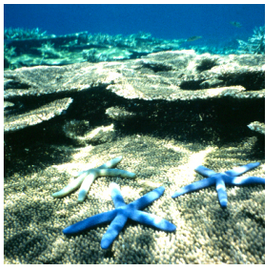

2005

2008

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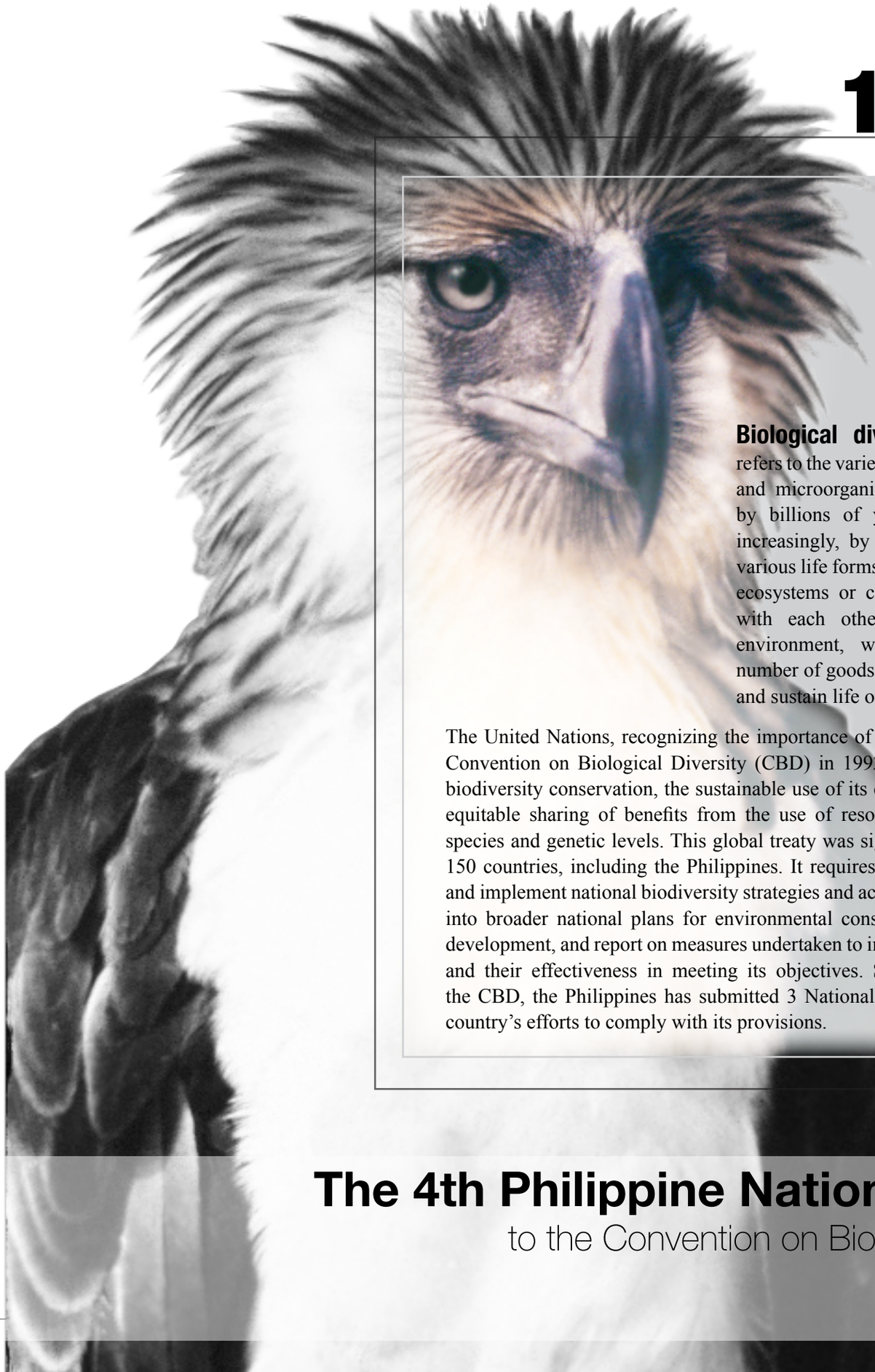
The 4th Philippine National Report

to the Convention on Biological Diversity

Assessing Progress Towards the 2010 Biodiversity Target



1.0 intro

Biological diversity or biodiversity refers to the variety of life – plants, animals and microorganisms – on Earth, shaped by billions of years of evolution and, increasingly, by human influence. These various life forms, including humans, form ecosystems or communities that interact with each other and the surrounding environment, which produces a large number of goods and services that support and sustain life on the planet.

The United Nations, recognizing the importance of biodiversity, adopted the Convention on Biological Diversity (CBD) in 1992. Its goal is to promote biodiversity conservation, the sustainable use of its components, and fair and equitable sharing of benefits from the use of resources at the ecosystems, species and genetic levels. This global treaty was signed and ratified by over 150 countries, including the Philippines. It requires governments to develop and implement national biodiversity strategies and action plans, integrate these into broader national plans for environmental conservation and sustainable development, and report on measures undertaken to implement the Convention and their effectiveness in meeting its objectives. Since its membership to the CBD, the Philippines has submitted 3 National Reports that present the country's efforts to comply with its provisions.

The 4th Philippine National Report
to the Convention on Biological Diversity

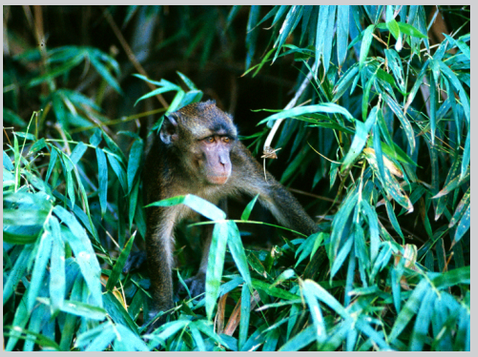
duction

This is the 4th National Report (4NR) of the Philippines to the CBD. It covers the period from mid-2005 to mid-2008 with updates up to early 2009. It focuses on the assessment of the country's progress towards meeting the 2010 biodiversity target of achieving a significant reduction in the current rate of biodiversity loss at the global, regional and national levels, consistent with the strategic plan for the CBD. The 2010 biodiversity target is also one of recent targets incorporated in the Millennium Development Goals (MDG).

Highlights and specific case samples are cited in this Report to give snapshots of the current status, trends and threats in the following ecosystems based on the thematic programmes of the CBD: forest and mountain, agriculture, inland waters, coastal, marine and island. Moreover, this Report identifies the gaps that should be addressed and some recommended actions for us to be able to meet the 2010 biodiversity target.

The information and case samples presented were gathered and validated through multi-stakeholder consultations/workshops convened by the Department of Environment and Natural Resources-Protected Areas and Wildlife Bureau (DENR-PAWB). The preparation of this report was facilitated by the DENR-PAWB, with the assistance of the Ateneo School of Government (ASoG) of the Ateneo de Manila University and other partners, and with funding support from the United Nations Development Programme-Global Environment Facility (UNDP-GEF), UNDP-Environment and Natural Resources Capacity and Operational Enhancement (ENR-CORE) Program, and the ASEAN Centre for Biodiversity (ACB).

This version of the 4th National Report highlights the progress made to meet the 2010 biodiversity target. The full Report can be accessed from www.pawb.gov.ph.



Assessing Progress Towards the 2010 Biodiversity Target

2005-2008

2.0 overview of status trends & threats

The Philippines is located in Southeast Asia, between the Philippine Sea and the South China Sea, east of Vietnam and north of Indonesia and Malaysia. It is composed of 7,107+ islands covering a total area of 300,000 square kilometers (sq km). The main island groups are Luzon, Visayas and Mindanao, with Manila as the capital city.

As of the latest census in August 2007, population reached 88.57 million with an annual growth rate of 2.04%. Over 60% of the population live in coastal areas, with Luzon (the largest island group), accounting for more than half of the entire population. Projected population for 2009 is 92.23 million (NSO, 2008) although there is currently an unofficial population estimate of 96.06 million as of July 2008.

The Philippines has vast natural resources that are a source of food, water, shelter and livelihood for its rapidly growing population. It is one of 17 megabiodiversity countries (containing 2/3 of the earth's biodiversity and about 70-80% of the world's plant and animal species) due to its geographical isolation, diverse habitats and high rates of endemism (native, restricted or unique to a certain country or area). The Philippines is 5th in the number of plant species and maintains 5% of the world's flora.

Map of the Philippines

Species endemism is very high, covering at least 25 genera of plants and 49% of terrestrial wildlife. The country also ranks 4th in bird endemism. In terms of fishes, there are about 3,214 (incomplete list), with about 121 endemic and 76 threatened species.

The Philippines is also one of the world's biodiversity hotspots, with a large number of endangered and threatened species and habitats, making it one of the world's top global conservation priority areas. The conservation of our biological resources should be integral to the country's development process to ensure the welfare of our people and the health of our environment.

3.0 progress towards the 2010 biodiversity target

The Philippines has made significant strides and gains in biodiversity-related policies, programs, projects and activities in the years 2005 to 2008, up to early 2009. However, assessing the country's progress towards meeting the 2010 biodiversity target of achieving reduction in biodiversity loss has been a challenging task in the absence of nationally agreed baselines, targets and indicators. Even more challenging is the fact that the 4th National Report requires reporting of outcomes and impacts but most of the data gathered only report outputs.

