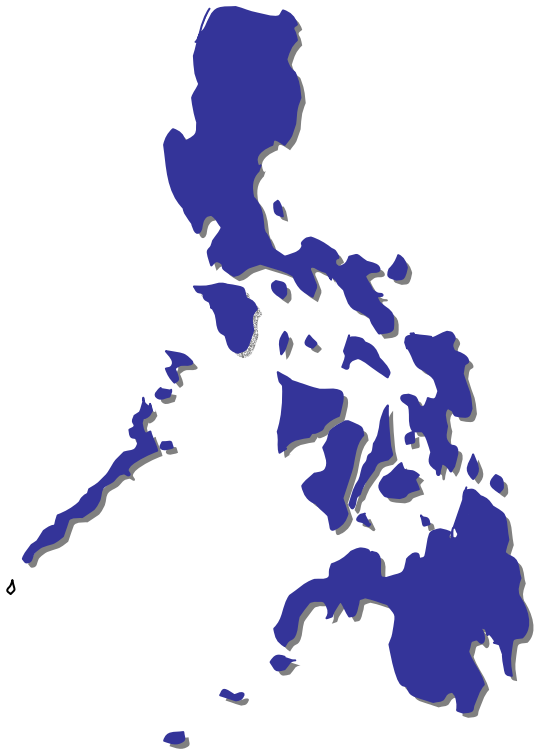
European Commission
The Philippines

Country Environmental Profile



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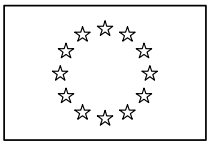

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Executive Summary

The Philippines disposes rich and diverse natural resources. However, these resources are being rapidly depleted due a variety of mutually reinforcing negative factors: high population pressure with the majority of the poor deriving their income from natural ecosystems; advancing industrialization/ conflicts of interest between long term environmental concerns and short term profit motives in particular regarding logging and mining; absence of political will (and therefore of allocation of resources) to enforce effective implementation of a relatively comprehensive legal and regulatory regime, yet which is marked by a lack of clearly defined mandates and responsibility between the various layers of central and local authorities.

The state of the environment

High population growth rate, severe rural poverty and inequity and lack of security of tenure in the agriculture areas put pressure on the forest, forcing poor people to move to the uplands marked by fragile eco-systems. Only 8% of the original primary forest remains and many species are under threat. Deforestation has made many poor communities more vulnerable to natural calamities such as landslides. Soil erosion has accelerated dramatically and is estimated at 50% of the fertile top layer in the last 10 years.

Over-fishing and destructive fishing practices are among the main threats of the marine environment; average catch per day is less than 3 kg down from 10 kg 20 years ago. 70% of the coral reefs are in poor to fair condition and degradation is unabated.

Just over 36% of the country's river systems are classified as sources of public water supply. Generation of waste is increasing rapidly as consumption rises, while collection efficiencies are dropping as service levels deteriorate. 40% of the country's solid waste remains uncollected. Metro Manila has been ranked by WHO as one of the five most polluted cities in the world. The largest contributors to this problem are fossil fuel combustion from small and medium industrial and commercial installations.

Environmental policy, legislative and institutional framework

Government addresses environmental and natural resource management through a rather comprehensive legal and regulatory regime for the sector with some sophisticated approaches.

The Philippines has ratified the Biodiversity Convention, the Kyoto Protocol, the Ozone Depletion Multilateral Agreements, and the International Tropical Timber Agreement among other key international instruments on environment protection.

The Department of Environment and Natural Resources (DENR) is the primary government agency responsible for the conservation and proper use of the natural resources. DENR is prone to outside pressure and suffers from internal conflicts of interest between having to protect certain areas and granting mining or logging permits. Many other public institutions have unclear and overlapping mandates on environmental protection, and coordination among them is inadequate.

Environmental and natural resource management in the Philippines receives a small share of the national budget. In 2004, it was only 0.8%. DENR and the LGUs are able to only cover their basic expenses, mainly salaries, and no investments at all, making it impossible to fulfill the mandatory tasks.

The Philippines has one of the most active and developed civil society at large and specific environmental NGO communities in particular in the Asia-Pacific region. NGOs play a major role in bringing environmental benefits into the community.

Sectorial integration

Community-Based Forest Management (CBFM) is the primary strategy for managing the country's forest resources. CBFM gives extensive rights and responsibilities to local people in managing forests. In practice, an array of legal problems and complications exist in most of the cases. Many communities do not know or fully understand their legal rights and options. Besides social and community forestry, reforestation activities have also included large scale government and industrial plantations and private tree farming, with limited success.

In some municipalities, appropriate land use management systems and soil conservation techniques have been developed to minimize land degradation, indiscriminate conversion, and consequent deterioration of land productivity. Private firms are increasingly adopting voluntary environmental guidelines. Nevertheless, these initiatives have a very limited impact at the national scale. Although beach-based tourism remains the mainstream in the Philippines, for the past few years, eco-tourism has slowly been gaining attention. Some cities and municipalities have started or are planning to convert their open dumps into controlled dumpsites and sanitary landfills. LGUs had intensified their efforts to make collection more efficient. Alternative economic yet sustainable uses of forest resources remain under-exploited.

Philippines have long maintained an industrial pollution regulatory system. There has not been much progress on sustainable production and consumption (recycling, eco-labeling, green procurement, etc.)

EC and other international development assistance

EC supports natural resource management issues either by integrating environmental components in economic and social development projects, or through specific environmental protection projects. By 2004, overall EC commitment to environmental actions in the Philippines totaled almost € 15 million (composed of bilateral environment projects proper, major environmental components of other projects and Filipino portion of regional projects).

The number of international cooperation projects in the environment sector is now less than in the past. Confronted with GOP's own lack of commitment and even more so of its weakness in effective implementation of environmental laws and programmes, various donors have been reducing their funding allocations to the environment sector. Most of the aid to the

environmental sector is now by-passing the DENR and going directly to NGOs and LGUs. Major donors are ADB, WB, US, Japan, EC, Germany and Sweden.

Recommended priority actions

The EC commitment to environmental protection in the Philippines will continue to use a mix of policies and instruments to enhance the sustainable use of natural resources and ease pressure on them.

The EC will continue to join forces with concerned civil society actors in their attempts to try and make GOP and the private sector take a more pro-active environmental stance and to effectively tackle the key issues of enforcement of and respect for environmental legislation.

In addition to projects funded from thematic budget lines and/or the regional CSP/NIP, directly or indirectly related to the environment, emphasis will be on mainstreaming environmental focus and concerns in projects and programmes funded from current and future NIPs. Major ongoing rural development programmes will actively pursue replication of proven environmental best practices. Forthcoming sector-wide approaches in health and education could be incorporating environmental concerns and be used as vectors to effectively encourage awareness and combat the linkages between poverty and a deteriorating environment. The Small Grant Facility will continue to target the environment among its priority areas for funding.

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Thematic Index

The state of the environment

1. Physical environment

The Philippines is one of the most important countries of the world in terms of environmental resources diversity. These resources are, unfortunately, being depleted because of rapid industrialization and high population density. A majority of the poor derive their income from natural ecosystems.

1.1. Basic geographic facts

The Philippines is an archipelago consisting of around 7,100 islands and rocks above water. The total land area of the Philippines is approximately 300,000 square kilometres, 92% of which is contained within 11 islands. The Philippines has a very extensive coastline stretching 34,600 km. From north to south, the nation's archipelago stretches for 1,840 km while spanning 1,100 km from east to west. The biggest islands are Luzon and Mindanao which cover roughly 66% of the country's total land area.

This island nation can be divided into four main groups: (1) **Luzon**, the largest and northernmost island, which is also the site for the country's capital, Manila[1]. (2) **Mindanao**, the second largest island at the other end of the map together with Basilan, Sulu, Tawi Tawi. (3) The tightly packed island group in the middle, called the **Visayas**, which is made up of seven major islands namely Panay, Negros, Cebu, Bohol, Leyte, Samar and Masbate. (4) Finally, to the west, lies the island of **Palawan.**

1.2. Climate

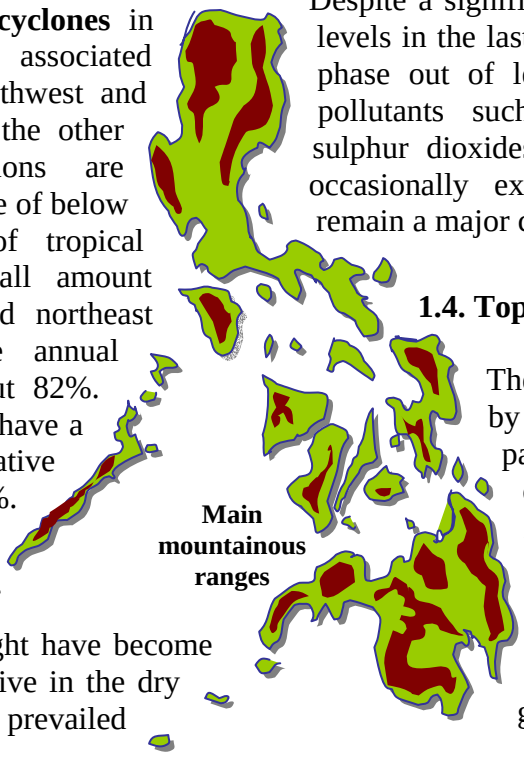
Due to the Country's archipelago characteristics and geographical location, the Philippines has a tropical maritime climate. The country is exposed to the Southwest monsoon, Northeast monsoon, North Pacific Trades, Inter-tropical Convergence Zone, the tail end of the cold front, easterly waves, the passage of tropical cyclones and the El Niño phenomenon. The climate of the country is

[1] Mindoro, Polillo, Marinduque, Cantanduanes and other small islands can be considered eographically part of Luzon.

influenced by the numerous mountains and valleys, the mountain ranges and the surrounding sea. The mean annual temperature of the Philippines is about 27 C. The hottest months are April, to May while the coldest months are December to February.

The average annual rainfall is 1,600, ranging from 914 mm in General Santos, Cotabato to 4,358 mm in Borongan, Samar. Some areas, particularly those located at the western portion of the country, generally have distinct dry and wet seasons, while at the other end, some areas have no dry season with maximum rainfall in winter. The rest of the country is intermediate between these two extremes.

Rainfall abnormalities are caused by occurrences of **tropical cyclones** in the vicinity and associated intensification of the southwest and northeast monsoons. On the other hand, **drought** conditions are attributed to the occurrence of below the expected number of tropical cyclones, the low rainfall amount during the southwest and northeast monsoons. The average annual relative humidity is about 82%. Almost all of the stations have a monthly average relative humidity greater than 70%. **Deforestation has altered the climatic conditions of the country**. Periods of drought have become more common and extensive in the dry season while floods have prevailed in the rainy months.



The average annual wind speed in the Philippines is only 3 meters per second (mps). The speed and direction are altered by the passage of tropical cyclones; the wind speed can exceed 50 mps and at times 75 mps. During the intensification of monsoons, wind speed can exceed 15 mps.

1.3. Air quality

It is widely known that **air pollution is a serious problem in Metro Manila and other metropolitan areas**. Metro Manila has been ranked by WHO as one of the five most polluted cities in the world. Poor air quality costs annually over $430 million in health care costs alone, and a related amount in lost productivity. The problem is also felt in most major cities in the country where urbanisation has led to more factories being set up, an increase in population density and an increase in vehicle registration. The largest contributors to this problem are **fossil fuel combustion** from industries and vehicle **exhaust**.

Despite a significant drop in ambient lead levels in the last few years because of the phase out of leaded gasoline, other air pollutants such as particulate matter, sulphur dioxides and total oxidants still occasionally exceed the standards and remain a major concern

1.4. Topography

The Philippines is conformed by the higher portions of a partly submerged mountain chain. Consequently, the islands in the Philippine archipelago are very mountainous. 54% of the land in the Philippines has a slope greater than 18%.

The larger islands, particularly Luzon and Mindanao, have a diversified topography, with fertile river valleys in the interior. Mountain ranges generally parallel the coasts, forming narrow coastal plains.

On **Luzon**, the Sierra Madre Mountains form the longest range of the Philippines, extending along the island's eastern, or

Pacific, coast. The parallel ranges of the Cordillera Central, to the west about 80 km across the Cagayan River Valley, contain Luzon's highest peak, Mount Pulog, at 2,930 m. Near this peak, mountainside rice terraces have been cultivated for hundreds of years. Further south the important rice-growing region of the Central Luzon Valley, well irrigated by numerous rivers, extends from Lingayen Gulf to Manila Bay. The rugged Zambales Mountains, containing Mount Pinatubo (1,780 m), form the valley's western boundary, leading south to the Bataan Peninsula, the sheltering landmass for Manila Bay. Luzon becomes narrow at its southern end, curving to the southeast in a long, mountainous extension called the Bicol Peninsula. Here a string of volcanoes includes the cone-shaped peak of Mayon Volcano, rising to a height of 2,525 m.

Mindanao is somewhat similarly formed, with coastal mountain ranges and inland valleys, notably those of the Agusan and Mindanao rivers. The country's highest point, Mount Apo (2,954 m.), rises in the south near the Mindanao River basin. The large Zamboanga Peninsula extends from western Mindanao, hooking southward toward the Sulu Archipelago.

1.5. Soils

In the northern islands the soils are chiefly of volcanic origin; coral limestone is an important constituent of the soils in the southern islands.

In the Philippines, **terracing** is a traditional conservation measure which farmers employ to prevent continuous soil erosion, particularly in steep areas. Thus in Benguet province, with its steep slopes and shallow soils, terracing is one of the techniques used to transform a terrain that is unsuitable for farming into productive land.

There is significant **soil erosion** throughout much of the Philippines, with 21% of agricultural lands and 36% of non-agricultural lands throughout the country assessed as moderately or severely eroded. There are regional variations; for example, 38% of Mindanao's agricultural lands were assessed as moderately or severely eroded in the mid-1990s[2].

Agricultural yields in lowland areas are stagnating, increasingly beset by **salinization** and **water logging**. Population pressure is stimulating **cultivation of fragile upland areas**, causing further soil erosion.

Losing the soils in Mindanao

*Investigations by the E funded **Upland Development Programme** in Southern Mindanao confirm that improper land use in the uplands is continuing to reduce soil depths by 2-3 cm or more every year. Upland farmers remember when their soil was over 100 cm deep 20 years previously. In the worst cases, farmers say soil depths have gone from knee high (i.e. 50 cm deep) to ankle deep (15 cm) in the same period of time. Observations in remnant patches of forest or old fruit tree groves on very steep slopes indicate that originally soil depths were between 90-150 cm.*

The accelerated loss of soil has several adverse impacts. For the upland farmer, it reduces soil fertility and crop yields (the loss of one centimetre can lower yields of corn by almost 100 kg per hectare). To make up for this shortfall in yield, the farmer has to expand the area under cultivation by felling more forest to access fertile soil; or else buy and apply large amounts of inorganic fertiliser. Without the cash to spare many upland farmers prefer to expand the area under cultivation, increasing the problems. Also land degradation has played an increasingly significant role in the incidence of natural disasters.

[2] According to other sources (e.g. WB), of the total land area, as much as 76% faces some extent of degradation.

Sedimentation due to poorly controlled land use is a major threat to the marine ecosystem. Apart from the opportunity costs associated with the foregone earning from well-managed land, soil erosion has imposed high costs on downstream sectors – roads, bridges, settlements, water districts, etc.

1.6. Hydrology and water quality

The principal islands of the Philippines are traversed by large rivers, some of which are navigable. The longest river of the republic is the Cagayan, in north central Luzon (160 Km.s long). Other important rivers of Luzon include the Agno and Pampanga, crossing the Central Luzon Valley; the Chico, flowing through the Cordillera Central and irrigating the mountainside rice terraces; the Pasig, a commercially important artery flowing through Manila; and the Bicol, the primary river of the Bicol Peninsula. The principal rivers of Mindanao are the Mindanao (Rio Grande de Mindanao), which receives the waters of the Pulangi, and the Agusan.

Laguna de Bay, 13 km southeast of Manila, is the largest lake of the Philippines. Lake Taal, 56 km south of Manila, occupies a huge volcanic crater and contains an island that is itself a volcano, with its own crater lake. Lake Lanao is the largest lake of Mindanao and the source of the Agusan River, which exits the lake in the spectacular Maria Christina Falls. There are many wetlands in the Philippines, including mangrove forests and swamps, such as Agusan marsh or Pampanga wetlands.

Up to 58 % of groundwater is contaminated with coliform and needs treatment.

86% of the Philippine people have access to an improvised water sources. Nevertheless, data on surface and groundwater quality and availability indicate that access to clean water is becoming a cure seasonal problem in many urban and coastal areas. More than 2.2 million metric tones of organic pollution are produced annually.

The degraded water quality that exists in parts of the Philippines is not without economic cost to the country. Approximately 31% of all illnesses monitored by the Department of Health between 1996 and 2000 were caused by water-borne diseases. In addition, the annual economic losses caused by water pollution have been estimated at € 1,000 million, including € 44 million for health and € 253 million for lost fisheries production.

In Metro Manila, water pollution is a ubiquitous environmental problem. Most surface waters[3], can be considered **biologically dead** during the dry months. Water pollution in the megalopolis is caused mainly by the discharge of untreated and inadequately treated wastewater from domestic, industries and solid waste. According to a 2004 ADB study, the Rodriguez and Payatas waste sites generate an estimated 76 kilograms of arsenic annually, released into the water bodies surrounding Metro Manila.

The lack of point-source and non-point source pollution controls are the main factors that contribute to the degradation of water quality in the Philippines. Forest denudation exacerbates the **flow of silt** and other pollutants to coastal waters. **Uncontrolled dumping** of raw sewage in coastal areas, particularly in areas that are thickly populated or used heavily by tourists, contributes to dangerous contamination water levels. About 60% of groundwater extraction is **without water-right permits**, resulting in indiscriminate withdrawal.

[3] Except for upper portions of the Marikina River. Major rivers of concern are the Pasig, Marikina, Tullahan, San Juan and Parañaque Rivers.

The present situation is unsustainable, although in view of the growing population; there is an increase in demand for water for domestic use[4], food and industrial production. This increase in demand does not only lead to more water use but also to more pollution as water is used. Over time the water availability is decreasing[5].

1.7. Natural disaster risks

The Philippines is host to many natural disasters, particularly tropical cyclones, droughts, floods, earthquakes and volcanic eruptions. The WB values direct damage caused by disasters between 1970 and 2000 at €224 million per year.

The Philippines is part of the so-called Ring of Fire, an area encircling the Pacific Ocean where earthquakes and volcanic activity result from the movements of tectonic plates. At the east of the islands lies the Philippine Trench, where one tectonic plate is being forced beneath another in a process known as sub-duction. This sub-duction causes frequent **earthquakes**. Large submarine earthquakes are known to cause tidal waves, or **tsunamis**, that can strike the coasts[6].

The Philippine Islands include about 20 active **volcanoes** and many inactive, or dormant, volcanoes. The most active is Mayon Volcano, with recent eruptions in 1993, 2000, and 2001. Mount Pinatubo caused widespread damage when it erupted in 1991 after lying dormant for about 600 years. Mount Apo, the country's highest mountain, is an active volcano with three peaks.

[4] WB estimates that water demand by 2025 will be three times the demand of 1995.
[5] This situation is already occurring in some cities in the Philippines e.g. Cebu and Iloilo.
[6] However, in end 2004, the Philippines as not victim of the Tsunami that hit Asia.

The cyclones record country

*Among the different countries in the world, The Philippines has the most number of passages of tropical **cyclones**, averaging 19 up to 20 tropical cyclones per year. Associated with tropical cyclones and heavy rainfall are **floods**. In November 2004 flooding provoked by two subsequent cyclones caused thousands of deaths in Quezon and Aurora provinces.*

Deforestation has also made many poor communities more vulnerable to natural calamities such as **landslides**. The deforestation of the country is responsible for increasing floods and droughts in the country[7].

Fire is not a usual major threat, but occasionally the country faces strong fire crisis[8].

