the political will to carry out conservation efforts. USAID activities will also strengthen the enforcement of environmental laws, develop innovative user fee systems to finance conservation efforts and support efforts to mitigate conflicts over natural resource use. More specifically, under the new strategy USAID will help: 1) strengthen the capability of local and national institutions to manage natural resources; 2) improve national and local policies for more sustainable use of natural resources; 3) build political will and advocating for more responsible management of resources; 4) integrate population management, health and sanitation in key environmental activities; 5) mobilize grassroots and multi-stakeholder support for biodiversity conservation; 6) enhance capacity of local and national bodies to enforce environmental laws; 7) promote co-management arrangements to sustainably manage and protect resources, including ecosystem-based efforts to protect and expand corridors; 8) encourage local government and communities to invest in waste water treatment facilities; and 9) advocate for good environmental governance by national and local government agencies concerned with the management of forests, water and coastal resources.

The strategy envisions funding the EcoGovernance<sup>2</sup> Project (\$25 million over seven years), the Environmental Justice Project (\$450,000 over three years), Fisheries Improved for Sustainable Harvest Project (\$14 million over seven years), Transforming the Marine Aquarium Trade Project (\$800,000 over three years), the Sustainable Coastal Tourism in Asia (SCOTIA) Project (\$1.4 million over three years) as well as other conservation efforts by local and international conservation organizations, including projects funded by the EGAT Bureau's Biodiversity Team, e.g., Enterprise Works Worldwide community forestry activities.

These efforts are aimed at addressing the technical issues and recommendations identified above to conserve tropical forests and biological diversity.

# **ASSESSMENT OF CONSERVATION INITIATIVES OF TROPICAL FORESTS AND BIOLOGICAL DIVERSITY IN THE PHILIPPINES**

## **1.0 Introduction And Background**

The Philippines once possessed some of the richest biological diversity in the world. However the country has undergone a catastrophic degradation of its natural resource base, resulting in one of the lowest rates of per capita forest cover in the tropics (about 0.085 ha per capita), and the collapse of much of the country's mangrove and coral reef ecosystems. The main direct cause of this degradation has been over-exploitation and destruction of forest and coastal resources fueled by greed, rapid population growth, the conversion of land to other uses, urbanization, pollution, and sedimentation from extensive land-based erosion.

In spite of almost twenty years of donor and government efforts, the overall condition of country's natural resources continues to deteriorate under intense pressures from illegal loggers and slash and burn farmers, over fishing and destructive fishing practices, uncontrolled dumping of solid waste, and almost no investment in the management and disposal of sewage. The country loses an estimated 100,000-130,000 hectares of forest land each year, less than 5% of the country's reefs remain in excellent condition. Gross environmental mismanagement has accelerated the loss of biodiversity in the Philippines, and puts at the risk the country's long term economic and physical well being. Upland degradation and pollution costs the country an estimated \$1.3 billion per year in added health costs, lost tourism, and reduced coastal fisheries.

Over the past decade, the Government of the Philippines has tried to reverse these trends, developing a comprehensive legal and institutional framework for sustainable natural resource management that promotes decentralized environmental management by local governments, indigenous groups and resource dependent communities. This framework of laws and executive orders include:

1. National Integrated Protected Areas Act
2. Executive Order 263 that provides the legal basis for community-based forest management.
3. Indigenous Peoples Rights Act
4. Agriculture and Fisheries modernization Act
5. Clean Water Act
6. Fisheries Code
7. Local Government Code of 1991

This framework of laws is complemented by various Department Administrative Orders (DAOs) and specific implementing rules and regulations (IRRs) that clarify (or sometimes even complicate) national policies and establish detailed implementing procedures. One key element of this framework is a variety of new tenure instruments that grant property rights of various kinds over public forest lands to local and indigenous

communities. Another important feature is the establishment of a national system of protected areas.

Many donor organizations have supported interventions to improve natural resource management by strengthening the capacities of the Department of Environment and Natural Resources (DENR), Local Government Units (LGUs), non-governmental organizations (NGOs) and local communities, and supporting innovative partnerships among them. Foremost of these efforts are: Assistance of the USAID and Ford Foundation in institutionalizing participatory forest and uplands management at DENR (1981-1990), ADB's and JBIC's support in contract reforestation with various sectors (LGUs, communities, NGOs, private sector) from 1989 – 2003, USAID's and the GTZ's support for the protection of old growth forests, policies towards decentralization, devolution, and deregulation, and focus on strengthening community based forest and coastal zone management from 1991 – 1999, World Bank's and the Global Environment Facility's (GEF) support on engaging LGUs in regional resource management, forest protection and enforcement, and protected area management (1995-2002; 1999-2006), the European Union's (EU) support in protected area management of selected biodiversity areas, and most recently, USAID efforts to integrate sustainable ecosystem management 2001–2004.

Despite these efforts, the overall state of the environment in the Philippines today is worse than in 1990. The megadiversity of the Philippine tropical forests and marine and coastal resources is threatened and highly at risk. This situation reflects weak to non-existent enforcement and implementation of existing laws; continuing rapid population growth rate (2.3 percent) and high levels of extreme poverty; conflicting and unclear institutional mandates between central government agencies and local government units (LGUs); inconsistent and inadequate sustained financing at the national and LGU level for NRM programs; delays and other problems in issuing and supporting the new tenure instruments for public forest lands, and the lack of an equivalent system of tenure instruments for coastal waters and their resources; administrative blockages; and a lack of capacity, accountability and transparency in both public and private institutions responsible for delivering NRM services.

The long-term success of improvements in resource management and protection of biodiversity will be contingent upon successful parallel efforts by the GOP and donors to address other critical development challenges like (a) Slowing the country's population growth rate; (b) Creating viable economic alternatives for poor families that currently depend upon the destructive exploitation of forest and coastal resources to survive; and (c) Developing sustained sources of financing for investment in improved environmental management.

The sustainability of biodiversity resources is a function of a country's socio-economic and political characteristics. Resource use is determined by the number of people dependent on these resources and the kind of activities in which the population is engaged in. Resource management, on the other hand, is indicated by the governance priorities of the country's leadership. Asian Development Bank (2001) enumerates

driving forces resulting in poor environmental quality and extensive environmental degradation in the Asia and Pacific Region to be as follows: 1)growing population which demands higher energy, materials and ecosystem services; 2) extensive urbanization and industrialization; 3) income growth, unequal distribution of wealth and widespread poverty; 4)use of technologies based on inefficient energy and material use; 5) Lack of civil society and private sector participation, and governance venues which exclude majority of stakeholders; and 6) weak institutions and inappropriate policies which contribute to inefficiencies and incapacity to account externalities of economic activities. Thus, analysis of these two factors is a useful tool in assessing the present status of the country's resources and formulating future direction towards sustainable utilization. Annex A provides more details on the macro economic setting of the Philippines with respect to biodiversity conservation and tropical forestry.

## **2.0 Current Status Of Tropical Forests And Biodiversity**

### **2.1 Climate, Topography, and Types of Tropical Forests**

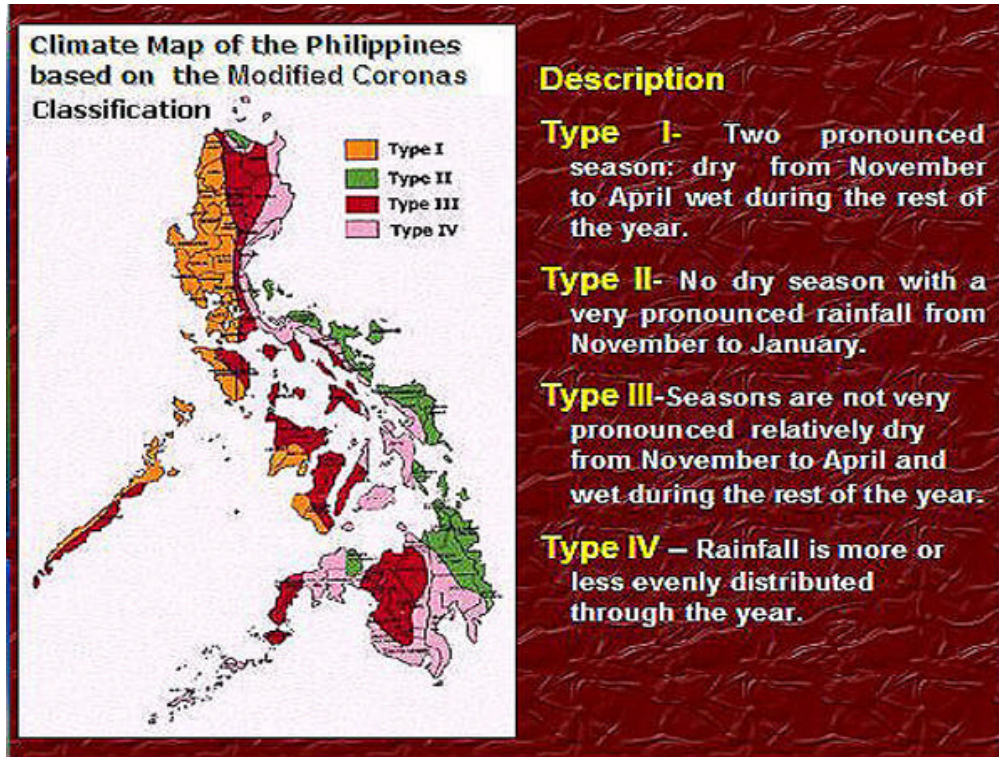
#### Climate and Topography

The Philippines is an archipelago, composed of 7,107 islands, located slightly north of the equator, between latitude 5 °N and 21°N and between longitude 116 °E and 127 °E. Its climate is characterized by relatively high temperature, high humidity and abundant rainfall and is generally known as tropical and maritime climate. The mean annual temperature of all the country's weather stations (excluding Baguio) is 26.6°C. In the cooler months, the lowest mean temperature is 25.5°. Variation in temperature due to latitudinal position of the different islands is insignificant. However, temperature variation due to altitudinal differences shows greater disparity. Baguio City located 1500 meters above sea level has a mean annual temperature of 18.3°.

High humidity or high moisture content of the atmosphere is an attribute of the Philippine climate, owing to its archipelagic configuration, surrounding bodies of water and the high temperature. The average monthly relative humidity varies between 71 percent in March and 85 percent in September.

“Rainfall is the most important climatic element in the Philippines.” (PAGASA, 2003). Amount of rainfall varies throughout the archipelago and through the two main seasons. The mean annual rainfall varies from 965 to 4064 millimeters. The rainfall experienced in the different regions of the country is dependent on the direction of moisture-bearing winds and the location of the mountain systems.

In Koeppen's climate classification, which uses rainfall and temperature as basis for classification, the Philippines have two major seasons that can be distinguished, the rainy season, occurring from June to November; and the dry season, from December to May. Philippine climatologists also use the Corona classification which further distinguishes four climate based on the rainfall distribution shown in the map below.



Source: <http://www.pagasa.dost.gov.ph/cab/cab.htm>

### Violent Weather Patterns

Many years of studies on the anomalous weather patterns during El Niño or drought episode and the violent weather patterns that follow it have yielded many disturbing discoveries about the phenomenon and its relation to the bigger issue of climate change. Today this phenomenon is now known as the ENSO or El Niño/Southern Oscillation. The table below summarizes the general climatic conditions experienced in the Philippines during ENSO periods.

| EL NIÑO                          | LA NIÑA                          |
|----------------------------------|----------------------------------|
| Expected dry season              | Short dry season                 |
| Early end of rainy season        | Early onset of rainy season      |
| Weak monsoon activity            | Strong monsoon activity          |
| Less number of tropical cyclones | More number of tropical cyclones |
| Above normal sea level pressures | Below normal sea level pressure  |
| Above normal air temperatures    |                                  |
| Dry weather conditions           | Wetter weather conditions        |

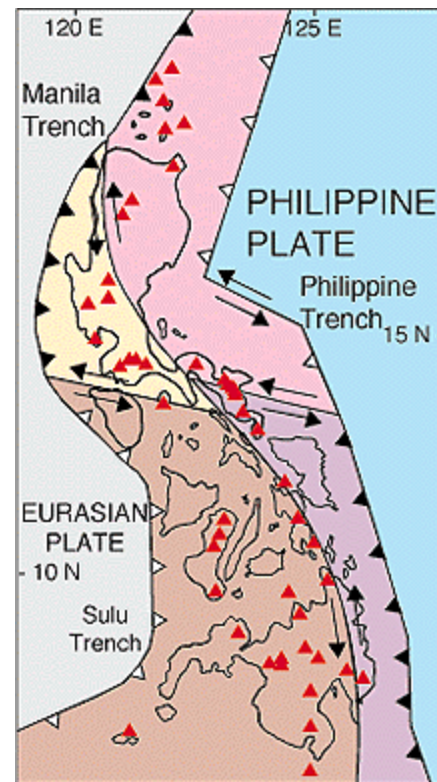
Source: PAGASA ENSO handouts.

In 1998 the most widespread ENSO phenomenon was recorded. It caused the bleaching of corals in many countries in the world especially those in the Pacific. About 16% of the coral reefs in the world were damaged. ([http://www.usaid.gov/our\\_work/environment/water/tech\\_pubs/coral.reef.report.sections/04.coral\\_reef\\_report.2002.global\\_status.pdf](http://www.usaid.gov/our_work/environment/water/tech_pubs/coral.reef.report.sections/04.coral_reef_report.2002.global_status.pdf))

Among the countries affected by this massive destruction was the Philippines. The Philippine coral reef area is the second largest in Southeast Asia (estimated at 26,000 km<sup>2</sup>). It is also among the most diverse ecosystems in the region. Studies have identified “915 reef fish species and more than 400 scleractinian coral species, 12 of which are endemic.”

The 1998 experience was said to be the first ever mass-bleaching occurrence in the Philippines. It was first observed off the coast of Batangas, “in June 1998 and then proceeded nearly clockwise around the Philippines, correlating with anomalous sea-surface temperatures. Most reefs of northern Luzon, west Palawan, the Visayas, and parts of Mindanao were affected. Subsequent mortalities were highly variable, with decreases in live coral cover ranging from 0.7 to 46 percent and up to 80 percent in Bolinao”.

More recent surveys in 1997 found a slightly lower percentage of reefs to be in excellent condition. They found only 4 percent of Philippine reefs in excellent condition (i.e., over 75 percent hard or soft coral cover), 28 percent in good condition (50--75 percent coral cover), 42 percent in fair condition (25--50 percent coral cover), and 27 percent in poor condition (less than 25 percent coral cover). The Visayas have experienced the most significant decline in coral cover, exhibiting an average of only 11 percent hard coral cover. Coral status information for Mindanao and the Sulu Archipelago is limited.



Source: Burke, L., E. Selig and M. Spalding, 2002, Reefs At Risk in Southeast Asia.. World Resources Institute, 72p. ([See document](#))

### Topography

The general topography of the Philippines consists of narrow coastal plains which rises to moderately steep to very steep mountains. This is characteristic of islands arcs formed by volcanic processes such as the Philippines. Elevations reach up to 3,144



meters above sea level in Mindanao at the peak of Mount Apo. The second highest elevation is 2,930 meters in Luzon island at the Peak of Mount Pulag.

Using the 18 per cent slope as the limits of the lowlands, around 48% of the total landmass is considered as lowland. The remaining are uplands, which are dominated by areas with a 50% and above slope.

### Geologic history

The Philippine archipelago are made up of different pieces from different tectonic plates in the area. The Philippines island arc was produced by a combination of subduction and volcanism. “The combination of the Philippines’ complex geological origins and its location in the warm tropics between the bio-rich regions of Sundaland Southeast China and New Guinea have given rise to an extraordinary biological richness of unique life forms.” (ARCBC, 2001)

## **2.2 Land Classification, Tropical Forest Status and Management**

Out of the total land area of 30 million hectares, 14.8 million hectares are classified as “forestlands” and are considered to be public domain. These lands may or may not have forest cover. About 1.1 million hectares are still to be classified and remain to be under public domain unless re-classified through a Congressional action. There are 14.1 million hectares of alienable and disposable lands from which an estimated 4 million hectares are arable and under agricultural production. As shown in Table 1, the estimated natural forest cover of the Philippines is about 18.1% and about 19-20% if forest plantations and permanent perennial high value crops are included in the estimate (ESSC, 1999; Kummer, 2003).

As discussed by Kummer (1992 and 2003), partly affirmed by the JAFTA study (JAFTA, 2001) and the ESSC study (ESSC, 1999), and as observed in ongoing municipal forest land use planning with different local government units under the Philippine Environmental Governance Project (EcoGov Project Phase 1), the Philippines’ remaining primary forests (old growth) are declining as a result of continuing legal and illegal logging. Accessible residual dipterocarp forests are continuing to be cut, legally or illegally, because of increasing domestic demand for timber and construction materials. There is also an increasing expansion of plantation/agroforestry/high value crop types of forests as a result of forest conversion, reforestation, promotion of high value permanent perennial crops especially in Mindanao, Central and Eastern Visayas, and Central and Northern Luzon areas. With the sluggish economic growth, increasing population, gradual improvements of farm to market roads, complacency in addressing “property rights”, and business as usual enforcement of forestry regulations, the remaining accessible residual forests will be completely decimated and gradually become tree and agroforestry farms, plantations of high value perennial crops such as rubber, coconut, coffee, durian and other fruit trees. This degradation is expected to further threaten biodiversity in the primary forests because of weakened “connectivity” and loss of

corridors for certain species. This will also render the remaining old growth forests more vulnerable to illegal bioprospecting and of cutting of forest products.

**Table 1. Estimated area of different forests in the Philippines**

| Tropical Forest Types                | Area in '000 hectares | % of total land area of the Philippines |
|--------------------------------------|-----------------------|-----------------------------------------|
| 1. Old growth dipterocarp forest     | 805                   | 2.7                                     |
| 2. Residual dipterocarp forest       | 2,731                 | 9.1                                     |
| 3. Close canopy pine forests         | 124                   | 0.4                                     |
| 4. Open canopy pine forest           | 104                   | 0.4                                     |
| 5. Submarginal forest                | 475                   | 1.6                                     |
| 6. Mossy forest                      | 1,040                 | 3.5                                     |
| 7. Mangrove forest                   | 112                   | 0.4                                     |
| <b>Sub-Total for Natural Forests</b> | <b>5,391</b>          | <b>18.1</b>                             |
| 8. Forest plantations                | 774                   |                                         |
| <b>TOTAL</b>                         | <b>6,165</b>          |                                         |

**Sources:** Data on the area of natural forest types were taken from Acosta (2002) while information on the estimated area of forest plantations came from Cadiz (1999); and Alonzo, et.al.(1998). Figures were rounded to the nearest thousand.

The remaining natural forests in the Philippines are found under different tenure or allocation instruments (Table 2). There is a need to ascertain the extent and nature and whether or not most old growth and residual forests are in protected areas and reserves, in areas under allocations to migrant communities and indigenous peoples (CADCs and CADTs, CBFMAs), and in areas of the remaining holders of IFMAs and/or TLAs<sup>1</sup>. The table also provides a set of information for assessing the governance of forestlands in the country. For instance, it is expected that each holder or recipient of tenure or “allocation instrument” as resource managers are responsible, accountable, and have certain authority and rights to protect and manage the natural forests of their areas based on principles of sustainable forest management and biodiversity conservation. Each holder of tenure or allocation instrument becomes an “accountability center” and expected to plan, get funding support, and carry out activities that will protect and manage remaining forests or expand forest cover within their areas. Each holder is also expected to enforce property rights within their respective areas to achieve defined objectives - biodiversity conservation, enhancement of environmental services such as water and energy, production of forest products, and others. This perspective supports both decentralization and devolution of forest protection and management and ensure that the limited human and financial resources of the State are invested in protecting and managing forests and

<sup>1</sup> It should be noted that there are area overlaps between CADCs/CADTs and proclaimed/declared/enacted protected areas and watershed reserves. Areas covered under the Protected Area Community-based Resource Management (PACBRMA) in multiple-use and buffer zones of protected areas may have also been included in the “allocation of forestlands for communities”. These overlaps may result in double counting areas under certain categories.

biodiversity conservation in areas that will greatly benefit the present and future generations.

The table shows that the “State”, which has “set aside” at least 26% of the total forestlands as watershed reserved, protected areas, wilderness areas, and game refuge and bird sanctuaries (GRBS), has the bulk of responsibility, accountability, and authority to ensure biodiversity conservation, supply of environmental services, and meet research and aesthetic needs. But, there is a great need for all holders of “tenure and allocation instruments” to determine what they have in their areas (forests, communities, biodiversity resources, etc.), integrate and summarize information, and monitor improvements of the baselines over time. Initially, this could be done from the ongoing or completed forest cover assessment of several foreign-assisted protected areas and watershed reservations. For smaller protected areas or reserves, the use of community mapping may provide rough sketch of forest cover under each tenure or allocation instrument.

The policies and mechanism for protecting and managing the remaining natural forests under each of the tenure or allocation instrument are in place including guidelines for the expansion of forest plantations in the buffer and multiple use zones of protected areas and in open forestlands of other allocations in forest lands to lessen dependence from natural forests over time. It can be inferred from Table 2 that the protection and management of the remaining forest cover and the existing Philippine biodiversity are the key responsibilities of each holder of “tenure or allocation instrument”.

For those “set asides” as reserves and protected areas by the government under different policy instruments (law, presidential proclamation, administrative orders, etc.), the State through the DENR has the responsibility, is accountable of, and has the authority to ensure that biodiversity conservation is achieved in these areas. For all others, the holders of tenure and allocation instruments should be held responsible and accountable with certain authority and rights to protect and manage the primary and residual forests in their areas as clearly defined and stated in their approved resource management plans. The DENR and the local government units have the responsibility to ensure that the holders of these instruments monitor performance especially in protecting and managing the existing forest cover and biodiversity resources. The civil society organizations (CSOs) could also advocate and lobby for the periodic reporting of how each of the holder of tenure and allocation instruments is carrying out and ensuring forest protection and biodiversity conservation in their areas.

**Table 2. Status, condition, and potential of allocated forestlands in the Philippines for biodiversity conservation**

| Management Considerations                              | Present Allocation of Forestlands and Unclassified Areas                                 |                                                                   |                                                                                                                                                                                                   |                                                                                                                                                                  |                                                                                 |                                                       |
|--------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------|
|                                                        | Watershed Reserves and Protected Areas                                                   | Civil & Military reserves                                         | LGUs                                                                                                                                                                                              | Communities under CADCs/CADTs and CBFMAs                                                                                                                         | Private Sector under Fishpond Lease Agreements, IFMAs, SIFMAs, TLAs, PLAs, etc. | Unclassified                                          |
| 1. Total Area (ha)                                     | 4.165 million                                                                            | 0.295 million                                                     | ?                                                                                                                                                                                                 | 5.332 million                                                                                                                                                    | 1.766 million                                                                   | 1.089 million                                         |
| 2. Percent of Total Forestlands and Unclassified Areas | 26.2%                                                                                    | 1.8%                                                              |                                                                                                                                                                                                   | 33.5%                                                                                                                                                            | 11.1%                                                                           | 6.8%                                                  |
| 3. Total Forest Cover (ha) – natural and planted       | ?                                                                                        | ?                                                                 | ?                                                                                                                                                                                                 | ?                                                                                                                                                                | ?                                                                               | ?                                                     |
| 4. Total population of communities inside (million)    | ?                                                                                        | ?                                                                 | ?                                                                                                                                                                                                 | ?                                                                                                                                                                | ?                                                                               | ?                                                     |
| 5. Resource Manager                                    | DENR with NPC, NIA, PNOC                                                                 | Military institutions; academic institutions                      | LGUs                                                                                                                                                                                              | CBFMA holders, CADC holders, CADT holders                                                                                                                        | Holders of TLA, IFMA, FLA, MPSA, etc.                                           | State through DENR?                                   |
| 6. Dominant Objective of Allocation                    | Protection of biodiversity, watersheds, etc.                                             | >Research and training<br>>Other uses                             | >Protection<br>>Production<br>>Recreation<br>>Training and research                                                                                                                               | >Production<br>>Protection                                                                                                                                       | >Production of goods and services                                               | ?                                                     |
| 7. Approved Resource Management Plan (RMP)             | Some have; most do not have                                                              | Some have; most do not have                                       | A few have                                                                                                                                                                                        | >those assisted with external funds have RMPs                                                                                                                    | >most have RMPs (required)                                                      |                                                       |
| 8. Funding source for RMP implementation               | >Mainly from DENR; some from LGUs, NGAs, donors<br>>Environmental user's fees or charges | >Budget of Recipient of reservation<br>>Environmental user's fees | >LGUs IRA,<br>>donors, >private sector (contracts)<br>>Bonds<br>>Revenues from environmental fees or resource use rights<br>>Shares from the national government on income from natural resources | >POs (value of labor counterpart)<br>>Revenues from resource use rights<br>>Rental, entrance fees<br>>Private sector via business contracts<br>>donors<br>>DENR? | >Private sector paid-in capital<br>>Revenues from resource use rights           | ?                                                     |
| 9. Mechanism for multi-sectoral M&E and enforcement    | >established PAMBs; those without none or internal to DENR                               | >Generally not clearly defined; mostly internal to recipient      | >multi-sectoral with DENR, POs, LGUs, civil society                                                                                                                                               | >Mechanism is emerging involving DENR, LGUs, POs, civil society?                                                                                                 | >Holder, DENR                                                                   | >Via checkpoints and selective issuance of use rights |
| 10. Allocation (property rights) instruments           | Proclamations, PDs, and RAs; CADCs and                                                   | Proclamations or PDs                                              | >co-management agreements<br>>No IRR for the                                                                                                                                                      | >CBFMAs<br>>CADCs,<br>>CADTs                                                                                                                                     | >TLA, IFMA, PLA, FLA, SLUP, MPSA, etc.                                          | >need to be classified                                |

|                                                                                         |                                                                                              |                                                                                   |                                                                            |                                                                                                                                                         |                                                                                                              |                                                   |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                                                                                         | CBFM instrument in MUZ and BZ                                                                |                                                                                   | 5,000 hectares under the LGC                                               | >CSCs, CALCs/CALTs                                                                                                                                      |                                                                                                              |                                                   |
| 11. Bundle of rights to communities                                                     | >limited in MUZ and BZ                                                                       | >Not defined, restrictions defined under the proclamation and recipient           | >partly defined in the JMC 2003-01 and other policies                      | >Rights defined under CBFM policies; dependent on DENR's regulatory powers                                                                              | >Limited; rights defined by the holder and DENR                                                              | > de facto                                        |
| 12. Bundle of rights to private sector                                                  | >Almost none, except possibility of JVs in Recreation, MUZ, BZones                           | > Not defined, restrictions defined under the proclamation and recipient          | >LGUs may contract with the private sector                                 | >Rights and privileges restricted by DENR regulations                                                                                                   | >Rights defined by policies but have been generally unpredictable and unstable especially on tenurial rights | >de facto                                         |
| 13. Responsibility, accountability, authority for "protected forests and forestlands"   | DENR, whole area (with partnership and collaboration)                                        | Recipient for specific area may be delineated as "protected areas" as part of RMP | Recipient for specific area delineated as "protected areas" as part of RMP | CBFM instrument holder for delineated "protected areas" in the RMP); may partner with public and private organizations for development and enterprises. | Holder of instrument for delineated "protected areas" in the RMP                                             | ?                                                 |
| 14. Responsibility, accountability, and authority for rehabilitation and development    | DENR and other partners for specifically delineated areas for rehabilitation and development | Recipient based on approved RMP                                                   | LGUs based on approved RMP                                                 | CBFM instrument holders based on approved CRMFs or ADSPP                                                                                                | Holders of instruments based on approved RMPs.                                                               | ?                                                 |
| 15. Potential to produce "timber"                                                       | Low                                                                                          | Low                                                                               | Moderate                                                                   | Moderate (smallholder types and from managed natural forests)                                                                                           | High (both from plantations and managed natural forests)                                                     | >Depends on site and risks taken by the occupants |
| 16. Potential to produce "non-timber"                                                   | Moderate                                                                                     | Low                                                                               | Low to moderate                                                            | Low to moderate                                                                                                                                         | Moderate to High depending on incentives                                                                     |                                                   |
| 17. Potential to produce "high value crops"                                             | Low                                                                                          | Low                                                                               | Moderate to High                                                           | Low to moderate (depends on government support system)                                                                                                  | High because of private sector efficiency                                                                    |                                                   |
| 18. Potential to provide "environmental services" – biodiversity, watershed, aesthetics | High                                                                                         | Low to Moderate                                                                   | Moderate                                                                   | Low to moderate                                                                                                                                         | Low to moderate                                                                                              | ?                                                 |

|                                             |                                                                             |                                        |                                         |                                                                                                                    |                                                                                                                            |   |
|---------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---|
| 19. Potential to address poverty and equity | >Low on poverty<br>>High on equity because of intergenerational perspective | >Low to moderate on poverty and equity | >Moderate to high on poverty and equity | >High on equity<br>>Low to moderate on poverty (depends on rights and distribution of benefits within communities) | >Low in equity and dependent on efficiency of taxation<br>>Moderate on poverty and dependent on local employment generated | ? |
|---------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---|