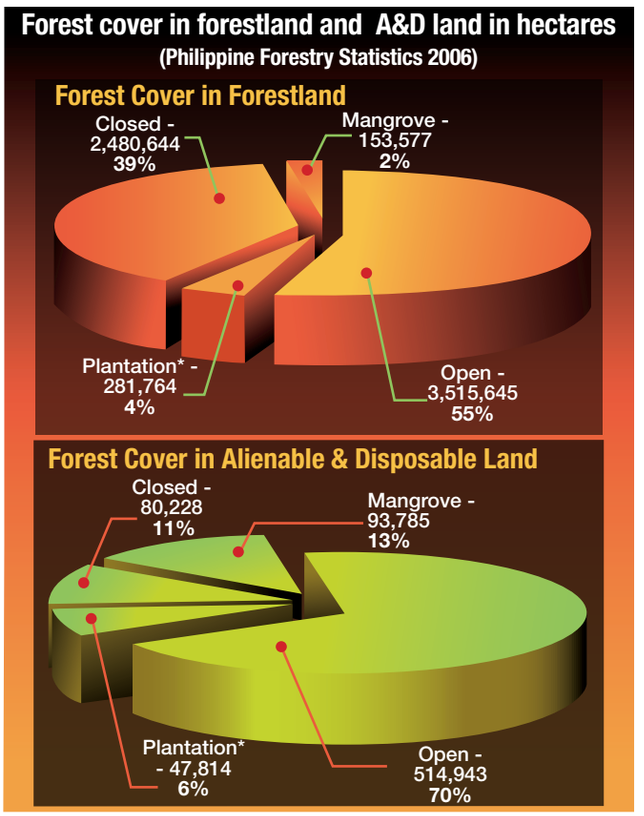
Based on available data, the Philippines' responses to meeting the 2010 biodiversity target are summarized under 7 focal areas:

- Protecting components of biodiversity
- Promoting sustainable use
- Addressing threats to biodiversity
- Maintaining the goods and services provided by biodiversity to support and sustain human well-being
- Protecting traditional knowledge, innovations and practices
- Ensuring the fair and equitable sharing of benefits from the use of genetic resources
- Ensuring the provision of adequate resources for biodiversity conservation

1 Protecting components of biodiversity

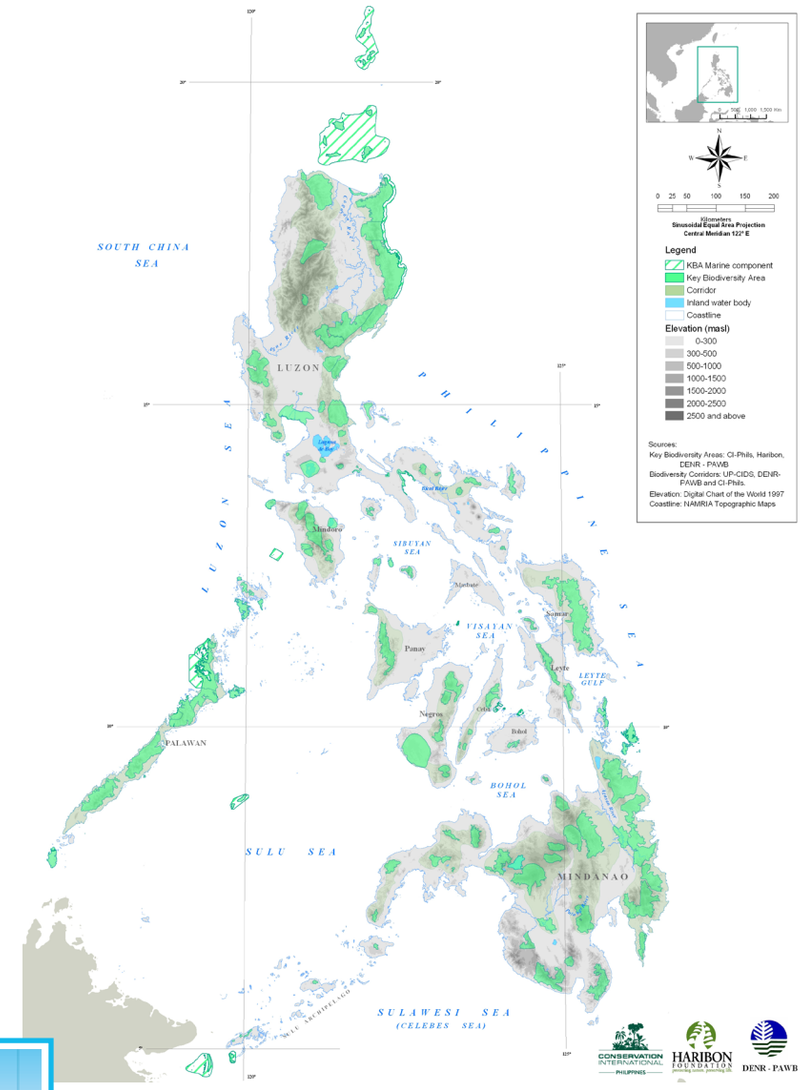
There are 3 components of biodiversity - ecosystems, species and genes - and the ecological complexes of which they are part of, that need protection. The following indicators were used to measure progress in protecting these components.

- The proportion of forest cover to land area has increased from 24% of the country's total land area in 2003 to 52.6% in 2006. The increase in forest cover is reportedly due to the a) reforestation program of the government and the private sector, particularly the development of forest plantations and management of natural forest areas; and b) forest policy shifts, initiatives and public awareness on sustainable forest management (2007 Philippines Mid-term Progress Report on the MDG). This increase, however, has been the subject of much debate, primarily because of a disagreement among government and non-government stakeholders on the definition of forest cover.

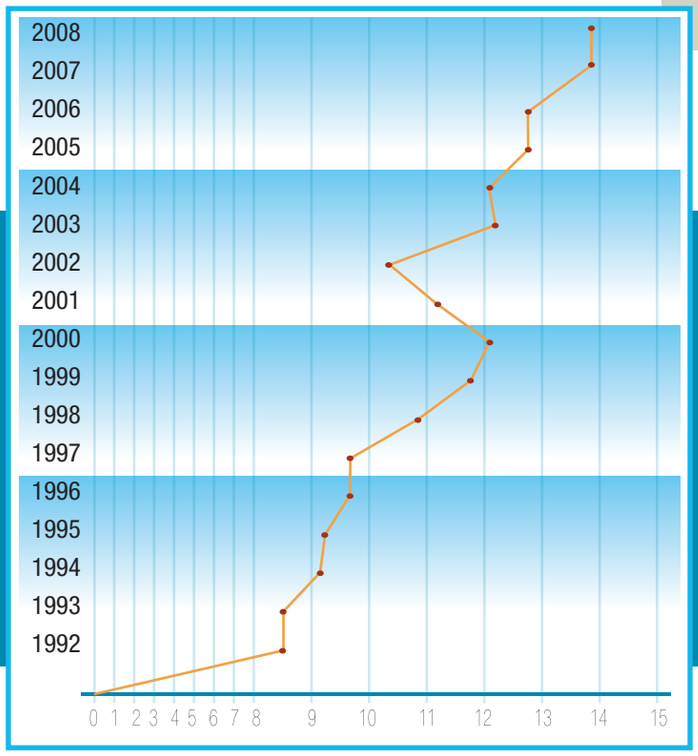


** Plantation data are not yet complete*

The Philippine biodiversity conservation priorities were reinforced by the identification of Key Biodiversity Areas (KBAs) in 2006. KBAs represent sites that are globally vulnerable, irreplaceable, and are the last strongholds for many threatened and geographically concentrated species. Of 206 conservation priority areas and species conservation priorities, 128 terrestrial KBAs have been identified for 209 globally threatened and 419 endemic species of freshwater fishes, amphibians, reptiles, birds and mammals, and 62 congregatory bird species. Sixty-six (66) marine KBAs are being proposed as priority areas that need research and management interventions. Terrestrial biodiversity corridors in Eastern Mindanao, Palawan and Sierra Madre, and marine biodiversity corridors in Cagayan Ridge, Balabac Strait, the Tri-National Sea Turtle and Verde Passage were also identified to provide habitat and dispersal routes for wildlife, maintain ecological processes, and provide livelihood. Biodiversity corridors link KBAs through biodiversity-friendly use of land, coasts and seas.