2. Biodiversity

According to Conservation International (CI), the Philippines is one of the top 17 mega diversity countries in the world. The Philippines has more than 50,000 described species, more than 65% of which are found nowhere else on Earth. More new species are described every year in the Philippines than in any other country in the

[7] According to an investigation conducted in 2005 by the Laguna College of Forestry in affected area and contrary to the common opinion, the Quezon and Aurora floods of November/December 2004, that caused thousands of deaths, where neither caused nor enervated by the forest denudation in the area. There are evidences of various forested areas that suffered heavy landslides while some grassland lands –e.g. limestone areas- were not affected at all. Forest cover facilitates a higher degree of infiltration capacity of the soil, but there is certain limit for infiltration, so the influence of the forest coverage is however limited during extended rain events, because filtration capacity is not infinite.
[8] E.g. during the first few months of 1998, forest fires raged through the forests of Palawan leading the government to plead for international assistance in the fire fighting effort. Estimates of the area affected in the first three months of 1998 ranged from 20,000 to 45,000 hectares. Estimated property and agricultural losses exceeded €19 million.

world. The numerous islands which make up the country have been isolated from the mainland of Asia for many thousands of years, and in their rich tropical forests[9], a great diversity of animals and plants have evolved that are not found anywhere else on earth. 40% of the plant species are endemic. The biodiversity of the country is so distinct that it is considered a separate biological region in their own right[10].

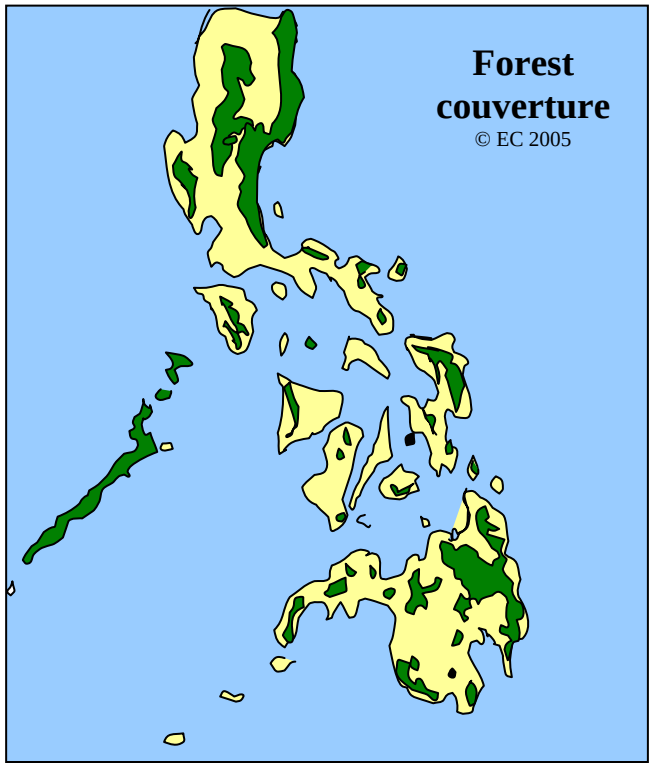
2.1. Vegetation diversity

Forests in the Philippines include the banyan, many varieties of palm, trees yielding rubber, and many indigenous trees with extremely hard wood such as apitong, yacal, lauan, camagón, ipil, white and red narra, and mayapis. Bamboo and cinnamon, clove, and pepper plants grow wild, as do hundreds of species of orchid. Abaca, or Manila hemp, is a commercially valuable indigenous plant; its fiber is used in making cordage, textiles, and hats.

While the total amount of cover forest remains a matter of some debate[11], there is widespread agreement that the overall decline in forest cover is alarming. It is estimated that in 1930 60% of the country was covered by primary forest. Between 1969 and 1988, 2,000 square kilometres were logged annually on average. Today, only 6 to 8 % of the original primary forest remains. This figure is the smallest among all the countries of the region except for Singapore[12]. The remaining forest is highly fragmented.

Utilization of forest products (rattan, ornamental wild plants recollection, etc.) is another challenge of the Philippine plant diversity.

Mangrove trees and nipa palms grow in coastal swamps. Coarse, hardy tropical grasses have taken over many upland areas that were cleared of their original tropical rain forest.Conversion to fishpond has been historically the cause of the dramatic **decrease of the primary mangrove** in the Philippines in the past. The vast majority of the remaining mangroves of the Philippines are secondary growth. Despite a 25 years old official policy of mangrove protection, cutting of mangroves is very frequent all over the country.



2.2. Animal diversity

The Philippines has few species of large mammals. The domesticated water buffalo, or carabao, is common throughout the

[9] By 'forest' is meant a natural ecosystem in which trees are a significant component.

[10] It must be pointed out that there is insufficient level of information regarding the biodiversity of the country and more research is needed. For example, according to the Haribon Foundation, only one quarter of the key conservation areas of the country are considered to be relatively well known at the ornithological level.

[11] Recent official estimates, based on the 2002 satellite images of the entire country show the country's forest cover increasing to 24% of total land area, but only less than 1/3 of this is closed canopy forest (e.g. primary forest).

[12] In total, forest cover 48% of the ASEAN region.

islands, while a wild species of carabao - the tamaraw-, is found only in interior Mindoro. Small mammals are more numerous, including monkeys, rodents, bats, and shrews; several species of deer, including a dwarf deer; mongooses; and porcupines, found only on Palawan. Reptiles and birds abound in greater variety and number than mammals. The islands have 556 species of birds, including colourful parrots and the endangered monkey-eating eagle. Palawan has many species of birds found nowhere else in the world.

Vertebrates diversity in the Philippines[13]

Fauna Classification	No. of Species	Endemic Species	Percent Endemism
Mammals	201	116	58
Birds	556	183	33
Reptiles	193	131	68
Amphibians	63	44	70
Total non-fish vertebrates	1,013	474	48

64% of the mammal species are endemic to the country, as are 70% of the reptiles, 75% of the amphibians and 44% of the birds.

The importance of Forest patches

As a consequence of the way biodiversity is distributed in the Philippines, even small fragmented forests can be of international conservation significance. For example, forest sites in Cebu, Mindoro and Panay, which are now small due to rapid deforestation in these islands, are of critical importance in the preservation of national and international biodiversity. A single small forest in Cebu, covering just a couple of hundred hectares, for example, supports more endemic bird and mammal species than occur in the whole of the Netherlands, Belgium and Germany combined.

The Philippines harbours nearly 200 terrestrial vertebrate species threatened by extinction. Endemic species such as the Cebu flower pecker, the golden-crowned flying fox, the Philippine cockatoo, the Negros forest frog, and the Philippine eagle survive in small forest fragments.

Hunting for trade, especially in the case of birds**,** is a major threat to Philippine animal diversity. For example, the Philippine Cockatoo is a lowland bird, and has been heavily targeted for the cage bird trade. In many areas, virtually all newborn ones are collected from the nest, so that the population is now made up of a dwindling number of ageing adults only. As a result, its numbers and range have declined dramatically. Hunting for trophy or meat is also affecting the country biodiversity.

Another threat to biodiversity in the country is the **introduction of exotic species** to the islands. For the past 40 years the rate and the risks associated with biotic invaders have increased enormously. Among the worst invasive alien species in the Philippines are the giant cat fish and black bass; toads, including the marine toad, the American bullfrog, and aquatic plants like the water hyacinth and water fern, have had a large impact on wetland biodiversity.

2.3. Marine biodiversity

The Philippines, being an archipelagic country, is rich in coastal resources. Most types of tropical coastal ecosystems such as reefs, sea grass bed and mangrove forests are found in the country's seas.

Coral reefs are widespread and may be found around almost the entire archipelago. About 27,000 sq km of coral reef area occur within the 20 m depth contour, but 70% of these coral reefs are in poor to fair condition and degradation is unabated[14]. Coral reefs in the Philippines contain more than 500 of the world's 700 known coral species.

[13] World rank refers to percent endemism.

[14] The World Bank ups this figure to 90%.

Coastal and inland waters teem with marine life, including thousands of species of fish as well as molluscs such as clams. Pearl oysters are abundant around the Sulu Archipelago, and Sulu pearls are renowned for their quality

Over fishing and **destructive fishing** practices are among the main threats of the marine environment. According to the WB, the mismanagement of fisheries resources is estimated to cost US$ 420 annually.

Illegal night fishing by foreign fleets jeopardizes the rebounding fish sanctuaries[15]. In many places aaverage catch per day is less than 3 kg down from 10 kg 20 years ago.

The high demand for exotic tropical marine products abroad which spurred a frenzy of **unsustainable harvesting practices** in the Philippines in the 1990s also contributed to the degradation of coastal resources.

Uncontrolled harvesting of sharks, sea urchins, and sea horses used for their food and medicinal values contributed to almost local extinction of these species in certain fishing grounds.

Aquarium fish and certain high-value species of snappers and groupers that need to be exported live so that restaurateurs can display them live (fresh) before cooking are harvested with the use of cyanide. Cyanide, when squirted into the water to stun the fish, kills coral reef organisms, and this practice has led to the surreptitious destruction of extensive areas of coral reefs.

[15] There are a lot of complaints from the private fishing sector of poaching in Philippine waters by foreign fishing fleets, the exact magnitude of which the Philippine Government does not have any figures to back up.

3. Socio-economic conditions, socio-cultural conditions and human health

3.1. Archaeology and cultural heritage

The **Cagayan Valley** has been, in the previous years, a source of continual reports of the presence of the fossil remains of large animals now extinct in the Philippines. These animals include elephants, rhinoceros, stegodon, and others. The earliest evidence of man in the Philippines is that of the **Tabon Man** of Palawan -dating to 22000 years ago-, but there are more than a hundred Old Stone Age sites in the country. The first solid evidence for the presence of iron tools was found in Palawan and dated about 190 B.C. The first evidence of high-fired ceramics came from the municipality of Laurel, Batangas. Younger in archeological age are those sites found within the city of Manila itself, and the areas about the Laguna de Bay.

In north Luzon, the UNESCO World Heritage Site of **Vigan** displays precious remnants of the splendid architectural Spanish legacy. The well-preserved colonial structures create a unique 17th-century European atmosphere. Various **Baroque Churches** in Manila and Ilocos are also UNESCO World Heritage Sites. Iloilo City, Carcar town and other sites in the Visayas have preserved Castilian houses, gardens and churches. In recent years **Marine archaeology** is gaining importance in the country[16].

[16] The first systematic marine archaeological project in the Philippines was completed in 1980 in the island of Marinduque. Another important shipwreck was found off the town of Puerto Galera in the island of Mindoro at a depth of about 20 meters. Suspected galleon wrecks have been pinpointed in the Verde Islands and the Lubang Island off the western coast of Batangas province. The **galleon San Diego** constructed in Cebu and later sank near Batangas during a battle with the Dutch in 1600 was excavated with a large amount of its contents recovered.

3.2. Landscape, visual and recreational aspects

The Philippine landscape is characterized by its diversity and richness. There are many beautiful places all over the country. **Luzon** spectacular landscape is made up of mountainous regions in the north, the flat vistas of the central plain, lakes and volcanoes in the southern peninsula, and a coastline dotted with caves and sandy-beached islands. Carved out of the hillside by Ifugao tribes people 2,000 to 3,000 years ago, the remarkable **Banaue rice terraces** stretched like stepping stones to the sky - some reaching an altitude of 1,500m. **The Hundred Islands**, lying off the coast of Pangasinan, is made up of 400 islets surrounded by coral gardens and white sand beaches. Countless of other spectacular sights are scattered throughout Luzon including the volcanic crater **Lake Taal**, southwest of Manila; and the burial caves of **Sagada**.

The Visayas Islands have a lot to offer in terms of landscape and visual beauty. The **Chocolate Hills**, in Bohol, covered are a strange spectacle with mounds rising up from the flatlands. The famous white beaches of the island of **Boracay**, off the north-western tip of Panay, regularly appears in those 'Best Beaches of the World' lists that travel rags are so fond of compiling.

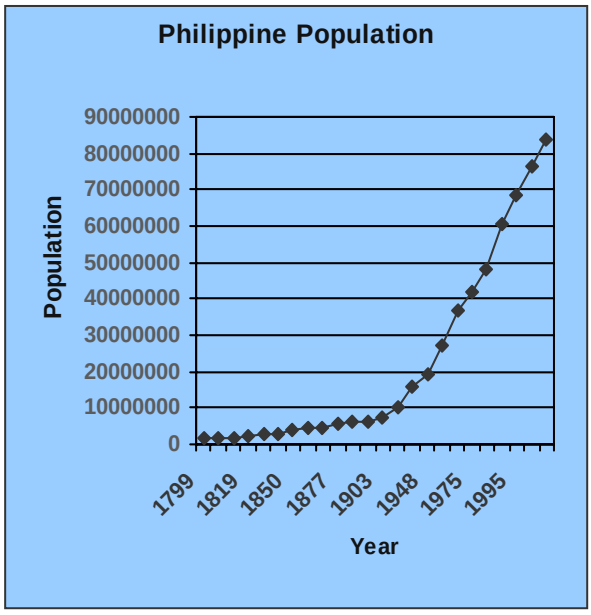
Palawan is rich in natural resources and boasts of exotic wildlife and white sand beaches. Also known as "the last frontier", it is a haven for adventure seekers and nature lovers.

Mindanao's many natural attractions, rich flora and fauna, cultural diversity, and colourful ethnic festivals could make the island am Mindanao an exciting tourist destination, but the insecure situation prevents most of the tourists –national and international- to visit it.

Unfortunately, all this natural beauty is completely absent in the main cities, especially in Metro Manila. The city suffers serious infrastructure and environmental problems in the areas of land, water, air, sewerage, drainage, waste, and traffic. As mentioned, air pollution is another major environmental problem, accounted for by motor vehicles and industry waste. The huge amounts of solid waste produced by the city each day often clogs the poor drainage pipeline and causes eventual flooding. Like most other metropolitan cities, Metro Manila suffers from serious traffic congestion.

3.3. Population

The estimated population in 2004 was **86 million**. The population is growing by about 2.3% a year, giving the Philippines one of the world's highest population-growth rates.

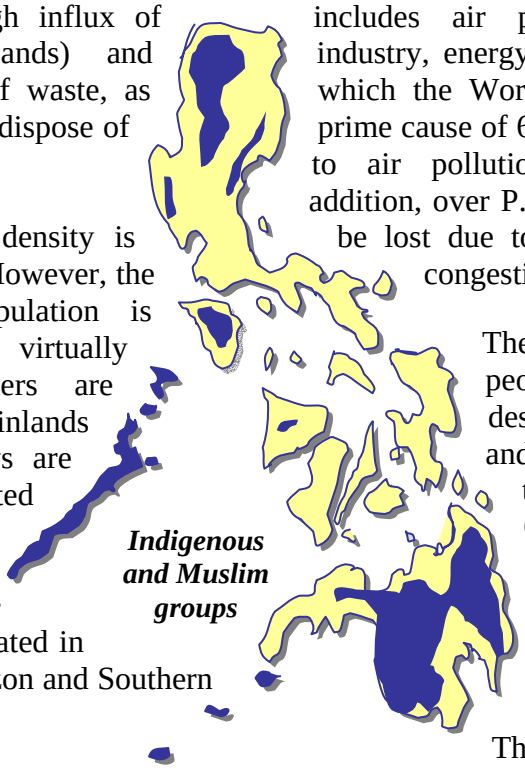


Due to the influence of the Catholic Church in the Philippine society and politics, there is a clear **lack of population control measures** by the Government. The high birth rate contributes to a predominantly young population; about

57% of the population is below the age of 25.

The constant rise in the country's population has put a huge burden on public services, such as schools and health centres which need to be regularly expanded to cater for ever increasing numbers of people. This problem also reduces central and local government's capacity to invest in environmental actions (made worse by the fact government departments such as DENR employ too many people at the expense of sustainable development activities); increases the pressure on natural resources to provide food security (made worse by the high influx of migrants in some islands) and amplifies the problems of waste, as well as where and how to dispose of it safely.

The average population density is **289 persons per sq km**. However, the distribution of the population is uneven; some areas are virtually uninhabited, while others are densely populated. The inlands coasts, plains and valleys are the most densely populated areas. About two-thirds of the population lives in the coastal area. 40% of the population is concentrated in Metro Manila, Central Luzon and Southern Tagalog regions



The percentage of the population living in rural areas has steadily declined in recent decades. It decreased from 68% in 1970 to 40% in 2004. With about 60% of its population living in urban centres, the Philippines is the most urbanized country in Southeast Asia (except for Singapore) and the country with the sixth highest urbanization rate in Asia. Metro Manila is populated by 14 million people. The depletion of the natural resource base in the long-established islands such as Luzon or Cebu, has forced many small farmers and fishermen to migrate with their unsustainable practices to islands they consider as "lands of plenty", such as Palawan, where migration pressures from inhabitants from both Luzon and the Visayas has been very high over the last decade, aided by family connections. Parts of Central and Northern Mindanao have also been major colonisation areas for landless migrants from the Visayas over the last 30 years.

In the case of Metro Manila, migrants have come in search of work and over time this has led to a huge rise in water consumption, energy and waste. The latter includes air pollutants derived from industry, energy generation and vehicles, which the World Bank estimates is the prime cause of 6,000 deaths each year due to air pollution related diseases. In addition, over P. 21 billion is estimated to be lost due to poor health and traffic congestion every year.

The majority of Filipino people are of Malay origin, descendants of Indonesians and Malays who migrated to the islands long before the Christian era. The most significant ethnic minority are the Chinese. About 90% of the population is Christian, mostly Roman Catholic. The major non-Hispanicize groups are the Muslim population, concentrated in the Sulu Archipelago and western Mindanao and the indigenous people , loving mainly in Luzon's Cordillera, inland Mindoro Eastern Mindanao and Palawan.

About 87 native languages and dialects are spoken, all belonging to the Malay Polynesian linguistic family. The three principal indigenous languages are Cebuano, spoken in the Visayas; Tagalog, predominant in central Luzon, Mindoro and Palawan; and Ilocano, spoken in

northern Luzon. Since 1939, in an effort to develop national unity, the government has promoted the use of the national language, Pilipino, which is based mainly on Tagalog. Meanwhile, English is the most important non-native language.

3.4. Economy

The Philippines is a lower middle income country with many problems of low income countries including high poverty incidence. The rate of income disparity and land between the richest 10% of the Filipino population and the poorest 50% is enormous. As a result the majority of the Filipino population live at or below the poverty line and this has forced ever increasing numbers to extend the agricultural frontier in the uplands, cut down mangroves for firewood, or fish for already depleted fish stocks. Between 1999 and 2003, Philippine per capita income in nominal terms increased from US$1,040 to US$1,080, which translates into less than 1% compounded annual average growth (CAGR) over the period[17]. A combination of relatively slow economic growth (some 4% average in past decade) and high population growth (over 2%) explains the minimal improvement. There is general dissatisfaction over the quality of growth, (driven largely by remittance-fuelled consumption spending) unable to create sufficient jobs (unemployment rate has remained at double-digit levels since 2000 reaching a high of 11.7% in 2004), and leading to more and more Filipinos seeking work outside the country, with accompanying high social costs.

As the WB states in its 2004 Environmental Monitor, “The Philippines economy remains acutely depend on natural resources. The rural employs some 11.2 million people; and it is a substantial contributor to GDP. In 2003 it generated € 943 million trough agriculture, fisheries and forestry based industries”.

Various growth enhancing reforms were undertaken over the past two decades that saw tariffs decline and non-tariff barriers removed, state enterprises privatized, industries deregulated and subjected to increased competition, and increased reliance on markets for price setting. The adoption of market-based policies and the increased participation of the private sector in the development process as espoused in the Medium-Term Philippines Development Plan may has contributed to economic progress. However, activities aimed at producing those gains have also resulted in the degradation and depletion of the environment and natural resources[18]. Despite previous efforts at integration, the current state of macroeconomic policy-making in the Philippines leaves much to be desired in terms of incorporating environmental concerns into the decision-making process.

3.5. Land use and land regulation

In the Philippines, land is classified primarily into (1) alienable and disposable (private lands) and (2) timberland / forestland (public domain). Many farmers are tenants, who rent the land and pay the landowner a share of the crop. Other farm workers include seasonal migrant labourers.