**Sources:** DENR/FMB (2000) statistics; ES Guiang (Ford Foundation and FAO data, 2001).

## 2.3 Cultivated Land and Land Tenure

From Tables 1 and 2, it is possible to estimate the areas that are not under any type of forest cover in forestlands. These areas may be assumed to be under different forms of land use (upland farms, brushlands, grasslands, settlements, riparian zones, etc.). Although site-specific information may be available, the breakdown of these areas under each of the different tenure and allocation instruments are not available, not even a summary of forest cover in the “set asides”- protected areas, watersheds, game and bird sanctuary reserves, and wilderness areas. This is a major information gap at the national level for policy making, planning and monitoring. After much analysis of historical data and results of forest cover assessments using images, Kummer (2003) concluded that at the national level no one really knows the situation regarding national forest cover in the Philippines, whether it is increasing or decreasing.

Accordingly, given that the total area of forestlands (including unclassified lands) is about 15.9 million hectares and that the total forest cover area is only 6.165 million hectares, it could be surmised that the area of non-forest land uses is almost 10 million hectares. The distribution of these non-forest land uses over the different tenure and allocation instruments is not presently known. More than 20 million Filipinos reside in the forestlands (including 6.3 million Filipinos of indigenous peoples, and mostly in areas that are categorized as protected areas and watershed reserves) (Durst, et.al., 2001). Most of these residents are considered the “poorest of the poor” and were perceived not to have benefited from the high GDP growth that took place during the 1994-1997 period (Balisacan, 2000) because of poor accessibility, market imperfections, and natural disasters. The number is increasing because of increasing population, continuing widespread poverty in the lowlands that encourage upland migration in search of areas for agricultural production, and declining employment opportunities in urban areas.

Assuming that there is minimal area overlaps between the CADC/CADT areas with the watershed reserves and protected areas (set asides) in Table 2, there is still at least 3 million hectares of forestlands that are not covered by any form of “tenure or allocation instruments”. These areas are still under “de-facto” forestland resource managers – claimants and occupants – and generally considered as the “open access” areas. Another set of “open access” areas are those forestlands that are under some form of “tenure or allocation instruments” but not have effective on-site forestlands management e.g. no approved resource management plan, no personnel and budgetary

support, absence of active forest patrolling and protection system, and no system for addressing individual property rights regime.

In protected areas under the NIPAS law and its implementing rules and regulations, cultivation and other forms of limited agricultural production systems are allowed in multiple use and buffer zones. The total aggregated area of the buffer and multiple use zones for all the protected areas in the Philippines is not available at the national level. This has yet to be compiled, summarized and be made available. Zoning in a given protected area is included in the Protected Area General Protection and Management Plan and is prepared following participatory manner based on defined criteria. The plans are approved by the Protected Area Management Boards (PAMBs) and DENR senior management with endorsement from the Director of the Protected Area and Wildlife Bureau (PAWB). For tenured migrants and indigenous peoples in the protected areas, they can apply for the PACBRMA (Protected Area Community-Based Resource Management Agreement) as their tenurial instrument and the Certificate of Ancestral Domain Title (CADT), respectively. Many of the IPs in protected areas are still holding the Certificate of Ancestral Domain Claims (CADCs), which were issued by DENR before the 1997 IPRA law. The CADCs may be processed for conversion into CADT following the IPRA law implementing rules and regulations. The issuance of PACBRMA to legitimate tenured migrants was only started 2002 after the issuance of the administrative order, after more than 10 years of NIPAS law. PACBRMA issuance requires the approval of the protected area zoning plan and verification of claims of tenured migrants.

A sampling of draft completed Protected Area Management Plans<sup>2</sup> revealed that in protected areas, the percentage of buffer and multiple use zones range from 30% to 50%. The determination of the zones<sup>3</sup> was based on NIPAS criteria following extensive consultations and participatory discussions with the different stakeholders. The protected areas with the largest percentage are those that are highly accessible (or portion of the protected area), those with relatively mild topographic features, and those located in high elevation areas with fertile and volcanic soils. Examples of these are: Kanlaon National Park (Negros Occidental), Mt. Kitanglad (Bukidnon), Agusan Marsh, Mt. Apo (Davao), Bataan National Park, Siargao Islands, and western side of Sierra Madre Protected Areas. For instance, Mt. Apo National Park, Kanlaon National Park, and Mt. Kitanglad are becoming the major source of high value temperate vegetables that cater not only in their respective local markets but even regional and national markets<sup>4</sup>. In these protected areas and their adjoining areas especially in Eastern and Central Mindanao, there will be continuing pressures for agricultural production by small farmers, and extensive need for

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<sup>2</sup> Figures were lifted and estimated from the completed draft of Protected Area Management Plans of Bataan National Park (30%), Siargao Protected Area (86% based on terrestrial area), Agusan Marsh ((30%), Kanlaon National Park (30-40% based on map), Mt. Apo National Park (30-40% based on map), and Mt. Kitanglad (30-35% based on map).

<sup>3</sup> Other critical zones in protected areas are: strict protection zone, sustainable use zone, recreation zone, habitat management zone, cultural zone, and special use zone. The strict protection, habitat management, and cultural zone are those that directly ensure biodiversity conservation in protected areas.

<sup>4</sup> For example, vegetables such as tomatoes, bell pepper, lettuce, broccoli, etc. come from the extensive farms in and near the Mt. Kitanglad National Park.

establishing high value tree and cash crops (such as banana, fruit plantations, etc.). To buffer these pressures, there will be a strong need for effective protected area management systems to ensure conservation of biodiversity.

The recognition of occupants in forestlands outside the protected areas in the Philippines has been the major focus of the government's community-based forest management strategy (CBFM) over the last 15-20 years. The tenure system for the occupants in these areas has been consolidated under the Community-Based Forest Management Agreements (CBFMAs) under administrative policies (a Presidential executive order in 1995 and its implementing rules and regulations issued by DENR in 1996) (see Table 3). Years before the issuance of the CBFM executive order, DENR had adopted a policy in "managing occupants in forestlands in place" instead of resettling them or driving them out of the public forestlands. There was extreme difficulty in controlling the entry of forest migrants especially after construction of logging roads into the forests and after timber extraction activities in the areas under the Timber License Agreements (TLAs), who controlled most of the forestlands in the 60s and 70s (up to 11 million hectares during this period) under the concession system (Vitug, 1993). In forestlands outside the protected area, the private sector's appropriate tenurial instruments as defined in Table 3 are limited to Industrial Forest Management Agreement (IFMA) up to 40,000 hectares and Social Industrial Forest Management Agreement (SIFMA) for less than or equal to 500 hectares. Both the IFMA and SIFMA holders are required to recognize prior rights and claims in their forestlands areas. These two instruments have the dominant objective of establishing forest plantations to meet the country's needs for wood and wood products.

**Table 3. Major legal instruments governing forestlands ownership, access and control**



| <b>Legal Instrument</b>                                   | <b>Legal Basis</b>                                   | <b>Definition</b>                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Community-Based Forest Management Agreement (CBFMA)       | DENR DAO 22-93; EO 263 (1995); DENR DAO 96-29 (1996) | A production sharing agreement entered into between a community and the government to develop, utilize, manage and conserve a specific portion of the forestland, consistent with the principles of sustainable development and pursuant to a Community Resource Management Framework.                                                                |
| Certificate of Stewardship Contract (CSC)                 | EO 263 (1995); DENR DAO 96-29 (1996)                 | A contract, for 25 years, renewable for another 25 years, awarded to individuals or families actually occupying or tilling portions of forest lands.                                                                                                                                                                                                  |
| Industrial Forest Management Agreement (IFMA)             | DENR DAO 04-97                                       | A 25 year production sharing agreement entered into between the DENR and an individual or corporation to develop, utilize and manage a tract of forestland, other public land or private land to grow timber species including rubber and non-timber species including bamboo and rattan.                                                             |
| Socialized Industrial Forest Management Agreement (SIFMA) | DENR DAO 24-96                                       | An agreement entered into by and between a natural or juridical person and the DENR wherein the latter grants to the former the right to develop, utilize and manage a small tract of forest land (1-10 ha for individuals or single families, 10-500 ha for associations or cooperatives), consistent with the principle of Sustainable Development. |
| Certificate of Ancestral Domain Claim (CADC)*             | DENR DAO 02-93                                       | A certificate issued by DENR to an indigenous cultural community/indigenous people declaring, identifying and recognizing their claim to a particular traditional territory which they have possessed and occupied, communally or individually, in accordance with their customs and traditions since time immemorial.                                |
| Certificate of Ancestral Land Claim (CALC)                | DENR DAO 02-93                                       | A certificate issued by DENR to an indigenous Filipino individual, family, or clan, declaring, identifying and recognizing their claim to a particular area they have traditionally possessed, occupied and used by themselves or through their predecessors in interest since time immemorial.                                                       |

\* CADCs and CALCs are eventually to be converted to Certificates of Ancestral Domain Title (CADTs) and Certificates of Ancestral Land Title (CALTs) under the 1997 Indigenous Peoples' Rights Act.

**Source:** World Bank. 2003. Governance of natural resources in the Philippines: lessons from the past and directions for the future. Draft Report. World Bank of Manila, Pasig City.

## **2.4 Protected Areas, Watershed Reserves, Wilderness Areas, and Game Refuge and Bird Sanctuaries**

### Components of the Philippines Protected Area System (PAS)

There are 430 protected areas in the Philippines as shown in Table 4. These are part of the initial and additional component of the Philippines Protected Area Systems (PAS). Almost half (195) of the areas were part of the NIPAS law initial component with the rest as proposed protected areas for additional component. Based on the FMB statistics (2002) and Table 2 above, the total area of the “set asides” – watershed reserves, protected areas, wilderness areas, and game refuge and bird sanctuaries –is about 4.165 million hectares. Table 4 also shows that the largest category of protected areas falls under protected landscapes and seascapes.

At least 18 of these protected areas were able to get international funding support from the World Bank/Global Environmental Facility and the European Union after the Philippines signed as one of the contracting parties to the Convention on Biological Diversity signed by 154 nations at the UN Conference on Environment and Development in Rio de Janeiro in June 1992 (DENR and UNEP, 1997; NIPAP and PAWB, 2001). Eighteen sites that were supported by World Bank/GEF from 1995-2002 and by EU from 1995-2001. The 18 sites were selected because they are strategically located in identified biogeographical zones and because of a combination of high level of species and ecosystem biodiversity and endemism, unique ecosystems, ecological roles and importance (DENR and UNEP, 1997).

The rest of the protected areas either has relied from DENR regular budgetary support, support from NGOs for specific activities in the protected area, local support or from local government units. It should be noted that in terms of numbers from Table 4, the Philippines' present allocation of forestlands is more focused on protecting and managing (a) protected landscapes and seascapes, (b) natural parks, and (c) watershed forest reserves.

In December 2001, the Philippine Biodiversity Conservation Priority-Setting Program (PBCPP) was completed after the First National Protected Areas Congress in November 2001. The results and recommendations of the priority setting will be used in further assessing the "fit" of the 430 initial and additional components of the Protected Area System (PAS) of the Philippines with the new priority areas identified under the PBCPP. The new priority setting was based on new information that helped update the 6 biogeographic regions of the country to 16 terrestrial biogeographic regions and 6 marine biogeographic regions. Initial comparison of the PBCPP priority sites with NIPAS sites revealed that there are at least 38 sites (out of 96 unprotected priority sites) that are considered to be of extremely high (EH) importance and need urgent action for biodiversity conservation (Ong, 2002). To a certain extent the proclaimed protected areas under the NIPAS and those for proclamation generally include the 68 sites that are considered of extremely high (EH) importance with respect to biodiversity conservation.

**Table 4. Total number of Protected Areas in the Philippines**

| <b>Categories of Protected Areas<sup>5</sup></b> | <b>Initial Component</b> | <b>Additional Component</b> | <b>All Pas</b> | <b>% of Total</b> |
|--------------------------------------------------|--------------------------|-----------------------------|----------------|-------------------|
| 1. Marine Reserves                               |                          | 5                           | 5              | 1                 |
| 2. National Parks                                | 5                        | 3                           | 8              | 1                 |
| 3. Natural Biotic Area                           | 6                        | 5                           | 11             | 3                 |
| 4. Natural Monument/Landmark                     | 6                        | 6                           | 12             | 3                 |
| 5. Natural Parks                                 | 30                       | 25                          | 55             | 13                |
| 6. Protected Landscapes & Seascapes              | 100                      | 99                          | 199            | 46                |
| 7. Resource Reserve                              | 3                        | 1                           | 4              | 1                 |
| 8. Watershed Forest Reserves                     | 14                       | 23                          | 37             | 9                 |

<sup>5</sup> Generally based on IUCN categories as listed in Annex B.

|                           |            |            |            |            |
|---------------------------|------------|------------|------------|------------|
| 9. Wildlife Sanctuary     | 5          | 16         | 21         | 5          |
| 10. Strict Nature Reserve | 4          | 5          | 9          | 2          |
| 11. No Category           | 22         | 46         | 68         | 16         |
| <b>TOTAL</b>              | <b>195</b> | <b>235</b> | <b>430</b> | <b>100</b> |

Source: DENR/PAWB. 2004.

#### Legal Status of the Sites (Initial and Additional Components) under the Protected Area System

Following the 13 steps in establishing a protected area (based on NIPAS law and its implementing rules and regulations), the legal status of the protected area's (PA) recognition is summarized below. Majority of protected areas are still under DENR issuances (78%) with at least a fifth of the total number proclaimed by the President. Only 1% (6 sites) is covered by specific Republic Act as a Protected Area. The rest are still pending Presidential action. The legal status of the protected area has implications in terms of funding support from the national government, local government, and private organizations. The Republic Acts have also the direct impact on enforcement, property rights, and mobilizing support from multi-stakeholders group.

| <b>Legal Status of the protected area</b>         | <b>Number</b>                                                     | <b>% of Total</b> |
|---------------------------------------------------|-------------------------------------------------------------------|-------------------|
| 1. Established by DENR through issuances          | 334                                                               | 78                |
| 2. Proclaimed by the President of the Philippines | 90                                                                | 21                |
| 3. Enacted through a Republic Act                 | 6                                                                 | 1                 |
| 4. Pending draft Presidential Proclamation        | 192 (90 from initial component and 102 from additional component) | 45                |

Many of the pending protected areas for Presidential Proclamation are pending because some sites are also claimed as ancestral domain and are waiting for the settlement of key issues with the National Commission on Indigenous Peoples. Some sites have to be reviewed in the context of Biodiversity Priority Setting initiative. The others have to meet various procedural deficiencies (revised maps, map verification, endorsements, etc). Lastly, some will also need another round of review by the DENR-NIPAS Review Committee (DNRC).

Among the protected areas that have secured Presidential Proclamations, 44 of these have been lined up for the approval of Congress. There are 25 PA Bills in the House and 19 PA Bills in the Senate.

#### Protected Area Suitability Assessment (PASA)

As part of the key steps in endorsing protected areas for Presidential Proclamation, DENR has to conduct protected area suitability assessment (PASA) of both the initial and additional component areas. The PASAs will determine whether or not a certain protected area will have to be reduced, de-established, or recommended for proclamation. The PASA determines the importance of the proposed protected area with

respect to biodiversity conservation, providing environmental services, or serving as corridor for certain species. To date, DENR has completed the PASAs of 364 proposed protected areas out of 433 sites. From the completed PASA, only 90 % (329 sites) may be recommended as protected areas and subject to further review by the DNRC. The rest may be de-established, re-assessed, not to be recommended as part of the Protected Area System (PAS).

#### Initial Protected Areas Plan (IPAP)

Out of the total 430 initial and additional component sites, only 264 sites have completed their IPAPs or about 60%. The IPAPs are necessary for the issuance of Presidential Proclamation of a protected area.

#### Protected Area Management Plans

Most of the 18 priority protected areas that were supported by the World Bank/GEF and EU were able to complete drafts or prepare Protected Area Management Plans. These plans are formulated and approved by the PAMB and DENR as the basis in protecting and managing the protected area, annual budgeting, preparation of work plans, lobbying for financial support and contribution, information campaigns, and enforcing the zonations. The plans are prepared following participatory manner and with inputs from socioeconomic assessments and inventory and analysis of faunal and floral biodiversity resources. To date, 60% (277) of the total number of initial and additional components of Pas completed their inventory work. Information was used in preparing the Protected Area Management Plans and in monitoring key biodiversity indicators in the sites.

#### Integrated Protected Area Fund (IPAF)

Under the NIPAS law, each protected area has to establish an IPAF. This is a trust fund to provide sustained financing of NIPAS and the site-based development and operations. The fund is envisioned to come from (a) taxes from permitted sale and export of fauna and flora; (b) proceeds from leases of multiple use areas including tourist concessions; (c) contributions from industries and facilities benefiting from the PA; (d) fines and fees including entrance fees; (e) donations, endowments and grants from any sources, (f) and may be some taxes arising from the use of buffer and multiple use areas for agricultural production. All incomes are deposited to the IPAF account of each protected area and go to the national treasury. Under existing guidelines, at least 75 percent of the funds generated by a protected area would be retained and used by the protected area management board for the development and maintenance of that site. The remaining 25 percent IPAF income shall be used for the maintenance of the NIPAS, provision of technical assistance, and eventually be used in sites which have no or limited income. Each site, however, can only access the IPAF upon request and submitting required documentation such as approved work and financial plans. The fund would be managed by a Governing Board, comprising of seven people (the DENR Secretary, two

representatives from DENR or other government agencies, accredited conservation NGOs; and indigenous people respectively).

There are now 123 protected area sites which have set up their IPAFs. Region 7 has the most number of protected area with IPAF. The list below shows the sites with total income from users fee reaching the P 1 million mark.

|                                                |            |
|------------------------------------------------|------------|
| Ninoy Aquino Parks and Wildlife Nature Center  | 37,429,042 |
| Hinulugang Taktak National Park                | 6,472,624  |
| Apo Island Protected Landscape & Seascape      | 4,021,950  |
| Biak-Na-Bato National Park                     | 2,139,850  |
| St. Paul Subterranean River                    | 2,085,503  |
| Manleuag Hot Spring                            | 1,754,522  |
| El Nido-Taytay Managed Resource Protected Area | 1,431,056  |

A bulk of the IPAF comes from entrance fee. The list above shows that accessibility of the protected area is an important factor for public patronage and use. The top site is within the metropolis limits while the second highest grossing site is a short distance from the metropolis. The other sites are far from Manila or not very accessible, but offer unique features and landscape.

Lastly, around 52 sites have IPAF amounting to below P 50,000 while 26 still have no income at all.

#### Management of Protected Areas with the Protected Area Management Boards (PAMBs)

DENR has approximately 1100 staff assigned for protected areas management (Table 5). Based on the analysis of the World Bank (2003), approximately 90 percent of these staff is posted to the field which means that 990 DENR staff is responsible for all the protected areas. There are currently 159 Protected Area Superintendents (PASUs) managing 169 protected areas with no PASU assigned to the rest of the protected areas. Most PA staff members are assigned from within the regions while the forest rangers are detailed from the CENROs around the protected areas or hired directly as contract staff.

As the World Bank (2003) noted, the official DENR staffing for protected areas management is supplemented by personnel detailed from NGOs, LGUs, and volunteers. In some protected area sites receiving NGO funding or donor funds coursed through NGO projects, over 80 percent of staff are provided by these groups especially when the World Bank/GEF and EU funds were still supporting several sites.

**Table 5. DENR Protected Areas Staffing**

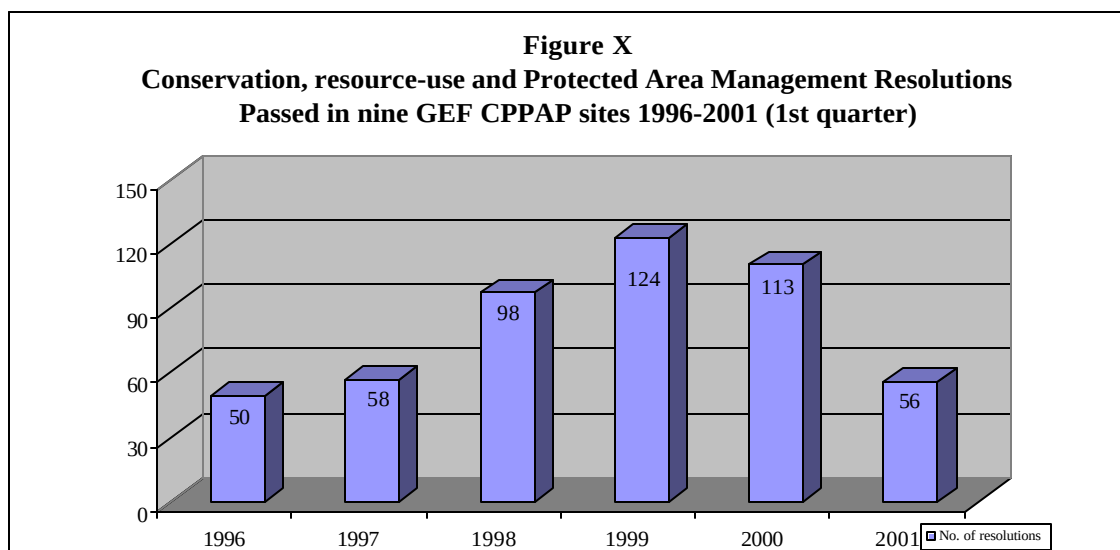
| PAWB<br>Central | PAWD<br>Regional | Estimated<br>PAWS<br>Provincial | PASU<br>169 PAs | Estimated Staff at 169 Pas | TOTAL |
|-----------------|------------------|---------------------------------|-----------------|----------------------------|-------|
| 100             | 121              | 400                             | 159             | 330                        | 1,100 |

Source: DENR-PAWB 2003

A total of 162 protected areas have created their Protected Area Management Boards (PAMBs). Of this total, 129 are part of the initial components and the remaining 33 are in additional component areas. There are still 267 protected areas that need to set up PAMBs. As per assessment of the World Bank, the PAMBs are emerging as good model for NRM Governance across the wider landscape (World Bank, 2003). PAMBs embody the NIPAS law's mandate of devolving the primary responsibility of managing protected areas within the NIPAS system. The PAMBs are multi-stakeholder in nature. Where PAMBs are adequately funded and the whole range of stakeholders are actively involved, they represent the best hope for providing direction and guidance in instituting effective governance for the Philippines' protected areas.

The PAMB provides a mechanism enlists a wide range of key stakeholders to support protected area management. It brings key stakeholders –local leaders, IPs, NGOs, government officials, DENR, LGUs - responsible for PA management through a forum where decisions related to PA management are made in a transparent and accountable manner. For example, data collected from sites financed by the World Bank-GEF Conservation of Priority Protected Areas Project indicate that establishment of PAMB as a participatory management tool has assisted PAs substantially increase the number of NRM issues discussed with a corresponding increase in actions and initiatives undertaken on the ground. The improved participation of the local stakeholders in management implementation also resulted in significant increases in the number of NRM resolutions issued by the PAMB (See figure below).