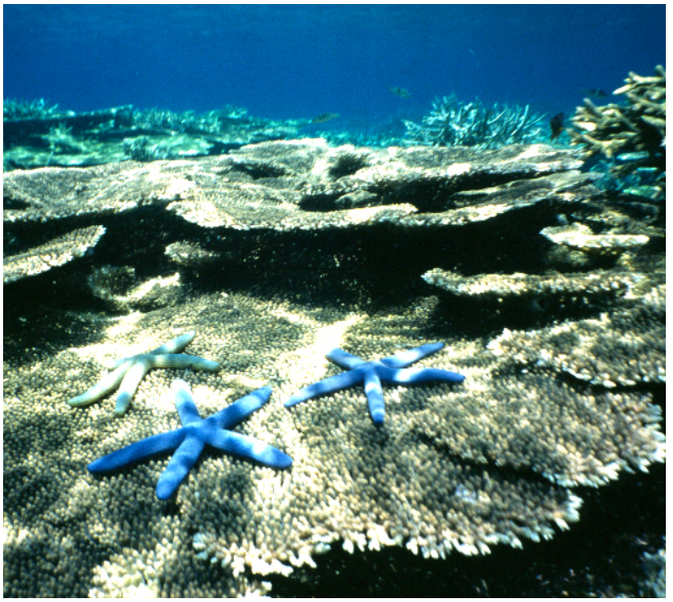
KBA Map (Conservation International, DENR-PAWB and Haribon Foundation, 2006)



The proportion of terrestrial protected areas (PAs) to total land area has increased from 8.5% in 1992 to 13.8% in 2008 (2007 Philippines Mid-term Progress Report on the MDG). While this may suggest increased protection of biological diversity, PAs, however, cover less than half of the KBAs identified and there are many PAs that are not considered as priority areas for biodiversity conservation. The current implementation thrust of DENR is to reconcile KBAs with legally-protected sites and address concerns on their management effectiveness.

Proportion of terrestrial PAs to total land area
(2007 Philippines Mid-term Progress Report on the MDG).

Nanola et al., in a 2004 report on the state of Philippine coral reefs, indicated that Philippine reefs may be experiencing a steady state of decline (from 5% to 3% to >1%), although better reefs can still be found in Celebes Sea, Southern Philippine Sea, Sulu Sea and the Visayas Biogeographic regions. Management interventions such as establishment of marine protected areas (MPAs) and law enforcement have contributed to averting the declining trend in coral cover, fish abundance and biomass.



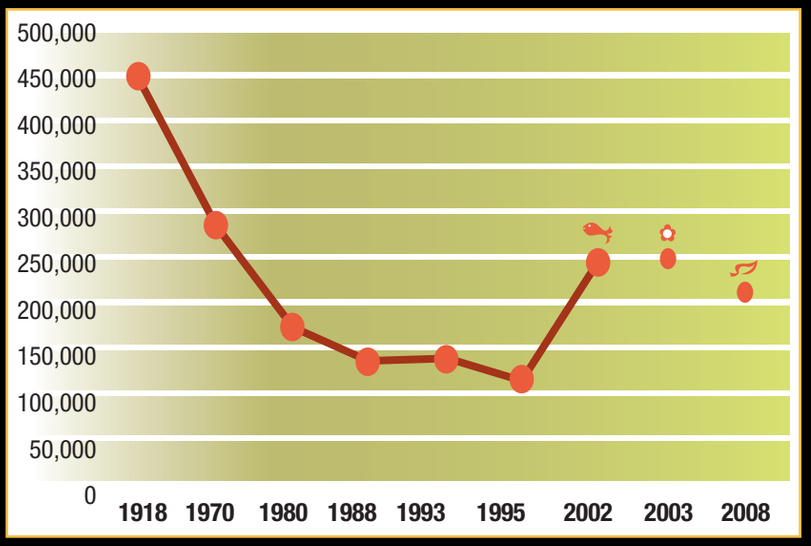
Using hard coral cover, fish abundance and biomass as indicators, recent biophysical monitoring data from selected MPA and non-MPA sites in 52 municipalities/cities in 31 provinces indicated that there is still an overall declining trend, especially in non-MPA sites. In the South China Sea region, average hard coral cover for both MPA and non-MPA sites did not show much change, although there was a higher percentage of coral cover observed in MPA sites. In terms of fish abundance, the Visayan Sea and Sulu Sea regions showed a slightly decreasing trend while the South China Sea region showed an increasing trend. Outside MPAs, there was a general decrease in trend except for Sulu Sea and Celebes Sea regions, which remained stable. In terms of fish biomass, the Sulu Sea MPA sites showed a decreasing trend, the Visayan Sea showed an increasing trend, while the South China Sea region remained stable. Many of the non-MPA sites remained stable (Gonzales et al., 2008).

The number of MPAs increased from 439 (existing) and 139 (proposed) in 1997 to an estimated 1,169 (existing) and 164 (proposed) MPAs in 2007.

These are categorized as Mangrove Swamp Forest Reserves, Protected Landscape/Seascapes, Reserves, Sanctuaries or Parks (RSPs), Tourist Zones and Marine Reserves, Wilderness Area, Wetlands, and others that are undetermined and fall under multiple categories. Majority of these MPAs are under the category of RSPs. There is also a significant increase in the size of MPAs, with about 48% within the range of 11 to 100 hectares. As of 2008, MPAs have been established in 415 coastal municipalities in 62 provinces (from 276 municipalities in 2000). Management effectiveness in these sites also increased, from 10-15% in 2000 to about 20-30% in 2007, based on enforcement level in these areas (Arceo et al., 2008). Despite the increasing number of MPAs, many locally managed MPAs such as those declared under Republic Act No. 8550 or the Fisheries Code have yet to prove significant contribution to biodiversity conservation; thus, efforts to establish MPAs and MPA networks in areas of high biodiversity such as in identified marine conservation priority areas should be pursued.

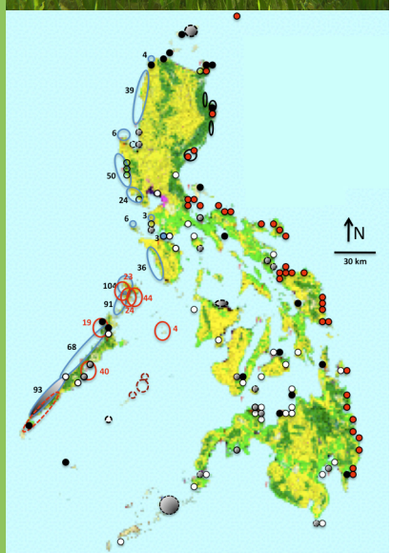
Several MPAs declared as part of the National Integrated Protected Areas System (NIPAS) under Republic Act No. 7586 also include larger ecosystems which encompass vital marine areas within the jurisdiction of several municipalities.

Mangrove cover has increased from 120,000 hectares in 1995 to 210,497 hectares in 2008 (based on 2002 satellite data validated by ground surveys). Ground validation is yet to be completed in several areas. There are current efforts to expand the coverage and strengthen the protection of mangrove areas in the country. This may suggest improvement of habitats for species that are mangrove-dependent and consequently contribute to increase in fisheries stock and livelihoods.



Trend in mangrove cover from 1918 to 2008

Note:
Based on NAMRIA and FMB interpretation of 2002 satellite data
Based on Forestry Statistics 2007 citing 2003 data
Based on DENR-CMMO validation of satellite data



Seagrass Distribution Map (Fortes, 2008)

Seagrasses are the least studied among tropical coastal ecosystems. The Philippines has the second highest seagrass diversity in the world, second only to Australia. It contributes about 19 species or about 55% of the number of species in East Asia. In the last 50 years, about 30-40% of seagrass areas in the Philippines have been lost. Recent data shows that seagrasses in the Philippines are now distributed over an area about 27,282 sq km (Fortes, 2008). A seagrass demonstration site has been established in Bolinao, Pangasinan and a seagrass sanctuary in Narra, Palawan to showcase the achievements and lessons learned in their management. In 2007, the Philippine National Seagrass Committee published the Philippine National Seagrass Conservation Strategy and Action Plan, an integrated approach to address seagrass-related issues and concerns.

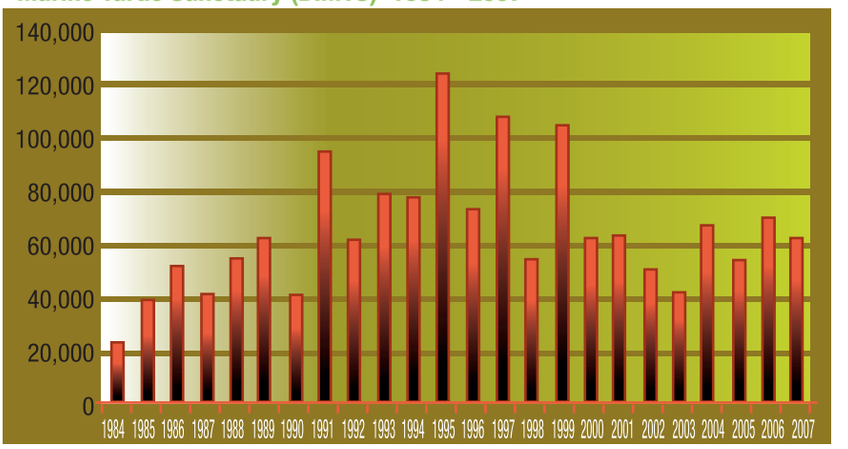
- *Sites in the Philippines where seagrasses have been reported (numbers beside geometric figures 1983-2008). Sites without numbers have been sampled only once or repeatedly. Broken lines indicate number of sites undetermined*
- *Initial Data 1983-2000*
- *Spot Surveys 2003-2005*
- *Pacific Seaboard Project Data 2005*
- *Visual analysis of major (at least 500 m in breadth) seagrass beds (landsat tm data 1999-2002, bands 1, 2, 3, paths 116 – 117, row 47-54)*
- *From Environmentally Critical Area Network (ECAN) 2005*
- *Perceptual survey*
- *Sampling overlap*