[17] Comparative per capita CAGR for other Asian countries during the period are: China (9%), India (4.8%), Indonesia (8.2%), Malaysia (2.9%), and Thailand (2.3%).

[18] The Philippine Agenda 21 amplifies those issues in the statement: "....While there is an acceleration in economic growth, there is evidence that environmental quality is fast deteriorating, as dramatized by the increased incidence of environmental disasters such as problems associated with mine tailings, deforestation, pollution, salt-water intrusion and a host of other destructive activities. The regenerative capacities of already fragmented areas in various bio-geographic zones are similarly threatened."

Current estimates indicate there are over 18 million landless people living in upland areas, of which approximately 7 million are indigenous people[19]. In the forest areas, the situation is similar, although in terms of access, the trend has been reversed in the last decade with the radical shift to the community based forest management strategy. This meant a drastic reduction in areas awarded to Timber License Agreement (TLA) holders from 6.7 Million hectares in 1982 (involving some 186 holders) to 858,000 hectares in 2000, involving only 20 TLA holders. On the other hand, the coverage of CBFMA holders increased from 30,000 hectares in 1982 to 5.48 million hectares in the year 2000. This indicates the extent of the pressure on natural resources as ever increasing numbers of migrants find refuge in the uplands in search of land.

Although the Government has already recognized some ancestral domain claims in Northern Mindanao, Palawan, Northern Luzon and other areas of the country, the boundaries of these domains have not been properly identified and mapped. This situation has caused extreme frustration within the communities whose claims were considered, while other communities saw their ancestral domain claim applications either rejected or ignored for nearly a decade. In the meantime transgressions of ancestral lands and domains in the Philippines continue.

The Philippines faces a critical problem of an inefficient and ineffective land-use administration system which discourages sustainable management of resources. There is a complex situation of overlapping of agencies and laws. There are also multiple standards for land valuation, which offer ample opportunities for corruption. There is a broad consensus on the need to overhaul the country's land administration and management system. Addressing these problems would require consolidating all the functions of several land registration and administration agencies.

The problem on inefficiency and improper utilization of lands, such as incompatible land uses, are partly attributed to outdated land use plans and the non-observance of zoning ordinances at the local level. Under the Local Government Code of 1991, LGUs were mandated to continuously prepare and update their comprehensive land use plans (CLUPs), and enact these through zoning ordinances as bases for their development directions. Out of the 1,664 municipalities and cities in the country, about 1, 183 LGUs or 71% were reported to have land use plans. Notwithstanding this big number, many LGUs proceed with their development initiatives without due consideration on the level of their available resources, much more on the complementation of several development activities they simultaneously undertake in their respective localities.

Such conditions often result to low land productivity, squatting, and the location of industries and settlements within ecologically critical areas. The lack of security of tenure in the lowland agriculture areas impacts negatively in the forest areas, provoking migratory movements of lowland folks to the highlands.

3.6. Access/transportation

Despite the difficult terrain, the Philippines has an extensive road system; however, only about 20% of roads are paved. The Pan-Philippine Highway[20] is a system of roads, bridges, and ferries that connects the

[19] There are approximately 24 million people living in or next to forest land and the number of people directly dependent on forest resources (excluding water supply from catchments areas) is estimated to be as high as 30 million (cf. ECEP, 2005).

[20] Also called the Maharlika Highway.

islands of Luzon, Samar, Leyte, and Mindanao.

The rail system, concentrated on Luzon, is limited, but will be expanded in the coming future due a macro-loan provided by the Government of China to construct new the connexions between Manila and the north of the island. A light-rail transit system known as Metro-rail was opened in Manila in 1985 to help reduce traffic congestion.

The country's international airports are in Manila, Davao and Cebu. Subic Bay and Clack International Airports, near Manila, serves international commercial flights as well as domestic passenger flights. The country has many seaports, the busiest at Manila, Batangas, Davao, Cebu, Iloilo, and Zamboanga.

Soil erosion from roads

Soil erosion from roads has generally been ignored in estimates of soil loss and declining watershed integrity in the Philippines, and the focus of attention has generally been on deforestation. Soil loss from unpaved roads is extremely high, however, with annual soil loss from 1 km of unpaved rural road being roughly equal to the annual soil loss of 5 ha of upland agriculture or up to 150 ha of secondary forest.

A major component of rural development in the Philippines in the past decade has been the improvement of access for remote, rural communities to increase availability of agriculture inputs and improve marketability of their agricultural products. The level of road construction in the rural Philippines has been substantial, but maintenance remains a problem.

3.7. Power sources[21]

Coal-fired power capacity is the dominant type of power generation in the country representing 25% of total installed capacity as of end 2004, followed by oil-based (23%), hydro (20%), natural gas fired (18%), and geothermal (14%) power plants.

While the **coal** sector maintains its crucial role in the country's energy mix- todate, out of 40 coal mines in the country, only eight are in active operation while the rest remain u n d e r moratorium.

The Philippines imported 91.4 million barrels of crude **oil** in 2004 and 7 million of oil products[22]. This dependence on imported oil makes the Philippine economy vulnerable to sudden spikes in world oil prices. Despite small proven oil reserves, limited exploration is underway. The Philippines' oil market was deregulated in 1998. The government has remained committed to deregulation despite public calls for price controls, and the Supreme Court upheld the constitutionality of deregulation in December 1999. Gasoline prices are among the lowest in Southeast Asia.

The Philippines has 2.8 trillion cubic feet of proven **natural gas** reserves. While in the past the gas sector has not been developed extensively, the government has made expanding gas use a priority, particularly for electric power generation, to cut oil import expenses. The Philippines' government expects total gas production to reach 255 billion cubic feet in 2009[23].

[21] In March 2005 the EC Delegation in the Philippines produced a study on the Energy Sector in the Philippines, with particular emphasis on the renewable energy sub sector. Most of the data in this chapter was obtained form the EC study.

[22] The country's largest suppliers of crude oil are Saudi Arabia, the United Arab Emirates and Iran.

[23] In the largest natural gas development project in the Philippines and one of the largest-ever foreign investments in the country, Shell Philippines Exploration (with a 45% stake), Texaco (45%), and the Philippine National Oil Company (10%) have tapped the Malampaya natural gas field's reserves. The field is located in the South China Sea,

The **Hydropower** supplies 10% of the country's electricity requirements. According to the DOE's Renewable Energy Policy Framework, the Philippines has an estimated untapped hydro potential of 13,097 MW of which 85 % is considered large and small hydros. The committed capacity addition is expected to provide 7.7 TWh of electricity per year, equivalent to a fuel oil displacement of 12.9 MBFOE.

Biomass fuels from forest lands, mainly charcoal and fuel-wood, provide a large part of the country's energy needs, particularly for private households in rural areas. It is estimated that close to 7 million households use biomass fuels for cooking; and that more than 31 million cubic metres of fuel-wood are consumed per annum in households and more than 8 million cubic metres in industry.

Geothermal energy

*The Philippines is the world's second largest producer of **geothermal** power, with currently available capacity of 1,900 MW. Geothermal power currently makes up around 16% of the Philippines' installed generation capacity.*

3.8. Water supply

The estimated national water resource potential is 226 million cubic meters. Of this, 91% comes from surface water and 9% from groundwater. Demand for water is less than one third of the renewable water available nationally. Yet in 1995, a national **water crisis** was declared to address the increasing water resources management challenge. Roughly 30 million people throughout the country do not have access to potable water through water supply and distribution operations. Water demand nationwide is expected to grow from 43 million cubic meters per year in 2000 to 88 million cubic meters by the year by 2025.

Forest covered mountains have functioned as watersheds for the small-island economies. These forests have supported the people's continuing freshwater needs such as for water for drinking and washing as well as for use in industry agriculture. Forest watershed function is also threatened as the forest cover of the country diminishes fast. Deforestation results in **scarcity of water** both for domestic and irrigation needs during the dry season[24].

3.9. Forestry

The Philippines went from being the world's biggest exporter of tropical hardwoods in the 1970s to being a net importer of forest products by the 1990s as a result of unsustainable management, over harvesting and extensive clearing of forests for agriculture. Reports indicate that the country now imports 60% of the wood it consumes.

In the early 1960s, the timber industry topped all other industries in terms of foreign exchange earnings. At the height of commercial logging operations in the country, just 420 logging firms were given licenses to extract timber form the majority of the forested areas. However, as a result of deforestation, which at its peak in the late 1960s was as high as 300 000 ha per annum, the industry began to wane in the 1980s.

offshore Palawan. A 500 kilometre pipeline is under construction that will link the field to three power plants in Batangas. The pipeline will be among the longest deep-water pipelines in the world.

[24] For example, a FAO study in some communities in Nueva Ecija (Central Luzon) showed that due to the low ground water recharging caused by deforestation, farmers now have to bore shallow tube wells up to 36 meters in depth, compared to the 60's, when water could easily be extracted from a depth of 6 meters.

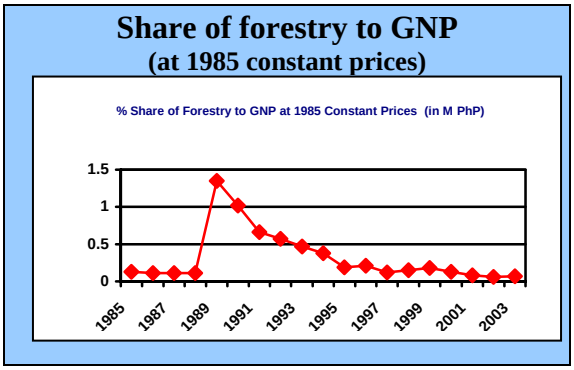
The government banned the export of unprocessed hardwood logs in 1986 in an effort to stimulate domestic processing of raw lumber into finished products. Initially this policy was successful, and products such as wood veneer became important exports. Then, in 1991 the Government imposed a selective logging ban. However, **illegal logging**[25] and **unsuccessful reforestation programs** depleted the hardwood forests and deforestation continued. The massive cutting of trees in the Sierra Madre, Cordillera and Mindanao still continues to this day. It is estimated that the country forests are shrinking at a rate of 2% annually.

Illegally smuggled exports of timber, **small scale subsistence logging** for firewood and local housing requirements in forest areas are some of the main causes of illegal logging in the country. Now there are fewer trees to be cut in the big logging concessions, so the big-time loggers are engaged in the buying of illegally cut logs from small loggers –popularly called *carabao loggers*[26]-. Estimates show that more than 40% of the country's industrial round wood comes from undocumented sources defeating management and conservation efforts. Inefficient and resistance of the government and misuse of the resource utilization permit by logging concessionaries are among the causes.

The DENR rangers are confronted with tremendous difficulties fighting illegal logging, including armed attacks and ambushes by the loggers[27]. To try to ensure their safety, the Government has recently announced a plan to issue guns to the forest guards.

The areas under control of armed groups are generally less affected by logging activities. The communist guerrilla group New People's Army imposes a revolutionary tax to the legal and illegal loggers operating within their territorial jurisdiction. Those that do not pay are punished by the destruction of their logging equipment.

Following the humanitarian tragedy caused by flooding and landslides in Quezon and Aurora provinces, President Arroyo ordered in late 2004 the suspension of all logging permits in the country[28] and called for tougher penalties and sanctions for persons involved in timber poaching. It was later clarified that the suspension of logging applies only to natural forests but not to man-made forests or industrial tree



plantations. The ban affects 18 timber licensing agreements covering just over 800,000 hectares (less than 15 % of the total area covered by forest). As the press pointed out, "the ban on logging can put the President at odds with local political personalities who would be exposed as closely associated with the illegal logging business".

Presently, the rigid political situation and the recent demagogy around illegal logging control are not enabling a sustainable forest management policy. As a consequence of the December 2004 ban, the reduction of the offer wood increase up to 40% (March 2005). One can forecast that the rate of illegal logging will increase

[25] The volumes of annual confiscations rounds 12 to 15 thousand m3 yearly. However the number of apprehensions is not very good indicators to measure the real impact of the illegal logging.

[26] Carabao is the local name for the water buffalo, the animal used by the loggers to carry out the trunks.

[27] Attacks occur almost every week. For example, in January 2004 5 armoured incidents were reported, with several rangers wounded.

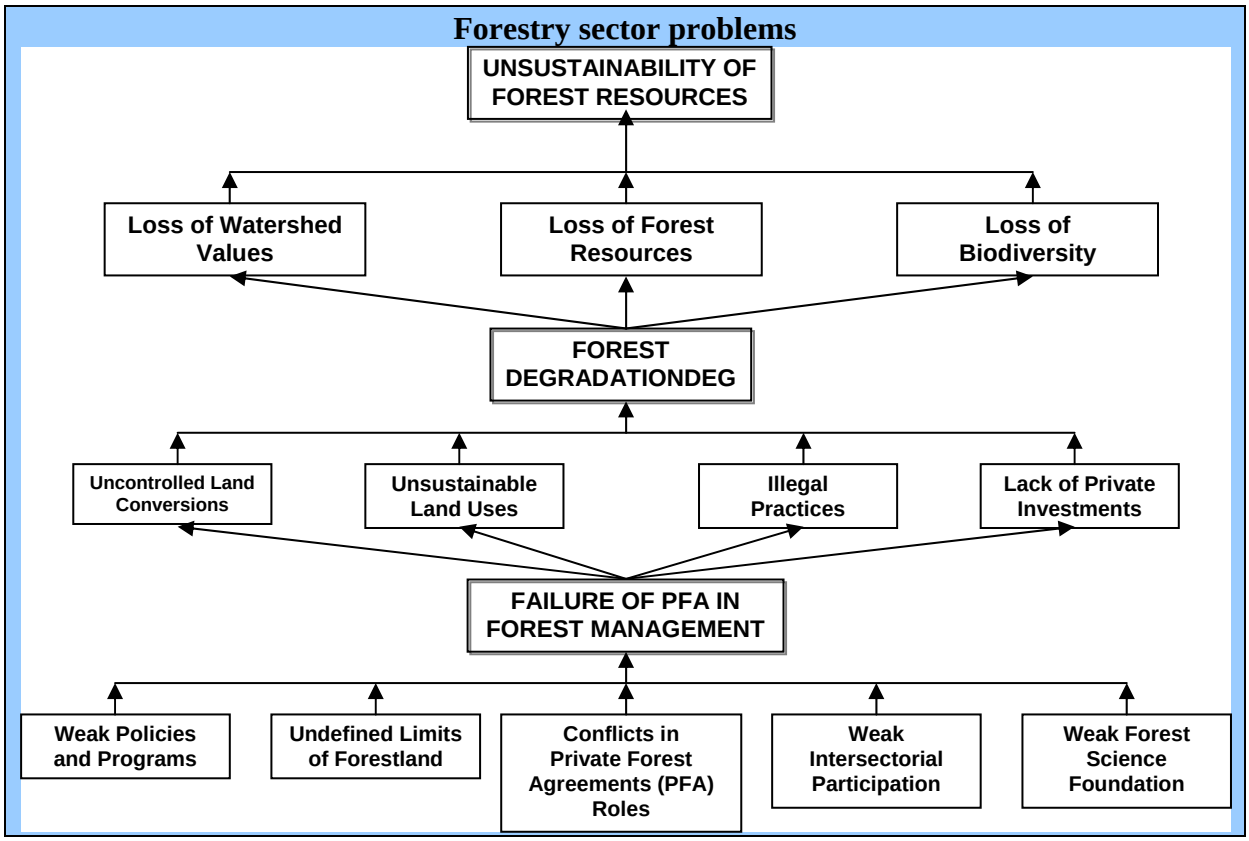
[28] Covering 8,130 Km2.

dramatically, because consumption will continue increasing, rational forestry will not be developed, importing is expensive and complex and logging is now more profitable than ever before.

3.10. Agriculture

About 20% of the total land area of the Philippines is arable, or suitable for cultivation. The most important subsistence crops are rice, corn, cassava, and sweet potatoes. Rice paddies and cornfields occupy about half of the arable land of the Philippines. Coconuts are one of the most important cash crops, and the Philippines is one of the world's leading exporters of coconut products, including coconut oil and copra (dried coconut). Bananas and pineapples are also important commercial crops, both of which are grown on large plantations owned by multinational companies. Sugar was the most important agricultural export of the Philippines from the mid-1800s to the mid-1970s. Other crops include palm oil, coconut, abaca (Manila hemp), coffee, tobacco, and mangoes. Livestock on farms include carabao (water buffalo), cattle, chicken, goats, horses, and pigs.

Climatic conditions are a major determinant of geographical crop production patterns. For example, coconut trees need a constant supply of water and do not do well in areas with a prolonged dry season. Sugarcane, on the other hand, needs moderate rainfall spread out over a long growing period and a dry season for ripening and harvesting. Soil type, topography, government policy, and regional conflict between Christians and Muslims have also been determinants in the patterns of agricultural activity. According to the ADB, the Philippine agricultural sector has been growing erratically since the early 1980s, with its overall annual productivity volume growth averaging about 1.1% from 1993 to 2002. There has been little intensification (0.8% from 1993 to 2002) and little expansion in the area under agriculture cultivation (0.3% increase per year between 1993 and 2002).



Genetically Modified Corps: A controversial issue

Like in many other countries, there is an ongoing debate in the Philippines regarding genetically modified corps. Should it be included in the list of environment threats or not?

In December 2002 the Philippine Government approved the commercial planting of the country's first genetically modified corp, a type of insect resistant corn made by Monsanto Corp. The corn variety gained the approval from the Bureau of Plant Industry to be planted in Philippine soil. Opponents argue that the variety is extremely harmful to a species of friendly insects. Another concern is the possibility of genetic contamination, a process through which local varieties acquire the characteristics of the GMP plant through pollination.

*A **Genetic Modification Forum** was held in Manila in 2003. Participants come from the government, the scientific community, NGOs, farmer organizations and business sector. Proponents and opponents contested each other's claims. In the end, the issue remained open. As in many other countries, it could be considered an answer or a disaster –depending on the point of view to environmental problems-.*

Productivity growth rates have lagged badly behind other parts of Southeast Asia. Average yield of rice in 2002 was 3.28 t/ha, with an annual increase in yield between 1993 and 2002 of about 1.5%.

Expanding fertilizer and pesticide use foster nutrient imbalances and groundwater contamination. Over the past twenty years the downside of the 60's Green Revolution became manifest in the Philippines, with important smallholder cropping systems becoming increasingly unproductive and unprofitable. The crops were object to progressively higher applications of agro-chemicals, resulting in declining soil quality, with subsequent effects such as poorer marketing prospects, higher production costs and serious health side effects. An average of 503 **pesticide poisoning incidences** was reported from 1980 to 1988, of which 15% die each year.

One of the main environmental threats to the remaining forest is now the activities of **shifting cultivators,** locally called *kaingeros*. According to the Ibon Foundation, at present, there are over 18 million landless people living in the uplands areas, including some 7 million indigenous people[29]. Human settlements are now encroaching into the uplands as well, particularly in areas opened up in the past by logging roads. Intercropping of crops such as corn, peanut, cassava, and sweet potato, with coconut trees, on steep to very steep slopes in the uplands of Southern Mindanao, has exposed the fragile upland soils to sheet and rill erosion. Sheet erosion is a combination of the detachment of surface soil particles by raindrop impact and their transport by rainfall run-off flowing across the soil surface.

3.11. Fishery

The Philippines is surrounded by a vast aquatic resource base. In 1976 the government adopted a 200-nautical-mile exclusive economic zone covering some 2.2 million square kilometres. However, the country's traditional fishing grounds constituted a relatively small 126,500-square kilometer area.

Coastal fishing activities account for 40-60% of total fish catch with the fisheries

[29] According to other sources, the number of people living in or near forest land reaches 24 million and the number of people directly dependent on forest resources is 25-30 million.

sector accounting for about 4% of GNP and employing more than a million Filipinos. The number of subsistence fishers is continuing to rise because of rapid population increases in coastal communities. The average annual fish catch exceeds 2 million metric tons. Nearly half of the total catch is made by municipal and subsistence fishers who operate small boats in shallow coastal waters. The surrounding and inland seas of the Philippines yield crab, sardines, anchovies, tuna and mackerel. Shrimp, milkfish, and tilapia are raised in artificially created fishponds. The Philippines is the largest producer of aquaculture products in South East Asia.