Some PAMBs have not yet achieved a truly multi-stakeholder identity. DENR is the PAMB Chair and executing body for the NIPAS Act, and is at the same time the regulatory body issuing land and resource use permits. Thus, as observed by the World Bank (2003), most PAMBs are still perceived at the local level as an extension of DENR rather than as a joint enterprise of local stakeholders. Over time, however, as DENR realizes the importance of decentralization, devolution, accountability, transparency, and participatory decision making, it may open up more opportunities for the other stakeholders to be more active in demanding for an “active, transparent, science-based, accountable actions and processes” from the PAMBs.



**Source:** World Bank. 2003. Governance of natural resources in the Philippines: lessons from the past and directions for the future. Draft Report. World Bank of Manila.

## 2.5 Biodiversity Status and Management

### Biodiversity Status

The Philippines has been known to belong to the 17 megadiversity countries, which among themselves contain 70-80% of global biodiversity (Heaney and Mittermeier, 1998). As seen in Table 6, the Philippines have a national biodiversity index (NBI) of 0.786, third to selected countries in South and Southeast Asia, with an NBI of 1.000 as the highest.

**Table 6. National biodiversity index (NBI) of selected countries in South and Southeast Asia**

| <b>Selected Countries in South and Southeast Asia</b> | <b>National Biodiversity Index (NBI)</b> |
|-------------------------------------------------------|------------------------------------------|
| 1. Bangladesh                                         | 0.538                                    |
| 2. Bhutan                                             | 0.607                                    |
| 3. India                                              | 0.732                                    |
| 4. Indonesia                                          | <b>1.000</b>                             |
| 5. Malaysia                                           | <b>0.809</b>                             |
| 6. Nepal                                              | 0.642                                    |
| 7. Philippines                                        | <b>0.786</b>                             |
| 8. Sri Lanka                                          | 0.656                                    |
| 9. Thailand                                           | 0.670                                    |
| 10. Viet Nam                                          | 0.682                                    |

**Note:** NBI is an index based on estimates of country richness and endemism in four terrestrial vertebrate classes and vascular plants; vertebrates and plants are ranked equally; index values range between 1.000 (Maximum: Indonesia) and 0.000 (Minimum: Greenland). The NBI includes some adjustment allowing for country size. Countries with land area less than 5000 sq. km. are excluded.

**Source:** Global Biodiversity Outlook.

The discussion in this section is largely based on the assessment of the Philippines biodiversity in the early 90s which was largely the basis of the country's action plan for biodiversity conservation (DENR and UNEP, 1997). The Philippines has an impressive record of species diversity and endemism during the time when the inventories were conducted. Thus, the current biodiversity may not include loss of biodiversity as a result

of losses in the past (DENR and UNEP, 1997). The assessment report pointed out that the flora of the Philippines forests is composed of at least 13,500 species and represent 5% of the world's flora and more than 50% of the species are found nowhere in the world (Heaney and Mittermeier, 1998). There are at least 25 genera of plants that are endemic to the Philippines. Moreover, the flowering plant families of the Orchidaceae, Rubiaceae, Euphorbiaceae, Myrtaceae, and Moraceae have the greatest number of indigenous and endemic species. It was estimated that 5-8% of the country's flora are still considered as unidentified.

The existence of diverse natural forest formations in the Philippines could be due to the strong influence of varying, physical and climatic factors, e.g. soil type, rainfall, and altitude. The various forest formations<sup>6</sup> are characterized by distinct species composition and associations, community structure and diversity indices. There are at least six types of forests in the Philippines. These are the mangrove, beach, molave, dipterocarp, pine, and mossy or cloud forest. The mangrove forests are found along the coast and tidal flats while the beach forest occur in sandy coastal areas. Molave forests are usually found in dry areas of rocky limestone substrate such as the original forest in Bohol. The pine forests are dominated by two species, the Benguet pine (*Pinus insularis*) and Mindoro pine (*Pinus merkussii*) in the Cordilleras and Zambales, respectively. The mossy forest are found above elevation of 1000 masl and considered as montane forests.

Among forestry species, the most important economic ones have been the dipterocarps, mangroves, the pine forest, the high premium hardwoods, rattans, bamboos, and some vines. These species in natural stands have provided much of the raw materials of several forest based and furniture industries. For many years during the 50s, 60s, and 70s, exports of the economically important forest species provided revenues to the government and generated massive employment in the rural and urban areas. After wanton exploitation, however, many of these forest-based industries have closed down for lack of adequate raw materials to process. Among the high premium hardwoods, narra is probably the most extensively used as raw material for traditional wood furniture in the Philippines, especially in most of Luzon areas. Mangroves have been known to be a major spawning areas of fisheries and have been harvested as a source of construction material, charcoal, and tannin for export. For many years, the furniture industry in the Philippines has been extensively using rattan species for making furniture both for local and export markets.

With respect to faunal diversity in Philippine forests, there are at least 1,084<sup>7</sup> species of terrestrial vertebrates of which 45 are considered endemic (DENR and UNEP, 1997). Ong (2002), using the term terrestrial wildlife, puts the number to 1130 species

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<sup>6</sup> A forest is defined as an area of one hectare or more which are at least 10 percent stocked with forest trees (including seedlings and saplings), with palm, bamboo, or brush. Narrow strips of land bearing forest must be at least 60 meters wide and one hectare in size to qualify as forest. Industrial plantations and tree farms, one hectare or more in sizes, are also included.

<sup>7</sup> Sometimes the term "terrestrial wildlife" species is used. This number goes up to 1130 with endemism of 49% (Ong, 2002).



with endemism of 49% (Table 8). Among the endemic species, the tamaraw, *Bubalus mindorensis* and the Philippine eagle, *Pithecophaga jefferyi*, are the most threatened species. Both species have an estimated population of less than 200 each although there have been ongoing works for captive breeding on these two species.

The Philippine wetlands are endowed with a rich diversity of flora (1,616 species) and fauna (3,308 species) (DENR and UNEP, 1997). Many of these species represent the complex food webs that have evolved in this ecosystem over time. The major wetlands areas in the Philippines are the Agusan Marsh and Liguasan Marsh in Region 12 and ARMM. Both areas supply large volumes of freshwater fish to the local, provincial, and regional markets in Mindanao. Both areas are also highly threatened by pollution of the river systems that keep the wetlands productive.

In terms of marine ecosystem diversity, the Philippines, with a total coastline of 33,900 km, have at least 4,951 species of marine plants and animals which are found in coastal and marine habitats. Of this, the number of fishes, non-coral invertebrates and seaweeds is the largest. Coral reefs are the most diverse or species rich with 3,967 species. There are 481 seagrass species and 370 mangroves species. The diversity of coral reefs and seagrasses species are considered to be some of the highest in terms of species richness in the world (DENR and UNEP, 1997; Alino, et. al., 2000). In fact, of the 20 seagrass species in the East Asian region, 16 have been found in the country (Fortes, 1994 as cited in Alino, 2003).

The coral reefs have an estimated total area of 25,000 km<sup>2</sup>, almost 10% of the total land area of the Philippines (Gomez et al, 1994). Well-developed reefs are situated in the Visayan Islands, around Palawan, on shoals in the Sulu Sea and South China Sea. The Philippines is part of the world's center of marine biodiversity – the coral triangle – with at least 410 coral and 1,030 coral reef species (Jacinto et al, 2000). It is second to Indonesia in having the most coral reefs in the region. In terms of mangrove, the total area is 1,607 sq km. Most mangroves are found in West Visayas and west of Southern Luzon. Remaining few primary stands of mangroves, on the other hand, are mostly found in Palawan, Samar (west Visayas) and Mindanao. (Spalding et al, 1997).

It should be noted here that the wetlands, coastal, and marine areas in the Philippines are the major source of fisheries production for local consumption and export markets (as shown in Table 7).

**Table 7. Quantity and Value of Fish Production, by Type of Fishing Operation (1991-2000), Quantity in thousand metric tons; value in million pesos**

| Year | Total    |          | Commercial Fishing 1 |          | Municipal Fishing 2 |          | Aquaculture 3 |          |
|------|----------|----------|----------------------|----------|---------------------|----------|---------------|----------|
|      | Quantity | Value    | Quantity             | Value    | Quantity            | Value    | Quantity      | Value    |
| 1991 | 2,599.0  | 60,033.3 | 759.8                | 15,244.6 | 1,146.8             | 22,132.6 | 692.4         | 22,656.1 |

|      |         |           |         |          |         |          |         |          |
|------|---------|-----------|---------|----------|---------|----------|---------|----------|
| 1992 | 2,625.6 | 65,443.5  | 804.9   | 16,800.7 | 1,084.4 | 22,656.4 | 736.4   | 25,986.5 |
| 1993 | 2,632.0 | 70,215.8  | 824.4   | 18,021.2 | 1,014.0 | 22,031.4 | 793.6   | 30,163.2 |
| 1994 | 2,721.0 | 80,192.1  | 859.3   | 20,714.5 | 992.6   | 24,474.9 | 869.1   | 35,002.7 |
| 1995 | 2,785.1 | 83,187.3  | 893.2   | 23,065.4 | 972.0   | 26,463.8 | 940.6   | 33,658.1 |
| 1996 | 2,796.0 | 83,275.2  | 879.1   | 24,555.3 | 909.2   | 25,373.2 | 1,007.7 | 33,346.7 |
| 1997 | 2,793.6 | 80,617.1  | 884.7   | 25,935.3 | 924.5   | 27,392.9 | 984.4   | 27,288.8 |
| 1998 | 2,829.5 | 85,133.1  | 940.5   | 29,737.1 | 891.1   | 28,966.5 | 997.8   | 26,429.5 |
| 1999 | 2,923.8 | 92,322.3  | 948.8   | 32,242.1 | 926.3   | 31,034.1 | 1,048.7 | 29,046.1 |
| 2000 | 2,993.3 | 98,622.1  | 946.5   | 33,878.7 | 945.9   | 32,595.6 | 1,100.9 | 32,147.9 |
| 2001 | 3,166.5 | 107,193.8 | 976.5   | 36,088.7 | 969.5   | 34,221.7 | 1,220.5 | 36,883.4 |
| 2002 | 3,368.5 | 113,130.4 | 1,041.4 | 39,681.2 | 988.9   | 38,041.9 | 1,338.2 | 35,407.4 |

Source: NSCB, 2000

Note: Details do not add up to total due to rounding.

1 Includes production from commercial fishing vessels.

2 Includes production from capture activities in various marine and inland (fresh) bodies of water such as lakes, rivers, etc.

3 Includes production from aquaculture activities such as brackishwater and freshwater fishponds, freshwater and marine fishpens, freshwater and marine fishcages, culture

### Extinct and Threatened Species

Tables 8 and 9 provide a summary of extinct and threatened species of plants and animals. It should be noted that the Philippines belongs to the top 5 countries with the highest species that are threatened and extinct. Among the terrestrial wildlife, the number of threatened endemic species is about 23%. The extinction and threats to species are the consequence lack of awareness and of weak institutional, legal, and enforcement systems towards the protection and management of biodiversity conservation in the Philippines.

**Table 8. Extinct and Threatened Species of Selected Countries in South and Southeast Asia**

| Selected Countries | No. of Threatened Species | No. of Extinct, threatened, and other species: Plants | No. of Extinct, threatened and other species: Animals |
|--------------------|---------------------------|-------------------------------------------------------|-------------------------------------------------------|
| 1. Bangladesh      | 85                        | 12                                                    | 73                                                    |
| 2. Bhutan          | 42                        | 7                                                     | 35                                                    |
| 3. India           | <b>482</b>                | <b>246</b>                                            | <b>236</b>                                            |
| 4. Indonesia       | <b>794</b>                | <b>383</b>                                            | <b>411</b>                                            |
| 5. Malaysia        | <b>828</b>                | <b>683</b>                                            | <b>145</b>                                            |

|                |            |            |            |
|----------------|------------|------------|------------|
| 6. Nepal       | 68         | 7          | 61         |
| 7. Philippines | <b>409</b> | <b>194</b> | <b>215</b> |
| 8. Sri Lanka   | <b>348</b> | <b>280</b> | 68         |
| 9. Thailand    | 213        | 84         | <b>129</b> |
| 10. Viet Nam   | 270        | 144        | 126        |

Notes: 1) Threatened species includes mammals, birds, reptiles, amphibian, fishes, mollusks, other invertebrates and plants.  
2) The extinct, threatened, and other species: plants and animals include those EX – extinct, EW – extinct in the wild, CR- critically endangered, EN – endangered, and VU - vulnerable  
Source: <http://www.redlist.org/info/tables/tables5.html> (IUCN Red List Categories)

**Table 9. Diversity, endemism and threatened species of Philippine wildlife**

| Species Group | No. of species | No. of endemic species | No. of threatened species | No. of threatened endemic species |
|---------------|----------------|------------------------|---------------------------|-----------------------------------|
| 1. Amphibians | 101 +          | 79 +                   | 24                        | 24                                |
| 2. Reptiles   | 258 +          | 170 +                  | 8                         | 4                                 |
| 3. Birds      | 576 +          | 195 +                  | 74                        | 59                                |
| 4. Mammals    | 204 +          | 111 +                  | 51                        | 41                                |
| TOTAL         | 1,139 +        | 555 +                  | 157                       | 128                               |

**Source:** Ong, Perry. 2002. Current status and prospects of protected areas in the light of the Philippine biodiversity conservation priorities. Proceedings of IUCN/WCPA-EA-4 in Taipei Conference on March 18-23, Taipei, Taiwan.

### Management of Biodiversity

As mentioned elsewhere, the management of biodiversity in the Philippines is pursued through the Protected Area Systems (PAS) and through the regulations and guidelines in protecting and managing forests and coastal areas that are outside the PAS. The DENR in collaboration with the Department of Agriculture's Bureau of Fisheries and Aquatic Resources and LGUs on biodiversity conservation in coastal and marine areas, provide the overall technical guidance, direction, and management of protected areas considered as "set asides".

Specifically, DENR's Protected Areas and Wildlife Bureau (PAWB) for terrestrial and marine protected areas and wildlife and DENR's Environmental Management Bureau on pollution management in protected areas. The management of biodiversity in both terrestrial and marine protected areas as "set asides" is with PAWB and DENR regional offices with the strong participation of different local stakeholders through the PAMB mechanism. In theory, each protected area has a Protected Area Superintendent (PASU) to carry out various protection, management, and development activities in each area. Each PASU with the PAMB has the responsibility to plan, implement, monitor, and conduct research on biodiversity with funding from the national government, LGUs, IPAF, and grants or donation.

The passage of the Local Government Code of 1991 has devolved management authority and implementation to local government units (LGUs) of key the 15-kilometer seaward of coastal waters. This puts the responsibility of protecting and managing biodiversity of coastal resources that are not part of the National Integrated Protected

Area System (NIPAS) to the LGUs. In addition to this, the RA 8550 or the Fisheries Code of 1998 provides that 15% of municipal waters should be allotted for fish sanctuaries and 25-40% of fishing grounds beyond municipal waters for fish sanctuaries or mangrove reserves. (Alino et al, 2003). Protecting marine and coastal biodiversity in non-PA areas becomes then the responsibility of the LGUs with the communities. LGUs have the responsibility of planning, implementing, monitoring, and enforcing biodiversity regulations within their municipal waters based on approved zones.

In 1992, the establishment and management of National Integrated Protected Areas System (NIPAS) was made through the enactment of RA 7586 or the NIPAS Act. The initial and additional components of the PAS cover “outstanding remarkable areas and biologically important public lands that are the habitats of rare and endangered species of plants and animals, bio-geographic zones and related ecosystems, whether terrestrial, wetland or marine, all of which shall be designated as protected areas”. Protected areas under the NIPAS are directly under the responsibility of DENR with the participation of local stakeholders through the PAMB. The Act specifies that PA management will be collaboration among national government, local government and concerned private organizations.

Biodiversity conservation in non- PA areas in terrestrial areas is the responsibility of holders of tenure or allocation instruments. This means that “old growth forests, highly diverse forest and ecosystem areas, caves, historical monuments, etc.” should be protected and managed as part of the approved resource management plans of the holders of tenure and allocation instruments. Thus, an IFMA, SIFMA, CBFMA, or CADC holder has the responsibility of protecting and managing patches of old growth forests and highly diverse areas in their forests and forestlands. The tenure and allocation holders will have to plan, implement, monitor, and enforce biodiversity conservation regulations within their management units.

Overall, however, the DENR through its regional offices and staff bureaus (PAWB, FMB, and EMB) and NCIP have the responsibility to ensure biodiversity conservation in areas that are part of the PAS or in areas that are outside the system of protected areas in the Philippines. It has also the responsibility of establishing biodiversity baselines, monitoring key biodiversity indicators over time such as forest cover, biodiversity indices, etc. and provides reports to local, regional, national, and international stakeholders under different international agreements (see Annex C for international agreements with regard to biodiversity conservation).

### **3.0 Assessment Of Threats To Tropical Forests And Biodiversity**

DENR and UNEP (1997) classified threats to biodiversity and sustainability of resources into the following: **habitat destruction, overexploitation, chemical (environmental) pollution, biological pollution (species level), and weak institutional and legal capacities.**

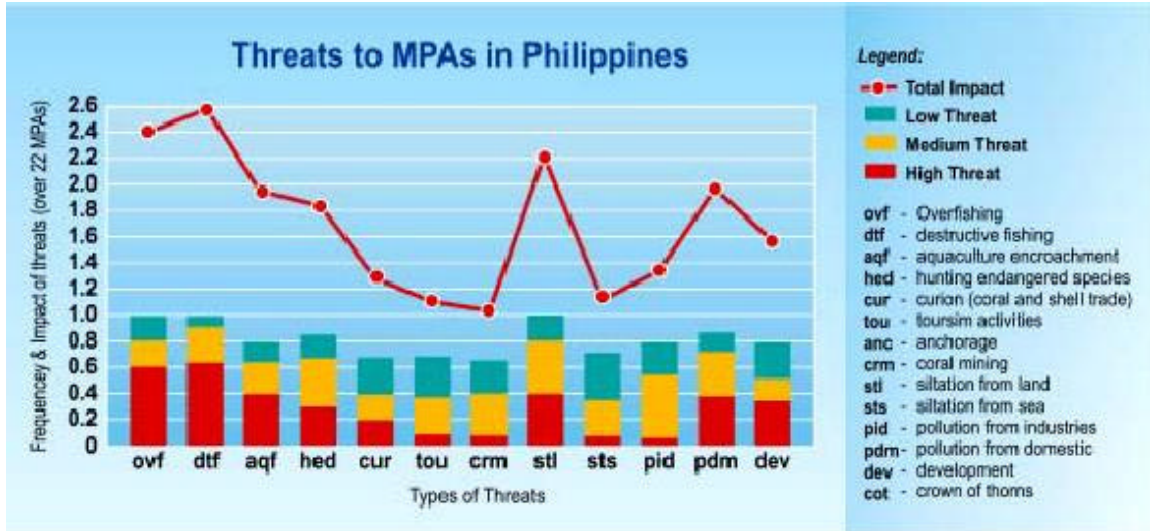
The PBCPP (2002) and ESSC (2002) further gave details and perspective of these threats in the context of mining, IP claims, protected areas, socioeconomic pressures. These threats are expected to increase with the increasing population of the Philippines (still at 2.2-2.3% growth rate), worsening poverty (still at 40%), increasing pressure to expand the national economic base for increased revenues (this means more directed efforts at identifying sources of national revenues that could potentially result to “windfall” incomes from mining, oil, etc.) as external loans eat up to 30% of the national budget, and with the complacent attitude of government bureaucracies to resolve issues and clearly defining property rights in publicly owned forestlands, coastal areas, lakes, and river systems. Moreover, equivalent “economic magnets” in the urban and lowland areas for employment are not expected to greatly increase in the next five years because most light and medium industries are still adjusting with globalization pressures, competition with more efficient economies, and instability in the Philippines’ political system.

Habitat destruction are the results of natural calamities such as the Pinatubo eruption affecting forests, marine life, and farmlands in Subic-Bataan National Park; and destructive and unsustainable practices such as the wanton logging in Mindanao, Northern Luzon, and Samar Islands in the 60s, 70s, and 80s followed by the extensive illegal logging in the late 80s and early 90s. Other destructive practices include forest and grassland fires as a result of increasing land conversion, encroachment and occupancy. Because 90% of the Philippines land area drains to a given watershed, upland destructive activities and calamities result to increased siltation of rivers, waterways, lakes, near shore areas and coastal waters. In terrestrial ecosystem, the loss of forest cover after the Second World War as a result of key contributing factors (see Durst, et. al., 2001) has disturbed stable the Philippine forest ecosystems causing displacements, increased threats to certain species, caused displacements, and nurtured survival strategies of certain species and indigenous cultures. The remaining 18-19% forest cover of the Philippines is not enough to support and stabilize existing megadiversity resources in the tropical forests (ESSC, 1999).

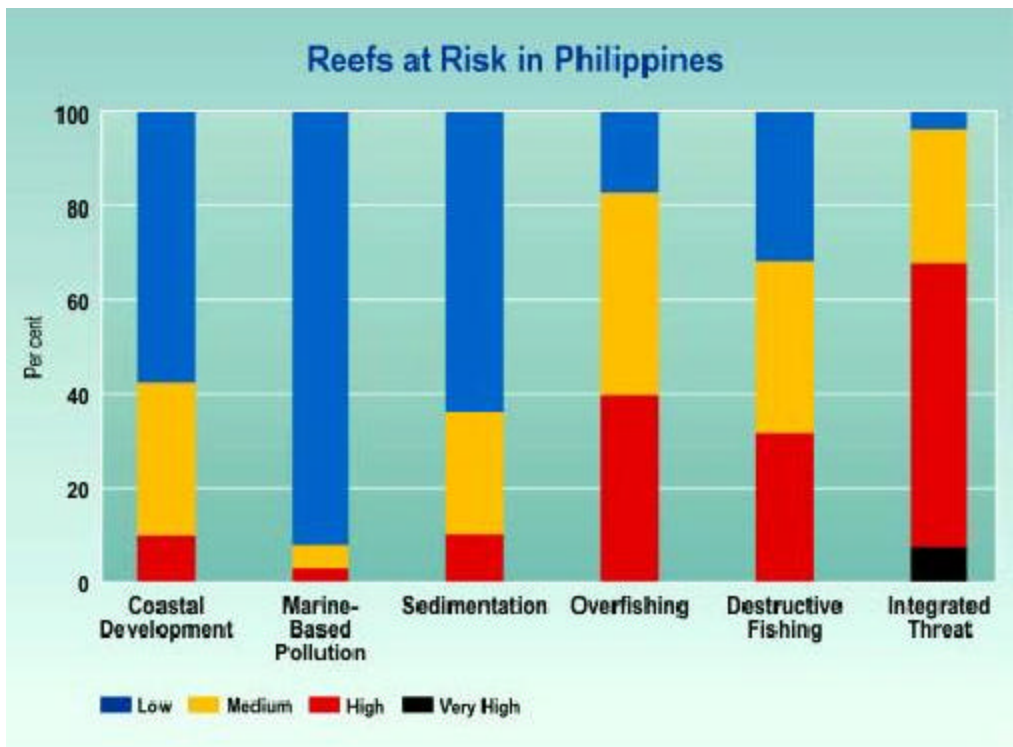
In the terrestrial ecosystem, the immediate threats are illegal logging and biopropecting in remaining natural forests because of poorly defined and unenforceable property rights system especially for communities and indigenous peoples, weak capacity and financial resources for enforcement of regulations on biodiversity, the pressures of mining, and worsening poverty in the uplands.

In coastal areas, the different threats to biodiversity are clearly depicted in the Figures below. Overfishing, destructive fishing, and siltation are the major threat to marine biodiversity.

**Figure \_\_. Threats to MPA in the Philippines**



Source: Cheung, 1995 (cited in Alino et al, 2000)



Source: Burke et al, 2002 (cited in Alino et al, 2000)

Chemical or environmental pollution, especially in marine, freshwater system, and coastal areas have, over the years, started to threaten biodiversity resources in key protected areas. For instance, mine tailings from the small mining operators in Compostela Valley combined with heavy usage of pesticide and fertilize in adjoining agricultural farms that drain towards Agusan River have threatened aquatic life in the wetlands of Agusan Marsh. Extensive and intensive agricultural production in and around the Liguasan Marsh has also threatened its sustainability for productive fisheries

and the habitat of certain fauna species. As earlier mentioned, pollution of river systems and coastal areas from sewerage systems, effluents and discharges from factories are negatively impacting growth and population of demersal and pelagic fisheries in municipal waters and major fishing grounds.

The introduction of exotic species in wetlands ecosystems (lakes and rivers) and in the forestlands at the expense of indigenous and endemic species have caused displacement or marginalization of these species through predation, competition, hybridization, or introduction of parasites and other diseases. For instance, the original fish population of Kaliraya lake has disappeared with the introduction of black bass (DENR and UNEP, 1997). Further the introduction of African catfish and golden snail has also impacted the population of indigenous species. In forestry, the introduction of exotic fast growing hardwoods in the massive reforestation planting in the 80s and 90s have gradually changed the landscape of many uplands and forest areas. Now, there are more plantations of exotic species of gmelina, mahogany, acacias, albizzia, leucaena, among others. The large area planted with leucaena in the 80s, for instance, caused the sudden outbreak of jumping plant lice that devastated many areas in the country.

Indirect threats to the Philippine biodiversity come from the impacts of weak institutional and legal capacities to implement the NIPAS Law, the Local Government Code, the Wildlife Act of 2001, the Fisheries Code, and the laws covering specific protected areas such as those in Mt. Kanlaon, Mt. Kitanglad, Mt. Apo, Sierra Madre, Batanes Islands, and Salay Protected Areas. Poor governance, inadequate funding support, incompetence, lack of capacity to enforce rules and regulations, lack of accountability and transparency, unclear property rights regime, among others are some issues with weak institutional and legal capacities. Proclaiming areas as watershed reserves, protected areas, wilderness areas, or game refuge and bird sanctuaries does not ensure that biodiversity or their dominant objectives are translated into work plans, human and financial support, information dissemination, livelihood support, advocacy, and carried out and implemented (DANIDA and DENR, 1999). These many unresolved issues have led to “indecisiveness” at the protected area level rendering most Pas as virtually “open access” areas.