Threatened flora and fauna were accorded further protection through the various species conservation programs and executive and administrative issuances that disallow collection and trade without a permit. In 2004, DENR Administrative Order (DAO) 2004-15 established a list of threatened animal species which includes 34 species of mammals, 80 species of birds, 18 species of reptiles and 14 species of amphibians. In 2007, DAO 2007-01 established a national list of 695 threatened plants. The number of threatened species suggests degradation of habitats and life support systems associated with them, such as ecosystems services and as sources of food, shelter, medicine, and livelihood. Despite the threats, however, new species have been discovered in the past 5 years. These new discoveries include the Calayan rail (*Galirallus calayanensis*), the Camiguin hanging parrot (*Loriculus camiguinensis*), the Philippine forest mouse (*Apomys camiguinensis*) and the *Rafflesia mira.*

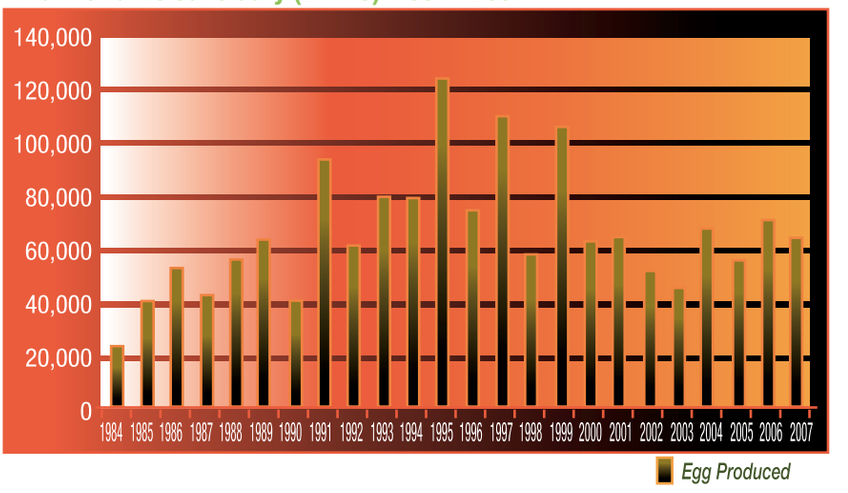
In the case of marine turtles, their population status and abundance were determined through the number of complete nests and eggs produced. Olive Ridley turtles in Bataan and Zambales showed increasing numbers of complete nests and eggs from August 2004 to February 2009. Marine turtles, mostly green sea turtles, in the Baguan Island Marine Turtle Sanctuary (BIMTS) showed fluctuating numbers in complete nests and eggs produced from 2004 to 2007 reportedly due to changes in weather patterns and predation.

DENR-PAWB-Pawikan Conservation Project

Number of Complete Nestings per Year, Baguan Island Marine Turtle Sanctuary (BIMTS) 1984 - 2007



Egg Production per Year, Baguan Island Marine Turtle Sanctuary (BIMTS) 1984 - 2007



- The number of confiscations of illegally traded wildlife species regulated under the Convention on International Trade in Endangered Species (CITES) increased from 513 in 2005 to about 2,691 in 2007, due to the vigilance of multi-sectoral watch groups and the stricter enforcement of laws by authorities.

In 2008, 513,759 board feet of illegally cut logs valued at PhP 7.9 million were confiscated in the Northern Sierra Madre Natural Park by an inter-agency Provincial Task Force on forest protection.

- There is a general recognition of the loss of plant and animal genetic resources important to agriculture. However, there are no actual figures for agricultural biodiversity decline or gain. Agricultural statistics and monitoring typically focus on crop yields and on the economic productivity of farms rather than biodiversity in the agricultural ecosystem. There is no systematic assessment of plant and animal genetic erosion in the country (Altoveros and Borromeo, 2007; Department of Agriculture (DA)-Bureau of Animal Industry (BAI), 2003).

In 2006, the Philippines ratified the Cartagena Protocol, a supplementary agreement to the CBD that seeks to protect biodiversity from the potential risks posed by genetically modified organisms resulting from modern biotechnology. In the same year, Executive Order No. 514 was issued, establishing the National Biosafety Framework of the Philippines that will support the implementation of the Protocol. The country also ratified the International Treaty on Plant Genetic Resources for Food and Agriculture. The objectives of the Treaty are similar to that of the CBD but focuses on plant genetic resources important to food and agriculture.

2 Promoting sustainable use

The CBD recognizes that biological resources are available for all and should be used for the benefit of everyone. This, however, should be done in a sustainable manner – in a way that meets our current needs but at a rate that does not lead to the continuous decline of biodiversity, and consequently, compromise the needs of future generations.

The following indicators were used to measure progress in promoting sustainable use of the country's biological resources:

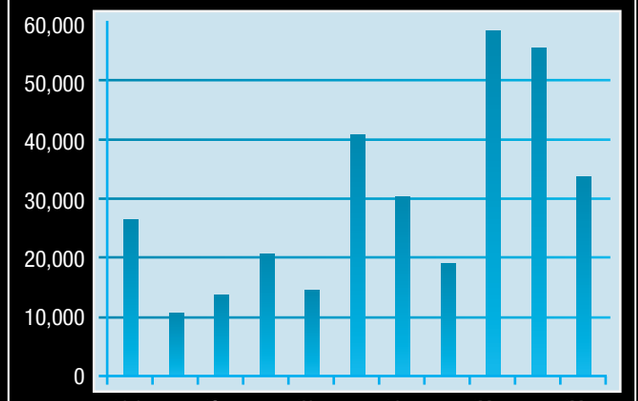
- The total quantity and value of fish production from commercial, municipal and aquaculture operations increased from 2.796 million metric tons valued at PhP 83.275 million in 1996 to 4,711 million metric tons valued at PhP 180.545 million in 2007. Capture fisheries (commercial and municipal) continue to be the major contributor to the country's total fish production with the aquaculture sector contributing significantly.

  However, major threats to fish stocks still persist, particularly the unabated fishing pressure brought about by the number of fishers and fishing gears, and the rapid mechanization in fishing operations. Recent data on the exploitation rates of selected fish species show high extraction patterns or fishing mortalities in the Babuyan Channel, Lingayen Gulf, Northern Zambales, Lagonoy Gulf, Sorsogon Bay, Visayan and Camotes Seas, Honda Bay, Hinatuan and Dinagat Waters and Davao Gulf (BFAR- NFRDI, 2008).

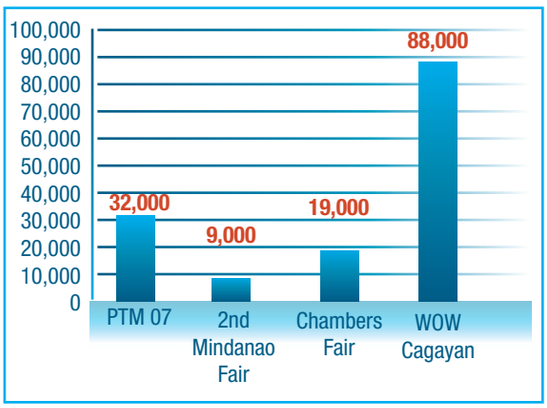
Biodiversity is an important asset to ecotourism, which is being mainstreamed in community-based natural resource management as a means to improve livelihood, and manage natural and cultural resources sustainably. A National Ecotourism Strategy (NES) and a National Ecotourism Program (NEP) for 2004-2008 have been developed with the issuance of Executive Order No. 111 in 1999. Some of the sites that have been tapped for ecotourism development include Pamilacan Island in Bohol, Sapang Bato-Mt. Pinatubo in Zambales, Banaue Rice Terraces in Ifugao, Hundred Islands National Park (HINP) in Pangasinan, Mayon Volcano Natural Park in Bicol, and Lake Sebu Protected Landscape in South Cotabato. Based on available data, it appears that the gains from ecotourism have increased, with communities and businesses alike benefiting from it.

Some models of low-impact, community-based ecotourism enterprises have been successfully piloted at the HINP and at the Lake Sebu Protected Landscape. The Hundred Island Ecotour Association (HIETA), a group of out-of-school youth, operates the Kayak Adventure Ecotour in the HINP. HIETA's operation from July 2007 to December 2008 has generated a total net income of PhP 129,800 enabling them to assist in the conservation efforts in the HINP, in linking this enterprise with other communities, and in stimulating other local livelihood programs.

HIETA Income from EcoTours,
Source: DENR & DOT NEP Annual Report 2007-2008



In Lake Sebu, a group of women weavers from 6 different Peoples Organizations (POs) has organized themselves into the Kenhulung Federation. The Federation has been supported with trainings on skills, organization and business development, accounting and marketing to improve their goods and services. Revenues have been generated from handicraft sales.



Income from Handicraft Enterprise (DENR-DOT NEP Annual Report 2007-2008)

Some marine protected areas have also doubled as ecotourism sites and have generated revenues from user fees. For example, the Gilutongan Island Marine Sanctuary in the Municipality of Cordova in Cebu has generated about PhP 3 million in user fee income in 2008 compared to just about PhP 550,000 in 2001. User fees have become a major source of income to sustain activities such as MPA maintenance, water supply and small businesses (Eisma-Osorio, 2008). This practice is being replicated in other areas in the country.