Much of the total catch is for domestic consumption, and about half of the protein in the Philippine diet comes from fish and other seafood. On the other hand, shrimp and prawn exports to Japan are a significant source of foreign exchange.

The **pollution** of coastal and inland waters and **depletion of fish populations** through **over fishing** have reduced the fishing sector's productivity in some areas of the Philippines. A recent study indicated a decline of 30% in selected municipal fisheries. USAID surveyed in 2004 that the Philippines louses around $420 million annually in potential revenues due to mismanagement of the fisheries resources.

On July 2003, the European Union suspended aquaculture imports from the Philippines because of the government's failure to file a monitoring plan for detecting **banned antibiotics** in shrimp farming.

3.12. Mineral exploitation

The Philippines has large deposits of copper, chromium, gold, and nickel, plus smaller deposits of cadmium, iron, lead, manganese, mercury, molybdenum, and silver. Industrial minerals included asbestos, gypsum, limestone, marble, phosphate, salt, and sulphur. The mining industry grew rapidly in the 1970s in response to government initiatives. In the mid-1980s, however, output in the metallic sector entered an overall decline as world prices for metals weakened.

The issue of mining has been a controversial one in the Philippines since the early 1990s. While mining may be lucrative, it has been identified as a major source of environmental problems. A serious threat to the forest comes from legal and illegal mining operations that not only require **forest clearing**[30] but **release toxins into local rivers** as well. Metallic mine waste generated from 1990 to 1999 is around 131 million metric tons and mine tailings is about 136 million metric tons[31].

3.13. Industry

In 2004, manufacturing contributed 23% of the GDP. The manufacturing sector accounts for a larger share of national income than agriculture, fishing, and forestry combined. However, more people are employed in these traditional sectors than in manufacturing.

The manufacturing industry is geographically concentrated. 50% of industrial output comes from Metro Manila and another 20% from the adjoining regions of Southern Tagalog and Central Luzon.

[30] Small-scale mining often leads to vegetation loss as hillsides are cleared when miners follow a vein of gold. Forest is also felled to make way for airstrips and working areas. In less than two decades, rampant and unlicensed gold mining and illegal logging have eroded Kematu's hillsides in T'boli, South Cotabato and dried its rivers.

[31] Economic valuation of environmental cost associated with mining activities has been done in isolated cases (i.e. Marinduque copper mining, Benguet gold mining) but not for the whole industry in general.

The Philippines has some heavy industries, including a copper smelter-refinery and chemical and fertilizer plants. They were built under a government-funded industrial-development program and were in operation by the early 1980s. Nondurable goods such as processed food, textiles, and tobacco products make up the largest percentage of manufacturing output. Other major products include refined petroleum, chemicals, construction materials, and clothing. The Philippines has increased its production of durable items, especially electrical and electronic equipment and components, non-electrical machinery, transport equipment, and furniture.

Although small and medium-sized firms accounted for 80% of manufacturing employment, they accounted for only 25% of the value added in manufacturing.

The Philippines have long maintained a traditional regulatory system, and it is estimated that over 60% of local factories have adopted at least nominal pollution control. However, various studies show that **industrial pollution** accounts for a high percentage of the total pollution in the Philippine rivers and watersheds. In the case of Manila's Pasig River, it accounts for 45%[32] and 30 % in the case of Laguna de Lake[33]. Many industrial plants in the country simply use the rivers and lakes as sinks for waste. According to various records, the textile and food manufacturing industries are the biggest water polluters. In the manufacture of the electronic products, there are a number of processes that are accompanied by emissions to air, water or soil. The industry uses different chemicals that can cause varying environmental or health problems.

3.14. Services

In 2004, services contributed 53% of the GDP. The services sector includes transportation, wholesale and retail trade, currency and banking, and foreign trade. Skilled Filipino labour has prompted some multinational companies to set up service operations in the country to serve consumers in Europe and the United States.

Tourism is a growing industry, and together with fisheries and other economic activities in coastal areas, contributes to a host of environmental, socioeconomic and institutional problems.

3.15. Health

The state of Philippine environmental affects the health in various ways: **Untreated wastewater** affects health by spreading disease-causing bacteria and viruses, which makes water unfit for drinking and recreational use, threatens biodiversity, and deteriorates overall quality of life. Known diseases caused by poor water include gastro-enteritis, diarrhea, typhoid, cholera, dysentery, hepatitis, and more recently, severe acute respiratory syndrome (SARS). The number of water-related health outbreaks including deaths are going up, as reported in the newspapers the past few months.

Air pollution is one of the major environmental threats affecting the health of the Filipino people. According to the World Bank, 6,000 Filipinos die each year due to air pollution related diseases. It also accounts for 20% of death in children are under 5 years old. € 310 million is lost due to health and productivity costs in Manila, Cebu, Baguio and Davao. The national figure gives a staggering total of € 1,104 billion.

[32] About 315 of the 2,000 or more factories situated in the river basin have been determined as principal polluters of the river, dumping an average of 145 t of biochemical oxygen demand (BOD) per day. This was established by determining the suspended solids in their treated and untreated waste-waters.

[33] According to the Laguna Lake Development Authority (LLDA), 1,481 factories occupied about 20% of the region's land area.

Under the Philippine Clean Air Act of 1999, no incineration of any kind of **medical waste** is allowed in the Philippines. Faced with the challenge of proper disposal for this kind of waste, the DOH, with the assistance of the WHO and UNICEF, created a set of guidelines for medical waste disposal.

The guidelines recommend that every participating health unit devise a simple, cheap, no-burn method of managing the waste from its immunization campaigns. The no-burn waste management techniques recommended by the Philippine guidelines included sterilization (autoclaving and microwaving) and burying in concrete septic vaults and clay pits[34].

3.16. Waste generation

Solid waste is now acknowledged as one of the most pressing environmental problems in the Philippines. Filipinos living in urban areas are estimated to generate an average of 0.5 kg of waste per capita/day and 0.3 kg. for those living in rural areas.

40% of the country's solid waste remains uncollected

Waste generation is increasing rapidly as consumption rises, while collection efficiencies are dropping as service levels deteriorate due to insufficient and inappropriate vehicles and inability to reach households or collection stations

The most common disposal system is **open dumping,** burning or **throwing into rivers**. 145 million litres of used oil are being dumped into the river yearly.

Metro Manila alone generates one quarter of the total garbage generated annually in the Philippines. Garbage in Manila is disposed in six controlled dumps. However, these sites have the capacity to accept waste for only two more years.

The Payatas dump tragedy

*The **Payatas dump**, Manila's largest rubbish dump, is a means of survival for some of the city's poorest families, serving as both home and work for 60,000 people. Unable to afford anywhere else to live, thousands have set up shanty houses below the mountain of rubbish in a squatters' colony called Lupang Pangako (Promised Land). On the morning of July 10, 2000, after 15 days of rain, a chunk of the Payatas dumpsite slid off and buried more than 200 people mostly sleeping residents under tons of muck. Dozens of bodies remain un-recovered to this day.*

Four years after a mountain of garbage collapsed at the open dump, killing 205 people and burying a Manila slum colony called Lupang Pangako, thousands still call it home. It is estimated that about three-quarters of the 5,000 tonnes of rubbish dumped at the site every day is picked up by the scavengers. The waste provides the only means of income for about a third of Lupang Pangako residents and part-time work for the rest of them. Anything - plastic containers, bottles, newspapers, scrap metal or even food - is collected. The collectors may make only 100 pesos (€ 1.3) or less a day.

[34] And in accordance with the Stockholm Treaty on Persistent Organic Pollutants.

Country basics

Population: 82.8 million (UN, 2005)
Capital: Manila
Area: 300,000 sq km
Major languages: Filipino, English (both official)
Major religion: Christianity
Life expectancy: 68 years (men), 72 years (women) (UN)
Main exports: Electrical machinery, clothing, food and live animals, chemicals
GNI per capita: US $1,080 (World Bank, 2003)

Country environmental indicators

Indicator	Indicator Value	Indicative Threshold/Std	Index Rating	Index Rating Class	Sustainability Rating Class
Forest Cover[1]	34	50%	2	Poor	Low Sustainability
Live Coral Reef[2]	30	50%	2	Poor	Low Sustainability
Mangrove Cover[3]	27	50%	2	Poor	Low Sustainability
Seagrass Beds[4]	50	50%	3	Fair	Fair Sustainability
Fish CPUE[5]	1.17	1.0-1.5 (mt/hp)	3	Fair	Fair Sustainability
Wildlife Endangerment[6]	50	40%	2	Poor	Low Sustainability
NIPAS DegradationDegradation[7]	50	40%	2	Poor	Low Sustainability
Soil Erosion Extent[8]	46	50%	3	Fair	Fair Sustainability
Solid Waste Disposal[9]	65	80%	2	Poor	Low Sustainability
Land Conversion Rate[10]	3,500	2,000 has/yr	2	Poor	Low Sustainability
Extent of Air Pollution[11] (10 monitoring stations)	50	20%	1	Bad	Very Low Sustainability
Extent of Water Pollution[12]	15	20%	3	Fair	Fair Sustainability
Compliance to Water Abstraction Limit[13]	6	50%	1	Bad	Very Low Sustainability
Mine Tailings[14] (%Non-rehabilitated Mined-out Areas)	90-100	50%	1	Bad	Very Low Sustainability
Overall Index Rating	-	-	2.07	Poor	Low Sustainability

Source: DENR Study for ENR Framework Plan (2004)

1 % forest cover in total forest lands;
2 % live cover remaining in good to excellent condition or with 50-100% cover;
3 % cover remaining;
4 % cover remaining;
5 Ratio of latest CPUE with average of last 5 years;
6 % of endangered wildlife (50% of 283 endemic species of mammals & birds);
7 % of NIPAS areas degraded (proxy indicator - % of the total number of national parks degraded);
8 % of total eroded areas suffering from moderate to severe erosion;
9 % of solid wastes in Metro Manila that is collected and properly disposed;
10 Number of hectares of agricultural lands converted annually;
11 % of total number of monitoring stations in Metro Manila exceeding standards for TSP;
12 % of total number of water bodies surveyed which are polluted
13 % compliance to withdrawal limits;
14 Incidence of mine tailings pond collapse or massive spill within last 5 years or % of non-rehabilitated mined-out areas and abandoned mines.

Environmental policy and legislation

The Philippines has a strong history of commitment to the protection, conservation, and sustainable use of environmental and natural resources. The environment regulatory frame in the Philippines is very progressive, but reality is very far from this policy and legal picture. In practice, some of the mechanisms are complex to implement and political will is insufficient.

1. Policy and action plans

1.1. Sustainable development plans

The 1977 **Philippine Environmental Policy** and the 1977 **Environmental Code** provide the framework and mandates necessary to implement a comprehensive program of environmental protection and management.

Environmental priorities are most clearly articulated in the 1992 **Philippine Strategy for Sustainable Development** and the landmark 1997 publication **Philippine Agenda 21**, which describes the main thematic and spatial priorities. It provides goals and guidelines for sustainable national development identifying the main themes and specific regions that will be targeted.

The Agenda 21 defines a number of aims in the environmental sector, such as the integrity and carrying capacity of the environment and natural resources are not degraded, but rather conserved; protected and enhanced in the process of development; environmental management tools in policy and decision-making are adopted and environmental protection is viewed as a shared and indivisible responsibility of all individuals, families, communities and other institutions in society.

In order to achieve these objectives, the following strategy elements are strongly recommended in the Philippine Agenda 21: (1) A scale of interventions that are primarily area-based; (2) focus on integrated island development approaches, where applicable; (3) people and the integrity of nature are at the centre of development initiatives. This implies the strengthening of roles, relationships and interaction between stakeholders in government, civil society, labour and business.

The **Medium Term Philippine Development Plan (MTPDP) 2000-2004** sounded off a warning on the alarming state of the environment in the Philippines and called for concerted efforts at arresting continuing degradation. The plan also identifies environment and natural resources as one of the nine areas which will contribute to economic growth and job creation[35].

MTPDP 2004-2010 priorities on environment and natural resources are to pursue sustainable and more productive utilization of natural resources; to promote responsible mining; to protect vulnerable and ecologically fragile areas; to reforest 1 million has. in 140 priority watersheds; to provide water to 200 waterless barangays; to improve air quality in major urban centres and reduce air pollution (total suspended particulates) in Metro Manila by 90 %; to replant mangrove starting in 10,500 has in 200 LGUs and initially establishing 85 marine sanctuaries and to mitigate flooding and landslides.

[35] The other areas are trade and investment; agribusiness; housing construction; tourism; infrastructure; fiscal strength; financial strength; and labour.

The environmental sustainability goal in the MTPDP 2000-2004	
Goal 7: Ensure environmental sustainability *Target 9: Integrate the principles of sustainable development into country policies and programmes to reverse the loss of environmental resources* *Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water*	*Chapter 3 on environment and natural resources promotes the concept of sustainable development.* ➢ *Three of five major thrusts on environment and natural resources pertain to the sustainable and more productive utilization of natural resources (Chapter 3; 48-52).* ➢ *Specific targets have been set for some areas (e.g. coverage and protection of coastal and marine eruptions (Chapter 3; 51).* ➢ *The fourth thrust of the chapter aims at creating a healthy environment focusing on air, water resources and waste management (Chapter 8; 52-55).* ➢ *One item of the President's 10-point agenda is the provision of water nationwide which will be achieved through the strategies found in Chapter 3 on Environment and Natural Resources.* ➢ *Target on access to safe water supply is included in Table 12.10 (Chapter 12; 161), with priority accorded to 200 waterless barangays in Metro Manila and 200 waterless municipalities.* ➢ *Specific targets have been set to improve access to potable water (Chapter 8;53)*

1.2. Renewable energy plans

The **Renewable Energy Policy Framework** was launched in 2003. The Strategy include, among its priorities, to ensure the compliance with environmental standards and to promote energy efficiency and conservation programmes. The main goals of this Policy Framework are to double the removable based energy capacity of the country within 10 years and to convert Philippines in the largest geothermal and wind energy producer in the area.

1.3. Biodiversity conservation plans

The **National Biodiversity Strategy and Action Plan** (**NBSAP**), prepared in 1997 with the support of the UNDP is anchored on the framework of man being at the centre of ecosystems and resource interaction and the need to balance the utilization driven policy which entails modification of biodiversity for human needs with the conservation driven policy for maintaining natural biodiversity. In 2002 an iteration of the NBSAP was undertaken trough the **Philippine Biodiversity Conservation Priorities Program**.

1.4. Forestry plans

The long-term goals for the Philippine forestry sector were elaborated in the **Master Plan for Forestry Development**, which has a time horizon of 25 years from 1990[36]. The major target of the master plan is to increase forest cover from 19% in 1990 to 26% by 2015. The Master Plan for Forestry Development was recently reviewed and updated with technical support from FAO.

2. Legislation

The commitment of the Government of the Philippines to environmental protection and environmental and natural resource management is expressed in the form of a

[36] Its goals are: 1) the equitable access for all Filipinos to opportunities for developing and managing the forest and partake of benefits derived from it; 2) scientific management, conservation and utilization of forest resources by a mix of managers from the private and the local communities in partnership with the government in appropriate ways and on a sustainable basis, 3) satisfaction of the needs of the people for forest-based commodities, services and amenities.

rather comprehensive legal and regulatory regime for the sector which contains in some cases what the ADB has called "very sophisticated approaches".

2.1. Air quality protection legislation

The **Philippine Clean Air Act** (1999) constitutes a crucial legal effort in the nation's air quality protection policies. The act set the provisions and guidelines to mitigate and reduce emission levels from stationary and mobile sources[37].

2.2. Renewable energy legislation

Presidential Decree No. 1442, otherwise known as **An Act to Promote the Exploration and Development of Geothermal Resources** provide various incentives for geothermal service contractors. **Executive Order 462**, issued in 1997, aims to encourage private sector participation in the exploration, of ocean, solar and wind resources for power generation and other energy uses. The **Electric Power Industry Reform Act** (**EPIRA**) mandates the Department of Energy to ensure that the restructured power industry will accommodate and have preferential bias for renewable energy technologies and projects. The rules governing the operation of the **Wholesale Electricity Spot Market** (**WESM**), as provided by the EPIRA, likewise include a special provision for renewable energy - generating units or "intermittent sources of energy" such as plants utilizing wind or ocean energy to further promote the market-driven development of a renewable power industry.

2.3. Forestry legislation

In June 2004 the Government EO 318, entitled **Promoting Sustainable Forest management** updated the PD 705 **Revised Forestry Code**. The order identified watersheds as ecosystem management units to be managed through a scientific and community base approach that would involve LGUs. An update **Sustainable Forestry At** is under discussion in the Congress.

2.4. Biodiversity protection legislation

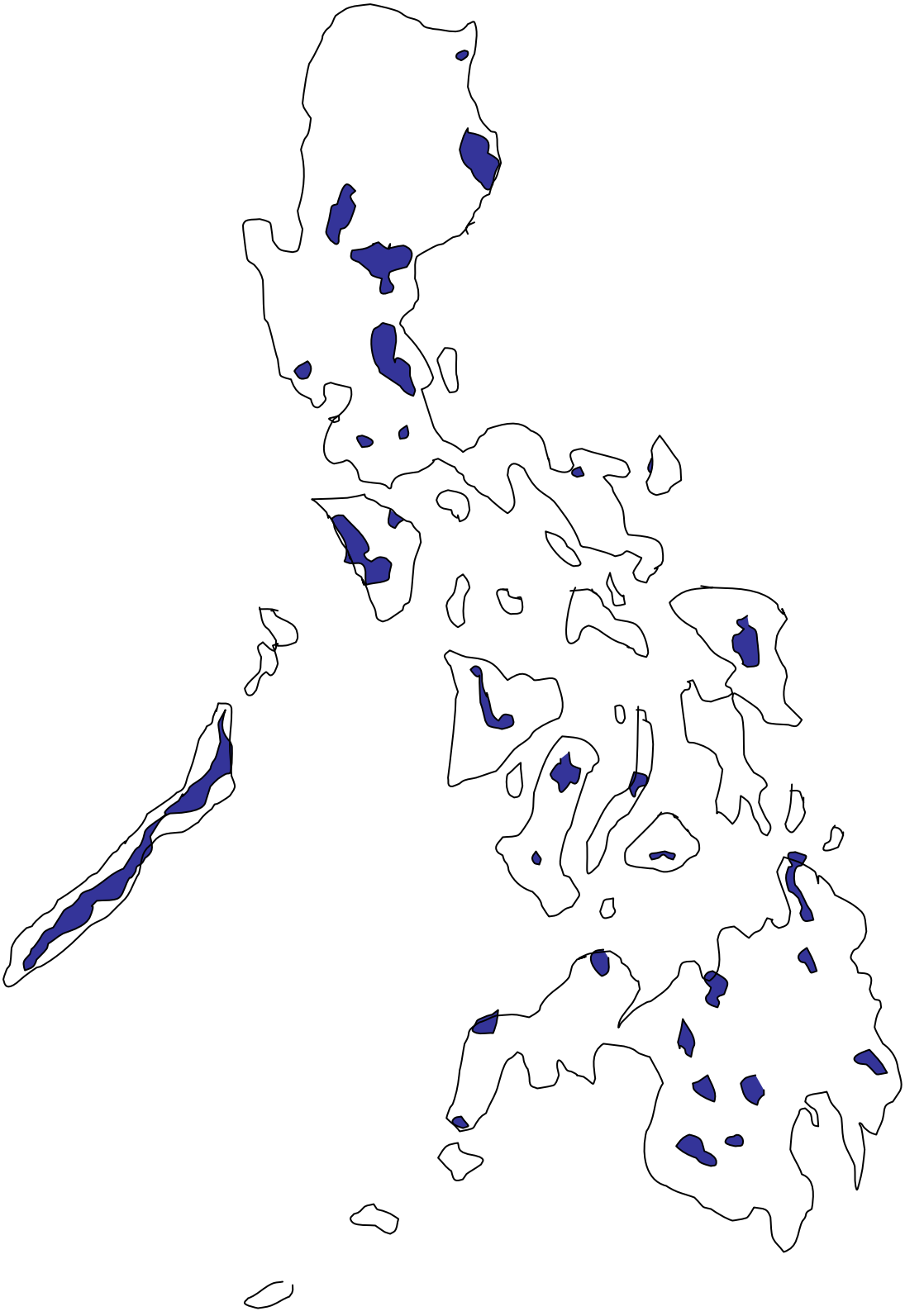
The main legal instruments for biodiversity protection include the **Guidelines on Biological and Genetic Resources** (1995) and the **Wildlife Resources Conservation and Protection Act** (2001). This is a law that regulates wildlife trade in the country. The Act attempts to conserve and protect wildlife species and their habitats to promote ecological balance and enhance biological diversity. It aims to regulate collection and trade of wildlife and shall initiate and support scientific studies on the conservation of biodiversity.