Existing capacities to implement PA activities requires technical and managerial competence. For instance, the lack of a functional and local monitoring system for key biodiversity performance indicators and aggregating information and analysis at the national level is not in place (NIPAP and DENR, 2001). In many cases, the technical and livelihood aspects of PA management are left out at the expense of biodiversity conservation. The legal and organizational capacities within DENR and NGOs are also quite limited. PAWB does not have direct jurisdiction over Pass (Menadue and Cervantes, 2001). Some NGOs have demonstrated strong capacities in advocacy, community organizing, and coordination/networking/leveraging but very limited in the technical aspects of managing biodiversity, livelihood projects and enterprises, and even in project management (World Bank, 2001).

In many ways, the indecisiveness, unclear direction, and the limited institutional capacity of government and non-government institutions in responding to opportunities and challenges in protected area management and biodiversity conservation have resulted to “de facto” management of many protected areas. This situation has resulted to “opportunistic and mercenary” behavior among local communities and stakeholders. Thus, land conversion for the production of high value cash crops has gradually crept in Mt. Apo, Mt. Kitanglad, and Mt. Kanlaon national parks. Small scale illegal cutting and “silent” illegal bioprospecting are occurring in several PA sites. This is also aggravated by complex bureaucratic requirements to “legalize” operations with the requirements for bioprospecting under DENR and NCIP’s free and prior information consent (FPIC).

#### **4.0 Major Issues and Key Recommendations for Improving Biological Diversity And Forest Conservation in the Philippines**

Many of the issues and recommendations that concern biodiversity conservation cut across terrestrial and marine ecosystems, except that the protection and management of marine protected areas or sanctuaries that are outside the PAS and are under the direct responsibility and management of the LGUs are facing different but localized biological diversity concerns. This section present issues and recommendations from three major perspectives: technical, institutional, and policy aspects of biological diversity and forest conservation. These broad categories of issues and recommendations try to deal with the following core questions:

- What, where, what kind, and how extensive are the biodiversity resources of the Philippines? Who are the stakeholders? To what extent can “set asides” in the form of Protected Area Systems (PAS) compatible with the interest of local stakeholders? To what extent will “integration of communities and local interests be compatible with long term biodiversity conservation objectives?”
- How could these biodiversity resources be effectively protected, managed, and conserved given present constraints and local interests? To what extent can protection and management of biodiversity resources appeal to “What’s in it for me” mentality?
- What are the technical issues? Institutional issues? Policy gaps and conflicts? Operational issues? To translate written policies and intentions into actions in the ground?
- Does the Philippines have what it takes to protect and manage its biodiversity? How much and how long will the country be dependent on external support for both technical and financial support?

In some ways the Philippines has answered most of the “what, where, what kind, how much, how extensive” questions. The issue boils down to the question of “so what”? Where do we start? What and how do we prioritize? How many can we effectively support and finance adequately without spreading resources so thinly over 430 sites or even with the new 16 terrestrial biogeographic regions and 6 marine transition regions? Where and how do we get sustainable funding instead of heavy reliance on donor support? What are the “trade offs” between focusing efforts and supporting a few



critical and important PA sites that capture the megadiversity and uniqueness of the biogeographic region and marine transitions than trying to protect biodiversity in all potential sites in the country?

#### 4.1 Key Technical Issues and Recommendations

- There is limited capacity to fully protect and manage the recommended number of re-prioritized sites and the number of initial and additional components of the Philippines Protected Area Systems.

**Re-prioritize** the prioritized protected areas as a result of the PBCP Priority Setting in 2001. New re-prioritization should be based on biodiversity consideration, management capacity, funding considerations, participation of key stakeholders, and local, regional, and national commitments. The present number of 430 PA sites (initial and additional components) and even the PBCPP new priorities could not simply be supported with current capacities and available funding support. Other proposed PA sites that are extensively under human settlements, much disturbance, and may not capture some of the megadiversity concerns may be de-established and managed through the management of tenure/allocation holders or devolve to LGUs and other academic/research institutions for protection and management.

**Focus attention** on the 110 priority areas that are under various stages of being proclaimed as protected areas and ensure that these PAs would cover the right areas (consistent with the revised 16 biogeographic regions in terrestrial and 6 in marine areas) (Ong, 2001).

**DENR and LGU should take pro-active** measures to protect the 96 priority areas that are not any conservation management system. Put them into co-management with LGUs, DENR issuance of order, etc. declares these areas as critical habitats (under the Wildlife Act of 2001). In these areas, address property rights and use rights in multiple use and buffer zones.

In re-prioritizing the prioritized protected areas, carefully **consider** the following factors: (a) drastic landscape changes and the current state of protected areas which are may be a far cry from they were when they were proclaimed such as most PAs have 2/3 of their areas with human settlements, (b) Under representation of ecosystem and habitat types in existing PAS, (c) Inclusion or exclusion of high proportion of degraded and converted habitat, (d) Presence of high percentage of manmade structure within Pas, (e) Under representation of species and mammals richness, and (f) Bias of the system in terms of location and species richness (Bugna and Blastique, 2001).

In re-prioritizing priority PAs, **account** for the size, connectivities of species, corridors and transition zones. Science-based selection process should be adopted (Bugna and Blastique, 2001; Ong, 2001).

- Biodiversity conservation information of forests is not clearly disseminated and linked with their role in providing other environmental services such as water supply, carbon sequestration and maintaining cultural integrity

In top priority PA sites, **link and document** the objectives of watershed management, carbon sequestration, and cultural integrity to broaden the base of stakeholders, and expand possible sources of financing in support of the dominant objective of biodiversity conservation. Conservation efforts should explore the development of water user fees to support the protection of forests with high biodiversity values. Efforts should also expand the many promising user fee or polluter fee systems in marine sanctuaries and other coastal areas.

- The extensive use of exotic species for reforestation and rehabilitation in PAs might have long term negative impacts on the nature and extent of biodiversity resources

Forest plantation development efforts in and adjacent to PAs should consider planting indigenous species and assisting natural regeneration of secondary forests. **Evaluate the viability** (technical, and cost wise) of harvesting of the massive plantations of exotic species in protected areas and gradually replace these with indigenous and endemic species. DENR should determine to what extent communities in the buffer and multiple use zones of PAs can sustainably harvest timber species from natural forests in buffer and multiple use zones. Therefore, PAMBs should establish a transparent and accountable process for managing natural forests surrounding protected areas.

- Absence of a commonly accepted and consistently implemented performance indicators in assessing improvements or decline of biodiversity resources in PAs remains a challenge.

The absence or lack of mechanism to monitor key biodiversity indicators in each PA, for aggregating information at the provincial, regional, and national level is limiting capacities for more informed decision making, policy change, or strategic resource allocation. Thus, key performance indicators for estimating or determining baseline and periodic improvements in biodiversity conservation efforts should be developed and implemented in each PA, including changes in forest cover at a minimum. Training and capacity building in support of the performance indicator system should also be carried out in collaboration with NGOs, academic and research institutions for credibility, better analysis, and independence. This may eventually be linked to criteria and indicators for sound PA and biodiversity conservation under independent assessment and certification of PA systems.

- There have been mixed results of livelihood and enterprise intervention in PA areas with regard to lessening threats to biodiversity conservation

While individual and community livelihood activities can help improve the lives of communities living in and adjacent to PAs, efforts should focus on encouraging communities to develop land outside of the PAs. Many of the initial assistance on

livelihood activities had mixed and minimal impacts for improving biodiversity or improving protected area management. Future livelihood support system and community enterprises should be consistent with the principles of helping communities increase their assets and social capital over time and should be consistent with protected area management (World Bank/CPPAP, 2001; NIPAP/Aide Memoire, 2001; Mittelman, 2000).

In the context of reducing economic dependence of communities in and around PAs, there is a need for each of the PA to identify and determine the most appropriate intervention and support system for each of the PA zones in collaboration with the local stakeholders in the context of to what extent can PAs absorb agricultural expansion and encroachment especially in the buffer, multiple, recreation, and ecotourism zones.

- Promote low-cost affordable wastewater treatment systems in critical coastal areas to reduce coastal and marine resources degradation. The DENR should work with LGUs, private sector, local communities and other stakeholders to improve water quality management in biologically important coastal areas such as marine corridors identified in the national biodiversity conservation priority setting analysis.
- Ban in harvesting natural timber species in buffer and multiple use zones by communities

For communities in the buffer and multiple use zones of PAs, **determine** sustainable and predictable harvest levels (of timber and NTFP) and appropriate harvesting practices instead of simply closing the door for timber and non-timber resource utilization by communities. A transparent and accountable process approved by PAMB should be established and institutionalized. Otherwise, the policy on banning any extraction of natural forests on a sustainable manner and encouraging them to plant exotic species would run counter the objectives of biodiversity conservation.

- Lack of accepted criteria and clear cut policies and processes in de-establishing existing or proposed PAs that do not meet criteria for biodiversity conservation or protected area system

There is a need for PA stakeholders (DENR, CSO, academic/research institutions, LGUs, and private sector, communities) to agree on a set of criteria for de-establishing existing and proposed protected areas into non-protected areas especially among the initial and additional components of the NIPAS law.

#### **4.2 Key Institutional Issues and Recommendations**

- Broader and more equal stakeholder participation (from community and private sector, academic/research organizations) in PAMBs remains limited and PAMB is still perceived as a DENR extension in the protection and management of the PAs.

Private sector groups should also be represented in PAMBs, especially, when there are clear indications that they are directly benefiting from environmental services provided by the PA (e.g. a private company using higher quality of ground and surface water in processing or manufacturing beer in Sta. Cruz, Davao del Sur). Processing of PAMB member appointments should be decentralized and periodically evaluated by PAWB. Presently, all appointments are signed by the DENR Secretary. This will also facilitate more participation from local stakeholders, community leaders, and IP groups.

DENR should provide a mechanism that defines and facilitates functional coordination among DENR and other government entities and NGOs for protected areas management. This mechanism should be part of standard institutional arrangements between and among CSOs, NCIP, LGUs, private sector, community groups, and DENR at the operational level. DENR still remains the agency that has the mandate to protect and manage “PA set asides” for biodiversity conservation to benefit the present and future generations. All other stakeholders at the international, national, regional, and local levels should work on a common agenda and incorporate these in the Protected Area Management Plan for annual planning and implementation.

Lastly, more transparency and accountability is needed in terms of monitoring PAMB’s performance in managing PAs, including measuring biophysical indicators and public presentations of financial expenditures. For instance, tools such as community mapping, simplified Biodiversity Monitoring System, GIS monitoring of improvement of forest cover, help improve the quality of data and information to based decisions on how to best conserve biodiversity in PA areas.

- Despite the more than 20 foreign-assisted projects supporting PA and biodiversity conservation, a national strategy for public information dissemination has not been fully integrated, implemented, and funded. There is a continuing need for focused, strategic, and constituent-oriented public awareness efforts to build public support and political will for conserving biological diversity.
- Existing institutional structure and arrangements are incompatible with the decentralized and devolved requirements for implementing the NIPAS law.

PAWB has the mandate to set the policies and standards for the DENR field offices in PA management and biodiversity conservation. However, it has only a weak voice when it comes to planning, budgeting, and re-aligning necessary support for the PAs. There is a need to strengthen key results area for monitoring regional PA performance for accountability and transparency in PA protection and management. There are no position items for PASUs under the NIPAS law. PAWB should have the authority to implement and monitor standards of PA management.

There is a need to carefully consider the possibility of the active involvement of PAWB in regional PAMBs especially for PAs with national and international significance and importance especially those that are part in meeting international agreements. This will allow mentoring and coaching from Manila specialists and

augmenting the capacities of the PASUs to do technical staff and analytical support for the policy making, oversight, and decision making of PAMBs.

- Limited capacities of PAWB, PASUs, LGUs, NGOs, communities, and PAMB members in providing oversight, implementation of PA management activities, livelihood assistance, monitoring, and creating political support and higher level of awareness among the constituency on the importance of biodiversity conservation. Assistance in this area should consider a longer and more strategic approach and perspective. It has to have institutional ownership and in support of DENR mandate instead of project driven capacity building and support system.
- Weak mechanisms to ensure transparency and accountability practices for PASUs, CSOs, LGUs, PAMBs, and communities in PAs. This process can be linked with the performance indicator system, PAMB periodic meetings for accountability combined with public expenditures reviews. This mechanism, if put in place in each PA, would be able to identify opportunities and constraints in protected area management focusing on biodiversity conservation. There is an increasing demand for improved governance of CSOs, PAMBs, and PASUs as they provide assistance in PA management because of some tainted experience with NGOs during the implementation of the World Bank/GEF-funded CPPAP which ended in June, 2002 (CPPAP, 2001).

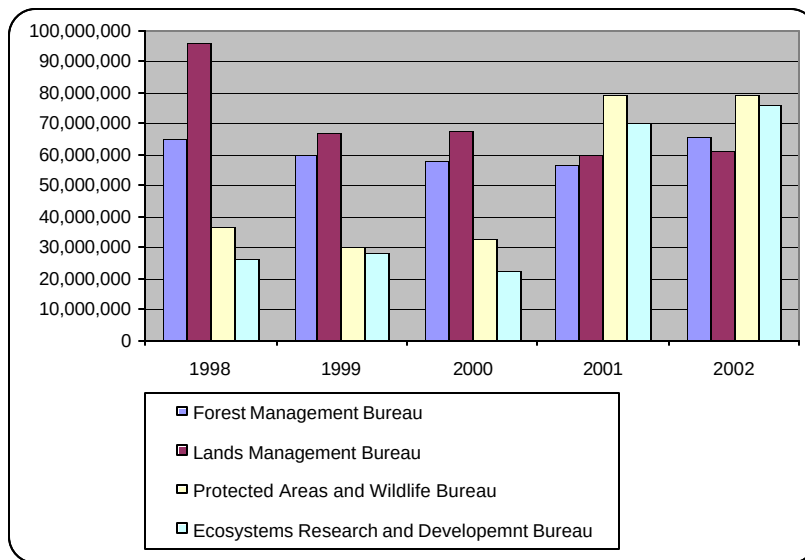
#### **4.3 Financing issues and Recommendations**

- There is inadequate funding to carry out core activities to achieve effective protected area management.

Support is needed to fund budgets for personnel (core technical, support staff), logistics (mobility, transport, communication, etc.), construct or maintain needed infrastructures (towers, monitoring stations, etc.), information dissemination, regular meetings and feedbacks, data gathering and analysis of biodiversity indicators, delineation of boundaries and addressing property rights claims. Given the government's budgetary constraint, there is an urgent need to broaden sources of funds for PA management and to help shift conservation thinking from the three traditional P's to "preserve, prohibit and punish" to a more modern and encouraging approach to "protect, participate and profit." Efforts should focus on supporting the management of the new endowment established under the Tropical Forest Conservation Act for the Philippines in order to demonstrate that funds can be used well and provide a basis for increasing this endowment.

The figure below shows that despite the 21 externally-funded support for PAs in the Philippines with a total funding support of about US \$ 59 million since mid-90s, budget in support of PAWB declined from PhP 95 million in 1998 to about PhP 60 million in 2002. This decline is attributed to the closure of the two largest donor funded projects in 2001 and 2002 (the EU with about US \$ 15 million and World Bank-GEF

with about US \$ 20 million). In 2002, budgetary support for protected area management in 432 PA sites in the regions had a total amount of PhP 6.385 million or an average of PhP 14,780 per site. If the budget was only used for the initial PAS component of 209 sites, the average would be PhP 30,550 per site. The amount of support per PA will be better if it will only be used in support of the 53 proclaimed PA sites that are within the updated biogeographic regions (Ong, 2001). Clearly, there is a need to increase budgetary support or reduce the number of PAs to only few sites. Protected areas such as the Mt. Kitanglad, Mt. Apo, Mt. Kanlaon, and Sierra Madre National parks will need annual amount ranging from PhP 2-5 million per year just to finance their fixed costs and recurring cost of protection and management (World Bank/CPPAP Aide Memoire, 2001).



Given the government's budgetary constraint, there is definitely an urgent need to broaden sources of funds for PA management. Thus, there is a need to influence the shift of conservation thinking from the three traditional "Ps" – preserve, prohibit, and punish" into a more modern and encouraging approach – "Ps" – Protect, participate, and profit". This means that in protected areas, tangible benefits from PA management must be immediately seen; otherwise, communities lose interest and dedication (Larsen 2000). Share of the PAMB and PASU from use rights and user fee revenues and benefits to communities will strengthen biodiversity conservation activities at the site level.

- The establishment and institutionalization of Integrated Protected Area Funds (IPAF) in all PAs needs to be accelerated.

There are now 123 PA sites with established IPAFs. Identifying potential sources of environmental or users' fees could increase these funds. The mechanism for accessing the IPAF fund has to be simplified as there are requirements for obtaining approval for work and financial plan and getting through the Bureau of Treasury and the Department of Budget and Management before the funds are released to the site. Besides, 25% of the IPAF will be retained in DENR central in support of PAWB activities

- There is no assurance of funding, even for newly enacted specific laws for certain protected areas.

Even for the six PAs that are now covered by Republic Acts, there is no assurance of funding for the implementation of their Protected Area Management Plans. More attention is needed to expand endowments to fund protected area management.

Currently, for example, only FPE and MICADEV (Mt. Matutum Integrated Conservation and Development Program) have active trust funds that are directly and partly supporting biodiversity conservation. The Samar Island Biodiversity Project funded under UNDP plans to set up US \$ 5 million to provide support for a revolving fund through the IPAF mechanism (Wells, 1999). The World Bank/GEF-funded CPPAP failed to set up a mechanism for trust or endowment fund from proceeds from the livelihood fund. The newly formed TFCA Fund may also be re-focused to give priority support for biodiversity conservation in the Philippines.

In the past, some donor agencies funded recurring costs in the protection and management of PAs. This was not sustainable after the phase out of the support. Donor agencies together with DENR and the PAMBs should clearly define what and where could donor agencies get the best return of their investments in biodiversity conservation. Limited financing by the government and corresponding heavy dependence on donor funds to finance most aspects of management helped some PAMBs to be functional but left certain dependency from external funds.

- Who will pay for the cost of participation of other PAMB members especially those of the local leaders, IPs, and other NGOs?

There are costs in running and coordinating typical Protected Area Management Board activities. In many sites, LGUs have been willing to shoulder the cost of meetings – meals and venue- but not the traveling expenses and per diem of IPs, local leaders, and CSO members. This has to a certain extent limited the participation of the grassroots leaders in the PAMB meetings. For instance, in Mt. Isarog, Northern Sierra Madre and Puerto Princesa Subterranean River NIPAS protected areas, the annual cost for a typical PAMB of 35 members holding 10 technical and 8 executive meetings over a year is in the range of \$7,500. Costs include travel, honoraria, and capacity development of stakeholders to ensure their active participation. In short, the policy framework and local mechanism to enhance stakeholder participation and institutional coordination in protected areas management is in place, but is vulnerable to total collapse when foreign funding ends – unless DENR and LGUs allocate sufficient funding for PAMB operation (World Bank, 2002).

#### **4.4 Key Policy Issues and Recommendations**

- There are overlaps and conflicts of institutional mandates between the Local Government Code, NCIP, Mining Law, and NIPAS Act with respect to resource-use permitting, environmental requirements, and collection of fees, land use

development and enforcement. Resolution of this conflict needs to consider community property rights in buffer and multiple use zones, natural resource sharing arrangements and social infrastructure support from LGUs.

- There is also a brewing issue of conflict between mining and biodiversity conservation objectives. This is going to intensify as the government presses to identify new and immediate sources of revenues to address a worsening fiscal deficit (ESSC, 2003; Malayang, 2003). National and local governments, NGOs, private sector and other stakeholders need to agree on acceptable trade-offs and environmental standards in order to generate jobs and income while conserving biological diversity. The NCIP's procedures for Free and Prior Information Consent (FPIC), DENR resource use rights issuance and permitting, issuance of Environmental Compliance Certificates (ECCs) within PAs, and bioprospecting requirements need to have simple, clearly defined guidelines to minimize illegal entries, harvesting, bioprospecting, and collusion arrangements.
- There is also the need to harmonize national and local policies for penalties, incentives, rewards, disincentives for communities in the uplands, fisher folks, private investors, and DENR PASU staff. For instance, some LGUs would pass ordinances on penalties for illegal fishing in municipal waters that are much lesser than what the Fisheries Code requires because of collusion, patronage culture, and corruption at the local level.
- There is also a need to harmonize national and local policies for penalties, incentives, rewards, disincentives for communities in the uplands, fisher folks, private investors, and DENR PASU staff. For instance, some LGUs would pass ordinances on penalties for illegal fishing in municipal waters that are much lesser than what the Fisheries Code requires because of collusion, patronage culture, and corruption at the local level.
- There is a need to consider increasing budgetary support through the internal revenue allotment for LGUs whose area covers large portions of a national protected area as an incentive for the LGUs to actively participate in protected area management. There could be other forms of incentives for LGUs to actively participate in protected area management.



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**Annex A**  
**Details of Key Macro Socio-Economic Indicators with Respect to Biodiversity**  
**Conservation and Protected Area Management in the Philippines**

**Brief Socio-Economic Profile**

Impacts of population on biodiversity can be attributed to growth or increase in numbers, consumption and technology. (DENR and UNEP, 1997). These variables are further elaborated by Asian Development Bank (2001) into four aspects: 1) resource demands due to increased population; 2) changes in labor productivity and consumption patterns resulting from demographic shifts (age distribution); 3) population migration patterns; and 4) population densities which are higher than the environment's carrying capacity. Thus, increasing number of population translates to increase in resource use due to increasing demand to survive and pursuit of improved standard of living. This is evident in developing countries where population density is highest. This scenario, then, is equated with increasing consumption of resources which is also observed in developed countries. In rich countries, however, rate of habitat loss is also adversely affected by technology as part of development strategies.

**A. Demographic Variables**

**1. Population**

The Philippines has a total population of 76,498,735 with an average annual rate of increase of 2.36% (NSCB, 2000). 2004 projected population is 82,663,561. Thus, in 2010, the country is expected to have a population of 91,868,309. Below is a table showing population projection from 1995 to 2010.

**Table 1. Projected Population (1995-2010)**

| Year | Mid-Year Population |
|------|---------------------|
| 1995 | 68,349,452          |
| 1996 | 69,951,810          |
| 1997 | 71,549,790          |
| 1998 | 73,147,776          |
| 1999 | 74,745,756          |
| 2000 | 76,348,114          |
| 2001 | 77,925,894          |
| 2002 | 79,503,675          |
| 2003 | 81,081,457          |
| 2004 | 82,663,561          |
| 2005 | 82,241,341          |
| 2010 | 91,868,309          |

Source: NSCB, 2000

Regional population figures show that Southern Tagalog has the biggest population of 11,793,655 with an average annual rate of increase (1995-2000) of 3.72% (NSCB, 2000). This is followed by National Capital Region and Central Luzon with populations 9,932,560 and 8,030,945, respectively. The table below lists regional population and their annual rate of increase.

**Table 2. Population by Region and Corresponding Average Annual Rate of Increase**

| Region                           | Population<br>(2000) | Average Annual<br>Rate of Increase<br>(1995-2000) |
|----------------------------------|----------------------|---------------------------------------------------|
| National Capital Region          | 9,932,560            | 1.06                                              |
| Cordillera Administrative Region | 1,365,220            | 1.82                                              |
| Ilocos Region                    | 4,200,478            | 2.15                                              |
| Cagayan Valley                   | 2,813,159            | 2.25                                              |
| Central Luzon                    | 8,030,945            | 3.20                                              |
| Southern Tagalog                 | 11,973,655           | 3.72                                              |
| Bicol Region                     | 4,674,855            | 1.68                                              |
| Western Visayas                  | 6,208,733            | 1.56                                              |
| Central Visayas                  | 5,701,064            | 2.79                                              |
| Eastern Visayas                  | 3,610,355            | 1.51                                              |
| Western Mindanao                 | 3,091,208            | 2.18                                              |
| Northern Mindanao                | 2,747,585            | 2.19                                              |
| Southern Mindanao                | 5,189,335            | 2.60                                              |
| Central Mindanao                 | 2,598,210            | 2.08                                              |
| ARMM                             | 2,412,159            | 3.86                                              |
| Caraga                           | 2,095,367            | 1.63                                              |

Source: NSCB, 2000

Rural to urban migration is also an important factor affecting environmental degradation. (ADB, 2001). The lack of capacity to improve environmental governance and infrastructure as a response to urbanization has worsened the rapid environmental situation of the country. This is, then, related with increased industrial production having negative impacts on the environment. Industrial production variables impacting resources are: 1) scale of economic activity; 2) sectoral composition of economic activity; 3) geographical distribution of production; 4) energy, materials and pollution intensity of production processes; and 5) effectiveness of policy in regulating industrial activity.

It is interesting to note that 36,756,881 or 48.05 % of the total population of the Philippines belong to urban population. (NSCB, 2001). Central Luzon ranks highest in the number of urban population (43.61%). This is higher than the national level 23.83%.

Eleven highly urbanized cities (HUCs) were classified as entirely urban. These were in Luzon and Visayas and three in Mindanao: Cagayan de Oro City, Marawi City

and Cotabato City. Zamboanga City, Iligan City, Davao City, General Santos City and Butuan City were classified as HUCs not entirely urban.

These population data may now be related with the country's land area as one method of measuring impacts of human activities on resources. The Philippines has a population density of 255 persons per sq.km. (NSCB, 2000). The figures below show land area and population density by region.