3 Addressing threats to biodiversity to support and sustain human well-being

Biological resources are the pillars of life on the planet. The products derived from our natural environment provide us with our basic needs - food, fuel and fiber, medicines, and building materials for shelter. The various ecosystems also offer natural services, such as purifying air and water, controlling pests and diseases and stabilizing the Earth's climate, which allow us to adapt to the changing world.

Our continually increasing demands for food, energy and other goods, coupled with the pressures exerted by rapid development and economic growth, have put much stress on our natural environment resulting to the destabilization of ecosystems, destruction of natural habitats and an alarming rate of biodiversity loss. Recognizing this fact, initiatives were launched and mechanisms were put in place to address threats to the country's biodiversity.

- The management of natural resources, including biodiversity conservation, is gradually shifting from being sectoral to holistic, evident in the use of the ecosystems approach to natural resources management. Recent policies have been issued in support of ecosystems management. In 2006, Executive Order No. 533 mandated the adoption of Integrated Coastal Management (ICM) and related approaches as the national strategy for the sustainable development of the country's coastal and marine environment and resources. Also in 2006, Executive Order No. 510 mandated the creation of a River Basin Control Office under the DENR and the preparation of an Integrated River Basin Management and Development Master Plan, the national blueprint for sustainable ecosystems management and development of river basins. Both Executive Orders mandate the integrated management of land, coast and sea.

- Integrated development and management plans were prepared and implemented in priority inland water bodies, coastal and marine areas, watersheds, and river basins to address the problems of multiple resource use and users, and ecosystem degradation. These plans have incorporated different elements that foster sustainability such as policy support, partnership building and co-financing.

  - The Operational Plan of the Manila Bay Coastal Strategy was adopted in 2006, covering the entire Manila Bay Region consisting of the National Capital Region (NCR), 4 coastal provinces (Bataan, Bulacan, Cavite and Pampanga) and 4 non-coastal provinces in watershed areas (Laguna, Nueva Ecija, Rizal and Tarlac). Using ICM, the challenges of water pollution, habitat degradation, overexploitation of resources and other concerns are being addressed. This effort was further reinforced in January 2009 when the Supreme Court directed the DENR and other offices to fully implement the Strategy for the rehabilitation, restoration and conservation of Manila Bay at the earliest possible time.

  - The Bataan Coastal Strategy formulated in 2002 was updated and adopted as the Bataan Sustainable Development Strategy in 2006. A Coastal Land and Sea-use Zoning Plan was also approved by the Provincial Board in 2006 and has become a model for other LGUs. The implementation of the ICM in the Province of Bataan is a model of best practice in managing fish sanctuaries, marine reserves and mangrove nurseries, and in enforcing coastal use zoning and related policies. ICM implementation is shared among partners-LGUs, private sector, civil society, and communities.

- In Samar Island, a 10-year consolidated management plan-cum-manual for the Samar Island National Park (SINP), the largest protected area in the Visayas, was developed on the principle of integrated watershed management through a participatory process facilitated by the Samar Island Biodiversity Project (SIBP). The management plan is expected to be integrated into the local planning processes of the LGUs in the province and help guide them in addressing biodiversity-related concerns. The SIBP is also piloting biodiversity modules that will be integrated in the school curricula of selected elementary and high schools in the province.

- In Laguna de Bay, the Laguna Lake Development Authority (LLDA) has engaged in partnerships for co-managing Laguna de Bay's resources and co-facilitating its development. In particular, partnerships have been forged with fisherfolk organizations through the Fisheries and Aquatic Resources Management Councils (FARMCs), LGUs, youth organizations such as the Young Environmental Stewards, and industries and other business organizations. The LLDA has also forged strategic international partnerships for knowledge exchange, capacity building, dialogue, strategic action, promotion of economic growth and collaboration in sustainable management and development.

- River Basin Master Plans are being prepared for major rivers such as the Cagayan River and Cebu River, and the Integrated River Basin Action Plans of Meycauayan-Obando-Marilao, Lake Lanao and Pasig-Laguna Lake-Manila Bay have been completed as of August 2008. The creation of the River Basin Project Management Offices of Agusan and Pampanga are ongoing. The River Basin Integrated Information Management System has also been developed and is currently being operationalized (DENR-RBCO, 2008).

- Invasive alien species (IAS) that threaten biodiversity and destabilize ecosystems are still a major concern. There are no known management plans in place for IAS but there is renewed interest in addressing their impacts on biodiversity. A proposed roadmap and action plan to address IAS issues has been discussed in a National Multistakeholder Consultation Workshop held in 2006 and in a meeting and Seminar on the Ratification and Implementation of Ballast Water Management Convention. Among the proposed actions are the drafting of an IAS national framework that will give impetus to increased collaborative efforts involving the government, private industry, academe, LGUs, and local communities, and the conduct of a status review and a national risk assessment that will support the development of a national policy, a ballast water management strategy and a National Action Plan.

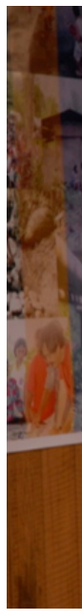
- Climate change poses another challenge to biodiversity. Several potential impacts of climate change to biodiversity have been identified, such as changes in the timing of biological events, changes in species distribution and behavior, increased vulnerability of species to extinction, increased intensity of pests and diseases, and potential reduction of the productivity of ecosystems. Experts advocate for an integrated mitigation-adaptation framework that will ensure the effectiveness of solutions dealing with climate change impacts (Villarin et al., 2008).

  There are many ongoing efforts in the country to address climate change and its potential threats to biodiversity and a number of institutional, policy and program milestones have been achieved following the ratification by the Philippines of the United Nations Framework Convention on Climate Change (UNFCCC)* in 1992 and the Kyoto Protocol* in 2003.

- Institutional mechanisms were put in place, with the creation of the Inter-agency Committee on Climate Change in 1991, the Presidential Task Force on Climate Change (PTFCC) in 2007 (later reorganized into the Office of the Presidential Adviser on Global Warming and Climate Change), and the designation of the DENR as the national authority on the Clean Development Mechanism (CDM)* of the Kyoto Protocol.

- In January 2008, Senate Bill 1890 or the Philippine Climate Change Act was filed, establishing the framework program for climate change, creating the Climate Change Commission, and appropriating funds for implementation. A similar bill has been filed in the Lower House.

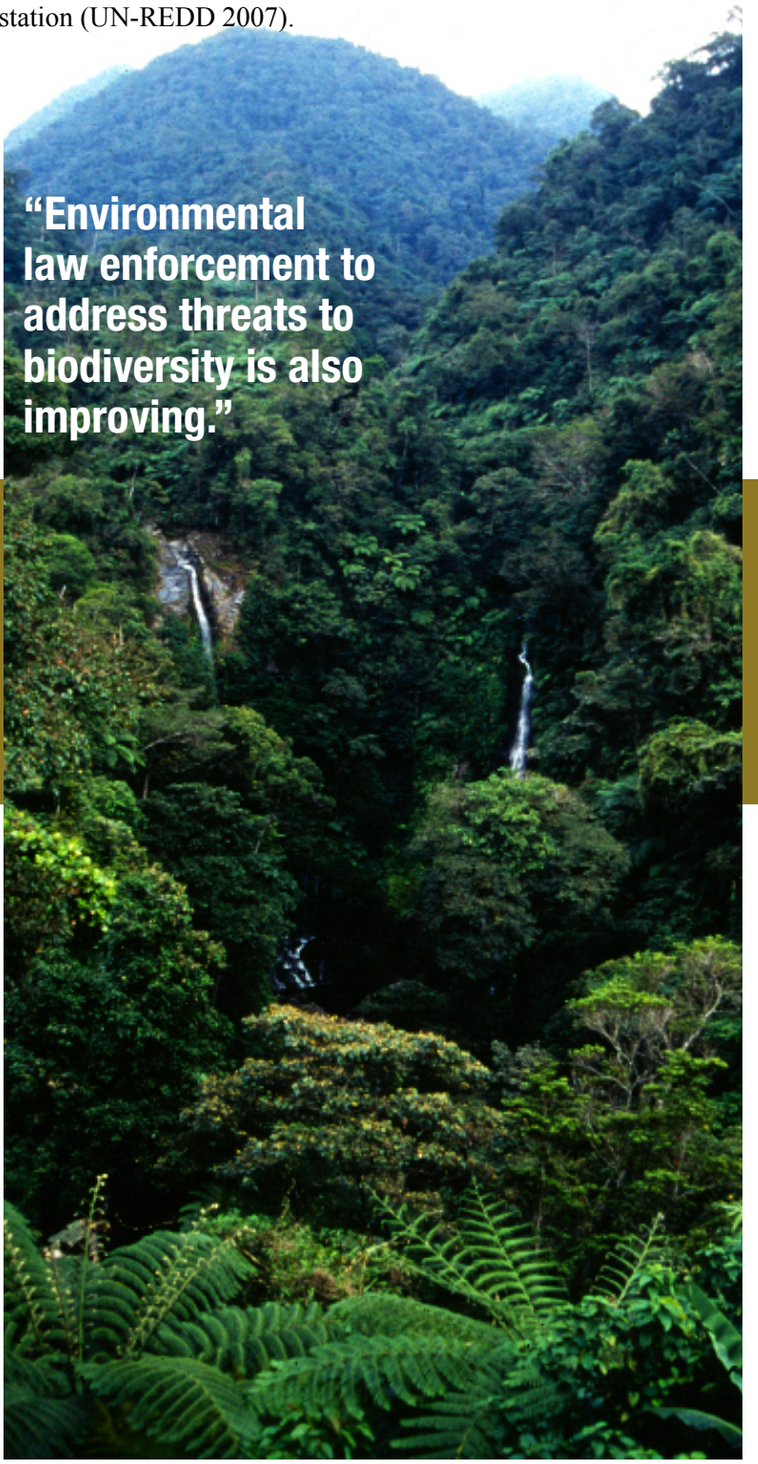
- There are initiatives at the local level on climate change mitigation and adaptation. Leading the initiative is the province of Albay, which convened the 1st National Conference on Climate Change Adaptation in Legaspi City in October 2007. As an offshoot of the conference, the Albay Declaration on Climate Change Adaptation was adopted to prioritize and mainstream climate change adaptation in local and national policies, and to advocate for "climate-proof" development. The Albay in Action on Climate Change (A2C2) is a pioneering local initiative that is being replicated by other LGUs in the country.