2.5. Land Protected Areas legislation

The **National Integrated Protected Area System (NIPAS) Law** was established in 1992 and is the responsibility of DENR. It replaced the **National Parks Law,** approved 60 years earlier. This single piece of legislation introduced the concept of local participation in protected area management at a time when the common practice of most governments in the Asian region was a strict protection zone policy. The EC NIPAP project was a key tool in the implementation of the NIPAS Act, supporting the conformation of the first 10 protected areas in the country under this law.

[37] This paved the way for the elimination of leaded gasoline in Metro Manila in 2000, followed by a nationwide phase-out in 2001.

Main Protected Areas



The NIPAS law attempts to address the problems of protected areas management by exposing the twin objectives of biodiversity conservation and sustainable development. The fundamental importance of this law is that now the environmental legislation can take precedence over logging concessions and mining applications. Another positive factor of the law is that it has taken a system, rather than a site-based approach.

Under NIPAS, there are 244 protected areas classified under various categories according to the NIPAS protected area classification system and at varying stages of approval.[38]. Nevertheless, this figure included some areas with very small environmental interest, such as historical places and other figures. On the other hand, the list includes some really small sites.

The NIPAS Act is considered landmark legislation not only by conservationists in the country but by international environmental policy makers as well.

2.6. Marine protection legislation

Main legislation in this issue includes the **Marine Pollution Decree** (1976), the **Water Code** (1978) and the **Water Crisis Act** (1995). The **Agriculture and Fisheries Modernization Act** (1997) has initiatives aimed to advance the nation's fisheries management, specifically projects on marine fishery reserves.

The **Fisheries Code** from 1998 designates coastal waters within 15 km as part of municipal waters, and assigns responsibility to LGUs for their management and protection. The Code prescribes for the formation of multi-sectorial Fisheries and Aquatic Resources Management Councils (FARMC) at the municipal and barangay levels to enforce national laws and local fisheries ordinances. The FARMCs essentially regulates entry of commercial fishing vessels within the municipal waters; protects specific areas selected as marine sanctuaries; appropriates rights for fish pen and fish cages culture; as well as regulates the use of destructive fishing practices.

Marine protected areas

Among the South East Asian countries, the Philippines have the most number of marine protection areas. Due to overlapping of jurisdictions among agencies, the total number can only be estimated in over 500. Nevertheless, most of these areas are just legally designated on paper, but for which insufficient resources have been allocated to implement the protected area management strategy. The management of Philippine marine protected areas and achievement of conservation goals suffer to some extent from legislative and administrative instability.

2.7. Fresh water legislation

One of the oldest legal initiatives in water protection in the country is the **National Water and Air Pollution Control Act**, dating from 1964.

The **Clean Water Act** was passed in 2004[39]. The Act seeks to designate specific water management areas and establishes a **National Sewerage and Septage Management Program** that will allot funds for constriction and rehabilitation of wastewater management infrastructure.

2.8. Land use legislation

The reform process of the Land use legislation started in year 2000 with the implementation of the **Land Administration and Management**

[38] Among them are two ASEAN heritage parks (Mt.Apo and Mt.Iglit-Baco).

[39] Rules and regulations for this Act are currently being drafted and debated.

Project, designed to determine possible improvements to the country's land administration system and develop new ways to improve security of land tenure and efficiency of land markets. One of the results of the project was the filing of the **Land Administration Reform Act**.

2.9. Mining legislation

The **Philippine Constitution** grants the State the option to directly undertake mining activities or to enter into the different modes of mining agreements with Filipinos or 60% Filipino-owned corporations. This provision is interpreted as giving preference to Filipinos in the grant of mineral rights, privileges and concessions. For large-scale mining, the Constitution grants the government the option to enter into an agreement for either financial or for technical assistance from a foreign corporation.

Under the **Mining Act** (1995), all public and private lands are open to mining operations. It states: "all mineral resources in public or private lands, including timber or forestlands... shall be open to mineral agreements or financial or technical assistance agreement applications."

Indigenous groups, NGOs and religious confessions –including the Catholic Church have challenged some provisions of this Act, and specifically the constitutionality of the possibility of foreign companies to own 100% of mining projects. These groups also content the conflict between this Act and the Indigenous Peoples Reform Act. After various years of uncertainty, in 2004 the Supreme Court ruled against the constitutionality of the Act. The motion for reconsideration by the Chamber of Mines and the DENR was later decided in their favour, with the Supreme Court reversing its original position.

While the Mining Act liberalized the mining sector to attract capital investments into the industry, the general framework of the **People's Small-Scale Mining Act**[40] seemed to stifle the development of small-scale mining, regulate and control the industry, and deprive small-scale miners, particularly indigenous communities, of an age-old economic activity.

2.10. Waste management legislation

On 2001 the Philippines approved the **Ecological Solid Waste Management Law**. It fixes that “local government units are hereby mandated to promote, encourage and implement in their respective jurisdiction a comprehensive ecological waste management that includes waste segregation, recycling and composting”. This Law specifically sets guidelines for solid waste avoidance and volume reduction through reduction and source and waste minimization measures that include composting, recycling, re-use before collection, treatment, and disposal in appropriate solid waste management facilities. It also requires LGUs to 'divert' 25% of trash collection to recycling in "material recovery facilities" to be constructed in every barangay or clusters of villages. The law set February 2004 as the deadline for the shifting from open to controlled dumping, but one year after waste continue to be disposed in open dumpsites all over the country.

Republic Act No. 6969, the **Toxic Substances and Hazardous and Nuclear Waste Control Act**, was passed by Congress in 1990. It bans consumption, storage or transport of toxic or nuclear waste into or through the Philippines. Violators can be subject to fines and confiscation of the banned substances. A core inventory of 38,000 chemical substances, known as the **Philippine Inventory of Chemicals and Chemical**

40 The act defines small-scale mining as mining that relies heavily on manual labour using simple implements and methods that does not use explosives or heavy mining equipment.

Substances (**PICCS**) has been prepared and was published in1999. Chemicals not included in the PICCS cannot be manufactured, imported or distributed.

2.11. Access to Genetic Resources legislation

Pursuant to the Convention on Biological Diversity, the Philippines was the first country to enact its own regulation on access to genetic resources and benefit sharing. **Executive Order 247** "Prescribing guidelines and establishing a regulatory framework for the prospecting of biological and genetic resources, their products and derivatives for scientific and commercial purposes; and for other purposes" was the result of a highly participatory process where scientists, government, NGOs and communities were involved. E.O 247 aims to regulate the prospecting of biological and genetic resources so that these resources are protected, conserved, developed and used in a sustainable manner. It also promotes the development of local science and technology. Its scope has been criticized for being too broad as it covers all kinds of bio-prospecting[41] activities, both commercial and academic. After almost 10 years of implementation, the initial excitement of the stakeholders has turned into disappointment and there is a need to improve the current system.

2.12. Environmental Impact Assessment legislation

The **Environmental Impact Assessment** (**EIA**) **System** was established in 1978. The System requires proponents of environmentally critical projects or areas to secure an **Environmental Clearance Certificate** (**ECC**) prior to construction.

Department Administrative Order 21 Series of 1992 (**Amending the Revised Rules and Regulations Implementing P.D. 1586**) articulates the division of responsibility between the DENR Environmental Management Bureau (EMB) and the DENR regional offices and other field personnel in implementing EIA system. Projects falling under the category of Environmentally Critical Project are being handled by the EMB. Those projects falling under Environmentally Critical Area are being handled by the **Protected Area Management Board** (**PAMB**) for each region. The EIA methodology basically consists of describing the project and evaluation parameters, identifying the environmental impacts, predicting and assessing the environmental impacts, formulating the mitigation measures, and designing the monitoring and enforcement measures.

Recent revisions in DAO 96-37 stipulates additional requirements namely, the **Health Impact Assessment** (**HES**) and the **Engineering Geological and Geo-hazard Assessment** (**EGGA**) for applications covering housing and other land development and infrastructure project.

Recently the Government has announced its interest on reducing the procedures and norms for environmental permissions. The DENR Secretary described them in October 2004 as "obstacles for private investment to the country". This de-regulatory approach could be considered positively if the idea is only to simplify the complexity of the current permissions system. But is seems that what the DENR is looking for is more to remove norms – rather than only to speed up the permissions - to attract more investors.

[41] Bio-prospecting is defined as the research, collection and utilization of biological and genetic resources for purpose of applying the knowledge derived there from to scientific and/or commercial purposes. E.O. 247 Appendix A. Definitions of terms (j).

2.13. Legislation on procedures for public participation on environment management

In the Philippines, there is a relatively long history of community participation on environmental development, but it has gained its momentum at both implementation and policy levels in the in the 90's. President Corazon Aquino included community forest management as a component of the **Constitution** in an effort to provide greater recognition of the rights of indigenous communities to upland forest utilization. Following the constitutional frame, five key events supported the decentralization and devolution of environmental sources to the communities:

(1) The already described **Philippine Master Plan for Forestry Development** stipulates that 1.5 million ha of the remaining 2.8 million ha of second-growth forest on land below 50% in slope should be put under community forest management over a 10-year period.

(2) The **Local Government Code** of 1991 devolving significant functions, powers and responsibilities to LGUs. In particular, Section 15 of the Code mandates LGUs to ensure the right of their inhabitants to a balanced ecology, and expects them to undertake community-based forestry efforts as well as other initiatives to protect the natural ecosystem.

(3) The mentioned **NIPAS Act**, which introduced with the objective of developing a comprehensive protected areas system and integrate the participation of local communities in protected areas management and decision-making.

(4) The **Presidential Executive Order No. 263** (1995) adopted **Community Based Forest Management** (**CBFM**) as the national strategy to ensure the sustainable development of the country's forest resources, and providing mechanisms for its implementation. This led to the creation of the process and procedures for the **CBFM Agreement** (**CBFMA**) – a 25-year production-sharing arrangement entered into by a community and the government to sustainably develop, utilize, manage and conserve a specific portion of forest land.

(5) The **Indigenous Peoples' Rights Act** of 1997 establishing definitions, principles and rights related to resource management in ancestral domains. The Act and its implementation rules and regulations strengthened the role of indigenous people, and provided participatory guidelines for the recognition, delineation and award of the **Certificate of Ancestral Domain Claim** (**CADC**). The new indigenous people's rights act grants these communities considerable power over their ancestral lands.

3. Key international environmental conventions

3.1. Kyoto Protocol

The Philippines has signed the **Kyoto Protocol** in April 1998. In October 2003 the Parliament approved a resolution ratifying it. With such concurrence the country can participate in the **Clean Development Mechanism** (CDM) system for CO2 reduction. Nevertheless, there are significant difficulties for the application of the CDM, such as the high development costs, the institutional framework -it is in a very early stage-, etc.

To implement the Kyoto Protocol, the country has prepared a **National Action Plan on Climate Change** (**NAPCC**). The NAPCC integrates climate change into government development plans and programs, designs mitigating measures, develops adaptation responses and catalyzes consensus for implementation of the action plan.

3.2. Ozone Depletion Agreements

Being a signatory of the two major **Multilateral Environmental Agreements** (**MEA**s), the **Vienna Convention for the Protection of the Ozone Layer** and the **Montreal Protocol on Substances that Deplete the Ozone Layer**, the country has adopted market-based instruments, legal measures, and public awareness to effect smooth transition from the main ODS (chlorofluorocarbons or CFCs) to non-CFCs technologies[42].

3.3. Biodiversity Convention

The Philippines was one of the countries to ratify the **Biodiversity Convention**, following the Rio Earth Submit of 1992. In response to its commitment to the Convention on Biodiversity, the mentioned Philippine Strategy for Conservation was developed by the Subcommittee on Biodiversity of the Philippine Council for Sustainable Development.

3.4. International Tropical Timber Agreement

The Philippines signed the **International Tropical Timber Agreement** and became a member of the International Tropical Timber Organization (ITTO) in 1983. The country then formulated the **Master Plan for Forest Management**.

3.5. Other international conventions

Other key international instruments Signed by the Philippines are the **Stockholm Convention on Persisting Organic Pollutants** –ratified in February 2004-; the **Basel Convention of Hazardous Wastes**, the **Ramsar Convention on Wetlands**, the **Convention on International Trade in Endangered Species of Flora and Fauna** (**CITES**), and the **Bonn Convention on Migratory Species**.

[42]From 1995 to the end of 2003 chlorofluorocarbons consumption fell by 58%, thus meeting the target ahead the schedule.

Environmental institutional framework

1. Structure and responsibilities

Various Departments and Agencies are responsible for the environmental sector (DENR, Environmental Management Bureau, Department of Agriculture, Department of Energy, etc). The fragmentation of responsibilities is a major problem in the planning of state and local programs.

Some of these institutions have **unclear and overlapping mandates** and coordination among them is inadequate. Lack of coordination among agencies is cited in numerous documents as an important impediment to proper environmental and natural resources.

Since decentralization in 1991, the LGUs have had sole responsibility for development planning and implementation in their own areas, yet they often do not have the necessary capacity (either in terms of staff or finances) and therefore continue to depend on the services of the ministries.

1.1. Department of Environment and Natural Resources

The **Department of Environment and Natural Resources** (**DENR**) (www.denr.gov.ph) is the primary government agency responsible for the conservation, management, development and proper use of the country's natural resources, including national parks, reserves and other protected areas. It compromises a number of Bureaus and attached Agencies:

(1) The **Forest Management Bureau** (**FMB**) provides support for the effective protection, development, occupancy management, and conservation of forest lands and watersheds. It collaborates with international and local development organizations in several forestry programs. (www.fmb.denr.gov.ph)

(2) Research pertaining to the development and use of forest products is carried out by the **Forest Products Research and Development Institute** (**FPRDI**).

(3) The **Ecosystems Research and Development Bureau** (**ERDB**) is DENR's Research and Development arm to assist interested parties who need technical or research-based information pertaining to the forest, grassland and degraded areas, upland farms, coastal zone and freshwater areas, and urban ecosystems. (www.laguna.net/~erdb/index.html)

(4) The **Land Management Bureau** (**LMB**) is responsible for land planning, but there is an overlap between its functions and the **Registry of Deeds and Land Registration Authority** under the Department of Justice; and the **National Mapping and Resource Information Authority**.

(5) The **Protected Areas and Wildlife Bureau (PAWB)** has the task to establish, manage and develop the National Integrated Protected Areas System, as well as the conservation of wildlife resources and information and education for nature conservation.

(6) The **Community-Based Forest Management Office** (**CBFMO**) is the official body dealing with the Community-Based Forest Management agreements at the national level.

(7) The **Environmental Management Bureau** (**EMB**) is the organism that deals with air and water quality protection. (www.emb.gov.ph).

(8) The **Mines and Geosciences Bureau (MGB**), as steward of the country's mineral resources, is committed to the promotion of sustainable mineral resources development.

(9) The **National Mapping and Resource Information Authority (NAMRIA)** is the central mapping and resource information agency of the country. NAMRIA has four major functions namely: mapping; oceanographic, hydro graphic and geodetic surveys; remote sensing and data analysis. (www.psdn.org.ph/namria/index.html).

(10) The **Environmental Management Bureau** (**EMB**) is responsible for recommendation and legislation of policies and programs for environmental management and pollution control.

DENR has at present 73 Provincial Offices (**PENROs**), or one for almost every province. There are also 171 local offices (C**ENROs**), each covering several municipalities in a province. PENROs and CENROs perform regulatory functions and are also responsible for public complaint-driven surveillance, facility inspection, review of EIAs, and evaluation of authorizations to construct permits to operate.

1.2. Other National Institutions

The **National Economic and Development Authority** (**NEDA**) is primarily responsible for formulating continuing, coordinated and fully integrated social and economic policies, plans and programmes. NEDA serves as the coordinating body for all foreign assistance through the **Investment Cooperation Committee** (ICC). (www.neda.gov.ph).

The **Department of Agriculture (DA)** is the principal agency of the Philippine government responsible for the promotion of agricultural development growth. (www.da.gov.ph). There are various bureaus and institutions attached to the Department of Agriculture with some environmental-related tasks, such such as:

(1) The **Bureau of Fisheries and Aquatic Resources** (**BFAR**) is, together with the DENR, the government agency mainly responsible for the national planning, policies and evaluation of the Philippine marine environment. BFAR provides technical assistance and training to coastal communities and local government managing their coastal resources. (www.bfar.da.gov.ph).

(2) The **Bureau of Soils and Water Management (BSWM)**, responsibilities include advise and render assistance on matters relative to the utilization of soils and water as vital agricultural resources; undertake the design, preparation and implementation of Small Scale Irrigation Projects and formulate measures and guidelines for effective soil, land and water resources utilization. (bswm.da.gov.ph)

(3) The **Fertilizer and Pesticide Authority** (**FPA)** is mandated to assure adequate supplies of fertilizer and pesticide at reasonable prices; rationalize the manufacture and marketing of fertilizer; protect the public from the risks inherent in the use of pesticides; and educate the agricultural sector in the use of these inputs. (www.fpa.da.gov.ph)

The **Department of Agrarian Reform** (**DAR**) is the principal agency responsible

for implementing the **Comprehensive Agrarian Reform Program** (**CARP**). Specifically, it shall improve land tenure through better access to and a more equitable distribution of land (http://www.dar.gov.ph). DAR has its own structures down to the municipal level and thus operates in relative isolation from other important service providers.

The **Department of Energy** (**DOE**) created in 1992, is the public institution mandated to prepare, integrate and coordinate the energy policies, including renewable energy sources. (www.doe.gov.ph).

The **Department of Interior and Local Government** (**DILG**) is the central government body in charged of the support and coordination of the LGUs. (www.dilg.gov.ph)

The **Department of Science and Technology** (**DOST**) is the premiere science and technology body in the country charged with the twin mandate of providing central direction, leadership and coordination of all scientific and technological activities, and of formulating policies, programs and projects to support national development. It has several offices providing research on environmental concerns[43], such as the **Philippine Council for Aquatic and Marine Research and Development** (**PCAMRD).** (www.pcamrd.dost.gov.ph/index.php).

The **National Commission on Indigenous Peoples (NCIP**) **(**www.ncip.gov.ph**)** is the primary government agency that formulates and implements policies, plans and programs for the recognition, promotion and protection of the rights and well-being of Indigenous Peoples (IP) and the recognition of their ancestral domains and their rights.

The **Department of Tourism** (**DOT**) through its Philippine Tourism Authority is in charge of ecological preservation, maintenance, and restoration of tourist attractions.

The **Laguna Lake Development Authority (LLDA)** is a quasi-government agency, organized in 1966 to carry out the development of the basin with due regard and adequate provision for environmental management. (www.llda.gov.ph).

By the end of 2004 the Government created the **Anti-Illegal Logging Task Force** to halt illegal logging in flood-prone areas and intends to prosecute illegal loggers as the same level with terrorists, kidnappers or drug traffickers. However, environmental crimes are not yet considered an anti-money laundering predicate offence - the criminal activity that gives rise to the funds to be laundered-, although illegal logging and protected species trade are widespread activities in the Philippines.