**Table 3. Land Area and Population Density (2000)**

| Region                           | Land Area  | Population Density |
|----------------------------------|------------|--------------------|
| Philippines                      | 30,000,000 | 255                |
| National Capital Region          | 63,600     | 15,617             |
| Cordillera Administrative Region | 1,829,368  | 95                 |
| Ilocos Region                    | 1,284,019  | 327                |
| Cagayan Valley                   | 2,683,758  | 105                |
| Central Luzon                    | 1,823,082  | 441                |
| Tagalog                          | 4,692,416  | 251                |
| Bicol                            | 1,763,249  | 265                |
| Western Visayas                  | 2,022,311  | 307                |
| Central Visayas                  | 1,495,142  | 381                |
| Eastern Visayas                  | 2,143,169  | 173                |
| Western Mindanao                 | 1,599,734  | 193                |
| Northern Mindanao                | 1,403,293  | 196                |
| Southern Mindanao                | 2,714,059  | 263                |
| Central Mindanao                 | 1,437,274  | 179                |
| ARMM                             | 1,160,829  | 211                |
| Caraga                           | 1,884,697  | 111                |

Source: NSCB, 2000

Thus, increasing population density means increasing competition for resources since more people will increase efforts in having share of the resource benefits. This, then, explains how rapid population growth affects resource sustainability.

The country's data on age distribution show that there is higher number on the age group which can be considered as part of labor force. ADB (2001) findings present that in South Asia, infant and child mortality is experiencing a declining trend which leads to higher number of youth in the population and increasing active labor force.

**Table 4. Population by Age Group, by Sex and Region: 2000**

| Age Group   | Population |
|-------------|------------|
| Total       | 76,504,077 |
| Under 1     | 1,917,431  |
| 1-4         | 7,752,071  |
| 5-9         | 9,694,781  |
| 10-14       | 8,949,614  |
| 15-19       | 8,017,298  |
| 20-24       | 7,069,403  |
| 25-29       | 6,071,089  |
| 30-34       | 5,546,294  |
| 35-39       | 4,901,023  |
| 40-44       | 4,163,494  |
| 45-49       | 3,330,054  |
| 50-54       | 2,622,316  |
| 55-59       | 1,903,649  |
| 60-64       | 1,633,150  |
| 65-69       | 1,138,843  |
| 70-74       | 797,970    |
| 75-79       | 505,356    |
| 80 and over | 490,241    |

Source: NSCB, 2000

To mention, 30% of the population or about 22,949,620 are directly being supported by the forest and upland ecosystem of the country. (Coxhead and Jayasuriya, 2003). This includes approximately 6.3 million indigenous people. Annual growth rate of upland population has been estimated to be 2.8%. (Guiang, yr?). Of the total land area, around 15.9 million has. or half of the country's land area has been classified as upland. (Cruz et al, 1988). On the other hand, 62% or approximately 47,429,215 of the total population live in coastal areas. (CRMP, 2001). In terms of municipalities, 832 out of 1,541 or 54% are coastal sites. These figures are reflections of the intensity of dependence on forest and coastal resources.

## 2. Education

In education, participatory rate in secondary level is pretty lower than participation rate in elementary level. The table below shows that almost only half of those who have graduated in elementary are able to acquire high school education.

**Table 5. Elementary and Secondary Enrolment: SY 1990-91 to SY 2002-03**

| School Year | Elementary | Secondary |
|-------------|------------|-----------|
| 1990-91     | 10,427,077 | 4,033,597 |
| 1991-92     | 10,595,713 | 4,173,568 |
| 1992-93     | 10,674,073 | 4,454,908 |
| 1993-94     | 10,739,535 | 4,599,478 |
| 1994-95     | 10,910,876 | 4,772,647 |
| 1995-96     | 11,504,816 | 4,883,507 |
| 1996-97     | 11,847,794 | 4,988,301 |
| 1997-98     | 12,225,038 | 5,022,830 |
| 1998-99     | 12,502,524 | 5,115,251 |
| 1999-00     | 12,680,936 | 5,167,553 |
| 2000-01     | 12,579,918 | 5,383,795 |
| 2001-02     | 12,826,218 | 5,813,879 |
| 2002-03     | 12,979,628 | 6,077,851 |

Source: NSCB, 2003

### 3. Health

Life expectancy for female in 2003 was 72.48 years while 67.23 for males. (NSCB, 2003). Infant mortality rate in 1998 was 35% while child mortality rate was 14%.

#### B. Economic Variables

##### 1. National Income

The Philippines recorded a Gross National Product (GNP) amount of P329,461,000,000 in 2003 at constant prices. Annual GNP growth rate has been estimated to be 5.5% Gross Domestic Product (GDP), on the other hand, totaled to P305,881,000,000 at constant prices in the same year with annual growth rate of 4.5%. (NSCB, 2003). With the 4.4% growth in the local economy, all the regions except CARAGA have shown increased GDP also. Top five contributors to growth include NCR (1.36 percentage points), Southern Tagalog (1.02 percentage points), Western Visayas (0.36 percentage point), Central Luzon (0.34 percentage point) and Central Visayas (.26 percentage point). This growth resulted, then, in higher growth in per capita GDP from 0.6% in 2001 to 2% in 2002.

Sector shares in GDP are distributed as:

**Table 6. Sector shares in GDP (percent)**

| Sector                  | Share |
|-------------------------|-------|
| Agriculture             | 18.02 |
| Natural Resources       | 7.63  |
| Processed Food and Feed | 7.86  |
| Other Manufacturing     | 14.20 |
| Services                | 52.29 |
| TOTAL                   | 100   |

Source: Coxhead and Jayasuriya, 2003

In 2001, a total of P913 million at 1985 constant prices was contributed by the forestry sector to the country's GNP. (FMB, 2001). This was equivalent to 0.09 percent share. On the other hand, BFAR (2001) estimated fishing industry's contribution to the country's GDP to be P3,640 billion (2.3%) at current prices and P989 billion (3.9%) at constant prices

However, in particular, the gross value added of Agriculture, Fishery and Forestry (AFF) sectors declined from 3.7% in 2001 to 3.3% in 2002. Below are gross value added figures of each region.

**Table 7. Gross Value Added in Agriculture, Fishery and Forestry at Constant Prices (2001 and 2002)**



| REGION / YEAR |                   | 2001        | 2002        |
|---------------|-------------------|-------------|-------------|
| PHILIPPINES   |                   | 199,567,999 | 206,198,004 |
| NCR           | METRO MANILA      | -           | -           |
| CAR           | CORDILLERA        | 3,436,763   | 3,419,436   |
| I             | ILOCOS            | 12,534,020  | 12,941,645  |
| II            | CAGAYAN VALLEY    | 11,762,904  | 11,459,549  |
| III           | CENTRAL LUZON     | 22,287,635  | 23,366,433  |
| IV            | SOUTHERN TAGALOG  | 35,894,708  | 37,517,994  |
| V             | BICOL             | 9,361,803   | 9,825,536   |
| VI            | WESTERN VISAYAS   | 21,171,746  | 21,627,527  |
| VII           | CENTRAL VISAYAS   | 9,249,175   | 9,649,801   |
| VIII          | EASTERN VISAYAS   | 7,350,019   | 7,807,537   |
| IX            | WESTERN MINDANAO  | 13,966,344  | 14,862,006  |
| X             | NORTHERN MINDANAO | 10,346,568  | 10,201,513  |
| XI            | SOUTHERN MINDANAO | 22,000,732  | 22,570,662  |
| XII           | CENTRAL MINDANAO  | 9,310,040   | 10,025,657  |
| ARMM          | MUSLIM MINDANAO   | 5,776,724   | 6,000,592   |
| XIII          | CARAGA            | 5,118,818   | 4,922,116   |

Source: NSCB, 2002

At constant prices, forestry sector contributed .5% to the agricultural sector while the fishery sector's contribution reached 19.4% at constant prices.

In addition, quantity and value of fish production by type of fishing operation are presented in the table below:

**Table 8. Quantity and Value of Fish Production, by Type of Fishing Operation (1991-2000), Quantity in thousand metric tons; value in million pesos)**

| Year | Total    |           | Commercial Fishing 1 |          | Municipal Fishing 2 |          | Aquaculture 3 |          |
|------|----------|-----------|----------------------|----------|---------------------|----------|---------------|----------|
|      | Quantity | Value     | Quantity             | Value    | Quantity            | Value    | Quantity      | Value    |
| 1991 | 2,599.0  | 60,033.3  | 759.8                | 15,244.6 | 1,146.8             | 22,132.6 | 692.4         | 22,656.1 |
| 1992 | 2,625.6  | 65,443.5  | 804.9                | 16,800.7 | 1,084.4             | 22,656.4 | 736.4         | 25,986.5 |
| 1993 | 2,632.0  | 70,215.8  | 824.4                | 18,021.2 | 1,014.0             | 22,031.4 | 793.6         | 30,163.2 |
| 1994 | 2,721.0  | 80,192.1  | 859.3                | 20,714.5 | 992.6               | 24,474.9 | 869.1         | 35,002.7 |
| 1995 | 2,785.1  | 83,187.3  | 893.2                | 23,065.4 | 972.0               | 26,463.8 | 940.6         | 33,658.1 |
| 1996 | 2,796.0  | 83,275.2  | 879.1                | 24,555.3 | 909.2               | 25,373.2 | 1,007.7       | 33,346.7 |
| 1997 | 2,793.6  | 80,617.1  | 884.7                | 25,935.3 | 924.5               | 27,392.9 | 984.4         | 27,288.8 |
| 1998 | 2,829.5  | 85,133.1  | 940.5                | 29,737.1 | 891.1               | 28,966.5 | 997.8         | 26,429.5 |
| 1999 | 2,923.8  | 92,322.3  | 948.8                | 32,242.1 | 926.3               | 31,034.1 | 1,048.7       | 29,046.1 |
| 2000 | 2,993.3  | 98,622.1  | 946.5                | 33,878.7 | 945.9               | 32,595.6 | 1,100.9       | 32,147.9 |
| 2001 | 3,166.5  | 107,193.8 | 976.5                | 36,088.7 | 969.5               | 34,221.7 | 1,220.5       | 36,883.4 |
| 2002 | 3,368.5  | 113,130.4 | 1,041.4              | 39,681.2 | 988.9               | 38,041.9 | 1,338.2       | 35,407.4 |

Source: NSCB, 2000

Note: Details do not add up to total due to rounding.

1 Includes production from commercial fishing vessels.

2 Includes production from capture activities in various marine and inland (fresh) bodies

of water such as lakes, rivers, etc.

3 Includes production from aquaculture activities such as brackishwater and freshwater fishponds, freshwater and marine fishpens, freshwater and marine fishcages, culture

## 2. Government Revenues

Recorded government revenues of P59,403 million in 2002 declined to P56,927 in 2004. (NSCB, 2004). In the forestry sector, records in 2001 showed that reported revenue from forest charges on logs amounted to P164 million. (FMB, 2001). Among the regions, CARAGA posted the highest revenue share. Income from non-timber forest products, on the other hand, amounted to P9.4 million where unsplit rattan had the biggest share with CARAGA having 57% of total revenue or P5.3 million.

## 3. Trade Accounts

Country's export values increased from US\$2,733 million in 2003 to US\$ 2,844 million in January of this year (2004). However, imports have also increased from US\$2,918 million in 2003 to US\$3,180 this January, 2004. The negative trade balance, then, increased from US\$(185) to US\$(336). (NSCB, 2004).

The primary forest-based product export in the year 2001 was forest-based furniture which totaled to 4 million pieces or US\$210 million, FOB. These numbers, however, have declined in quantity and value from year 2000 by 15 and 21 percent, respectively. Leading buyers of these furniture products in the period considered were United States, Japan and Saudi Arabia. Other forest products being exported are paper and paperboard, and traditional wood products such as log, lumber, veneer and plywood. (FMB, 2001). Top imported forest products were paper and paperboard and similar articles. Log, veneer and plywood were also imported but there has been a decreasing trend in the importation of such products.

A trade surplus of \$383.1 million was recorded for the fishery sector in 2001. Total fishery exports totaled to \$458.8 million while fishery imports amounted to \$75.7 million. Major export markets were Japan, USA, Hongkong, Singapore, Korea, United Kingdom, Denmark, Canada, France, Taiwan. Imports were primarily from Peru, USA, Indonesia, Taiwan, Spain, New Zealand, Thailand, Denmark, Korea and Marshal Island. (BFAR, 2001).

## 4. Livelihood and Employment

Employment rate at present is 89% (NSCB, 2004). Oppositely, unemployment rate is estimated to be 11%. Numbers of employed persons by major occupation group are listed below:

**Table 9. Employed Person by Major Occupation Group, January 2003-2004**  
(in thousands)

| Occupation |  |
|------------|--|
|------------|--|

|                                                                                                                                  |        |
|----------------------------------------------------------------------------------------------------------------------------------|--------|
| Total                                                                                                                            | 31,522 |
| Officials of government and special interest organizations, corporate executives, managers, managing proprietors and supervisors | 3,867  |
| Professionals                                                                                                                    | 1,340  |
| Technicians and associate professionals                                                                                          | 882    |
| Clerks                                                                                                                           | 1,341  |
| Service workers and shop and market sales workers                                                                                | 2,934  |
| Farmers, forestry workers and fishermen                                                                                          | 5,855  |
| Trades and related workers                                                                                                       | 2,898  |
| Plant and machine operators and assemblers                                                                                       | 2,408  |
| Laborers and unskilled                                                                                                           | 9,857  |

Source: NSCB, 2004

The table above shows that farmers, forestry workers and fishermen who are direct resource users comprise 18% of the total number of employed persons. Thus, the agriculture sector, composing of agriculture, hunting, forestry and fishing, has 11,145,000 total employed persons.

#### 5. Family Income and Poverty Threshold

In 2002, a family has an average annual income of P144,039 against an annual average expenditure of P118,002 resulting in an average annual net income of P26,037. (NSCB, 2002). These figures, however, are different when rural income is distinguished from urban income. Studies show that rural income and expenditures are pretty lower than urban income and expenditures. In 1997, a family in a rural setting earns an average annual amount of 73,319 with an average annual expenditure of P61,966 while a family in an urban area earns P178,121 against P140,955. Below is a table showing regional average annual income and expenditures in year 2000.

**Table 10. Average Annual Family Income and Expenditure by Region 2000.**

| Region                           | Average Income | Average Expenditures |
|----------------------------------|----------------|----------------------|
| National Capital Region          | 300,304        | 244,240              |
| Cordillera Administrative Region | 139,613        | 110,338              |
| Ilocos                           | 120,898        | 95,755               |
| Cagayan Valley                   | 108,427        | 88,655               |
| Central Luzon                    | 151,449        | 120,003              |
| Southern Tagalog                 | 161,963        | 135,043              |

|                   |         |        |
|-------------------|---------|--------|
| Bicol             | 89,227  | 77,287 |
| Western Visayas   | 109,600 | 94,704 |
| Central Visayas   | 99,531  | 83,644 |
| Eastern Visayas   | 91,520  | 72,090 |
| Western Mindanao  | 86,135  | 69,452 |
| Northern Mindanao | 110,333 | 84,477 |
| Southern Mindanao | 112,254 | 90,868 |
| Central Mindanao  | 90,778  | 74,716 |
| Caraga            | 79,590  | 66,288 |
| ARMM              | 81,519  | 72,108 |

Source: NSCB, 2000

In 2000 (NSCB), annual per capita poverty threshold was approximately pegged at P11,605. This means that a family of five members should have a monthly income of P4,835 in order to meet its food and non-food basic needs. NCR has been recorded to have the highest poverty threshold in 2000. This was followed by Batangas and Mt. Province with thresholds of P15,305 and P15,285, respectively. The bottom ten in poverty thresholds, on the other hand, are the following:

**Table 11. Bottom Ten in Provincial Thresholds (2000)**

| Province            | Amount |
|---------------------|--------|
| Western Samar       | 9,574  |
| Eastern Samar       | 9,516  |
| Zamboanga del Sur   | 9,404  |
| Basilan             | 9,271  |
| Northern Samar      | 9,166  |
| Bohol               | 9,125  |
| Zamboanga del Norte | 9,090  |
| Bukidnon            | 8,982  |
| Siquijor            | 8,966  |
| Negros Oriental     | 8,940  |

Source: NSCB, 2000

Income gap in the Philippines was estimated to be 29.6% in 2000. This means that the per capita income of poor Filipinos is 29.6% short of poverty threshold. The top ten provinces with biggest income gap are:

**Table 12. Ten Provinces with Biggest Income Gap, 2000**

|              |      |
|--------------|------|
| Saranggani   | 40.4 |
| Mt. Province | 38.0 |

|                     |      |
|---------------------|------|
| Zamboanga del Norte | 37.6 |
| Lanao del Norte     | 37.1 |
| Catanduanes         | 37.0 |
| Oriental Mindoro    | 36.9 |
| Masbate             | 35.9 |
| Abra                | 35.8 |
| Maguindanao         | 34.7 |
| Agusan del Sur      | 34   |

Source: NSCB, 2000

A World Bank study (1996) has presented that two-thirds of the poor are engaged in agriculture, fishery and forestry sectors. Upland people have been considered as belonging to the “poorest of the poor” sector. A study in 1987 (Cruz et al) showed that annual per capita income of an upland family amounted to P2,168 which was below the average poverty cut-off for families belonging to the bottom 30% income bracket. In the fishery sector, socio-economic variables have been the same in the last thirty years (CRMP, 2001). In 1996, it was found out that 80% of the fisher folk households were living below poverty threshold. It was estimated in 1985 that annual net household income of municipal fishers (including non-fishing activities) was P5,000. In a paper written for Canadian International Development Agency or CIDA (Templo,2003), it was mentioned that poor can be found among: 1) indigenous communities in the uplands who have been pushed in the interiors by loggers, miners and lowland migrants; 2) former workers of logging concessions who have migrated in the uplands and engaged in subsistence production; 3) municipal fisher folks displaced by commercial fishers in traditional fishing grounds; 4) farm and non-farm workers displaced by declining industries; 5) farm households affected by natural disasters; and 6) landless workers who have transferred to coastal areas, towns and cities and are unemployed or underemployed in the informal sector.

## II. Environmental Governance Profile

Philippines have been one of the first countries to steer its direction towards devolution in natural resource management (NRM). This has been strengthened through the passage of the 1991 Local Government Code which has mandated local government units (LGUs) to enact land use plans, reclassify land and levy fines and fees for resource protection and management. (AFN and ESSC, 2001). Specifically, the following are the provisions of the Code on the NRM devolution in the Philippines:

**Table 13. Relevant Provisions of the Local Government Code on NRM Devolution**

|            |                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 2  | General powers and attributes of LGUs                                                                                                                  |
| Section 3  | Operative principles of decentralization                                                                                                               |
| Section 5  | Rules of interpretation of provisions favors local gov't                                                                                               |
| Section 16 | General welfare provisions provide for LGU's role to, among others, preserve and enrich culture, enhance right of people to balanced ecology, economic |

|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            | prosperity, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Section 17                                                 | <p>LGUs shall discharge the function of national agencies devolved to them. For the municipality, this includes: 1) extension and research services related to agriculture and fisheries, water and soil resources utilization and conservation projects; enforcement of fishery laws; conservation of mangroves; 2) implementation of community-based forestry programs and similar projects; management and control of communal forest; establishment of tree parks, greenbelts and similar forest development projects; and 3) solid waste disposal and environmental management system and services or facilities, tourism facilities and attractions.</p> <p>For the province: agriculture extension and research; organizing of farmers and fishermen's cooperatives; transfer of appropriate technology; enforcement of forestry laws on community-based forestry; pollution control; small-scale mining; environmental; and mini-hydro electric projects.</p> |
| Section 20                                                 | Reclassification of lands and preparation of comprehensive land use and zoning plans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Section 26                                                 | Duty of national government agencies to consult with LGUs, NGOs and other sectors on the impact of projects on the environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Section 27                                                 | Prior consultations before implementation of any project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Section 33                                                 | Encourages cooperative undertakings among LGUs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Section 34-36                                              | On the role of People's and NGOs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Section 129                                                | Power to create sources of revenues                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Section 186                                                | Power to levy other taxes, fees and charges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Section 289                                                | Share in the proceeds from the development of national wealth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Section 389 (b.9)                                          | Role of Punong Barangay: Enforce laws and regulations relating to pollution and control and protection of environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Section 444 (b.3)                                          | Role of Municipal Mayor on revenue generation and to call on any national official assigned in the municipality for advice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Section 447 (a.1), Section 458 (1.v), Section 468 (a.1.vi) | Provides for Sanggunian to protect the environment and impose appropriate penalties for acts which endanger the environment such as dynamite fishing, illegal logging and smuggling, slash and burn farming, eutrophication of rivers, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Source: AFN and ESSC, 2001

Efforts in support of the Code are evident in forest and coastal management. Thus, Forest Land Use Plans and Coastal Resource Management Plans are being developed with community participation. Plans are then implemented through the provisions of ordinances. Ordinances include giving of property rights, activities prohibited, fees and penalties imposed.

Community participation is, also, increased through co-management schemes where local people are given share in the responsibilities and revenues of the program. Co-management schemes in forestry are achieved through granting of tenurial instruments. Major co-management agreements are: 1) Socialized Industrial Forest Management Agreement (SIFMA); 2) Industrial Forest Management Agreement (IFMA); 3) Community-Based Forest Management Agreement; and 4) Certificate of Ancestral Domain Claims.

In 2001, the number of Community-Based Forest Management (CBFM) project sites increased to 4,956 with a total area of 5.7 million hectares with the addition of 71 new project sites established as of the end of the year. (FMB, 2001). No difference was noted in 2002. 77% of the total CBFM project area are those with actual tenured area. This is equivalent to 4.4 million hectares. For the SIFMA, there were 947 agreements in the same period with total hectares of 27,645. This increased to 1,026 holders in 2002 with 29,593 has. IFMAs totaled to 186 holders with total area of 614,708. In 2002, IFMA holders totaled to 193 with 696,740. As of 2003, a total of 65,506 has have been given CADTs. Those with CADT applications or with CADCs have reached 3,432,344.6877 has as of year 2003.

Co-management with LGUs in forestry has also been a major direction. A successful example of this is the co-management scheme being implemented in Nueva Vizcaya.

The additional economic benefits of the Nueva Vizcaya's program are:

1. Hiring of participants to forest guards/managers;
2. Reduction in forest fire, charcoal making and timber poaching;
3. Improved supply of potable water for domestic and irrigation use; and
4. Increase in number of alternative sources of employment. The program has decreased poverty incidence in the area 52% in 1992 to 10.9% (Census, 2000).

In coastal resource management, several co-management initiatives have also been implemented.

Civil society has also contributed much to increased environmental governance in the country. These include non-state, non-profit organizations and groups, involving socio-civic organizations, professional organizations, academe, media, churches and development non-governmental organizations (NGOs), people's organizations (Pos) and cooperatives. ([www.asria.org](http://www.asria.org)). The number of NGOs involved in environmental efforts have increased from 1280 in 1990 to 1985 in 2000. ( <http://earthtrends.wri.org>) Zarsky



and Tay (2000) enumerates that civil societies have the following roles in environmental governance: 1) intellectual leadership; 2) specific issues advocacy; 3) technical support providers for problem-solving; 4) social service providers to marginalized groups; 5) government and corporate environmental performance monitors; and 6) philanthropists. The Code increases involvement of civil society through giving NOGos and Pos specific seats in local special bodies. (Brillantes et al, 2002).

These institutional arrangements, through the Code, have enabled all sectors to be involved in environmental governance. ([www.unipan.un.org](http://www.unipan.un.org)). Devolution in NRM has, indeed increased transparency and accountability, thereby, pushing LGUs to initiate effective and efficient environmental programs. These have, also, resulted in people empowerment as local communities become involved in the planning and implementation processes. These, the, have brought about positive changes in resource use behavior.

In addition to institutional reforms, devolution in the country has increased LGUs' financial resources through 1) broadening of taxing powers; 2) provision of specific share from national wealth; and 3) increased share from national taxes. ([www.unipan.unorg](http://www.unipan.unorg)). Also, the Code allows the government to collect local fees and charges. Records show that IRA has increased from P9.4 billion in 1991 to approximately P141 billion in 2003. (Brillantes et al, 2003). However, the sufficiency of these IRA shares has remained to be in question as will be discussed later. The table below shows amounts of IRA from 1991 to 2003.

**Table 14. Internal Revenue Allotment Shares of Local Governments (1991-2003)**

| FY   | Allotment (in billion pesos) | % increase | Total Budget |       |
|------|------------------------------|------------|--------------|-------|
| 1991 | 9.841                        | -          | 259.50       | 3.79  |
| 1992 | 20.305                       | 106        | 295.20       | 6.08  |
| 1993 | 36.724                       | 81         | 331.70       | 11.07 |
| 1994 | 46.815                       | 27         | 369.00       | 12.69 |
| 1995 | 52.042                       | 11         | 372.10       | 13.99 |
| 1996 | 56.594                       | 9          | 445.10       | 12.71 |
| 1997 | 71.049                       | 25         | 491.80       | 14.45 |
| 1998 | 76.941                       | 8          | 537.40       | 14.32 |
| 1999 | 96.780                       | 26         | 593.60       | 16.30 |
| 2000 | 111.778                      | 25         | 651.00       | 17.17 |
| 2001 | 121.778                      | 9          | 669.88       | 18.18 |
| 2002 | 134.422                      | 10         | 780.80       | 17.22 |
| 2003 | 141.6 (est.)                 | 4          |              |       |

Source: Brillantes et al, 2003

This financial provision of the Code is important as LGUs perform their NRM devolved tasks. This enables them to initiate programs addressing their local NRM concerns through revenue-generating activities. In local CRM programs, several LGUs have already collected user fees which are being used in the implementation of their

CRM programs. These have been allotted to improve fishery sector infrastructure, Marine Protected Area (MPA) management and provision of subsidies to fisher folk.

NRM awards programs have also been a devolution tool since these have induced LGUs and the community to increase NRM involvement. Examples of these are Galing Pook Awards of the Local Government Academy and Asian Institute of Management, and the Clean and Green Contest.