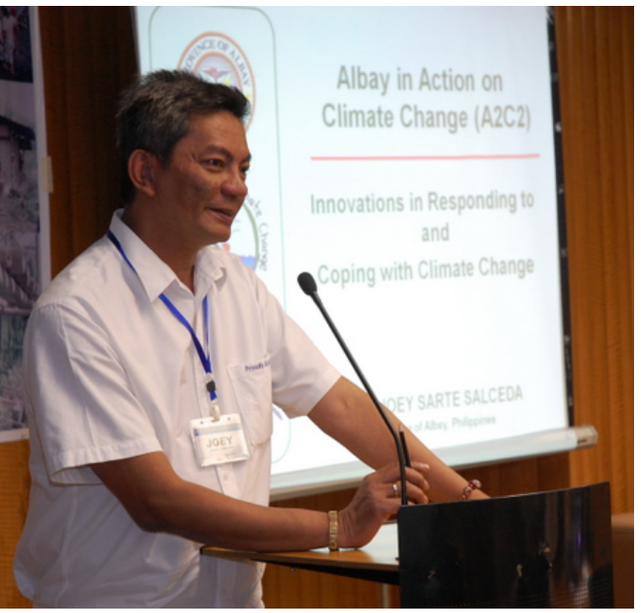


**The United Nations Framework Convention on Climate Change (UNFCCC) is an international agreement that aims to stabilize greenhouse gas concentration in our atmosphere that would prevent dangerous anthropogenic (man-made) interference with the climate system. The Kyoto Protocol to the UNFCCC is an international agreement that aims to reduce greenhouse gases by imposing emission targets on Annex I or developed countries and giving carbon credits to Non-Annex I or developing nations that invest on projects that lower emissions in their own countries. These credits can be traded or sold to Annex I countries and will raise their carbon emission ceiling for a certain period. The Clean Development Mechanism (CDM) is a mechanism under the Kyoto Protocol that allows Annex I countries with a greenhouse gas reduction commitment to invest in projects that reduce emissions in Non-Annex I countries as an alternative to more expensive emission reduction efforts in their own countries.*

- Reduced Emissions from Deforestation and Degradation (REDD) is another mechanism that aims to address climate change. The Philippines and its ASEAN counterparts share a common position on REDD on policy approaches, positive incentives, capacity building and methodological issues. Indigenous communities in the Philippines have agreed to actively embark on influencing the REDD scheme, recognizing that the forestry sector (where most indigenous peoples live) accounts for 17% of global greenhouse gas emissions due to deforestation (UN-REDD 2007).

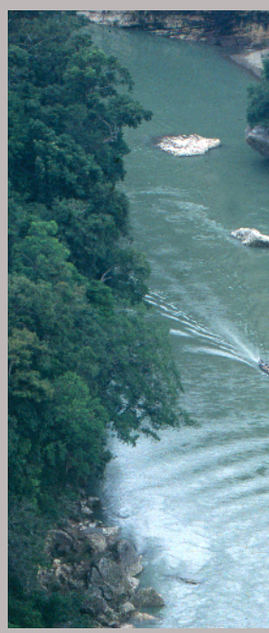
- In January 2008, the Supreme Court designated 84 branches of first-level courts and 31 branches of second-level courts as special Environmental Courts, also known as "green benches" or "green courts". These are tasked to handle cases involving violations of environmental laws. This is a positive development in the evolving role of the judiciary in environmental protection, and is expected to facilitate the adjudication of environment-related cases and strengthen local enforcement of environmental ordinances. However, there are still a number of measures needed such as enhanced training programs, and amendments of procedural and evidentiary rules, to make these courts fully functional and more effective (La Viña, 2008).





4 Maintaining goods and services from biodiversity to support human well-being

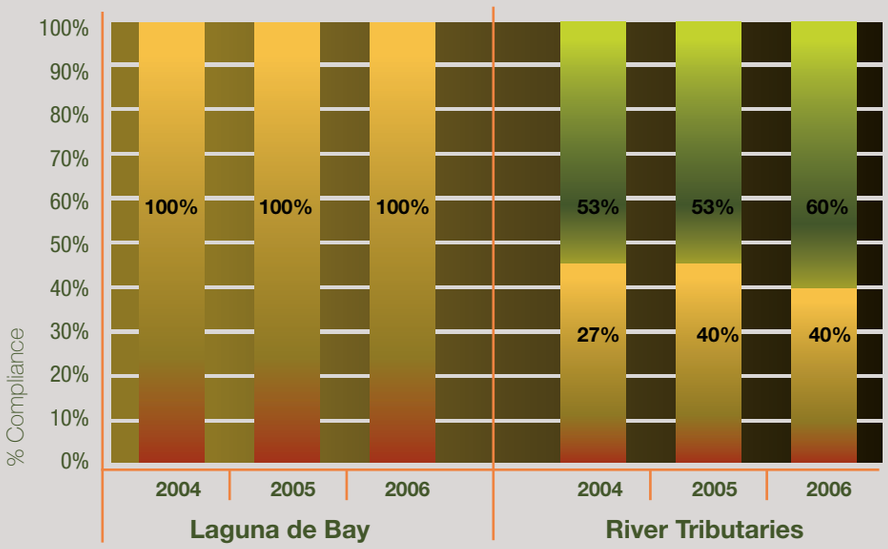
Corollary to efforts addressing the threats to biodiversity, initiatives to improve the conditions of ecosystems that support not only the sustenance and well-being of diverse wildlife species but also of the people living in the area were also carried out. Monitoring activities conducted in some of the country's major rivers and lakes have identified domestic pollution, industrial runoff, agricultural wastes and non-point sources, sedimentation, watershed habitat alteration, and urbanization as contributing factors to biodiversity loss in our inland waters (Ong et al., 2002; Lasco and Espaldon, 2005; DENR- EMB, 2006).



Laguna de Bay is the largest lake in the Philippines and is one of Southeast Asia's largest inland water bodies. It is home to 34 species of zooplankton which belong to three major groups: Rotifera (23), Cladocera (7), and Copepoda (4) (DENR-EMB, 2006). 33 fish species consisting of 14 indigenous (5 of which are migratory) and 19 exotic or introduced species are found in the Lake. These include high commercial value fish like milkfish, tilapia, carp, catfish, ayungin, and biya (LDBE Monitor, 2007). Various other species of plants and animals (vascular plants, algae, vertebrate fauna, crustaceans, and mollusks), including 48% of flowering plants and ferns endemic to the country are found in the lake basin. Recent findings from the Philippines Millennium Ecosystem Assessment (MA) Sub-global Assessment concluded that: 1) water quality has deteriorated due to pollution from various sources; 2) fish production is declining but still viable through aquaculture technology; fish production in rivers is declining due to pollution; 3) rice production is declining mainly due to land conversion and reduction in rice areas; 4) biodiversity in the forest ecosystem is still good but is also declining due to agricultural encroachment, development projects and timber poaching (Lasco and Espaldon, 2005).

Water quality has been used extensively to determine the state of ecosystems, more so for rivers and lakes. Levels of dissolved oxygen (DO)* and biological oxygen demand (BOD)* were used as indicators of water quality, primarily due to the availability of historical data. The water quality of Laguna de Bay has been deteriorating in previous years, but monitoring data from 2004 to 2006 for DO showed that water quality has improved and consistently passed the 5 mg/L Class C criterion (water intended for fishery, recreation/ boating, manufacturing processes after treatment) as compared to decreasing water quality in previous years. Monitoring Data for BOD for the same period indicate that the lake consistently passed the 7 mg/L Class C criterion. However, majority of the tributaries such as Marikina, Mangangate, Tunasan, San Pedro, Cabuyao, San Cristobal, San Juan, Siniloan and Sapang Bato Rivers failed to meet water quality standards (DENR-EMB, 2006).