1.3. The Local Government Units

The **Local Government Code** (1991) gave certain environment protection functions to the **Local Government Units** (**LUGS**) – both to the provincial and municipal levels -, such as the adoption of measures to safeguard and conserve land for forest sources, approve and pass ordinances and resolutions to protect the environment, review the land-use plans and zoning ordinances and create **Natural Resource Offices (NRO)**. Under the **DENR Administrative Order No. 30** the LGUs shall share with the national government "... the responsibility in the sustainable management and development of the environment and natural resources within their jurisdiction; and implementation of the devolved functions... shall be pursuant

[43] Namely: Industrial Technology and Development Institute for environmental impacts of industries and technologies; Philippine Council for Industry and Energy Development for clean technologies; etc

to national policies and subject to supervision, control and review of the DENR".

On the ground, there are many overlaps and conflict between DENR's national mandate and the process of decentralisation. The local government code and the DENR administrative orders on devolution need practical interpretation on the ground. All plans relative to the land management of every municipality should be rationalized and integrated into the **Comprehensive Land Use Plan** of the locality. LGUs should Formulate **Municipal Environmental Codes** and **Forest** and **Coastal Management Plans** that serve as basis in implementing environmental related programs and activities.

1.4. Coordination Councils

The **Philippine Council for Sustainable Development** (**PCSD**) involved, among other public institutions, the NEDA, DILG, DENR, etc. as well as NGOs. It formally adopted a **Philippine Agenda 21** and developed **National Sustainability Plans**.

The **Inter-Agency Committee on Climate Change** (**IACCC**) is composed of about 15 government agencies and NGO representatives. It was created to coordinate various climate change related activities, propose climate change policies and prepare the Philippine positions to the UN and other issues relative to climate change.

The **Inter-Agency Committee on Biological and Genetic Resources (IACBGR)** is responsible for the implementation of the bio-safety legislation. Its members include representatives from the DERN, DOST, DA, DOH, DFA, the National Museum, the academy, NGOs, and indigenous peoples. It appears that there is a difficulty to get a quorum and resolutions are delayed because of irregular attendance and coordination problems.

The **Philippine Pollution Prevention Roundtable** (**P3R**) was formed in June 1997 to stimulate business and industry, the government, communities and other sectors to adopt cleaner methods in operations to address the growing pollution problems[44].

The **National Water Resources Board** is the primary agency tasked with enforcing the water Code of the Philippines[45].

The **National Ecotourism Development Council** (**NEDC**) is composed of DENR, Tourism, Interior and Local Government, Trade and Industry, Finance, Education, the Secretary-General of NEDA and representatives from the private sector and NGOs.

There are different mediating bodies at the local and provincial level. An excellent example of these is the case of the **Palawan Council for Sustainable Development** (**PCSD**), the complementary body of the **Palawan Strategic Environmental Plan**[46]. It was the first provincial plan to cover forest and biodiversity protection activities and constitute a milestone and a model in local government's environment management. In Agusan del Sur (Mindanao), the strategy

[44] The **National Pollution Control Commission** was created in 1976 but unfortunately it is not operative anymore.

[45] There are approximately 30 government agencies currently involved in water resource management. According to the WB (2004), "in addition to operating under unclear overlapping mandates, many of these agencies also lack sufficient budgets".

[46] **PCSD** was created thanks to the support of the **EC Palawan Tropical Forest Protection Project** (**PTFPP**). The PCSD also reviews environmental impact assessments (EIAs) of project proponents, in addition to the usual review process of DENR; co chairs all PAMBs with DENR and assists LGUs to make sure the local development plans are consistent with the SEP.

to integrate the various development efforts in the environmental sector in the province resulted in the formation of a **Provincial technical Group on Natural Resource Management**[47]. It provides a channel for co-operation and joint activities between different stakeholders (governmental agencies, NGOs, etc)[48].

The **Pasig River Rehabilitation Commission** (**PRRC**) has been created since 1999 specifically to pursue a pro-active approach to clean up and rehabilitate Manila's Pasig River.

2. Non-public actors

2.1. The NGOs

Non-government organizations (NGOs) as advocacy group play a major role in bringing environmental benefits into the community. The Philippines has one of the most-developed NGO communities and People's Organization (POs) in the Asia-Pacific region. The activities of local environment NGOs have risen in the country especially since the late Marcos and early Aquino periods. In the beginning, their role in shaping and facilitating environmental policy has sometimes been as strong as in the case of agrarian reform, illegal logging and environmental damage by irresponsible mining companies.
Several NGOs are reliable and show successful results in implementing innovative ideas on a pilot scale. It is said that some other are not very efficient or – even worse- bogus organizations.

Established and well-known local NGOs working on the environment protection in the country include:

Babilonia Wilner Foundation, founded in the Philippines on 1995, works to increase environmental awareness and practices by encouraging the exploration of cultural and ecological relationships through advocacy and education (www.bwf.org)

Environmental Legal Assistance Centre (ELAC) was formed in 1990 as a special project of the Protestant Lawyers' League of the Philippines (PLLP) to mobilize human rights lawyers on behalf of communities besieged by environmental problems. With six offices now established in central Philippines, ELAC addresses environmental degradation issues brought about by illegal practices, unsound policies, poor resource management and lack of awareness. (www.elac.org.ph).

Foundation for the Philippine Environment (**FPE**): Incorporated on 1992, aims to reverse the rapid destruction of the Philippines' natural resources by initiating programs and activities that strengthen the role of NGOs, peoples' organizations 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. (www.fpe.ph)

Haribon Foundation is a leading conservation NGO in the Philippines with more than 25 years of experience in addressing critical environmental problems at policy and community levels. Haribon has been at the forefront of finding workable environmental strategies for implementing sustainable development in the Philippines. It has made a significant contribution to pioneering initiatives such as the NIPAS, community-based coastal resources management, and environmental law education and practice. . It bases its conservation work on the best quality biodiversity research in the Philippines. The Foundation has a staff of over 40 professionals, with varied specialisations,

[47] Supported by the Ec founded SPARK project, implemented by VSO.
[48] There are other forms of co-ordination. For example, in Eastern Samar (Visayas), the coordination adopts the form of a cluster of municipalities.

and Haribon has been the recipient grant of a major EC grant in the recent years.

KALIKASAN-People's Network for the Environment is a network of NGOs currently composed of sectorial organizations, regional formations, a 10 national-level non governmental organizations. KALIKASAN was established to enable greater coordination and complementation in addressing the environmental issues which continue to worsen the lives of already marginalized people.
(www.geocities.com/RainForest/Jungle)

LRC-KSK / Friends of the Earth. Was established in 1987 with the aim of empowering the marginalized directly dependent on natural resources. This NGO has already developed expertise on the subjects on indigenous people's rights, environmental management, forestry issues, energy efficiency, community and local initiatives. It is the official Philippine affiliate of Friends of the Earth International. (www.lrcksk.org).

Non Timber Forest Products Task Force (NTFP-TF) is a collaborative network of Philippine grassroots NGOs established to address emerging livelihood needs of upland forest dwellers with the context of sustainable forest management. NTFP-TF is a beneficiary of the EC SGF (www.ntfp.org).

Philippines Business for the Environment (**PBE**) assists Philippine business to address to its environmental issues and concerns, trough corporative trainings, advocacy activities, etc. (www.pbe.org.ph).

Philippine Rural Reconstruction Movement (PRRM) is engaged in the design and implementation of community and habitat development programs across the archipelago. Founded in 1952, PRRM is one of the country's longest-serving NGOs. (www.prrm.org)

World Wide Fund for Nature-Philippines World Wide Fund for Nature (WWF) began with the desire to save Philippine marine environment. Through the years, WWF programs have grown to include work in freshwater and forest ecosystems and pioneering projects on toxics and climate change while maintaining WWF strong emphasis on oceans, coasts, and marine species. (www.wwf.org.ph)

Other relevant environmental organizations are the **Philippine Federation for Environmental Concern** (www.psdn.org.ph/pfec), **Environmental Broadcast Circle (**www.ebc.org.ph), the **Tambuyog Development Centre**, the **Soil & Water Conservation Foundation** (**SWCF**)-financially supported by the EC-, the **Centre of Empowerment and Resource Development** (**CERD**), the **Asia Forest Network (AFN**) etc.

The indigenous[49] organizations are developing a crucial role in environmental protection in the country. Some of the most important nets are:

Federation of Tribal Peoples of Palawan (NATRIPAL) represents about 70 village associations on the island. Through its project office it gives assistance to communities in relation to the delineation of ancestral domains, marketing of non timber forest products and the development of village resource management plans.

Kalahan Educational Foundation (**KEF)** was established to protect the ancestral lands and culture of the Ikalahan, a forest

[49] The term Indigenous Peoples refers here to the more than 12 million descendants of the original inhabitants of the archipelago who have somehow managed to their own customs, traditions and life ways.

dwelling people living in the Northern Luzon Mountains. KEF was one of the first groups which acquired a Certificate of Ancestral Domain Claim. Its ancestral lands are well managed. It is active in processing of forest fruits, forest rehabilitation, etc.

Upland NGO Assistance Committee (UNAC) is an umbrella organization of NGOs which supports upland communities all over the Philippines. Through its Upland Marketing Programme it assists indigenous communities in different ways.

Other indigenous associations are the **Indigenous Peoples Farmers Association**, the **Tribal Development Foundation of the Philippines** the **Provincial Council of Elders for the Province of Davao Compostela Valley,** the **Sibol Aetas Development Association** and several others at the provincial, tribal or local level.

2.2. People Organizations

Communities[50] have begun to participate in natural resource management over the last fifteen years through which the approach of participation has been diverse according to different circumstances. In some areas, natural resource management and community participation are derived from the conflicts between the government and the communities. Relationships of People Organizations (POs) with LGUs are mixed, with some LGUs providing support. Other LGUs are less friendly and consider the POs as competitors, while others are blatantly hostile. Community groups are in need of much greater levels of assistance to develop collective interests in the resource and build the capacity to implement programmatic requirements in a long-term and sustainable method. Further simplifications of programmatic rules and requirements are recommended, with particular emphasis on finding ways to best meet POs needs.

Citizens& environmental management

While citizen involvement in environmental management programs has statutory and policy foundations in the 1987 Philippines Constitution, the LGC, and the Philippine Strategy for Sustainable Development, the role of citizens in environmental and natural resource management is still generally limited to filing complains against violators. There are a number of significant exceptions, however. For example, the law requires citizen involvement in the preparation of EIAs.

3. Formal structures and procedures for public participation

3.1. Participation of local communities in Protected Areas management

As it was already mentioned, the NIPAS Act fixes the participation of local communities in protected areas management and decision-making. The participatory approach is supposed to happen mostly through the **Protected Area Management Board** (**PAMB**), which is composed of government officers, NGOs, and local community representatives.

Several NGOs and POs, however, point out that in many cases the PAMB has not been functioning effectively due to a number of limitations varying from lack of documents in local languages and resources for meetings and workshops, to the fact that the PAMB's chairperson is a government officer and that local people are usually shy to voice their concerns in the presence of government officials. So, at the end, the decision-making power often

[50] In the Philippines there is a very limited definition of communities. In fact *communities* are used to refer to People's Organizations, because the policy recognizes only communities that are registered PO's. This affects those members of the communities that are not part of the PO; therefore they do not receive the same benefits.

still remains firmly in the government's hands.

3.2. Community Based Forest Management Agreements

In the past, access to forest resources was mainly through licence agreements or permits which were dominated mostly by large-scale operations involving thousands of hectares of forest lands.

The **Forest Land Management Agreement**, and **Community-Based Forest Management** (**CBFM**) was adopted under the earlier Ramos Administration as the primary strategy for managing the country's forest resources. CBFM gives extensive rights and responsibilities to local people in managing forests and has shown promising results despite lethargic implementation by some elements of government. As of June 2004 there were 5,500 CBFM sites, covering and area about 5 million ha.. CBFMAs are predicated on participatory planning and bottom-up approaches for identifying and articulating the communities' resource development and protection objectives and activities.

The emergence of CBFM as the dominant mode of forest governance in the Philippines is a result not only of the physical reality of a degraded resource base, but also of the social reality of a political economy that severely assaulted the resource base through elite rent-seeking even as forest-dependent communities were marginalized in the process.

However, a number of serious problems are evident in the field. An array of legal problems and complications exist in many cases. Many communities do not know or fully understand their legal rights and options vis-a-vis CBFMAs. Likewise, some DENR policies, programs and projects may not fully respond to the needs, problems, potentials and perspectives of local communities[51].

Many communities lack the organizational and technical capacity to properly manage commercial aspects related to CBFMAs. They also face a lack of working capital and have little or no financial management experience. They need to function as business enterprises, and most have difficulties in negotiating fair market prices, finding affordable transport, arranging payments, assuring quality and scaling standards for forest products, and meeting pre-payment requirements of the DENR for forest charges. On the other hand, the DENR field offices are usually unable to provide all the assistance needed by communities, especially with regard to cooperative business management.

Forest management plans from CBFM areas are too focused on timber harvesting, the prevalence of subsidy-driven micro-enterprise development activities and limited non-forest and agricultural based livelihood projects. Nevertheless, there are a number of organizations –like those linked with the NTFP-TF network- promoting forest management based in non timber forest products[52] (like honey, fruits, herbs, nuts, oils, mushrooms, ornamental

[51] Community mechanisms are established wherein local policies are formulated to regulate forest use, with such regulation being in the form of self-inflicted limits on harvesting of forest products. This makes the task of forest protection easier for the state by effectively exploiting the sense of voluntarism among communities. However, while volunteer efforts would be much better than coercion, the reliance on unpaid labour may become forms of exploitation when seen against the reality that such volunteer efforts take time away from productive work. In almost all instances, volunteer forest protection work rests on the social capital belonging to local communities, and is not in any way remunerated.

[52] Non timber forest products have been defined as "*biological resources other than timber witch are harvested from either natural or managed forests*" (NTFP-TF).

plants etc.) witch can serve as raw materials for cottage industries or community based industries.

3.3. Certificates of Ancestral Domain Titles (CADTs)

After decades of struggle the Philippine government passed the Indigenous People's Rights Act in 1997. This is the first time that a state in the region explicitly recognized the rights of indigenous people to their ancestral domains, to self determination and to the free exercise of their culture.

The act affirms that native title is the major basis of the ancestral domain rights of indigenous people. It offers an option to apply for a Certificate of Ancestral Domain Title (CADT), which formally acknowledges such rights. The act defines ancestral domain as all areas belonging to indigenous cultural communities and indigenous people. This includes lands, inland waters and coastal areas occupied or possessed by indigenous people since time immemorial. Ancestral domains also include forests, pastures, burial grounds, worship areas, mineral and other resources that indigenous people may no longer exclusively occupy and use but to which they access for their subsistence and traditional activities.

At least 11 Certificates of Ancestral Domain Titles had been awarded, covering 367,000 hectares. Around 76,000 indigenous people are direct beneficiaries of these certificates, a tiny proportion of the total indigenous population of 8 million. The EC has been very proactive promoting CADTs trough various programmes and projects (CASCADE, Haribon project, etc.). The implementation of the act has proven to be difficult, primarily because of bureaucratic inadequacies and discriminatory behaviour against indigenous groups of politicians and civil servants.

3.4. Community-based coastal resources management agreements

Perhaps one of the country's strongest points in sea environment protection has been its history of developing **Community Based Coastal Resources Management** (**CBCRMs**). Slowly, through a series of projects and programs beginning in the early 1980s, the Philippines has built up capacity for CBCRMs. The intended was to initiate the move away from open access by encouraging coastal communities to establish various territorial use rights in fisheries. The major activities included: territorial delineation of the bay, control of fishing efforts, law enforcement, management and conservation of marine habitat, resource and ecological assessment, community organizing and involvement of LGUs.

A good case of community based coastal sources management is the **Marine Ecosystems Program** of Haribon Foundation that began in 1989 and was developed in marine sanctuaries in important dive sites in Anilao, Mabini, and Batangas.

Another successful experience was **El Nido Marine Reserve Project** in northern Palawan –supported by the EC through the PTFPP- , an effort of co ordination between tourist resorts, NGOs and government agencies and Palawan Council for Sustainable Development (PCSD) to manage the tourist activities in the area in a sustainable way. There is now a substantial body of experience in this form of coastal resources management among various institutions including national and local government units, NGOs, and academic and research institutions. Nevertheless, despite what have been accomplished so far, there is unabated destruction and depletion of coastal resources.

4. Capacity & financial resources of the authorities responsible for environment

4.1. Department of Environment and Natural Resources

DENR has traditionally suffered a poor reputation due to its failure to redress the trend in environmental degradation of the country's natural resources over the last 30 years. The Department's mandate is often compromised by central government policies[53].

Human resources capacity

According to the 2004 revised organizational structure, more than 22,000 staff work in the DENR and its respective bureaus and regional offices in the 13 administrative areas of the country.

In 1991 the Philippines government accepted the challenge of reforming the DENR launching a major decentralisation programme to bring foresters closer to rural people. Many DENR staff was relocated to the regions and community forest management was promoted. Nevertheless, DENR human resources policy is inefficient and still today most of the staff is not working at the field level. .

The majority of the sites being designated under the NIPAS law do not benefit from large-scale founding.

DENR has 74 provincial offices (PENROs) and 170 local offices covering several municipalities within a province (CENROs). The PENROs and CENROs perform mainly regulatory functions and are responsible for public complaint-driven surveillance, facility inspection, review of EIAs, authorisation of logging and mining permits, etc.

According to a study conducted by the EC supported ARCBC project, the total staff dealing with the management of protected areas is only, 1,246, and, of them, only 733 is field staff (1.4 staff per every 1,000 km2).

Financial resources

According to the World Bank's study on the Governance of Natural Resources in the Philippines (2003) DENR's annual budget has only grown from P. 5.16 billion in 1997 to P. 5.6 billion in 2002, but declined as a percentage share of GDP from 0.2% to 0.13%, despite average annual growth of the economy in the same period. The World Bank's study also confirms that as a percentage of the national budget, the DENR budget has steadily declined from 1.05% in 1997 to 0.6% in 2002[54].

DENR by the nature of its mandate has the potential to raise a large part of its revenue through environmental taxes, penalties, entrance fees, publications etc.

About 70% of appropriations to DENR have historically been for core programs, with the remainder being for targeted projects. Appropriations for co-financing of international development assistance activities (loans and grants) have historically comprised about 20%, and nationally-funded projects comprising about 10%.

The public budget for protected areas in 2003 was only is only 50 € per Km2. Consequently, many areas of international importance, which support unique biodiversity, are receiving little or no money from national level.

[53] For example, in early 2005 the President lifted logging bans in parts of Mindanao and the Supreme Court's ruling on allowing new mining concessions to national and international companies in places such as Samar puts forest under new pressures. The President's 10 Agenda also makes no reference to the environment, even as a cross-cutting issue.

[54] In Thailand the Ministry of environment receives an average 1.5% of the national budget.

DENR field employees earn minimal salaries and there is not enough budget to cover their basic needs. Their transportation allowance, for example, is P50 monthly (les than € 1).

In-house corruption is another concern. There is a lack of internal controls to curb bribery, which has traditionally been notorious with respect to illegal logging and mining concessions. The fact there are multiple standards for land valuation have also complicated matters for government institutions, including DENR, as these offer ample opportunities for corruption at the local and national levels. Some Environmental NGOs point out that many politicians and DENR staff are into the illegal logging business.

Lack of co-ordination

The Department has tended to operate in isolation from other line agencies which are closely linked to environmental concerns, despite several mechanisms in place to aid such co-ordination.

The DENR is mandated among others to be responsible for the management of all public lands, that is, all areas with slopes of 18% and above, or those classified as public forest. The DA, on the other hand, is tasked to promote agricultural development mainly focusing on areas classified as alienable and disposable (i.e., not part of the public domain, and therefore outside of DENR jurisdiction). On top of these spatial division of responsibilities between public lands and Alien and Disposable, the DLR's main areas of operation involved agricultural lands subject to land reform, and parts of the public lands subject to titling, and more recently, parts of the public land occupied by indigenous peoples. Although titling of public lands is a responsibility of DENR, it is also part of the overall agrarian reform programme led by DLR.