In a study conducted on the 12 nationally recognized successful LGUs in NRM (Catacutan et al, 2001), key factors contributing to NRM success were: 1) allotment of their own local funds from either the general or local development funds, as included in their annual investment plan; 2) creation of Environmental and Natural Resource Management Office (ENRO) as a regular division of the LGU. These have been given staffing support and budget allocation; 3) passage of local policies to strengthen local implementation of environmental programs; and 4) strong political will and leadership of local leaders.

Nevertheless, several NRM devolution problems are still hindering LGUs. First, though there has been an increase in fund sources, LGUs still find their finances inadequate vis a vis the responsibilities devolved to them. ([www.unipan1.un.org](http://www.unipan1.un.org)). For one, the 40% share allotted for LGUs in the internal revenue collections of the national government is just 14% of the national budget. This has brought about the issue of “unfunded mandates”. ADB (2001) mentions that “environmental agencies in the Asia-Pacific region are often marginalized, under-funded and inadequately staffed”. As can be observed from the table above, IRA shares have been relatively low vis a vis the national budget. Thus, inclusion of NRM fund sources in their Annual Investment Plan should be a priority. Funds may come from the general fund, local development funds or from self-generated funds from various public or private sources

Second, law enforcement has been poor, thus, there is high non-compliance to LGU ordinances. Incentives, fees, fines and penalties, if present, have not really been adopted as written in national and local policies. Significant consideration, too, in relation to this aspect is the lack of public support and participation in monitoring, detecting and reporting of violations due to lack of incentive mechanisms. ([www.unipan1.un.org](http://www.unipan1.un.org))

Third, poor environmental monitoring remains to be a major problem. There have been inadequate and poor quality resource assessments. These, then, have resulted in ineffective policy directions due to unidentified stakeholders and problems.

Fourth, there is lack of capacity-building programs for LGU implementing officials. Trainings for monitoring and evaluation activities have been lacking due to inadequate funds. Capacity-building programs should be, then, increased in LGUs and concerned national agencies. (Brillantes et al, 2003). Capacity-building programs for improving local NRM should be designed in participation of the local resource users. Thus, training need analysis should be conducted in full involvement of the concerned

stakeholders. Creation of functional ENRO supported by technically qualified staff should be an important course of action by LGUs. This will help in focusing enforcement of policies and programs on NRM. ([www.unipan1.un.org](http://www.unipan1.un.org)).

Fifth, inter-LGU collaboration still needs to be strengthened. Though co-management schemes have been adopted, inter-LGU arrangements have to be increased. LGUs should have a clear understanding that NRM cannot be successfully achieved alone. It requires cooperation among LGUs concerned. In the case of CRM, inter-LGU CRM Plans have to be promoted in the local level since coastal resources of one LGU are interrelated with other LGU coastal resources.

Sixth, LGUs have to increase partnership with civil society in NRM activities. There is a need to collaboratively identify programs which may be initiated to resolve NRM conflicts. Documentation of NRM successful partnerships between government and civil society at the local level as well as dissemination of information on these collaborations will be useful tools in encouraging LGUs and civil society to engage in such activities. (Brillantes et al, 2003).

Lastly, incentive system has not been extensively promoted and adopted in local settings. This has led to slow understanding of the community to increase participation in environment sustainability strategies. Conduct of resource assessments should be a prerequisite in the development of NRM plans.

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## Annex B

### IUCN's six protected area management categories

**CATEGORY Ia:** Strict Nature Reserve: protected area managed mainly for science  
Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

**CATEGORY Ib**

Wilderness Area: protected area managed mainly for wilderness protection  
Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

**CATEGORY II**

National Park: protected area managed mainly for ecosystem protection and recreation  
Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

**CATEGORY III**

Natural Monument: protected area managed mainly for conservation of specific natural features  
Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

**CATEGORY IV**

Habitat/Species Management Area: protected area managed mainly for conservation through management intervention  
Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

**CATEGORY V**

Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation  
Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

**CATEGORY VI**

Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

## **Annex C**

### **Institutional Arrangements Affecting Philippine Biodiversity**

#### **I. Legislative and Institutional Structure Impacting Biological Resources**

##### **NATIONAL LAWS AND REGULATIONS**

###### **Republic Acts**

1. RA 7586: National Integrated Protected Area System
2. RA 2590: An Act for the Protection of Game and Fish
3. RA 9147: Wildlife Resources Conservation and Protection Act
4. RA 7308: An Act to Promote and Develop the Seed Industry in the Philippines and Create a National Seed Industry Council and for other Purposes
5. RA 7611: Strategic Environmental Plan for Palawan Act
6. RA 7900: High Value Crops Development Act 1995
7. RA 7942: The Philippine Mining Code
8. RA 8371: Recognizing the Rights of Indigenous Cultural Communities/Indigenous Peoples
9. RA 3571: An Act to Prohibit the Cutting, Destroying or Injuring of Planted or Growing Trees, Flowering Plants and Shrubs or Plants of Scenic Value along Public Roads, in Plazas, Parks, Schools Premises or in any other Public Pleasure Ground
10. RA 9072: National Caves and Cave Resources Management and Protection Act
11. RA 9168: Philippine Plant Variety Protection Act of 2002

###### **Executive Orders**

1. EO 247: Guidelines on Bio-Propecting

###### **Presidential Decrees**

1. PD 1433: Plant Quarantine Decree of 1978
2. PD 1586: Environmental Impact Statement System Law

###### **DENR Administrative Orders**

1. DAO 20, series of 1996. Implementing Rules and Regulations on the Prospecting of Biological and Genetic Resources
2. DAO 24, series 1991: Shift in Logging from the Old growth (Virgin) Forests to the Second Growth (Residual) Forests
3. DAO 2, series 1993: Rules and Regulations for the Identification, Delineation, and Recognition of Ancestral and Domain Claims
4. DAO 2002-02: Establishment and Management of Community Based Program in Protected Area



5. DAO 1992-13: Regulation Governing the Establishment of Buffer Zone within Forest Lands
6. DAO 1992-25: National Protected Areas System Implementing Rules and Regulations
7. DAO 1995-03: Procedural and/or Documentary Requirements, Guidelines and/or Criteria to be observed and/or followed in the Selection of Local Government Units (LGUs), Non-Government Organizations (NGOs) and People's Organizations (POs) to the Protected Area Management Board (PAMB)
8. DAO 96-40: Revised Implementing Rules and Regulations of Republic Act No. 7942 Otherwise Known as the 'Philippine Mining Act of 1995
9. DAO 2000-44: Amending certain provisions of DAO 96-29 and providing specific guidelines for the Establishment and Management of Community-Based Projects within Protected Areas
10. DAO 91-48: Establishment of a National List of Rare(R), Endangered(E), Threatened(T), Vulnerable(V), Indeterminate(I), and Insufficiently Known (K) species of Philippine Wild Birds, Mammals, and Reptiles
11. DAO 95-05: Guidelines in the Selection, Awards, Monitoring and Evaluation of Host Non-Government Organization in the Conservation of Protected Areas Project
12. DAO 91-36: Guidelines Governing the Confiscation, Seizure, and Disposition of Wild Flora and Fauna Illegally Collected, Gathered, Acquired, Transported, and Imported including Paraphernalia
13. DAO 2002-31: Guidelines for the Management and Development of Small Islands, including its Coastal Areas
14. DAO 2002-19: Guidelines on the Trade of Captive-bred Butterfly Specimens
15. DAO 2001-02: Amending Relevant Provision of DAO 2000-68, Re: Institutionalization of the Directorate on Special Projects for Waters and Integrated Ecosystems Management and Development (DSPWIEMD) and Related Functions, DAO No. 2002-70 Re: Suspension of DAO 2000-68 and Inclusion of Biodiversity Conservation Programs and Projects within the Protected Areas and Wildlife Bureau
16. DAO 2000-83: Guidelines for the Management and Development of Small Islands, including its Coastal Areas
17. DAO 2000-70: Suspension of DENR Administrative Order No. 2000-68 dated 14 September 2000
18. DAO 2000-51: Guidelines and Principles in Determining Fees for Access to and Sustainable Use of Resources in Protected Areas

19. DAO 2000-45: Amendment of DAO 25, series of 1992, Re: Duties and Responsibilities of Protected Area Superintendents (PASUs) and their Functional Relationships with other DENR Officers
20. DAO 2000-13: Guidelines on the Implementation of the Biodiversity Monitoring System (BMS) in Protected Areas

#### **DENR Memorandum Circulars**

1. DENR Memorandum Circular No. 16, Series of 1993: Guidelines on the Establishment and Management of Buffer Zones for Protected Areas

#### **DENR Memorandum Orders**

1. DENR Memorandum Order No.95-08: Clarification on the Provisions of the NIPAS Law Regarding the Modification of Boundary of the Protected Area and its Buffer Zone

#### **PAWB Administrative Orders**

1. Parks and Wildlife Office Administrative Order No. 1, Series of 1964: Rules and Regulation for the Protection and Conservation of Flora in Public Grounds

### **LOCATION-SPECIFIC LAWS**

#### **Republic Acts**

1. RA 4190: An Act Declaring Certain Places in the Province of Lanao Del Sur as National Parks
2. RA 9154: An Act Establishing Mt. Kanla-on Located in the Cities of Bago, La Carlota, and San Carlos and in the Municipalities of La Castellana and Murcia, all in the Province of Negros Occidental, and in the City of Canlaon and Municipality of Vallehermoso, both in the Province of Negros Oriental, as a Protected Area and a Peripheral Area as Buffer Zone Providing for its Management, and for other Purposes.
3. RA 9125: An Act Establishing the Northern Sierra Madre Mountain Range within the Province of Isabela as a Protected Area and its Peripheral Areas as Buffer Zones Providing for its Management and for other Purposes
4. RA 9106: An Act for the Establishment and Management of Sagay Marine Reserve, defining its Scope Coverage and for other Purposes
5. RA 8991: An Act to Establish the Batanes Group of Islands and Islets as a Protected Area, and its Peripheral Area, Waters as

buffer Zones, Providing for its Management and for other Purposes

### **DENR Administrative Orders**

1. DAO 2000-66: Rules and Regulations to Govern the DENR-Palawan Wildlife Rescue and Conservation Center (PWRCC) Accreditation of Palawan Council Destination Guides
2. DAO 2002-11: Transfer of Palawan Wildlife Rescue and Conservation Center, formerly Crocodile Farming Institute, from the Protected Areas and Wildlife Bureau to the Natural Resources Development Corporation
3. DAO 2001-19: Reiterating the Jurisdiction of the Protected Areas and Wildlife Bureau (PAWB) over the DENR Wildlife Rescue and Rehabilitation Center (DWRRC)-Ninoy Aquino Park and Wildlife Nature Center (NAPWNC)
4. DAO 2000-49: Renaming the Crocodile Farming Institute as "Palawan Wildlife Rescue and Conservation Center (PWRCC)
5. DAO 2000-46: Guidelines on the Establishment of Regional Wildlife Rescue Center
6. DAO 2000-27: Creating the Pasonanca Watershed Development Project Office and Designating Regional Technical Director Roberto G. de Vera as its Project Director

### **Proclamations**

1. Proclamation No. 926: Establishing Subic Watershed Forest Reserve
2. Proclamation No. 186-02: Declaring the Mountain Ranges of Northwest Panay Peninsula Situated in the Municipalities of Nabas, Malay, Buruanga, Province of Aklan and Municipalities of Libertad and Pandan in the Province of Antique as Protected Area pursuant to R.A.7586 (NIPAS Act of 1992) and shall be known as the Northwest Panay Peninsula Natural Park
3. Proclamation No. 214-02: Declaring the Mt. Isarog National Park Situated in the City of Naga and Municipalities of Calabangan, Tinambac, Tigaon, Goa, Ocampo and Pili, Province of Camarines Sur, as a Protected Area Pursuant to Republic Act 7586 (NIPAS Act of 1992) to be henceforth Known as Mt. Isarog Natural Park
4. Proclamation No. 228-02: Declaring Mt. Malindang National Park Situated in the Province of Misamis Occidental as a Protected Area and its Peripheral Areas as Buffer Zone Pursuant to Republic Act 7586 (NIPAS Act of 1992) and shall be known as Mt. Malindang Natural Park

5. Proclamation No. 260-02: Declaring Initao National Park and Portion of Initao- Libertad Marine Waters Situated in the Municipalities of Initao and Libertad, Province of Misamis Oriental as a Protected Area and its Peripheral Area as Buffer Zone Pursuant to Republic Act 7586 (NIPAS Act of 1992) and shall be known as Initao-Libertad Protected Landscape and Seascape
6. Proclamation No. 266-00: Declaring the Lidlidda Watershed Forest Reserve Situated in the Municipality of Lidlidda and Banayoyo, Province of Ilocos Sur, Island of Luzon as a Protected Area Pursuant to Republic Act 7586 (NIPAS Act of 1992) and shall be known as Lidlidda Protected Landscape
7. Proclamation No. 267-00: Declaring the Simbahan-Talagas River Watershed Forest Reserve Situated in the Municipality of Dinalungan, Province of Aurora, as a Protected Area Pursuant to Republic Act 7586 (NIPAS Act of 1992) and shall be known as Simbahan-Talagas Protected Landscape
8. Proclamation No. 268-00: Declaring the Ambuklao-Binga Watershed Forest Reserve Situated in the Municipalities of Atok, Bokod, Buguias, Itogon, Kabayan, Tublay, Kibungan, and La Trinidad, Province of Benguet, Municipalities of Hungduan and Kiangnan, Province of Ifugao; and Municipality of Kayapa, Province of Nueva Viscaya as a Protected Area Pursuant to Republic Act 7586 (NIPAS Act of 1992) and shall be known as Upper Agno River Basin Resource Reserve
9. Proclamation No. 269-00: Declaring the Baganga Watershed Reservation Situated in the Municipality of Baganga, Province of Davao Oriental, Island of Mindanao as a Protected Area Pursuant to RA 7586 (NIPAS act of 1992), which shall be known as "Baganga Protected Landscape"
10. Proclamation No. 270-00: Declaring the Cuatro Islas Protected Landscape/Seascape Situated in the Coastal Areas of the Municipalities of Inopacan, Hindang and Neighboring Islands Comprising Digyo, Apid, Mahaba and Himukilan Islands and their Surrounding Reefs, Province of Leyte, Island of Visayas as a Protected Area Pursuant to RA 7586 (NIPAS Act of 1992) and shall be known as Cuatro Islas Protected Landscape/Seascape

## **II. INTERNATIONAL LAWS AND REGULATIONS**

1. Name of International Agreement or Organization: **Convention on Biological Diversity**

Date of Philippine Accession or Membership: June 12, 1992

Date of Philippine Ratification: October 8, 1993

(Source: Protected Areas and Wildlife Bureau Website, [www.pawb.gov.ph](http://www.pawb.gov.ph))

### *Objectives:*

- a. Conservation of biological diversity
- b. Sustainable use of components of biodiversity
- c. Fair and equitable sharing of benefits derived from the utilization of genetic resources

### *Distribution/ Membership Cost*

|      |          |
|------|----------|
| 1995 | P126,308 |
| 1996 | P152,317 |
| 1997 | P113,903 |
| 1999 | P238,234 |
| 2000 | P154,187 |

### *Benefits:*

- a. Funding support for several projects on biodiversity
- b. Special privilege as developing as developing member country for funding support to attend related international meetings / conferences
- c. Access to information materials on the management of biodiversity conservation

| Philippine Commitments<br>Under the International<br>Agreement/Organization                                                                                                                                                                                                                                                                                                                                                                                                   | Accomplishments or Activities Undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Activities Currently Being Undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Development of national strategies, plans/programs and formulation and implementation of policies on biodiversity conservation;</p> <p>2. Exchange/sharing of information on biodiversity conservation;</p> <p>3. Provision of access to biological and genetic resources, equitable sharing of benefits from the use of these resources; and,</p> <p>4. Transfer of technology in case of development of product from the use of biological and genetic resources.</p> | <p>A. Policies formulated/implemented:</p> <ol style="list-style-type: none"> <li>2. National Integrated Protected Areas System (Republic Act 7586)</li> <li>3. Executive Order No. 247 “Prescribing guidelines and establishing a regulatory framework for the prospecting of biological and genetic resources, their by-products and derivatives, for scientific and commercial purposes, and for other purposes”.</li> <li>4. Republic Act 9147 “Wildlife Conservation and Protection Act”</li> <li>5. IRR of R.A. 9147</li> <li>6. Republic Act 9072 “National Cave and Cave Resources Act”</li> <li>7. IRR of R.A. 9072</li> </ol> <p>A. Implementation of biodiversity conservation programs:</p> <ol style="list-style-type: none"> <li>1. National Biodiversity Strategy and Action Plan (NBSAP)</li> <li>2. Establishment and management of Wildlife Rescue Centers</li> <li>3. Philippine Biodiversity Conservation Priority Setting Project (Second Iteration of the NBSAP)</li> </ol> | <ol style="list-style-type: none"> <li>1. Information Education Campaign (IEC);</li> <li>2. Capacity-building and training;</li> <li>3. Development of Philippine National Biosafety Framework;</li> <li>4. Implementation of biodiversity conservation programs/projects;</li> <li>5. Technology transfer, particularly on conservation breeding and management of <i>Crocodylus porosus</i>;</li> <li>6. Conservation breeding of some threatened Philippine wild fauna, such as Philippine Spotted Deer, Visayan Warty Pig, <i>Crocodylus mindorensis</i>, among others;</li> <li>7. Enforcement of the provisions of CITES particularly on trade of threatened wildlife species, and laws, rules and regulations on wildlife protection; and,</li> <li>8. Attendance to the CBD Conference of the Parties and other meetings related to CBD.</li> </ol> |

| Philippine Commitments<br>Under the International<br>Agreement/Organization | Accomplishments or Activities Undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Activities Currently Being Undertaken                                                                                                                                      |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                             | <p>4. Implementation of the National Biosafety Framework Project</p> <p>B. Implementation of Biodiversity Conservation Projects:</p> <ul style="list-style-type: none"> <li>- Philippine Raptors Conservation Program</li> <li>- Pawikan Conservation Program</li> <li>- Tamaraw Conservation Programs</li> <li>- Palawan Wildlife Rescue and Conservation Center (formerly Crocodile Farming Institute)</li> <li>- Other Biodiversity Conservation Projects:</li> <li>- Philippine Cockatoo</li> <li>- Philippine Hornbill</li> <li>- Visayan Warty Pigs</li> <li>- Philippine Spotted Deer</li> <li>- Philippine Cloud Rats</li> <li>- Philippine Crocodile</li> <li>- Philippine Tarsier</li> <li>- Calamian Deer</li> <li>- Dugong</li> <li>- Conservation Research on Philippine Birds and Mammals</li> <li>- Field inventory and conservation of Philippine Land Vertebrates</li> <li>- Philippine Biodiversity Inventory</li> </ul> <p>C. Established Committees/ Councils/ Working Groups/Task Forces to oversee/guide the implementation of the plans and programs in relation to CBD.</p> <p>D. Attended international meetings related to CBD.</p> | <ul style="list-style-type: none"> <li>- Conduct series of consultations for the review/evaluation of the draft National Biosafety Framework of the Philippines</li> </ul> |

2. Name of International Agreement or Organization:

**CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES  
OF FLORA AND FAUNA (CITES)**

Date of Philippine Accession or Membership:

**March 3, 1973**

Date of Philippine Ratification :

**April 20, 1981**

**(Source: Protected Areas and Wildlife Bureau Website, [www.pawb.gov.ph](http://www.pawb.gov.ph))**

*Objectives:*

- a. Protect species against overexploitation resulting from unregulated international trade to promote their aesthetic, scientific, cultural, recreation, and economic values
- b. Encourage rational and sustainable utilization of the existing flora and fauna

*Distribution/ Membership Cost*

|      |          |
|------|----------|
| 1999 | P107,115 |
| 2000 | P105,067 |

*Benefits:*

- a. Generated revenues from trade (export, import, and re-export) of fauna and flora
- b. Funded local and international trainings
- c. Funded attendance of PAWB staff to international meetings / conferences
- d. Access to information materials for the regulation of international trade and conservation of wildlife
- e. Advisory services of CITES Secretariat on matters pertaining to the management and enforcement procedures



| Philippine Commitments<br>Under the International<br>Agreement/Organization                                                                                                                                                                                                                                                                                                                              | Accomplishments or Activities Undertaken                                                                                                                                                                                                                                                                                                                                                                                            | Activities Currently Being Undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. PAWB as CITES Management Authority for Terrestrial Species , issues import, export and re-export permits for species listed under CITES</li> <li>2. Implementation and monitoring of wildlife trade regulations</li> <li>3. Attendance to Conference every 2 years</li> <li>4. Payment of annual dues (being paid by Department of Foreign Affairs)</li> </ol> | <ol style="list-style-type: none"> <li>2. From 1994-2003, an average of 652 CITES and 880 Non-CITES permits were issued generating an average income of PhP5,352,466.95 and PhP356,204.37, respectively.</li> <li>3. Created 15 Regional Wildlife Monitoring Teams</li> <li>4. Attendance to Conference of the Parties (every 2 years) by PAWB and BFAR representatives</li> <li>5. Payment of annual dues up to CY 2002</li> </ol> | <ol style="list-style-type: none"> <li>1. PAWB as CITES Management Authority for Terrestrial Species , issues import, export and re-export permits for species listed under CITES</li> <li>2. Implementation and monitoring of wildlife trade regulations</li> <li>3. Attendance to Conference of the Parties (every 2 years) and other meetings related to CITES</li> <li>4. Payment of annual dues by the Department of Foreign Affairs</li> <li>5. Formulation of policies for the implementation of CITES regulations</li> </ol> |

3. Name of International Agreement or Organization:

**CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF  
WILD ANIMALS (BONN CONVENTION)**

Date of Philippine Accession or Membership:

**February 4, 1994**

Date of Philippine Ratification:

**March 30, 1993**

**(Source: Protected Areas and Wildlife Bureau Website, [www.pawb.gov.ph](http://www.pawb.gov.ph))**

| <b>Philippine Commitments<br/>Under the International<br/>Agreement/Organization</b>                                                                                                                   | <b>Accomplishments or Activities Undertaken</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Activities Currently Being Undertaken)</b>                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Development of conservation measures for Appendix I species.</li> <li>2. Formulation of strategic plan for the conservation of migratory species.</li> </ol> | <ol style="list-style-type: none"> <li>1. Initiated the inclusion of three species of marine mammals (<i>Stenella attenuata</i>, <i>Stenella longitortris</i> and <i>Lagenodelphis hosei</i>) and the whale shark (<i>Rhincodon typus</i>) to Appendix II of the CMS</li> <li>2. Developed National Wetland Action Plan;</li> <li>3. Signing of Bilateral Agreement with the Malaysian government for the establishment and management of the Turtle Island Heritage Protected Area;</li> <li>4. Establishment of Protected Areas (NIPAS Law) including critical habitats for migratory species;</li> <li>5. Creation of the Inter-agency Task Force on marine mammal conservation;</li> <li>6. Membership to the RAMSAR which complements the CMS. Six protected areas were listed as RAMSAR sites;</li> <li>7. Implementation of special conservation project for certain migratory species (e.g. Marine Turtle and Dugong Conservation Projects)</li> </ol> | <ol style="list-style-type: none"> <li>1. Implementation of the National Wetland Action Plan.</li> <li>2. Implementation of Marine Turtle Conservation Project and Dugong Conservation Program.</li> <li>3. Conduct Annual Asian Waterfowl Census in all Regions within the Philippines.</li> </ol> |

| Philippine Commitments Under the International Agreement/Organization | Accomplishments or Activities Undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Activities Currently Being Undertaken |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|                                                                       | <p>8. Participation in the Asian Waterfowl Census being coordinated by the Wetland International;</p> <p>9. Participated in the development of MOU for the conservation of Marine turtles and their habitat of the Indian Ocean and South East Asia. As such co-hosted the CMS funded conference “Conservation and Management of Marine Turtles in the Indian Ocean and Southeast Asia” held in June 19-23, 2001;</p> <p>10. Involvement in the Anatidae site network in the Asia flyway;</p> <p>11. Restoration of the 540 ha. within Olango Island, Cebu as Ramsar site;</p> <p>12. Conducted workshop on Wetland and Migratory Species Protection;</p> <p>13. Conducted trainings on Migratory Bird Identification and Banding;</p> <p>14. Attended international trainings on migratory birds conservation and wetland protection; and,</p> <p>15. Exchanged/shared information on Migratory Species and Waterbirds (within Southeast Asia).</p> |                                       |

| Philippine Commitments<br>Under the International<br>Agreement/Organization | Accomplishments or Activities Undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Activities Currently Being Undertaken |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|                                                                             | <ol style="list-style-type: none"> <li>16. Proposed jointly with India the inclusion of whale shark in CITES Appendix II during the CITES COP 12</li> <li>17. Nominated the inclusion of 5 species of migratory birds to CMS Appendix I. Three of which were approved such as Platalea minor, Tringa guttifer and Sterna bernsteini</li> <li>18. Chaired the Standing Committee Meeting for four (4) consecutive years from 1999-2002</li> <li>19. Chaired the CMS COP 7 held in September 2002 in Bonn, Germany</li> <li>20. Undertook a collaborative tracking studies with United States scientist on whale sharks</li> <li>21. Conducted a survey of small cetaceans in the Southern Sulu Sea in 1998 funded by the CMS</li> <li>22. Held a joint Philippine/Malaysian Marine Mammal Training Workshop, and conducted a Survey of Abundance of Fishery Interactions in the Southern Sulu Sea and Malaysian Waters in 1997</li> </ol> |                                       |

4. Name of International Agreement or Organization:

**CONVENTION OF WETLANDS OF INTERNATIONAL IMPORTANCE ESPECIALLY  
AS WATERFOWL HABITAT (RAMSAR CONVENTION)**

Date of Philippine Accession or Membership:

Date of Philippine Ratification:

**November 8, 1994**

**(Source: Protected Areas and Wildlife Bureau Website, [www.pawb.gov.ph](http://www.pawb.gov.ph))**

*Objectives:*

- a. Ensure the wise use of wetlands because of their richness of flora and fauna and their important functions and values