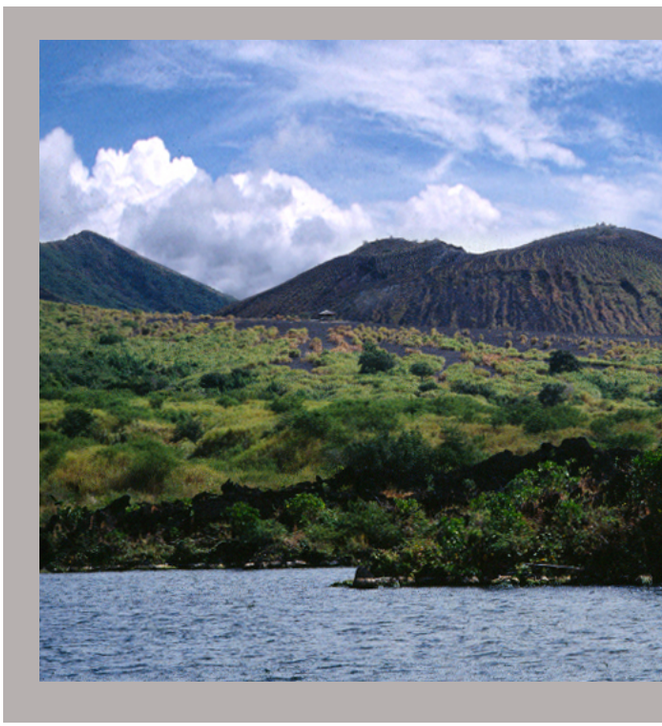
**DO is defined as the amount of oxygen available in the water for fish and other aquatic organisms to live. An average DO level of less than 5mg/L may bvgen used by microorganisms to decompose organic matter. An average BOD level of not more than 7 mg/L is good for fishery. The lower the BOD level, the better the water quality, the better for biodiversity.*



Percent compliance to DO standards in Laguna de Bay and river tributaries (LDBE Monitor 2007)

**based on Class C Water Quality Criteria (DA0 90-34). % compliance in terms of stations*

Findings for the same period also indicate an increasing trend in lake water level, a decreasing trend in transparency resulting to less algal production, and decreasing net primary productivity and fish production (LDBE Monitor, 2007). Institutional, policy and program responses had been enacted and initiated to address the issues and problems on the resource use of the lake such as the formation of multi-sectoral river rehabilitation councils, the development of a Laguna Lake Zoning and Management Plan and the designation of some areas as conservation priority areas. The ultimate goal is to increase and sustain productivity of the lake from which many Filipinos rely on for their livelihood and survival.



Taal Lake, the third largest lake in the country surrounding the world's smallest active volcano, was declared as the Taal Volcano Protected Landscape (TVPL) in 1996 under the NIPAS. It is known for its beauty and tourist attractions and is home to

the endemic species *Sardinia tawilis*, the world's only commercial freshwater sardine, and *Hydrophis semperi* locally known as "duhol", one of only three freshwater sea snakes in the world. The lake is also known to have one of the highest diversity of fish species in any lake in the country, with at least 47 species recorded in the early 1930s. Taal Lake, however, is deteriorating mainly due to pollution and unregulated fish pen and cage operations. Through the collaborative efforts of the provincial and local governments and other stakeholders, about 1,300 illegal fish pens and cages had been dismantled and a 10-year management plan for the TVPL has been drafted to address issues and problems on resource use, similar to those identified for Laguna de Bay. The TVPL Management Plan hopes to ensure that actions of all stakeholders are consistent with the vision for the basin - "clean water and surroundings, cared for by citizens who are happy and economically secure relying on productive resources and able management of the basin".

The same issues and problems of pollution from point and non-point sources, illegal fish pens and fish cages, overstocking and overfeeding have resulted to eutrophication and decreased productivity in most rivers and lakes. Through partnerships and alliances across sectors - national and local governments, private sector, civil society and communities - and across ecosystems, these issues and problems are currently being addressed.

5 Protecting traditional knowledge, innovations and practices, and ensuring the fair and equitable sharing of benefits from their use

The cultures and survival of indigenous cultural communities (ICCs)/ indigenous peoples (IPs) and local communities traditionally depend on the natural environment. Over the years, they have applied traditional knowledge and means in using and conserving nature's resources. Member governments to the CBD are compelled to respect and preserve such knowledge and practices, to promote their wider application with the approval of the communities, and to ensure that these communities share in the benefits derived from their use.

- Portions of the Philippine forestlands are covered by ancestral domain claims. In 2008, 38 Certificates of Ancestral Domain Titles (CADTs) have been approved, compared to only 58 from 2002 to 2007. As of December 2008, CADTs cover about 2.7 million hectares benefiting about 550,511 beneficiaries. 189 Certificates of Ancestral Land Titles (CALTs) were also approved, covering an area of roughly 7,443 hectares and benefiting 3,893 beneficiaries.

Approved CADTs/CALTs as of December 2008 (NCIP, 2008)

Year	No. of ADs	Area (Hectares)	No. of Individual Beneficiaries	No. of ALs	Area (Hectares)	No. of Individual Beneficiaries
2002 - 2004	29	604,143.95	150,048	48	961.38	429
2005	9	237,004.42	36,743	2	2,870.88	678
2006	18	269,049.42	50,847	112	1,017.10	1,681
2007	2	94,425.75	22,585	13	11.7889	4
2008	38	1,463,489.83	290,243	14	2,581.49	1,191
TOTAL	96	2,668,113.38	550,511	189	7,442.64	3,893

Total area of approved (CADT and CALT) - 2,675,556.0171 hectares

Total number of beneficiaries (CADT and CALT) - 554,494

- ICCs/IPs are required to prepare their own Ancestral Domain Sustainable Development and Protection Plans (ADSDPPs) in accordance with their customary practices, laws and traditions that will guide the planning, implementation and monitoring of the use of indigenous knowledge systems that promote and preserve biodiversity resources. These plans are expected to complement and harmonize with the Comprehensive Land Use Plan (CLUP) and Development Plan of their respective LGUs and the PA Management Plan mandated under the National Integrated Protected Areas Systems (NIPAS) Act. As of 2008, a total of 70 ADSDPPs have been completed and 114 are currently being formulated under various projects funded by the National Commission for Indigenous Peoples (NCIP) and other donor partners.

- The NCIP has also documented the indigenous knowledge systems and practices (IKSP) of 16 groups of ICCs/IPs nationwide to better understand their norms, customs and traditions, belief systems, and institutions.

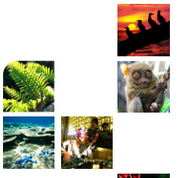
List of documented IKSPs of tribes (NCIP, 2008)

Year	Region	Location	Tribe
2005	CAR	Ifugao Province	Tuwali Communities of Banaue, Hingyon, Kiangan, Lagawe
		Tinglayan, Kalinga	Kalinga
	Region VI	Libacao, Aklan	Bukidnon of Alfonso XII, Rosal Oyang & Dalagsaan
	Region X	Real, Bukidnon	Bukidnon of Bae Inatlawan, Adelina Tarino, Sitio Inhandig, Dalwangan
2006	CAR	Happy Hallow, Baguio City	Ibaloi and Kankanaey
	Region I	Banayoyo, Ilocos Sur	Bago
	Region IV	Iraan, Aborlan, Palawan	Tagbanua
	Region V	Iriga City, Camarines Sur	Kabihug
	Region XII	Lake Sebu, South Cotabato	T'boli
	Region XIII	Gigaquit, Surigao del Norte	Mamanwa
2007	Region II	Sta. Margarita, Baggao, Cagayan	Ibanag
		Kayapa, Proper West, Kayapa, Nueva Vizcaya	Kalanguya
	Region III	Abucay, Bataan	Aeta
	Region IX	Limpapa, Zamboanga City	Subanon
	Region XI	Sibulan, Davao del Sur	Bagobo
2008	Region II	Dupax Norte, Nueva Vizcaya	Bugkalot

The Free and Prior Informed Consent (FPIC)* Guidelines of 2006 (NCIP Administrative Order No. 01) ensures fair and equitable sharing of benefits between the community and the proponent whenever a project or program is introduced in an ancestral domain area. As of 2007, NCIP records show that ICCs/IPs have benefited from royalties, infrastructure development and social programs generated by199 projects such as mining, mini-hydro/dam, forestry, small scale sand and gravel, and biodiversity research (NCIP, 2007).

**Free and Prior Informed Consent (FPIC) is a consultative process that allows indigenous peoples and communities to determine for themselves policies, programs and plans that meet their needs and concerns, and gives them the right to accept or reject a certain development intervention being imposed in their communities.*

*"Bioprospecting" means the research, collection and utilization of biological and genetic resources for purposes of applying the knowledge derived therefrom solely for commercial purposes.



6 Ensuring the fair and equitable sharing of benefits arising out of the use of genetic resources

The country is rich in biodiversity resources - plants, animals and microorganisms - that can be a source of commercially valuable biochemical or genetic resources.

- Article 15 of the CBD recognizes the sovereign rights of member countries over their own natural resources, including the authority to determine access to genetic resources and benefit-sharing. In 1995, the Philippines became one of the first countries to come up with a policy on access and benefit sharing through the issuance of Executive Order 247. This was subsequently amended by a Joint Administrative Order No. 1 of the DENR, Department of Agriculture (DA), Palawan Council for Sustainable Development (PCSD), and the NCIP or the Guidelines for Bioprospecting* Activities in the Philippines issued in 2005 pursuant to Section 14 of Republic Act 9147 or the Wildlife Resources Conservation and Protection Act and its implementing rules and regulations. Complementing this regulation is the issuance in 2006 of NCIP Administrative Order No. 01 or the Free and Prior Informed Consent (FPIC) Guidelines of 2006.