Functionally, there are overlaps in the delivery of services by these agencies. The DENR develops and implements environmental policies which affect agricultural development and property rights allocation; the DA provides agricultural support to areas considered part of the public lands, while DLR provides agricultural and environment and natural resources management support services packages to its agrarian reform beneficiaries. In providing such services, the DA and DLR have to recognise the policies of DENR on management of specific areas of the public domain. For example, there are different policies that govern management of watershed areas, parts of the residual forests granted community management rights, protected areas, and even timber harvesting in privately owned lands. As a client group, the beneficiaries of the DENR's titling program have yet to be mainstreamed in DLR's agrarian reform community program to receive the same level of support as the other beneficiaries of DLR administered land redistribution activities. In addition, the beneficiaries of the DENR's community-based forest management programs (CBFM) are practically outside the scope of the DA's services, even if they needed their support. This forces linkages to be established with NGOs, or other assisting organisations, and occasionally through institutional collaboration between the agencies.

4.2. LGUs

The DENR chose not to devolve its functions to the LGU level. As a result the LGUs effectively assume many of the functions of DENR in the form of Provincial and **Municipal Environmental Officers** who are entrusted with the management of natural resources in their locality. These policies and programs are enforced through municipal ordinances,

following the national policies and guidelines set forth by the DENR.
LUGs urgently needs staff with experience in environmental legislation, conservation of marine and forest resources, protected area design and management, land-use planning, and community-based forestry. Most importantly, they need from DENR information on the location, conservation importance and conservation requirements of priority sites for land-use planning.

There has been only limited international support for conservation awareness and capacity building at the local level. LGUs are currently an untapped force for conservation.

The ability of LGUs to finance environment programs and projects is severely constrained not only by the lack of total resources but by the allocation of most of their resources to recurrent expenditures for salaries and regular operating expenses.

Of the total LGU expenditure about 90% went to such recurrent expenditures. In the past, national government provided additional subsidies to local governments for environmental projects and coastal resources management. Recent policy changes were issued to eliminate these subsidies in order for LGUs to perform better in revenue-raising and expenditure management. The newly created **Municipal Finance Corporation** is intending to centralize and rationalize financial assistance to LGUs from the national government.

Puerto Princesa: An environmental champion

Puerto Princesa City (Palawan) has consistently won the award of being the cleanest and greenest city in the Philippines. As the WB recognizes, "the city has not only been at the forefront of environmental protection but has also paved the way for others". Puerto Princesa has lunched massive reforestation programmes put an odd-even scheme for tricycles, constructed one of the first sanitary land fields in the country…

Integration of environmental concerns into the main economic sector

1. Forestry

From the 1960's the Filipino Government and the private sector were able to reforest 1.6 million hectares of forest land. In fact, the total area deforested during the same period far exceeded the total area reforested[55]. Some private companies (such as Paper Industries Corporation of the Philippines –PICOP- and Provident Tree Farms) reforested via tree plantations within their concession areas[56].

In the 80's, a major milestone in the country's reforestation efforts was the **Master Plan for Forestry Development**. This program was given a boost by the ADB loan for $240 million in 1988 and became the **Forestry Sector Project**. The project targeted the reforestation of 1.8 million hectares, but only reached 0.27 million of hectares[57].

The 1990s continued to see numerous community-based and integrated development projects implemented by the Government, NGOs, LGUs, and people's organisations. As we have seen, community based forest management through different types of tenure instruments was adopted as the national strategy for reversing the destruction of Philippine's remaining natural forests.

Besides social and community forestry, **reforestation** activities have also included large-scale government and industrial plantations and private tree farming. The latter has cropped up spontaneously in response to market demand, particularly in Mindanao, Luzon, and Cebu. It has been suggested that private land reforestation in the last decades may have actually led to increased forest cover in various places. Many upland farmers have adopted new role-tree planters. Responding to market signals, upland farmers in Mindanao have suddenly been planting a fast-growing, timber species on parcels going out of annual crop production. Results have been mixed with some promising cases and others are not quite in each of the approaches, depending on the circumstances.

"Rainforestation"

*The Leyte University and GTZ **Applied Tropical Ecology Program in Leyte Project**, Philippines, initiated in the late 90's the rein-forestation model, a new holistic approach for reforestation, based on fundamental ecological research an agro forestry production.*

The main concept of this system is to plant endemic fruit and lumber trees at a high density and a high degree of diversity in order to achieve a three story plant structure which aims at resembling the natural rainforest, instead of planting traditional alien timber trees. For intercropping purposes the trees are suggested to be cultivated together with conventional tropical agricultural crops as intercrops. The result is a home garden-type of an agro forestry system.

Haribon-with the support of the EC- and other NGOs are now promoting rain-forestation as an alternative to traditional reforestation.

[55] By 1973, there were 91 governmental reforestation projects (46 in Luzon, 31 in Visayas and 14 in Mindanao) with reforestation funds derived from timber concessions.

[56] PICOP also pioneered smallholder tree farms among upland farmers near the concession through partnerships.

[57] The poor results could be explained by the lack of employment opportunities, coupled with the uncertainty of being able to harvest the planted tree in the future

2. Agriculture

The Government is leading numerous programs and initiatives in order to improve the agrarian livelihood situation of the rural population in a sustainable manner. The DA implements the **Key Production Area** (**KPA**) development approach to sustainable agriculture. The KPA approach is based on the need to optimize the use of limited land and water for the food requirements of the growing population and foster "export winners" within the context of equitable and sustainable development. It encourages farmers and fisher folks to produce specific products suitable to the land, water resources, and climate of specific areas in the country.

Appropriate land use management systems and soil conservation techniques have been developed to minimize land degradation, indiscriminate conversion, and consequent deterioration of land productivity. These farming techniques include c**ontour farming** and **alley cropping**, as well as and **water resource management**. **Low cost Slope Treatment-Oriented Practices** (**STOP**) developed by projects such as the EC supported UDP Project enable farmers to apply site-specific, environmentally sound, cropping strategies. The logic of restricting the cultivation of annual crops to gentle or terraced slopes and minor valleys are effective because of SWC interventions, and planting a mixture of fruit trees on long, steep slopes, gained acceptance. Farmers are now aware that further reduction in soil depths is not in their interests, but they need continuing assistance if they are to change their farming systems.

The **Small Water Impounding Projects** (**SWIPs**) have been developed as water storage mechanisms to supplement the water supply for subsistence farmers and as a deterrent to soil erosion.

3. Fishery

A national programme of assistance to LGUs is being implemented by the DA to prevent further environmental degradation by prohibiting further destruction of the mangrove ecosystem and reconverting abandoned, foreclosed, or unproductive fish ponds into mangrove farms and restoring productivity and ecological balance of exploited inland waters by prohibiting the use of destructive fishing methods.

The **Coastal Environment Program** (**CEP**) is being implemented by the DENR and integrates programs, projects and initiatives related to or concerning coastal environments. The program aims to promote community-based sustainable use of resources in coastal areas in the country by encouraging the use of environment friendly technologies, providing livelihood opportunities to coastal communities, promoting equitable access to resources, and building DENR capabilities in the management of coastal areas. The CEP has the potential to develop into a national coordination and policy unit, supporting integrated coastal management throughout the Philippines

4. Energy

Government projects an increase of geothermal installed capacity to 2,206 MW by 2014 which is promoted through the Geothermal Bid round in which geothermal sites are offered and bid out to private investors. This offers 10 prospective sites with 300 to 510 MW potential capacity. The evaluation of the bids for two sites is currently on-going.

The Philippines has a total **wind** potential of about 7,404 MW in sites with a power density of at least 500 W/m^2. Within the next ten years, the Government aims to install at least 417 MW of wind-based power projects.

Latest estimates reveal that the country's agriculture sector can potentially produce 277.7 MBFOE of **biomass** (mainly from sugar bagasse, rice husk, and coconut residues) in 2004, and could reach 327.7 MBFOE by 2013. With the implementation, in 2005, of the EC supported 1.0 MW rice husk-fired cogeneration plant in La Suerte Rice Mill in Isabella, several other projects in the rice industry are poised to follow suit.

It is estimated that in terms of **solar energy**, the country has an annual potential average of 5.1 kWh/m^2/day. Based on the 2001 inventory of solar technologies, a total of 5,120 solar systems have been installed. A solar manufacturing plant was inaugurated in March 2004 with a programme to initially produce some 8 million wafers equivalent to 25 MW of installed capacity, expected to increase to 150 MW by 2007. Moreover, in October 2004, CEPALCO's 1,082 kWp PV Plant in Cagayan de Oro was inaugurated.

Although the possibilities for utilisation of renewable energy sources appear to be significant and the prospects seem positive, there still exist several obstacles that have to be overcome. The risks related to fuel/feedstock supply are significant, especially with regard to biomass, wind and hydropower. Moreover, there are no standard terms for renewable energy sources supply contracts, and the existing excess capacity does not encourage any premium in the price of energy produced using renewable energy sources. One of the most significant factors preventing the commercialization of renewable energy technologies in the country is the reluctance of local financing institutions to lend to such kind of projects and initiatives. In addition, there are serious obstacles related to the often tedious procedures for obtaining permits and consents.

There is a set of fiscal and non-fiscal incentives offered for the exploitation of renewable energy sources in the country. In addition, the EPIRA mandates the Department of Energy to ensure that the restructured power industry will accommodate and have preferential bias for renewable energy sources technologies and projects.

A **Renewable Energy Act** is now being discussed in the Congress, the passage of which is expected to greatly facilitate the development and utilisation of renewable energy sources in the country. The EC assisted COGEN project has been crucially lobbying for this law.

Clean Development Mechanism

*Currently, there are 17 Project Information Notes (PINs) submitted to the **Inter-Agency Committee on Climate Change (IACCC)**, comprised mainly of small scale waste-to-energy projects and renewable energy projects. The first CDM project to be given a commitment for approval by the National Authority is a 25 MW wind project in Luzon.*

5. Mineral resources

The Mining Act declares areas covered by existing mining claims or that are deemed ecologically crucial as closed to mining operations. The latter includes old growth forests, watershed forest reserves, mangrove and mossy forests, national parks, bird sanctuaries and marine reserves, among others.

6. Water

In the past decade, the Philippines made steady progress in achieving safe water and sanitation for the whole population. It is on target to meet the Millennium Development Goals for water and sanitation—to reduce by half the number of people living without safe water and

sanitation by the year 2015. The Government recognizes the opportunity in investment presented by improving water and sanitation throughout the country. Therefore, they have been working with numerous bilateral and multilateral donors to support water and sanitation projects.

7. Industry and production

Environmental protests against un-friendly industrial projects have been very active in the Philippines since the mid 80's. The influx of investments and the rise of environmental awareness have brought about this phenomenon.

The Philippine government has come to recognize the economic and environmental benefits of the industrial ecology concept only in the last decade. In pursuit of promoting a sustainable production pattern, the **Board of Investments** should provide –according to various regulations- economic incentives for the practice of industrial ecology (i.e., industrial ecosystem) and by-product exchange among industries. But in practice, except for administrative concessions, however, there has not been much progress in the form of fiscal support or financial assistance as earlier envisioned.

A recent survey of the country's top 1,000 companies revealed that private firms are increasingly adopting voluntary environmental guidelines such as the **Philippine Business Charter for Sustainable Development** (**PBCSD**), **Responsible Care Program**[58] or the **International Standards Organization ISO 14000**.

In some other cases, the adoption of pollution prevention, minimizing waste, and clearer production strategies was initially spearheaded by foreign and locally funded projects like the **Metropolitan Environmental Improvement Project** (MEIP) and the **Industrial Environmental Management Project** (IEMP), which both aimed at reducing pollution. These projects have shown companies that environmental improvement is not just a cost factor but can be a beneficial factor. There are some companies voluntarily adopted these concepts to improve their competitiveness in the market while keeping the regulatory bodies outside their fences.

Most existing electronic industry facilities in the Philippines are entirely owned subsidiaries of the leading electronic companies from developed countries. Due to the strict enforcement of environmental laws in their countries, parent companies provide their Philippine subsidiaries with **regular information on environmental standards** and on how to respond to them. The Philippine electronic companies, in turn, provide employees seminars and trainings to familiarize the engineers and operators on new requirements.

Green procurement

*In March 2004, the Government Executive Order (EO) 301 established a **Green Procurement Program for all Departments, Bureaus, Offices and Agencies of Government**. EO 301 says that all Departments and agencies are to prepare their respective green procurement programs within 6 months and then the Program should target a timetable of full implementation within eighteen months, but there is still no information to what extend this program has been implemented so far. Nevertheless, all these initiatives in sustainable production and consumption have a very limited impact at the national scale. There is still too much to do to integrate environmental concerns in the Philippine industrial sector appropriately, especially at the micro, small and medium-size industries.*

[58] The local chemical industry has adopted the **Responsible Care Program** as a means of minimizing risks and potential adverse effects associated with its operations.

There is no reliable data on the extent of **industrial recycling** in the country, as it remains largely an informal-sector activity. According to the WB, data from some sectors indicate that recycling is on the rise[59]. **Eco-labelling** is a relatively new concept in the Philippines. In 2003 the **Department of Trade and Industry – Bureau of Product Standards** (**DTI-BPS**) launched the Philippines' **Eco-labelling Programme**. So far, only one detergent trademark is using the label.

8. Tourism

Although beach-based tourism remains mainstream in the Philippines, for the past few years, **ecotourism**[60] has slowly been gaining attention. Several products have been recently highlighted for their environmental and cultural practices[61]. Palawan for example, has focused on the conservation of its natural resources and capitalized on them as tourist attractions, partly with EC assistance.

Provincial governments are increasingly recognizing ecotourism as a means for achieving local objectives. Constraints for development include a threatened and diminishing natural resource base, difficulties on partnerships among stakeholders, lack of product development, and poor linkages with other sectors of the industry, particularly with regard to marketing and promotion.

There are a wide range of individuals and organizations involved in activities associated with planning, developing and marketing ecotourism. Their involvement in ecotourism is motivated by different interests, ranging from the need to conserve natural resources, develop local communities and alleviate poverty, and to provide an economic rationale for utilizing protected areas.

9. Financial sector

There are certain cases of good practises on greening the financial sector in the Philippines. The **Development Bank of the Philippines** (**DBP**) launched recently a code of environmental conduct for all banks that borrows from them. DBP has also revised their credit evaluation forms to incorporate environmental issues. The bank also used interest rates as an instrument to encourage borrowers to include environmental considerations in their investment decisions[62]. The **Land Bank** has set up a specific Environmental Unit, tasked to do environmental analysis of all project financing, expand their capacity to finance waste and water projects and incorporate environmental factors into its lending operations[63].

[59] **Philippines Recyclers Inc.** (PRI) is the largest and most advanced battery recycling facility in the Philippines. It supplies all lead requirements of the Ramcar Battery group, the largest battery manufacturer in the Philippines and one of the largest in Southeast Asia. The **Polystyrene Packing Council** is a group of producers who have set up a recycling plant for this product. The **Pulp and Paper Manufactures Association** is collaborating with various sectors to improve the recovery of waste paper.

60 Ecotourism is officially defined by DENR as "a form of sustainable tourism within a natural and cultural heritage area where community participation, protection and management of natural resources, culture and indigenous knowledge and practices, environmental education and ethics as well as economic benefits are fostered and pursued for the enrichment of host communities and satisfaction of visitors".

[61] Partly as a reaction to the late 90s Boracay water pollution problem, which has deeply affected attitudes to tourism development within the Philippines.

[62] This includes environmental targets such as pollution reduction in the loan agreement. The Bank plays an active role in encouraging clients, and its participating financial institutions under its wholesale lending program to include environmental considerations in their business and thrusts.

[63] Land Bank also expanded its Environmental Unit, accredited 13 environmental consulting firms that can be tapped for technical evaluations.

Environment and gender in the Philippines: Experiences form the field

Understanding the environmental roles and responsibilities of women in developing economies is critical to resource conservation and sustainable use. Overcoming the barriers to women's full participation in the management of resources is also a necessary first step toward the ultimate goals of poverty alleviation and sustainable development. A participatory approach to environmental project planning requires project designers to pay attention to women's needs and interests, within a mainstream project. FAO studies indicate that environmental projects that do not take into account the gender dimensions of socio-cultural conditions are bound to be unsustainable in the long-run and undoubtedly contribute to gender inequities in the local areas.

An evaluation of a community-based forest management project in Pagkalinawan shows that despite several positive impacts on peoples' livelihoods, the project had negative impacts for women. Its failure was rooted in the fact that it did not recognise women's knowledge and the gender divisions of labour in the community and in the household. The project issued land use certificates and land titles - to improve land tenure ship- only to men, who thus became the ones to have access to and control over resources. The project had the insidious effect of reinforcing patriarchy and establishing gender inequality in the community: Men had more opportunities to become representatives of the community and the market and to become powerful leaders in Pagkalinawan; men, and not women, had links to external agencies (e.g., markets) through the credit facilities of the project; men, and not women, had links to other economic and educational opportunities.

There are, indeed, some good examples, such as the case of a Mindanao's project aiming to reduce the amount of silt running into a lake used to generate electricity. The silt build up in the take, due to logging activities (a male-dominated activity) and increased farming (a female-dominated activity), was interfering with the generation of electricity. Soil conservation techniques to reduce the amount of silt running into the lake were taught to both women and men; both were asked to monitor the lake's water quality to determine if conservation efforts were working. The men showed no interest in monitoring and the women also were not interested until project planners learned that the women were interested in health issues. They adjusted the program to teach women about the effect that clean water has on the health of the family. Project staff expanded the water inspection to include monitoring for bacteria. With these changes, women began to participate in efforts to reduce the silt runoff into the lake. They also became involved in other environmental activities and their enthusiasm for managing the community's natural resources helped engage the men in soil conservation efforts.

From these experiences it becomes clear that for a community-based environmental project to succeed, the inclusion of the gender dimension based on acknowledgement of women's knowledge, views and participation is a must.

EC is becoming very active in this sector, with two new environmental projects targeting the financing institutions supported by Asia Pro Eco and the EC-ASEAN Energy Facility.

10. Transport

Low-leaded gasoline was initially introduced in the Philippines in 1994 following the **Clean Air Pact** introduced by the Chair of the Senate Committee on Ecology and Natural Resources. In addition, the PCSD Subcommittee on Atmosphere, with members from the government, civil society and business, began the consultations in 1994 with the oil industry, car manufacturing associations, government planning and policy bodies, and nongovernmental organizations, particularly tackling the health effects of lead and the economic impacts of the phase-out of leaded gasoline.

Metro Manila Development Authority (**MMDA**) is actively involved in anti-smoke belching apprehensions as part of its mission to make Metro Manila's environment conducive to work and live in. MMDA is also engaged in implementing the **Metro Manila Air Quality Improvement Sector Development Program**, a major project supported by ADB.

Cleaning up polluting *jeepneys*[64] by providing loans for clean engines is a move being promoted by the DENR. While black smoke emitted from jeepneys is high, over recent years engines have been imported; emissions from a single jeepneey vehicle are likely to have been reduced. However, jeepneey numbers have also increased[65].

11. Waste management

Multi-sectorial solid waste management Boards at the provinces and municipalities has been created in almost all the LGUs, but their performance continues to be poor. Some cities and municipalities are planning to convert their open dumps to controlled dumpsites and sanitary landfills but as in December 2004 there were are only 125 controlled dumpsites nationwide and 866 open and non controlled dumpsites. The Ecological Solid Waste Management act mandates the shift to sanitary landfills by February 2004, but here are only two operating in the country.

Specific measures are being planned to promote private sector participation in the management of solid wastes.

Waste management in Marilao

In 1997 Marilao municipality started to produce compost with the bio-degradable waste generation from households, two markets and small-scale enterprises. Compost application studies were carried out with the community stakeholders. From 1998-2001, the municipality invested human resources, time and logistics into the collection of raw materials (biodegradable waste), and the processing and use of the compost for agricultural production. The compost was sold based on an incentive scheme of a local ordinance. The users of the compost have experienced an average 16% per annum increase in yield and an 8% reduction in expenditures given the savings from reduced used of chemical fertilisers. While these moves in the right direction and are necessary components of any effort to solve the problem, they are not sufficient.