*Distribution/ Membership Cost*

|      |         |
|------|---------|
| 1995 | P37,380 |
| 1996 | P40,940 |
| 1997 | P43,410 |
| 1999 | P62,145 |
| 2000 | P72,219 |

*Benefits:*

- a. Funding assistance for training programs, travels, workshops / meetings and in the preparation of the management plan for Olanga Island Wildlife Sanctuary and Naujan Lake National Park.

| <b>Philippine Commitments<br/>Under the International<br/>Agreement/Organization</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Accomplishments or Activities Undertaken</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Activities Currently Being Undertaken</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Designation of at least one Wetland area for inclusion in the “List of Wetlands of International Importance” and maintenance of its ecological character</li> <li>2. Inclusion of wetland conservation within the national land use planning to promote the wise use of wetlands</li> <li>3. Encouragement of research, exchange of data and publications regarding wetlands and training in the field of wetland research, management and wardening</li> <li>4. Consultation with other Contracting Parties on the implementation of Convention</li> <li>5. Implementation of the Philippine Wetland Action Plan</li> </ol> | <ol style="list-style-type: none"> <li>1. Four (4) wetland sites were designated as Ramsar sites and included in the list of Wetlands of International Importance namely:               <ul style="list-style-type: none"> <li>- Olango Island Wildlife Sanctuary (R-7) on July 08, 1994</li> <li>- Naujan Lake National Park (R-4) on Nov. 12, 1999</li> <li>- Agusan Marsh Wildlife Sanctuary (R-13) on Nov. 12, 1999</li> <li>- Tubbataha Reefs National Marine Park (R-4) on Nov. 12, 1999</li> </ul> </li> <li>2. From 1997 to 2002 there were 133 wetlands identified as critical to biodiversity conservation</li> <li>3. From 1997 to 2003 World Wetlands Day (WWD) was celebrated every 2<sup>nd</sup> day of February. WWD activities were undertaken both by the national and Field Offices such as exhibits, lectures, symposia and field trips to nearby wetlands</li> </ol> | <ol style="list-style-type: none"> <li>1. Designation of at least one Wetland area for inclusion in the “List of Wetlands of International Importance” and maintenance of its ecological character</li> <li>2. Inclusion of wetland conservation activity in the national land use planning to promote the wise use of wetlands</li> <li>3. Encouragement of research, exchange of data and publications regarding wetlands and training in the field of wetland research, management and wardening</li> <li>4. Consultation with other Contracting Parties on the implementation of the RAMSAR Convention</li> <li>5. Implementation of the Philippine Wetland Action Plan</li> </ol> |

| Philippine Commitments Under the International Agreement/Organization                                                                                                                                                     | Accomplishments or Activities Undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Activities Currently Being Undertaken                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>6. Attendance to meetings of the Conference of the Parties every three years</li> <li>7. Payment of annual dues</li> <li>8. Updating of Philippine Wetlands Action Plan</li> </ul> | <p>Symposium on the human values and uses of wetlands were also undertaken. The participants include the DENR employee, representatives from LGUs and other government agencies, academe, students and local communities</p> <ul style="list-style-type: none"> <li>6. As of December 2002 eleven Regions conducted Asian Waterfowl Census in 47 sites</li> <li>7. Two projects funded by the Ramsar Bureau were implemented               <ul style="list-style-type: none"> <li>a. Community-Based Resources Management for Olango Island</li> <li>b. Comprehensive Management Planning and Institutionalization of PAMB of Naujan Lake NP</li> </ul> </li> <li>8. Coordinated with concerned academe, NGO and GO to achieve activities on wetlands</li> </ul> | <ul style="list-style-type: none"> <li>6. Attendance to meetings the Conference of the Parties (every three years) and other related meetings of the RAMSAR Convention</li> <li>7. Payment of annual dues</li> <li>8. Preparation of proposals to secure funding</li> </ul> |

## **5. ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB)**

### *Objectives:*

- a. Ensure protection of the environment and the sustainability of its natural resources to sustain continued development
- b. Eradicate poverty and attain highest possible quality of life for the people of the ASEAN countries

*Distribution / Membership Cost: None*

### *Benefits:*

- a. Linkages and coordination with ASEAN member countries in the formulation of conservation frameworks
- b. Technical assistance for programs and projects
- c. Access to donor partners and funding agencies

## **6. Convention Concerning the Protection of the World Cultural and Natural Heritage**

Source: [http://whc.unesco.org/ab\\_conve.htm#debut](http://whc.unesco.org/ab_conve.htm#debut)

The Convention defines the kind of natural or cultural sites which can be considered for inscription on the World Heritage List and sets out the duties of States Parties in identifying potential sites and their role in protecting and preserving them. By signing the Convention, each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage.

The Convention further describes the function of the [World Heritage Committee](#), how its members are elected and their terms of office, and specifies the professional advisory bodies to which it can turn for advice in selecting the sites to be listed. The Convention explains how the World Heritage Fund is to be used and managed and under what conditions international financial assistance may be provided.

## **7. UN Convention to Combat Desertification**

**Source:** <http://www.unccd.int/convention/text/leaflet.php>

The Convention opens an important new phase in the battle against desertification, but it is just a beginning. In particular, governments are regularly reviewing the action programmes. They also focus on awareness-raising, education, and training, both in developing and developed countries. Desertification can only be reversed through profound changes in local and international behavior. Step by step, these changes will ultimately lead to sustainable land use and food



security for a growing world population. Combating desertification, then, is really just part of a much broader objective: the sustainable development of countries affected by drought and desertification.

## **National action programmes**

Countries affected by desertification are implementing the Convention by developing and carrying out national, sub-regional, and regional action programmes. Criteria for 'preparing these programmes are detailed in the treaty's - five "regional implementation annexes": Africa (considered a priority because that is where desertification is most severe), Asia, Latin America and the Caribbean, the Northern Mediterranean, and Central and Eastern Europe. Drawing on past lessons, the Convention states that these programmes must adopt a democratic, bottom-up approach. They should emphasize popular participation and the creation of an "enabling environment" designed to allow local people to help themselves to reverse land degradation. Of course, governments remain responsible for creating this enabling environment. They must make politically sensitive changes, such as decentralizing authority, improving land-tenure systems, and empowering women, farmers, and pastoralists. They should also permit non-governmental organizations to play a strong role in preparing and implementing the action programmes. In contrast to many past efforts, these action programmes are to be fully integrated into other national policies for sustainable development. They should be flexible and modified as circumstances change.

## **An innovative solution**

Combating desertification is essential to ensuring the long-term productivity of inhabited drylands. Unfortunately, past efforts have too often failed, and around the world the problem of land degradation continues to worsen. Recognizing the need for a fresh approach, 179 governments have joined as of March 2002, the United Nations Convention to Combat Desertification. This Convention aims to promote effective action through innovative local programmes and supportive international partnerships. The treaty acknowledges that the struggle to protect drylands will be a long one - there will be no quick fix. This is because the causes of desertification are many and complex, ranging from international trade patterns to unsustainable land management practices. Real and difficult changes will have to be made, both at the international and the local levels.

## **National country report on the UNCCCD implementation (Philippines)**

**Rogelio N. Concepcion, CCD Focal Point for the Philippines**

<http://www.unccd.int/cop/reports/asia/national/2000/philippines-eng.pdf>

The Philippines ratified the United Nations Convention to Combat Desertification on February 10, 2000 and finally the final accession to the Convention comes into full force in May 2000. As an initial effort, this report provides an insight on the country's increasing vulnerability to drought and land degradation on account of poor watershed and land management, increasing population, and increasing recurrence of extended dry spell, and alternating incidence of El Nino and La Nina. These conditions resulted in continuing loss in soil productivity, decline in water availability, and create

serious stress on the marginal lands that become the primary source of subsistence for the marginally poor farmers.

## **7. International Union for the Conservation of Nature and Natural Resources (IUCN)** **(Source: PAWB)**

### *Objectives:*

- a. Ensure the conservation of nature, especially of biological diversity, as an essential foundation for the future
- b. Ensure that where the earth's natural resources are used, this is done in a wise, equitable and sustainable way
- c. Guide the development of human activities towards ways of life that are both good quality and in harmony with other components of the biosphere

### *Distribution/ Membership Cost*

|      |           |
|------|-----------|
| 1994 | P101, 211 |
| 1995 | P119, 278 |
| 1996 | P119, 545 |
| 1997 | P107, 079 |
| 1999 | P163, 215 |
| 2000 | P170, 773 |

### *Benefits:*

- a. Established international linkages/cooperation for the conservation of migratory species
- b. Free technical assistance from other member states for the conservation, protection, and management of migratory species of wild animals
- c. Travel grant (US\$3,000) annually as member of the Scientific Council to attend meetings and workshops for the Convention
- d. Travel grant (US\$5,000 annually) as member of the Conference of the Parties to attend the COP meetings

## INTERNATIONAL COMMITMENTS FUND

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| <b>Appropriations and Obligations</b>                                                             | <b>Maintenance and other operating expenses<br/>(In Thousand Pesos)</b> |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| UN Convention to Combat Desertification                                                           | P496,000                                                                |
| International Center for the Study of the Preservation and Restoration of Cultural Property       | P168,000                                                                |
| UNESCO World Heritage Fund                                                                        | P195,000                                                                |
| Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar, Iran) | P18,000                                                                 |
| Trust Fund for CITES                                                                              | 171,000                                                                 |
| Trust Fund for CMS                                                                                | 80,000                                                                  |
| Trust Fund for CBD                                                                                | 343,000                                                                 |

**Source: Department of Budget and Management,**  
**[http://www.dbm.gov.ph/dbm\\_publications/nep\\_2004/bpms\\_files/ICF.TXT](http://www.dbm.gov.ph/dbm_publications/nep_2004/bpms_files/ICF.TXT)**

## II. CONFLICT SITUATIONS

### a. Conflicting situations with indigenous groups

In December 2000, about 90 indigenous persons coming from all corners of the world to participate in a conference organized by the Tebtebba Foundation (Indigenous Peoples' International Centre for Policy Research and Education. Among those who attended came from Greenland, Siberia, and Eastern Europe, from South America, Central America, and North America, from Southern, Central, Western and Eastern Africa, from the Middle East, from South and Southeast Asia, Australia, Aotearoa, and the Pacific gathered in Manila to share:

- o stories of conflict in their respective lands and the struggles they are waging
- o Stories of how they are building peace among themselves and with others and the lessons they learned;
- o Their definitions of conflict, peace, justice, and sustainable development.
- o Their visions of a future where justice and lasting peace will reign in our territories and our tasks of building this future.

During this conference, the group declared that:

States should respect and faithfully implement the peace accords with indigenous peoples and other armed groups, should resume stalled peace talks and overcome the setbacks in some ongoing peace negotiations. We call on states to do the following:

- d. Implement fully the Chittagong Hill Tracts Accord of 1997 between the Parbatya Chattagram Jana Samhati Samiti (PCJSS) and the Government of Bangladesh.
- e. Implement fully the 1996 Guatemala Agreement on a Firm and Lasting Peace between the Unidad Revolucionaria Nacional Guatemalteca (URNG) and the Government of Guatemala, particularly the Agreement on the Identity and Rights of Indigenous Peoples.
- f. Implement and reinvigorate the San Andres Accord between the EZLN (Zapatistas) and the Government of Mexico.
- g. Resume the stalled peace negotiations between the National Democratic Front-Communist Party of the Philippines-New Peoples' Army (NDF-CPP-NPA) and the Government of the Philippines.
- h. Resume the peace negotiations between the Moro Islamic Liberation Front (MILF) and the Government of the Philippines.
- i. Overcome the setbacks in the ongoing peace talks between the National Socialist Council of Nagaland and the Government of India
- Indigenous peoples should participate fully in peace processes and these processes should ensure the participation of chiefs, elders, women, community and religious leaders, youth. The broad participation of all peoples and sectors of society should be ensured in the peace-building process. The inclusion of the right people in the decision-making processes from the lowest to the highest political level can constitute a significant contribution to peace building.
- Indigenous peoples systems, methods and practices on peacebuilding and conflict resolution should be further developed and used by indigenous peoples, themselves. These should be supported by States, the donor community and international bodies. These indigenous capacities to prevent, resolve and transform conflicts should be developed from the local level upwards.
- In order to strengthen peace-building capacities of indigenous peoples, conflicts should be carefully analysed to examine their root causes and the political economy of their prolongation.
- Skills training on how to negotiate at the local, national, regional, and international levels should be sensitive to indigenous practices and should be made available for indigenous peoples.
- States should create conditions for peace negotiations to take place- i.e.,
  - a. agreeable to all parties,
  - b. based on genuine desire for peace, good faith, openness, flexibility, and mutual respect.
  - c. consensus building, common platforms, and creating mechanisms for dialogue

- d. not based on divide and rule tactics and not solely based on the agenda of states for the surrender of arms
- International bodies such as the UN should be enjoined to participate in peace-building processes in indigenous peoples territories through, facilitation, moderation, conciliation, mediation and arbitration. This participation should be based on the free and informed decision by the indigenous peoples through their legitimate representatives and authorities.
- Establish mechanisms that will ensure transparency and accountability of peace negotiators or representatives to their constituents. This should be ensured before and during peace negotiations and during the post-conflict reconstruction period. Indigenous persons and other negotiators who occupy government structures as a result of the peace accords should maintain a high sense of accountability to their constituents. Broad consultations and dialogue on how the peace accords are being implemented should be established.

## **b. Settlement of disputes and conflicts under environmental legislation**

Source: ESCAP Virtual Conference,

[http://www.unescap.org/drpad/vc/orientation/legal/legal\\_4\\_philippines1.htm](http://www.unescap.org/drpad/vc/orientation/legal/legal_4_philippines1.htm)

### *Example of conflicts*

- Despite having a number of mechanisms in place for the integration of environmental concerns into decision-making, conflicts still arise in the Philippines. Several examples of such conflicts and how they have been resolved are given here.

### *Creation of multi-stakeholding body*

1. In Tagaytay City, Philippines, conflict arose between tourism development for revenue generation and the development of livelihood for the local population, which was competing with the protection of the pristine environment and unique geological features of the region. The development of Tagaytay and its rapid urbanization, if left uncontrolled, would have spelled disaster for the environment. The solution has been the creation of a multi-stakeholding body, the Presidential Commission on the Development of Tagaytay, in which representatives of the competing interest groups have the opportunity to voice their needs and concerns. The principle is that all interests are considered legitimate, and providing a forum for negotiation and consensus building is expected to result in the mutual satisfaction of needs and interests.

### *Facilitating coordination and cooperative decision-making*

2. The increasing popularity of golf courses as a tourist attraction has led to widespread development and construction on large areas. That has resulted in growing concern over land conversion and its impact on food security and biodiversity, as well as water scarcity. The creation of a multi-stakeholding mechanism that brings the divergent interests to the negotiating table is seen as the best way of facilitating coordination and cooperative decision-making.

### *Mechanism for generating social acceptability*

3. One of the salient features of the Executive Order to Strengthen the Environmental Impact Assessment System is the mechanism for generating social acceptability. That type of conflict

stems from the desire among various non-governmental groups for full and extensive participation in decisions related to the choice of projects for implementation, and may entail a painstaking and time-consuming process. On the other hand, some government agencies try to expedite the implementation of critical projects such as those related to energy and transportation. Failure to strike a compromise on the provisions results in a significant delay in the formulation of the required Executive Order. Therefore, it was decided to separate the technical and environmental issues from the social issues, possibly through a separate instrument for social acceptability and the issuance of a department order (instead of an Executive Order) that addresses the issue.

#### *Resolution of conflict*

4. The Industrial Forest Management Agreement was promoted by the Department of Environment and Natural Resources as a forest policy that addressed the need to assure a stable supply of forest products while fulfilling reforestation objectives. Nevertheless, the technological and biodiversity implications did not make the approach a sound one in that it promoted monocropping which tended to erode genetic diversity and increase incidence of pests and diseases. The resolution of that conflict was in the form of an agreement that the promotion of the policy would be reassessed and its continuing implementation reviewed by the Department of Environment and Natural Resources. The resolution was facilitated by Philippine Council for Sustainable Development (PCSD) and the formulation of the Philippine Agenda 21, which brought the issue under discussion.

### **Bringing the Vertical Dimension to the Negotiating Table**

#### **Preliminary Assessment of a Conflict Resolution Case in the Philippines**

**By Giacomo Rambaldi, Sahlee Bugna, Angela Tiangco and Dave de Vera**

#### *Conflict Resolution in the Cordillera*

For at least a century, the Philippines' cultural and biological diversities have been under great pressure from logging, mining, conversion of forests into farmland, population increase, and movement of lowland communities into areas traditionally occupied by Indigenous Peoples (IPs). This ignited in the '70s long-lasting conflicts between minority groups and the central government. The 1986 revolution that propelled President Corazon Aquino into power provided the opportunities for the active participation of otherwise marginalized sectors of society. Indigenous Peoples in particular, benefited from the 1987 Constitution, which recognized and enshrined their existence, and that of their ancestral lands, cultural plurality and autonomy (Wandag, 2001).

Community-based initiatives from 1986- 1992 in the Cordilleras also created "peace zones", which were de-militarized areas of dialogue and consensus building, and encouraged the operation of indigenous systems. In 1992, the National Unification Commission was created to identify the root causes of the conflicts through nation-wide consultations. As a result, the Social Reform Agenda and other peace initiatives were launched. The DENR issued DENR Administrative Order No. 2 Series 1993 (DAO 2, S. 1993) that sought to recognize, identify and delineate areas occupied by Indigenous Peoples. The Order provided for the issuance of Certificates of Ancestral Domain Claim (CADC) to eligible groups. In order to avail of the legal stewardship entitling IPs to live, manage and utilize their ancestral domain, applicants had to

meet a series of requirements including providing proof of use and occupation of given portions of the territory, since time immemorial. In this context, maps exerted all their power in addressing resource tenure and access, and in influencing national governance: cartography resulting from two and three dimensional community-based maps, supported by GPS/GIS applications, formed the foundations upon which IPs filed numerous applications and developed ancestral domain resource management plans. In 1996, Cordillera peace partners formulated the Four-Point Cordillera Peace and Development Agenda (Box 1). A series of follow-up consultations resulted in the identification of critical peace and development issues related to land tenure / security and ancestral domain recognition. Year 1997 marked the passage of the Indigenous People's Rights Act (IPRA) that laid the foundation for the recognition of indigenous groups' tenurial rights on their ancestral domains.

| <b>Box 1. Cordillera Peace and Development Agenda</b>                                                                                                                                                                                                                                                                        |                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ancestral Domain</b> <ul style="list-style-type: none"> <li>• Identification, definition, delineation</li> <li>• Resource use and management (land use mapping, Ancestral Domain Resource Management Plan preparation)</li> <li>• Innovative and sustainable development (social equity, ecological integrity)</li> </ul> | <b>Cultural Integrity</b> <ul style="list-style-type: none"> <li>• Pluralism</li> <li>• Enculturation</li> <li>• Harmony in Diversity</li> </ul>                                             |
| <b>Healing and Reconciliation</b> <ul style="list-style-type: none"> <li>• Pluralism</li> <li>• Re-entry, re-integration, accommodation</li> <li>• Addressing the roots of insurgency</li> </ul>                                                                                                                             | <b>Autonomy</b> <ul style="list-style-type: none"> <li>• Empowerment of people through consultation consensus and participatory governance</li> <li>• Re-definition of governance</li> </ul> |

Between February 1996 and June 19983, DENR issued 23 Certificates of Ancestral Domain Claims CADC) within the Cordillera Administrative Region including one in favor of the municipality of Balbalan in Kalinga. Most of the CADC awarded did not undergo actual ground delineation due to administrative and financial constraints.

Prior to the awarding of the certificates to the municipalities of Balbalan and neighbouring Conner Apayao Province), OPAPP provided venues and facilitated consultations with local communities to formulate ancestral domain resource management plans with the assistance of local NGOs. Like many other CADC holders, Balbalan signified its intention to have its CADC converted into a Certificate of Ancestral Domain Title CADT) under the auspices of the IPRA law. In 1999, OPAPP formulated an Integrated Conflict Resolution and Management Programme (ICRMP) for 11 pilot CADC municipalities in partnership with the Cordillera Ancestral Domain Partners for Peace and Development (CADPPD). The Programme aims to support local conflict management and resolution processes, and promote the use of indigenous knowledge, systems and practices.

### *The Balbalan Case*

In 1966, Republic Act 5695 subdivided the Mountain Province into four provinces, one of which included both Kalinga and Apayao. In 1992, by virtue of Republic Act 7878, the former became a separate province with eight municipalities: Balbalan, Pasil, Lubuagan, Pinukpuk, Rizal, Tabuk, Tanudan and Tinglayan. Administrative boundaries of the single municipalities were mapped, neither undergoing a proper consultative process nor considering local cultural and environmental settings.

Kalinga is located centrally in the Cordillera Region and features a rough mountainous terrain with still pristine forests. Balbalan encompasses the Balbalasang-Balbalan National Park, which is considered, from a biodiversity point of view, one of the most interesting sites in Northern Luzon. The Park, covering a total area of 1,338 ha, was established in 1972 and proclaimed in 1974. Its expansion to approximately 16,700 ha and its conversion into a Natural Biotic Area is being considered by the Department of Environment and Natural Resources (Lepiten-Tabao et al. 2001). The Park falls within the ancestral domain of the Balbalan Municipality, which covers a total land area of 5335 km<sup>2</sup>, subdivided into 14 smaller administrative units (barangays). It is home to the Kalinga ethno-linguistic group, specifically to seven subgroups: Banao, Buaya, Daoangan, Mabaca, Gubang, Poswoy and Salegseg. Over the centuries, the social characteristics among Kalinga peoples have been shaped by the harsh mountainous environment, isolation due to poor communications, strong cultural identity and the desire to maintain independence from central rule.

Traditionally, disputes among neighbouring villages or ethno-linguistic groups have been governed by peace pacts (bodong). Fundamentally, the bodong is a written bilateral agreement defining intertribal relationships that minimizes traditional warfare and serves as a mechanism for the initiation, renewal, maintenance and re-enforcement of social ties. In recent years, the bodong system has been expanded into a multi-lateral peace pact to foster unity in the Cordilleras. Peace pacts were and are developed by individuals who carry the responsibility of their implementation on behalf of the group they represent. The agreements define physical boundaries between the economic and cultural domains of the signatories and lay out by-laws governing infringements in the use and access to resources, personal security and belongings. Boundaries are mainly described and occasionally depicted by supporting sketch maps. According to precise rules, the responsibilities attached to the pacts are inherited by a close kin upon the death of the holder. Being passed on from generation to generation, the pacts have to be regularly renewed to maintain a common understanding of boundaries, rules and by-laws. In addition, their renewal or “warming up” involves a revision and re-negotiation of their provisions.

In some cases, a bodong becomes “dormant” if upon the death or departure of the holder, it has not been properly transferred, thus setting the basis for disputes. A number of concurrent factors contributed to escalating boundary conflicts. These include the assimilation of the municipality into a centralized institutional framework with consequent (top-down) setting of administrative boundaries and associated allocation of Internal Revenue Allotments<sup>6</sup> (IRA), development pressures linked to the discovery of mineral deposits and geo-thermal resources, and the increasingly perceived value of water as a finite resource.



## *The Conflict Resolution Process*

The process started in August 1999 with an internal Conflict Management Assessment (CMA) which led, through the active participation of all concerned parties, to the identification of the conflicts, their causes and the common benefits which would derive from their solution (OPAPP, 1999). Balbalan representatives identified eighteen boundary conflicts, involving seven different ethno-linguistic groups, 14 barangays and 3 municipalities (Figure 1), and defined *conflict* as “the absence of peace, personal or social, with violent or cold manifestations brought about by, but not limited to the following:

- Violations of the *bodong* and/or its elements;
- Infringement of personal rights;
- Theft;
- Inter-personal, inter-family or clan, inter-village and inter-group differences;
- Unclear, ambiguous or unknown administrative boundaries;
- Issuance of dubious or inappropriate tenurial instruments;
- Development aggression by government and private entities; and
- Ideological differences.

Cross-cutting benefits deriving from a clear definition of the administrative boundaries would include the possibility of pursuing the conversion of the Certificate of Ancestral Domain Claim (CADT) into a proper Title (CADT) and ease in preparing Barangay and Municipal Development Plans to access development funds.

Most issues were intertwined and analysis would show that conflicts were largely categorized into the following:

| Conflict                     | Issues                                                                                |
|------------------------------|---------------------------------------------------------------------------------------|
| Inter-tribal                 | Resource use, tribal disagreements, cultural boundaries.                              |
| Inter-barangay               | Administrative boundaries, resource use and access, internal revenue allotment (IRA). |
| Inter-municipal / provincial | Administrative boundaries, resource use and access, internal revenue allotment (IRA). |

The Conflict Management Committee (CMC) agreed that OPAPP’s assistance would focus on external or inter-municipal conflicts, while local government units would handle inter-tribal and inter-barangay conflicts.

Unlike other municipalities, the CMC in Balbalan decided to address barangay conflicts simultaneously. **Conflict Issues** Inter-tribal Resource use, tribal disagreements, cultural boundaries. Inter-barangay Administrative boundaries, resource use and access, internal revenue allotment (IRA). Inter-municipal / provincial Administrative boundaries, resource use and access, internal revenue allotment (IRA).

### **III. NON-GOVERNMENTAL ORGANIZATIONS**

#### **1. The Babilonia Wilner Foundation (BWF)**

Website: <http://www.bwf.org/>

Overview: BWF, a duly accredited NGO and private operating foundation, was founded on September 24, 1994 under the California Public Benefit Act and other applicable Federal laws. BWF was founded in the Philippines on August 28, 1995 under registration with the Security Exchange Commission of the Republic of the Philippines.

BWF operates two Programs, which are registered DBAs (doing business as), Balik Kalikasan in the Philippines and Pusod in the United States.

Being a non-profit organization, BWF has developed a dynamic management strategy resulting in the highly efficient utilization of human and material resources. This efficiency is achieved, first of all, through its staff. They are the most valuable asset. The staff are competent, but more than that, they have the passion to protect and preserve the environment.