  Recent reports from DENR-PAWB and DA-BFAR show that no applications and approvals for bioprospecting have been processed due largely to the perception that the regulation is restricting research and that the royalty provisions, in particular, provide a disincentive to potential research collaborations and partnerships. There is an urgent need to review the provisions of the regulation in order to address the concerns of stakeholders. On the other hand, ICCs/IPs have benefited from the FPIC Guidelines as mentioned in the preceding section.

  At the global level, an international regime on access to genetic resources and benefit sharing is currently being discussed and the Philippines has started an initiative that looks into policy coherence between and among biodiversity, indigenous peoples' rights and intellectual property rights issues.

7 Ensuring the provision of adequate resources for biodiversity conservation

The implementation of the National Biodiversity Strategy and Action Plan (NBSAP) of 1997 and its iteration in the Philippine Biodiversity Conservation Priorities (PBCP) in 2002 continues to be a major challenge. The NBSAP identified 6 strategies and 17 major thrusts while the PBCP identified 6 similar strategies and immediate actions that serve as a framework for the country's biodiversity plans, programs and activities. The implementation of both the NBSAP and PBCP has been hampered by certain constraints such as the lack of concrete targets and indicators; lack of mechanisms for monitoring, evaluation, data management and information sharing; and limitations of agencies in terms of capacity and financial support.

Financial resources from the national government and donor communities for biodiversity conservation programs and projects have been declining, and there is an increasing realization that innovative financing is needed to push the conservation agenda.

In addition to the government's annual budget appropriations and other development assistance (ODA) received from external sources, financial resources for biodiversity-related initiatives have been augmented by the Integrated Protected Areas Fund (IPAF) created under the NIPAS Act. Environmental user fees paid by visitors are channeled into the IPAF, which has become a major source of fund to sustain activities such as MPA maintenance and some small local businesses in the area (Eisma-Osorio, 2008).

75% of IPAF funds are used by the income-generating PAs, while 25% goes to the central fund to finance and support the activities in non-income generating PAs.

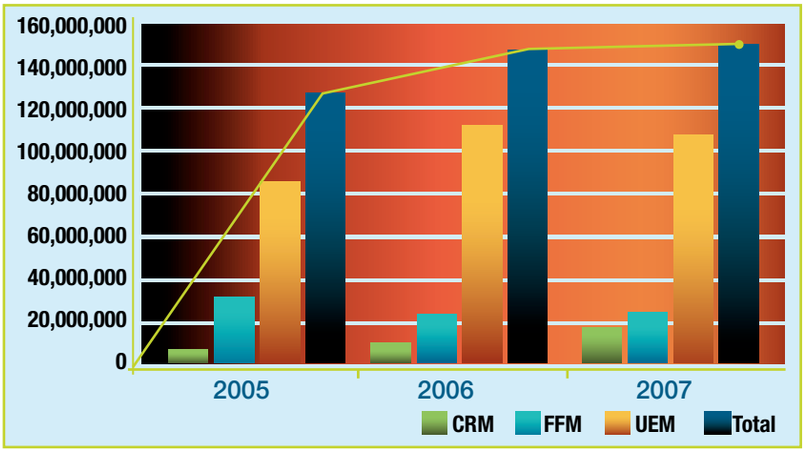
	PA Sub-Fund (75%)	PA Central Fund (25%)	Total (100%)
Deposited	104,434,302.34	34,870,167.80	139,453,127.22
Disbursed	98,694,178.48	595,350.00	99,289,528.48
Balance	7,136,760.93	34,274,817.80	41,411.578.74

Summary of Integrated Protected Areas Fund from 1996 to 2008 (DENR-PAWB, 2008)

"As of May 2008, the IPAF has generated about PhP 139.45 million in revenues to sustain operations of protected areas."

Based on the records of DENR-PAWB, 15 protected areas have generated an income of more than a million pesos as of December 2008. The Ninoy Aquino Park and Wildlife Center in Metro Manila, the Apo Island Protected Landscape and Seascape in Negros Oriental, and the Hinulugang Taktak in Antipolo top the list.

- Local government allocations for biodiversity-related activities have increased. The USAID-funded Environmental Governance 2 Project reported an increasing number of local government units (LGUs) allocating support for protected area management from their own Internal Revenue Allotment (IRA). From 2005 to 2007, LGU budgets for coastal, forest and urban management have also increased.



LGU Budget by Sector, by Region (USAID & EcoGov2, 2008)

Recommendations for action

The Philippines has made significant strides in terms of biodiversity conservation and the implementation of biodiversity-related policies, programs and activities during the reporting period. However, assessing the country's progress towards meeting the 2010 biodiversity target has been a challenging task in the absence of nationally agreed baselines, targets and indicators.

Based on the information gathered and the results of multi-stakeholder consultations, priorities for action have been identified in 4 key areas:

Policy

- Set national baselines, measurable targets and indicators a) to assess progress towards meeting the 2010 biodiversity goal; b) to guide decision-making; and c) in anticipation of the next CBD report and other similar reports.
- Make as a top priority the establishment of a coordinated and sustained biodiversity monitoring and evaluation system.
- Assess the effectiveness of the management of existing protected areas and ensure that all protected areas have their comprehensive Protected Area Management Plans;
- Adopt a framework that will help assess extent and effectiveness of mainstreaming biodiversity considerations in the plans and programs of government, research and academic institutions, civil society organizations, business sector and other stakeholders.
- Agree on standard definitions (e.g. forest cover) to avoid conflicts in interpretation; improve the quality and usefulness of information provided by agencies; and allow cross-checking and validation of data among stakeholders.
- Ensure synergy, complementation and harmonization among plans and programs in the landscape, seascape and/or political administrative units to maximize resources and improve governance.
- Harmonize NIPAS, IPRA, Fisheries Code and the Local Government Code, and establish a successful coordinating mechanism among relevant institutions in the implementation of these laws.

Knowledge Management and Information, Education and Communication

- Continually generate and update biodiversity information and create an information system that will guide and facilitate decision-making, including on agricultural biodiversity and indigenous knowledge systems and practices for which data is limited.
- Encourage the use of and contribute information to the national Clearing House Mechanism to promote biodiversity information sharing among stakeholders.
- Integrate biodiversity conservation and sustainable use in the school curricula at all levels, and develop specialized courses on biodiversity for practitioners and policy makers.

Capacity Building

- Build taxonomic and scientific monitoring capacities in the country.
- Strengthen the capacity of LGUs in addressing biodiversity-related concerns, and in integrating and mainstreaming biodiversity conservation and sustainable use into local plans and programs.
- Encourage and increase the participation of stakeholders, especially those in the agriculture sector and related fields, in discussions on biodiversity.

Financing biodiversity

- Explore innovative financing options, including the potential of biodiversity-related projects to be included in the proposed debt conversion for MDG programs and projects.
- Explore other methods to generate income apart from environmental user fees in order to sustain biodiversity conservation efforts.

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Our Natural Heritage: The Protected Areas of the Philippines. DENR, Philippine Airlines Foundation, Inc. and Foundation for the Philippine Environment (1998). Photography by George Tapan

KBA Map by Conservation International, DENR-PAWB and Haribon Foundation (2006), p. 6

Sierra Madre photo, courtesy of Task Force on Forest Protection of the Province of Isabela, p. 10

Gov. Joey Salceda of Albay at the Forum on Coping with Climate Change Risks, courtesy of the iBoP Asia Project, Ateneo School of Government, p. 17

Samar Teacher's Workshop photos, courtesy of PAWB-Samar Island Biodiversity Project (SIBP), p. 14 - 15

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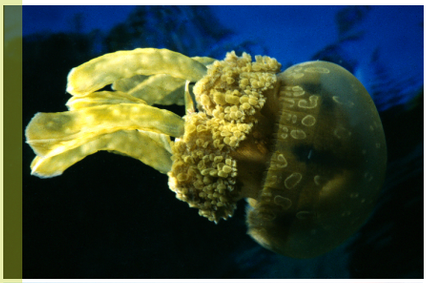

Implementing the UN Convention
on Biological Diversity in the Philippines

The 4th Philippine National Report to the Convention on Biological Diversity

2005 2008

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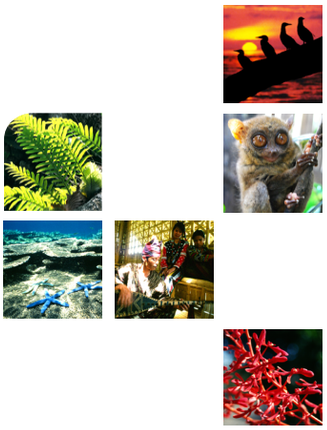

biodiversity natural resources conservation rainforests ecosystem coral reef environment ocean animals flowers life tarsier sustainability marine endangered species underground rivers philippine eagle tubbataha organisms tropical forests natural heritage agriculture vegetation habitat ecology diversity natural resources conservation rainforests ecosystem coral reef environment ocean animals flowers sustainability marine endangered species underground rivers philippine eagle tubbataha organisms tropical forests natural heritage agriculture vegetation habitat ecology biodiversity natural resources conservation rainforests ecosystem coral reef environment ocean animals flowers life

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Fr. Arrupe Road, Social Development Complex
Ateneo de Manila University
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1108 Quezon City, Philippines

United Nations Development Programme
30/F Yuchengco Tower, RCBC Plaza
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ASEAN Centre for Biodiversity
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