Through Balik Kalikasan and Pusod, and BWF's other programs and projects, the Babilonia Wilner Foundation works in offering people the means to better understand the economic, cultural and ecological conditions that affect the Philippines and the world.

BWF is a firm believer in the Filipino. We assert that care and respect for the environment has long been a part of our cultural heritage. In this light, we strive to arouse in the people their sense of pride in being Filipino, from which will stem their initiative to relive the spirit of environmental protection which our ancestors fostered.

#### **2. Coral Cay Conservation (CCC)**

Website: <http://www.coralcay.org/>

Overview: Coral Cay Conservation (CCC) is a not-for-profit organization at the cutting edge of ecotourism. CCC is a not-for-profit international conservation organization that helps protect threatened coral reefs and tropical forests. CCC runs expeditions to collect scientific information that is used to produce habitat maps and provide management recommendations.

CCC has been organizing conservation expeditions since 1986. CCC currently has coral reef expeditions in Fiji, Honduras, Malaysia, and the Philippines forest expedition in Malaysia and the Philippines. CCC does not charge the countries in which it operates. CCC is invited by host countries to assist with existing conservation strategies. CCC is largely financed by volunteers who pay to participate in an expedition for anything from 2 and 12 weeks +. Volunteers come from a range of different backgrounds and from ages 16 to 70+. Volunteers require no scientific background and are trained on-site in marine or terrestrial ecology and survey techniques. Volunteers with no dive experience or qualifications are trained to PADI Advanced Open Water diver. Volunteers on a marine expedition will, on average, do 12 dives a week. CCC offers PADI

dive training up to and including Divemaster. CCC has been recognized for its outstanding safety record and procedures. CCC actively promotes and provides education in tropical ecology and conservation.

### **3. Pipuli Foundation Inc.**

Website: <http://www.ozamiz.com/earthcalls/>

Overview: Envisions a vigorous and robust nature where healthy forest, sea, soil, air, and water systems support all kinds of trees, plants, flowers, insects, fish, birds, animals, and people and where these diverse creatures share life within the fragile limits of tropical island habitats.

### **4. Haribon Foundation**

Website: <http://www.haribon.org.ph/>

Overview: Since its inception in 1972, Haribon Foundation for the Conservation of Natural Resources, a non-profit, non-stock, non-governmental organization, has been in the forefront of environmental protection and sustainable resource management in the Philippines. The latter phrase means that Haribon has set out to ensure that "the needs for the present are met without compromising the ability of future generations to meet their own needs" (from the World Commission on Environment and Development).

Haribon undertakes community-based resource management strategies; conducts scientific and socio-economic research on natural ecosystems to benefit communities; and raises national consciousness on sustainable approaches to development.

### **5. Kalikasan**

Website: <http://www.geocities.com/RainForest/Jungle/6887/>

Overview: Kalikasan-People's Network for the Environment is a network of people's organizations (POs), non governmental organizations (NGOs) and environmental advocates. It aims to address environmental issues but in such a way that primacy is given to the people- especially the grassroots people who constitute the overwhelming majority of the population. All environmental causes shall thus have the people's interest at their core.

Kalikasan is currently composed of seventeen (17) sectoral organizations, eight (8) regional formations, and ten (10) national-level non governmental organizations. This network includes national organizations of peasants, fisherfolk, workers, women, indigenous peoples and urban poor. Many of the member organizations have existed for over ten years (and in some cases even over twenty years) and all have consistently espoused the sentiments and upheld the interests of their respective constituents.

Kalikasan was established to enable greater coordination and complementation in addressing the environmental issues which continue to worsen the lives of already marginalized people. So-called 'development' schemes, in particular, have caused great environmental harm with correspondingly great human costs.

## **6. Legal Rights and Natural Resources Center**

Source: <http://www.info.com.ph/~lrcksk/>

Overview: LRC-KSK / Friends of the Earth - Phils. is a legal and policy research and advocacy institution. Established in 1987, it is organized as a non-stock, non-profit, non-partisan, cultural, scientific and research foundation.

The goal of the Center is to empower the marginalized and disenfranchised peoples directly dependent on our natural resources so as to be able to effect ecologically sustainable, culturally appropriate, gender-sensitive, economically viable, equitable uses, management, conservation and development of natural resources.

Its main advocacy has been that recognition and protection of the rights of indigenous peoples and long-term occupants of the forests and of the rest of the uplands should be a main, if not the primary, component of any program on sustainable development.

Hence, the Center seeks to bridge the gap between the informal articulation of the aspirations of the peoples organizations on the one hand, and the formal, technical, bureaucratic and legal language used by the State.

The Center strives to accomplish its goals through five major teams: Direct Legal Services, Research and Policy Development, Campaign Support and Linkages, Administrative Support and the Mindanao Branch Office.

It also houses the regional secretariat of the NGO Working Group on the ADB as well as the secretariat of the NOVIB Partners for Ecological Exchange.

The Center has already developed expertise on the subjects on indigenous peoples rights, environmental management, forestry issues, energy efficiency, community and local initiatives.

## **6. International Institute of Rural Reconstruction**

Website: <http://www.iirr.org/>

Overview: The International Institute of Rural Reconstruction (IIRR) is a rural development organization with 80 years experience, working in Africa, Asia, and Latin America. IIRR promotes people-centered development through capacity building for poor people and their communities, development organizations and agencies.

- Through participatory approaches, IIRR builds capacities of communities and their organizations, encourages people-centered practices among other development organizations, and strengthens linkages between communities and their partners.
- We share our experiences, from working with the communities, with development practitioners through training programs and publications.
- We facilitate the sharing of field-tested knowledge from development organizations, which is useful in the fight against poverty.

- Our main outputs are training courses and publications on development issues, and learning from the work with communities.

IIRR works with the poor in Africa, Asia and Latin to enable them make meaningful change in their lives. In order to achieve this, IIRR creates partnerships with development organizations, government agencies and communities. The IIRR program has three components:

- The Learning Community
- Education and Training, and
- Publications and Communication

## **7. Legal Rights and Natural Resources Center Inc.**

Overview: Participates actively in local and international lobbying on forestry issues and on the recognition of traditional systems of land use and ecosystem management.

**From <http://www.forestsandcommunities.org/display.php3?id=17>**

The Legal Rights and Natural Resources Center, Inc.-Kasama sa Kalikasan/Friends of the Earth Philippines is a legal and policy research and advocacy institution which deals primarily with the process of attaining ecologically sustainable, culturally appropriate, gender-sensitive, economically viable, equitable and dynamic stewardship and use of natural resources.

With the assistance of legal policy experts, the Center strives to articulate policy alternatives which are intimately linked with those communities that directly depend upon natural endowments. The Center works through the following teams both in the National as well as in its Regional Offices:

- Direct Legal Services
- Research and Policy Development
- Campaigns Support and Linkages
- Administrative

The Center also hosts the NGO Forum on the Asian Development Bank, an advocacy network of NGOs around Asia and the Pacific focusing on issues relating to the Asian Development Bank.

The Center has developed expertise on the subject of indigenous peoples rights, land tenure, natural resource management, environmental management, forestry issues, energy efficiency and community and local initiatives.

## **8. Philippine Rural Reconstruction Movement**

Website: <http://www.prrm.org/>

Overview: The Philippine Rural Reconstruction Movement is a nongovernmental organization engaged in the design and implementation of community and habitat development programs across the archipelago. PRRM promotes agroforestry, sustainable agriculture and fishing

technologies. It also plans and implements integrated, community-based resource management; and disseminates information to NGOs in the Philippines and Asia on the INCD process.

PRRM is organized both as an NGO and as a membership institution. The first allows it to undertake programs at all levels. The second gives it the character of a movement drawing strength and resources from a broad professional base. PRRM has a staff capacity of over 300 full-time and multidisciplinary workers. It runs a continuing program for staff and career development appropriate to its basic strategy.

PRRM's financial resources are drawn from outside as well as local sources. Its main funding partners are NGOs in the North like NOVIB, German Agro-Action, IPADE in Spain, and several others. It also gets project funding support from its members-in the form of dues, donations, and technology extension-and from its endowment fund.

PRRM also runs a volunteer and apprenticeship program for local and international students and professionals interested in participating and in contributing to community and habitat development initiatives on the ground.

PRRM owns several training facilities in provinces where it operates, the largest of which is its 14-hectare training facility in the province of Nueva Ecija. This facility doubles as in-housing training venue and income center when leased out occasionally to other agencies. Its headquarters in Quezon City also serves as training and conference venue for activities of both PRRM and its partners.

### ***Core Programs:***

#### **a. Strengthening civil society capacities and movements**

PRRM helps communities and civil society organizations plan for their development, manage their natural resources, pursue economic activities, address their health and other social service needs, participate in governance, engage the state and other actors in development, and sustain development gains beyond the period of direct assistance. PRRM's approach also aims to help individuals, women and men, realize their full potentials, in their households, organizations and communities. The gender dimension is integrated in all aspects of PRRM's development work.

PRRM has helped build sectoral associations, cooperatives and community organizations at the village level, sectoral and multi-sectoral federations and networks at the municipal and provincial levels, and national sectoral federations of small farmers, fishers, women and youth. These partner sectoral organizations at the national level form the People's Organizations Leaders' Caucus (POLAC):

*Pambansang Samahan ng mga Magsasaka para sa Likas-Kayang Pananakahan (SAKAHAN):* federation of farmers for sustainable agriculture.

*Nagkakaisang Ugnayan ng Maliliit na Magsasaka at Mang-gagawa sa Niyugan (NIUGAN):* federation of small coconut farmer organizations.

*Pinalakas na Ugnayan ng Maliliit na Mangingisda sa Luzon, Mindanao at Visayas (PUMALU-MV)*: federation of municipal fisherfolk organizations.

*Daluyan at Ugnayan ng Organisasyong Pangkababaihan (DALUYONG)*: a national women's organization.

*Philippine Rural Reconstruction Youth Association (PRRYA)*: organization of Filipino youth mobilized as volunteers for community development.

## **b. Developing and implementing innovative field programs and projects**

At the field level, PRRM has evolved a sustainable area development strategy on the scale of what it calls a sustainable rural district, or SRD. The concept of PRRM's SRD assumes a certain scale of sustainability in demonstrating a community-centered area development model.

Intervention in small, isolated villages becomes futile when the policy and institutional set-ups affecting development (e.g., trading and marketing systems) transcend the level of the village.

The identification and selection of a potential SRD is based on a set of ecological, economic, demographic and socio-political criteria. The SRD can be described as a habitat of at least two contiguous ecosystems, with at least one major market center serving a cluster of 5-12 towns, and a population of 200,000-450,000.

PRRM has implemented the following sustainable area development programs:

### *Sustainable Rural District Development Program (SRDDP)*

Implemented in Bataan, Ifugao, Camarines Sur, Nueva Ecija and North Cotabato; supported by the Netherlands Organization for International Development Cooperation (NOVIB).

### *Sustainable Area Development Program (SADP)*:

Implemented in Negros Occidental, Nueva Vizcaya and Marinduque; supported by German Agro-Action (GAA).

### *Camiguin Sustainable Island Development Program (CSIDP)*:

Supported by the Spanish Agency for International Cooperation (AECI) through the Spanish partner NGO IPADE.

### *El Nido Community-Based Conservation and Development Program (ENCBCDP)*:

Supported by the Netherlands Directorate General for International Cooperation (DGIS) and implemented in partnership with a consortium of local NGOs.

## **c. Learning for sustainability**

## **d. Challenging public policy and promoting development cooperation**

### **9. Foundation for the Philippine Environment (FPE)**

Website: [www.fpe.ph](http://www.fpe.ph)

Overview: Incorporated on 15 January 1992, FPE aims to reverse the rapid destruction of the Philippines' natural resources by initiating programs and activities that strengthen the role of NGOs, peoples' organization (POs), and local communities in the responsible management of the ecosystem.

The initial financial base of FPE is an endowment fund established through debt-for-nature swaps. Start-up financing came from the United States Agency for International Development (USAID) which, through the Natural Resources Management Program (NRMP), provided the grants that established an endowment worth about US\$22 million in Philippine pesos.

FPE encourages international and local cooperation between and among communities, NGOs and POs, business group and government agencies towards developing policies and effective programs for biodiversity conservation and sustainable development.

FPE also initiates, assists and finances biological diversity conservation and sustainable development activities. It aims to strengthen the capabilities of NGOs and POs and local communities in enhancing biodiversity conservation and sustainable development.

FPE likewise generates additional financial resources for funding qualified projects in biodiversity conservation and sustainable development. FPE also provides financial linkages between proponents and donors.

#### *Types of Projects Assisted*

##### *Community-Based Resource Management (CBRM)*

CBRM programs aims to empower communities for biodiversity conservation and sustainable resource management in identified sites.

##### *Proactive*

The FPE Proactive Program aims to design, study, and test strategic interventions and mechanisms in support of overall efforts for biological diversity conservation and sustainable development.

##### *Action Grants*

Action Grants are small grants for short-term initiatives intended to create or open avenues for visible and swift responses to specific needs and issues, and generate deeper or wider scale information, education and action.

##### *Special Projects*

Special Projects are collaborative pursuits of FPE and other funding institutions sharing a common goal of biodiversity conservation and sustainable development.

## **10. Philippine Business for Social Progress (PBSP)**

Website: <http://www.pbsp.org.ph/>



Overview: PBSP is a private and non-profit foundation dedicated to promoting business sector commitment to social development. It was organized in December 1970 by 50 of the country's prominent business leaders, and has since grown to become the nation's largest and most influential business-led social development foundation. From an initial membership of 50 business companies, it has grown to more than 160 members, worked with some 2,500 partner organizations, provided over P4.6 billion in financial assistance which supported over 5,000 projects, and benefited close to 2.5 million poor households.

For the past 32 years, PBSP has been the business sector's vehicle in delivering organized, professional, and sustainable assistance to the Filipino poor, particularly the landless farmers, fisherfolk, rural workers, urban poor, and indigenous cultural communities. An aggressive membership and corporate involvement program continuously invites corporations from all over the country to join the PBSP membership. As member companies, corporations commit to allocate 20 percent of one percent of net income before taxes to fund the Foundation's operations and programs.

The Foundation considers as its key strengths: development technology, which is founded on the premise that development is about helping people to help themselves; and corporate support, in the form of financial resources, time and competencies that its member companies invest to help improve the quality of life of the Filipinos

### *Foundation Strategies*

PBSP works with government, business, NGOs, donor institutions and poverty groups through multi-sectoral partnerships in seeking to contribute to nationwide poverty alleviation. The Foundation adopts various strategies in the pursuit of meaningful, effective and sustainable social change.

It has found its niche in the practice and promotion of corporate citizenship, through which it has been able to help companies integrate corporate social responsibility (CSR) within their business operations, and to look at core business policies and practices in the light of their impact on society, on the environment and on development in general.

Over the years, PBSP has streamlined its assistance to promote integrated area development in impact areas where the poorest of the poor are and where social and physical infrastructures are present that will ensure the sustainability of its programs.

The Foundation's projects and assistance provide for environmental protection and regeneration interventions, particularly of exploited marine and coastal areas, and denuded upland, lowland, and mangrove areas and watersheds.

PBSP implements programs based on sound technology management. The Foundation has pioneered socio-economic technologies that over time, have become part of the mainstream of NGO and government development work. To improve productivity of poverty groups, PBSP has also established technology centers for the testing, validation, and dissemination of agri-based and marine technologies that promote optimum use of land and sea.

PBSP helps generate jobs and employment by developing enterprises and providing livelihood through credit assistance to micro, cottage, small and medium scale enterprises in the countryside.

As a partner of government, the Foundation actively participates in strengthening local governance by building the capabilities of local government units and their leagues to effectively deliver social services to their constituents.

PBSP has also institutionalized development management training in order to develop the capacities of the corporate sector, government, member companies and other civil society organizations involved in development work.

## ***Programs***

### ***a. Area Resource Management (ARM) Program***

The Area Resource Management Program is PBSPs core development strategy. It develops workable approaches and strategies that aim to regenerate the environment, develop enterprises, build capacities of local institutions, and enhance local governance.

Launched in 1991, the ARM program is on its 2nd five-year period of implementation. The ARM is currently focused on high growth or high investment areas characterized by rapid industrialization and urbanization. A part of the larger ARM Program of PBSP, the High Growth Area (HGA) -ARM targets the labor force, upland farmers and sustenance fisherfolk.

## **11. Foundation for Sustainable Society, Inc. (FSSI)**

Website: <http://www.fssi.com.ph/index.khtml>

Overview: The Foundation for a Sustainable Society, Inc., a non-stock, non-profit corporation whose primary purpose is to contribute, encourage, assist, and provide technical and managerial support to non-government organizations (NGOs), people's organizations (POs), cooperatives and similar private organizations in sustainable production.

FSSI was born out of the massive campaign to reduce the Philippines' bilateral debt to Switzerland. It is believed that much of the debt was worked out and negotiated by vested interests that benefited the most from the transaction but has become the democratically shared burden of citizens who benefited the least.

The movement was spearheaded by the Swiss Development Coalition and actively supported by their Filipino counterparts.

Through a national referendum, the Swiss people acceded to the cancellation of debt, hence, resulting to the signing of a Bilateral Agreement on the Reduction of the External Debt between the Governments of the Philippines and Switzerland on August 11, 1995. This agreement involved the cancellation of a portion of the Philippines' bilateral debt.

Fifty percent of the debt's face value was turned into an endowment fund to be used as grants or loans that support projects of NGOs, POs, cooperatives and private organizations in sustainable production.

FSSI holds and manages the fund.

#### *Working Committees*

In 2002, FSSI's General Assembly ratified the creation of working committees that further involves the members in the decision making process concerning the Foundation's operations and activities.

#### *Membership Development*

The Membership Committee serves to expand opportunities and build capabilities for the mutual benefit of its member organizations, their donor-beneficiary constituents, common interests based on mandates, basic sectors and grassroots communities on which FSSI projects and programs have a direct effect. Hence, involvement goes beyond the general assembly and board meetings. The membership will be encouraged to actively participate in the different committees in order to contribute their insights, suggestions and possibly explore areas of collaboration and direct involvement.

#### *Internal Governance*

The Internal Affairs Committee implements the exercise of good governance learned from benchmarks and best practices. It upholds principles of transparency, accountability, efficiency and quality in the spirit of justice, innovation, mutual respect and freedom. This institutional culture shall be built from the staff and management up to the trustees and members so FSSI may serve as an example of good governance in civil society itself.

#### *Eco-Enterprise Development*

The Eco-Enterprise Development Committee oversees the prospecting and evaluation of projects not just on the basis of their stand-alone viability and direct community impact.

#### *Development Portfolio Management*

The Development Portfolio Management Committee engages in the regular review of FSSI's developmental portfolio of project financing and grant bestowing. Moreover, it anticipates risks and opportunities so that the institution may act on them in a timely matter.

#### *Investment and Finance*

The Investment & Finance Committee assures the responsible stewardship of FSSI's resources. It assumes a more active role in the conservative but productive management of financial resources while helping grassroots effectively mobilize their own resources as well.

#### *General Assembly Institutional Members*

1. Alliance of Philippine Partners in Enterprise Development (APPEND)
2. Association of Foundations, Inc. (AF)

3. CONVERGENCE for Community Area Centered Development
4. Department of Finance, Republic of the Philippines
5. Federation of People's Sustainable Development Cooperative, Inc. (FPSDC)
6. Freedom from Debt Coalition (FDC)
7. Green Forum Philippines (GF)
8. Grupo ng Lakas ng Kababaihan (G10)
9. HELVETAS
10. Magbassa Kita Foundation, Inc. (MKFI)
11. Mindanao Alliance of Self-Help Societies-Southern Philippines Education Center for Co-ops (MASS-SPECC)
12. Mindanao Coalition for Development (MINCODE)
13. National Confederation of Cooperatives (NATCCO)
14. National Council of Social Development (NCSD)
15. National Council of Churches in the Philippines (NCCP)
16. National Secretariat for Social Action (NASSA)
17. NGO Center for Cooperative Development (NGO-CCD)
18. Oiko Credit Foundation Philippines, Inc.
19. Partnership of Philippine Support Service Agencies (PHILSSA)
20. Philippine Business for Social Progress (PBSP)
21. Philippine Network for Rural Development Institute (PhilNet-RDI)
22. Philippine Partnership for the Development of Human Resources in Rural Areas (PhilDHARRA)
23. Philippine Network for Helping the Hardcore Poor (Philnet)
24. SWISSCONTACT
25. Swiss Interchurch Aid (HEKS)
26. Visayas Cooperative Central Fund Federation (VICTO-VCF)
27. Women's Action Network for Development (WAND)

### *Development Portfolio*

Coco Coir, Dust & Fertilizer  
 Microfinance  
 Seaweeds  
 Sustainable Agriculture  
 Solid Waste Management  
 Technical & Services

#### **12. World Wildlife Foundation, Philippines**

Website: <http://www.wwf.org.ph/>

Overview: WWF-Philippines, also known as Kabang Kalikasan ng Pilipinas, is an environmental non-government organization in the Philippines whose ultimate mission is to stop, and eventually reverse the accelerating degradation of the environment in the Philippines. And to build a future in which Filipinos live in harmony in nature.

### ***Projects***

*a. Forests*

Mt. Guiting-Guiting Natural Park - Sibuyan Island, Romblon

El Nido-Taytay Protected Area – Northern Palawan

Northern Sierra Madre Natural Park Conservation & Development Program Phase 2 - Northern Sierra Madre

*b. Oceans and Coasts*

Coastal Resource Management of Northern Guimaras Strait

Integrated Coastal Management Project of Balayan Bay

Mabini-Tingloy Marine Biodiversity Conservation Project

Marine Protection Crusade in Puerto Galera and Apo Reefs

Protection of Tubbataha Reef World Heritage Site

Integrated Conservation & Development of Turtle Islands Sanctuary

Coastal Resources & Fisheries Conservation in Tawi-tawi, Bohol, Cebu, Northern Palawan, & Batangas

*c. Species*

Cetacean Research & Conservation Project

Humpback Whale Research & Conservation Project

Malampaya Sound Ecological Studies Project

Tañon Strait Initiative

Dugong research & Conservation Project

Community-Based Ecotourism and Coastal Resource Management in Donsol, Sorsogon

Species-Fishery Interaction

*d. Toxics*

Environmental Sensitivity Index (ESI) Mapping for Oil Spill

*e. Climate Change*

Climate & Energy Policy Program

**Resource Mobilization**

WWF's conservation work and experience worldwide demonstrate that a solid base of supporters is a powerful force in the areas of advocacy, networking and fundraising. Powerful partnerships lead to real action and positive results. WWF has always recognized that the way ahead in its relationship with business and industry is forging partnerships for mutual benefit.

WWF's business partnerships provide companies with the opportunity to respond to a growing public interest in conservation through partnership with WWF. The unrestricted support from our corporate donors helps WWF develop lasting, long-term solutions to global environmental challenges.

The Resource Mobilization Unit is mandated to expand WWF-Philippines' constituency base of enlightened individuals and companies that will actively support its conservation agenda in the country. There are four major programs that aim to expand WWF Philippines' constituency of

supporters:

- Conservation Alliance Program (CAP)
- Corporate Partners Program (CPP)
- Friends of WWF-Philippines (FOW)
- Supporters of WWF-Philippines (SOW)

### **13. Philippine Eagle Foundation**

Website: <http://www.philippineeagle.org/index.htm>

Overview: The Philippine Eagle Foundation is a private, non-stock, non-profit organization dedicated to the conservation and protection of the endangered Philippine Eagle. By using the eagle as its flagship for conservation, it has been able to undertake direct actions that benefit the species, other wildlife and the people who share its rainforest habitat with the eagle. The Foundation prides itself with taking direct actions and achieving results, which has earned it an enviable reputation among the non-government organization community in the Philippines. The dedication and transparency with which the Foundation undertakes in its conservation actions have engendered a broad sense of support among grassroots communities, schools, local government units, the private business community, and the general public.

#### **Conservation Breeding Program**

The Philippine Eagle Foundation (PEF) is best known for the successful captive propagation of Philippine Eagles. Sixteen birds have been produced since 1992 at the Philippine Eagle Center using both cooperative artificial insemination and natural pairing techniques. The captive-bred eagles so far represent the most successful breeding of large tropical raptors in the world.

Activities in captive breeding management include the propagation of Philippine Eagles and other raptors, rearing and rehabilitation of injured birds, feeding and nutrition, cryogenic research, and the development of laboratory techniques. We continually seek innovations in cooperative artificial insemination techniques and natural breeding, rearing of young for imprinting, natural pairing, falconry and hacking, or release of eagles back to protected forests in the wild.

Aside from breeding Philippine Eagles, the Conservation Breeding Program has started venturing in the propagation of other species such as the White-bellied Sea Eagles, Scops Owls, Grey-headed Fishing Eagles, Serpent Eagles, and the Philippine Hawk Eagles

#### ***Conservation Education***

This program targets urban and rural communities in developing public awareness and understanding of wildlife conservation issues. Our partners and linkages include teachers, students, local government units, private business corporations, and indigenous communities as well as the print and broadcast media. Our task is to develop public awareness and understanding

of the natural environment. We do this by providing a venue and developing materials with which to educate the nation about our wildlife resources and the need to conserve them.

### ***Field Research***

The Philippine Eagle Foundation, in collaboration with the Protected Areas and Wildlife Bureau of the Department of Environment and Natural Resources embarked on a radio tracking program for three main purposes: to gather information on the eagle's home range, juvenile dispersal and mortality, and to estimate the species' survival rates.

It is now commonly realized that the pattern of landscape transformation of the Philippine archipelago has resulted in severe fragmentation and isolation of forest raptor populations. Over the short-term period, the one important hypothesis that needs to be tested is whether juveniles and straggler individuals show or are capable of crossing barren lowlands areas (Miranda et al, 2000).

Over the long-term period, the persistence of the Philippine Eagle as a viable evolutionary unit is questionable. Data gathered by radio tracking of juveniles will provide us with empirical data to make predictions on the eagle's vulnerability to inbreeding, abnormal age class ratios, and mortality rates over natality.