Other pilot experiences have been less successful. The main problems are lack of incentives for waste generators to consistently separate wet and dry wastes, problems in obtaining required quantities of waste, and inability to market the products at a price necessary to make a profit. Data from Manila suggest that small plants are too expensive to operate and produce too little compost. When all expenses are calculated, the costs can be enormous.

[64] A popular local meaning for public transport.

[65] There are over 500,000 jeepneys of all types (whether private or public) operating in Metro Manila at present. In a move to introduce new, cleaner engines to Jeepneys, the DENR, the **Federation of Jeepnee Operators and Drivers Association of the Philippines** (**FEDJODAP**), the Pilipinas Engine Remanufacturing and Reconditioning Corp, and Petron Corp have signed a Memorandum of Understanding (MOU) involving DENR providing a low interest loan for purchase of remanufactured engines with emission devices.

EC environmental cooperation in the Philippines

1. EC environment policies

1.1. EC environment policies in South East Asia

As outlined in the conclusions of the last **EC-ASEAN Joint Cooperation Committee** (September 2001), the priority areas for cooperation with the region in the environment sector will be climate change and energy efficiency, environmental and clean technologies, capacity building implementing and negotiating multilateral environmental agreements and coastal and marine environment. On the other hand, the Committee also mentioned that illegal logging and trade of illegal wood receive growing political attention and would be an important focus of relations with ASEAN in the years to come.

2004 communication from the Commission **New partnership with South East Asia** states that "Environmental dialogue and co-operation with South East Asia will be a priority in the years ahead. The Commission will continue to support bilateral and regional resource conservation and natural resource management projects and programmes".

1.2. EC environment policies in the Philippines

Following the **EC-Philippines Country Strategy Paper 2002-2006**, the overarching objective of EC co-operation is to support the sustainable (economic, social and environmental) development of the Philippines. The main areas of concentration for the co-operation are: (1) assistance to the poorest sectors of society, and (2) assistance to trade and investment. Two other, non-focal areas for co-operation are preconditions for sustainable development: support to human development and rights, and support to stability and security in the Philippines.

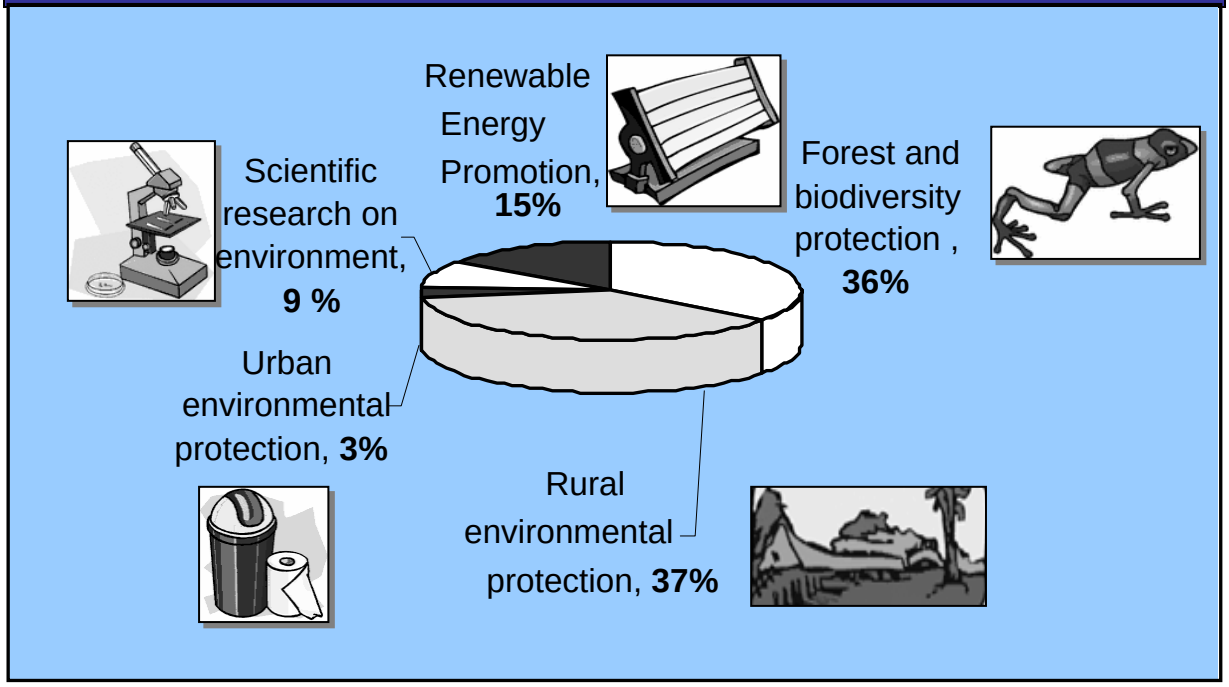
EC supports natural resource management issues either by integrating environmental components in the economic and social development projects, or through specific environmental protection projects. IN June 2005 the EC ongoing environmental actions in the Philippines totalized € 15 million.

The EC approach of treating environment as a cross-cutting issue contributes to sustaining a focus on developing it as an integral part of operations rather than as a sector with isolated projects that could fade away once funding priorities shift.

2. Review of the past environmental cooperation

The EC started working in the environmental sector in the Philippines in the final 80's. A large number of the projects were identified in response to the political reforms at the end of the 1980s and early 1990s. In the case of the stand-alone environmental projects, they aimed at implementing specific laws, such as NIPAP -designed to implement the NIPAS law-. The Rural Development sector projects and programmes respond principally to the EC's commitment to poverty alleviation, where environmental considerations are of paramount importance in the promotion of more sustainable development practices.

Distribution of EC funds in the Philippines within the environmental sector
% based on EC contribution



As part of the build up to preparing the 2007-2013 Country Strategy Paper for the Philippines, the EC conducted in March and April 2005 a **Review of Environmental Actions** –EC and Member States funded through environmentally specific, or environmentally related projects and programmes and covering all sectors of the environment[66].

The Review assessed the **efficiency** of environmental actions in global terms with the main aim of determining how far EC/MS-funded projects and programmes have executed their environmental actions according to original plans and budgets and proved value for money. In terms of the overall results achieved in meeting planned outputs and specific objectives, the Review found the vast majority of EC and MS-funded projects have been **effective**.

The Review found the **impact** of EC environmental actions has generally been limited and localized, although all projects reviewed revealed positive as well as negative impact. For example, most projects have attempted to strengthen and support local institutions and organizations, but they have only had a limited effect on strengthening the LGUs or DENR due to their low absorption capacity and the lack of political will at the central level to introduce reforms to facilitate the consolidation of developments locally and ensure laws are applied and enforced.

In terms of **sustainability**, the Review concludes the overall performance of EC/MS environmental actions over the last 15 years has been much lower than originally planned. Indeed, no project has succeeded in producing real changes in policy or reforms at central government level to bring about a reverse in the general

[66] The Review focused on an assessment of projects and programmes which were identified and implemented in the 1990s and completed by 2004. The main purpose of the Review was to determine the overall impact and sustainability of such actions following their completion.

trend of environmental degradation of the country's natural resources. Despite considerable effort, resources and time, most environment-related actions have only managed to produce a temporary or localised reduction in the rates of natural resource degradation, even when they have successfully gained Protected Area status. Soon after project closure poor and damaging environmental practices were found to reappear on an ever-increasing scale, unless another project was there to takes its place.

In addition the conclusion also points to a number of **external factors**, which it believes have contributed to the limited impact and sustainability of many EC funded environmental actions. These include: High natural population growth and migration in rural areas covered by many of the projects reviewed; reduced central and local government's capacity to invest in the environment: high concentration of the country's wealth and land in the hands of the few and the reversal of government policy at any given moment.

Review of Environmental actions by the European Member States

*The 2005 EC's **Review of Environmental Actions** marked a milestone in EC-Member States co-ordination. It was the first time that the EC conducted an evaluation targeting both EC and Member States development actions in the Philippines. These were the main findings concerning the environmental co-operation by the European Countries active on this field:*

- ***British co-operation** connected with the environment has also gained increased cost-effectiveness through the encouragement of British private sector investment in renewable energy, and more recently through the Global Opportunities Fund for Climate Change. In both cases, by targeting a more reliable department such as the DoE and ensuring the active participation of the private sector, limited financial resources have been used more efficiently than had they moved through traditional environmental channels, such as DENR.*

- ***Dutch Co-operation**. Despite a long-term commitment to the NGO sector since the late 1980s and the employment of reputable NGOs such as CARE in the AWESOME project, PRRM in El Nido PA (in co-ordination with NIPAP), or WWF in the Northern Sierra Madre Conservation Project, RNE has consistently experienced low performance levels, which in the case of the Northern Sierra Madre Conservation Project was stopped due to inefficient implementation.*

- ***German co-operation** has successfully built up the technical capacity of permanent and independent state institutions such as Leyte State University under the Tropical Ecology Project. This has ensured research and development activities in its 3 subsequent projects have been developed on the basis of co-management principles engaging both state and beneficiary communities in NRM. The involvement of the private sector in the rainforestation initiative is also a positive development, because it has helped to develop the assets of the forest for economic as well as environmental benefits. For example, the supply of abaca fibre to Daimler-Chrysler has proved both cost effective on the one hand and beneficial to the farmer in terms of an increase in farm income and improving the natural environment, on the other. It was also understood from the EC's Environmental Profile that NGOs such as Haribon are now promoting rainforestation as an alternative to traditional reforestation.*

- ***Spanish co-operation** decision to work within existing structures such as ICRAF (now WAC) and team up with other donors like AusAid has resulted in greater efficiency and cost-effectiveness. This has also been enhanced by its long-term commitment to supporting the Land Care initiative, which unlike most EC-funded projects, has meant funds can be regularly pin-pointed to where they are needed most. In the case of CRMP in Baler, Aurora, the project's efficiency may be less evident because it has its own project office and NGO staff that are not directly linked to ASCOT the main counterpart agency, or the provincial government.*

3. Current environmental cooperation

The EC Delegation is seeking ways to manage and articulate the current collection of projects related to the environment as a consolidated and coordinated portfolio within the context of an integral strategy for the environment. It is also acknowledged that establishing a general follow-up process with project partners is a major challenge in working with the Delegation's portfolio of projects relating to or impacting on environment, even if partners are working in the same locality.

2.1. Biodiversity and forest protection

Various EC specific environmental protection projects are focused on biodiversity and forestry protection. These projects have a participatory or community-based forest approach, which means that the forest management must be based on the participation of people who inhabit the forest[67].

Sharing and Promotion of Awareness and Regional Knowledge is a project implemented by Voluntary Services Overseas (VSO)-UK. It is a 42-month project that started in November 2003. EC contribution (€ 1 million) is 50% of the total cost. This project is funded under the thematic budget-line on Environment and Tropical Forests in Developing Countries. The goals of the project are to strengthen the capacity of local administrators and NGOs to implement community-based natural resource management.

The **Rajah Sikatuna National Park Biodiversity Conservation** project assists local people in conserving and enhancing bio-diversity in Rajah Sikatuna National Park (RSNP) in Bohol, while increasing family incomes through sustainable management of natural resources in barangays (communities) surrounding the park. It has a duration of 36 months and an EC support of € 0.65 million. (47% of the total cost).

The **Small Grants Program to Promote Tropical Forests** (**SGP-PTF**) programme is implemented by the United Nations Development Programme (UNDP) through the Regional Co-ordination office located at the SEARCA in Los Baños, Laguna Philippines. It is a regional action, covering Pakistan, Philippines, Thailand, Vietnam, Cambodia, Indonesia, Lao PDR, Malaysia, and Sri Lanka. The principal thrust of the SGP-PTF is the provision of small grants (€ 20,000 to € 200,000) to enable civil society organisations to implement small forest-related projects that promote sustainable forest use by local stakeholders. The total grant allocation for the Philippines is € 1.9 million (40 grants).

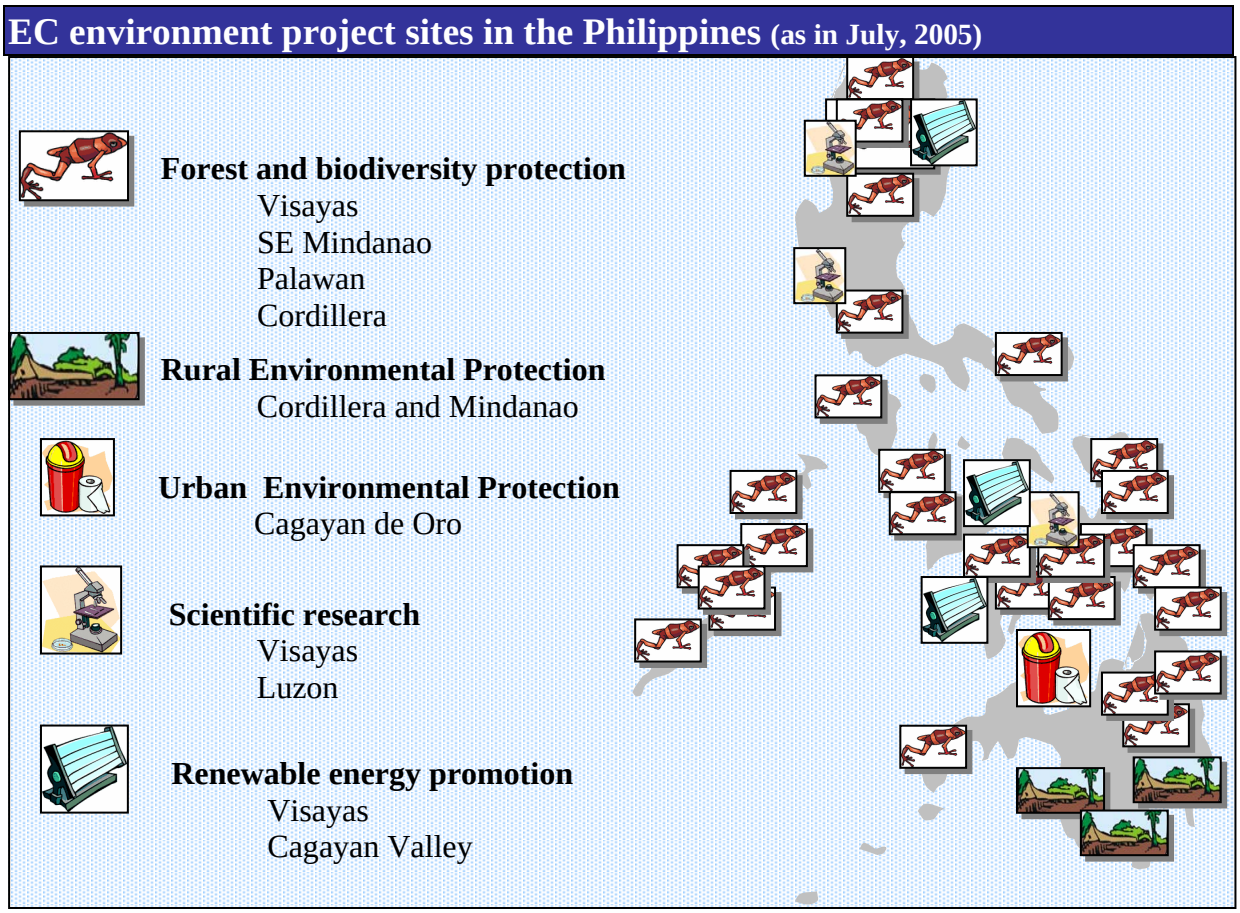
2.2. Rural development

The EC also integrate environmental protection in to the rural development actions. These projects support to local communities for the rehabilitation of their natural resource base. Examples of such activities include the establishment of marine sanctuaries, watershed rehabilitation, education and awareness, and promoting agro-forestry.

The **Upland Development Programme for Southern Mindanao** (**UDP**) started in 1999 and will last until 2006[68]. It is supported by € 18.3 million in grant funds from the EC and € 30.35 million in counterpart funds from the government, partner financial institutions, LGUs, and beneficiaries. The programme is implemented in Davao del Sur, Davao Oriental, Compostela Valley, South Cotabato, and Sarangani.

[67] Or they claim it as their home or have been traditionally dependent on it.

[68] A request of extension until mid 2007 is currently under consideration by the EC.



UDP addresses two main objectives: the development of a replicable model for sustainable upland resources management, and assistance to upland communities to help them address their subsistence needs as well as produce marketable surpluses through sustainable, market-led agricultural development. Environment friendly activities that UDP is developing includes the formation of a **Municipal Watershed Management Teams** in all covered municipalities and local development communication campaigns focusing on environmental awareness, and agro-forestry and hedgerow establishment projects covering 1,600 hectares of farmlands.

2.3. Urban environment protection

The only ongoing EC action on urban environment in the Philippines is the **Urban Environmental Resources Management and Food Security** project, situated in Cagayan de Oro, is implemented jointly by the local municipality, the Xavier University College of Agriculture, Facultés Universitaires Notre Dame de la Paix (FUNDP) and Namur City, Belgium. It is financed through the EC Asia Urbs Programme with € 0.49 million, and will end in December 2005. The project assists three Cagayan de Oro barangays in implementing the Ecological Waste Management Act. Three pilot areas for garbage segregation at the household level have bee established.

2.4. Scientific research on environment

The EC supports various projects on environmental scientific research in the Philippines through different programmes (**ASEAN-EU University Network Programme** –AUNP-; **Asia-EU Information and Communication Technology**; **International Scientific Coop. – Research for Development**; etc.), **Sustainable utilisation of plant genetic**

resources, **Cultural and Environmental Information Exchange**; **Strengthening of Agro-forestry & Watershed Management**; **Marine ecosystems research**; and **Improving the Quality of Maritime Education**. The total EC contribution to these projects is € 1.3 million.

2.5. Renewable energy promotion

The EC has a specific interest in promoting cogeneration and renewable energy sources as a significant element for sustainable development by reducing air, soil and water pollution and CO2 emissions.

The **EC-ASEAN Energy Facility** (**EAEF**) is a programme of co-operation between the European Commission and the ASEAN to facilitate partnerships between South East Asian and European organisations in developing specific joint projects in the energy sector. In 2004, the Energy Facility approved six projects targeting the Philippines, totalizing € 2.2 million. These projects address various problems related with the energy sector in the Philippines, such as the improvement of Coal-fired Power Plants or the capacity building for wind energy development

2.6. Environment and financial sector

The EC has recently awarded ADFIAP[69] with a € 0.3 million contribution from the Asia pro Eco Programme, to implement the project **Environmental Governance Standards for Development Financing Institutions in Asia**. The action intends to initiate an *EU-Asia Environmental Governance Partnership Initiative*. This partnership initiative will ensure a wide participation of DFIs in Asia in order to promote good corporate environmental policy and practices.

The EAEF project titled **Increasing Access to Local Sources of Financing for Renewable Energy Investments** is undertaken by the International Resources Group – Philippines (IRG) in partnership with Energy Economy Environment Consultants (EEEC, Thailand), Risoe National Laboratory (Denmark) and IT Power (UK).

Recognizing the fact that this reluctance roots from the lack of understanding of the technology and economics of renewable energy (RE), the IRG-P has conceptualized this project to assist financing institutions to recognize the potential of RE and benefit from it. This will be achieved by capacity building of local banks. The project is funded by the European Union with a grant contribution of € 428,000.

Environment and trade

EC has recently started supporting various projects to promote the protection of the environment in the framework of economic and commercial relations.

*Examples of this are the **Investing in a Sustainable Marine Aquarium Trade** project (EC contribution is € 0.2 million (from **Asia-Invest II**) and the **Modern-Indigenous handicrafts from the Philippines** (EC contribution € 0.09 million from the **Small Projects Facility**). The first aims to promote trade based on international standards developed by the Marine Aquarium Council. The second aims to expand European high end, fair trade opportunities for indigenous Philippine handicrafts made from Non-timber Forest Products.*

[69] ADFIAP is a non-governmental organization (NGO) in consultative status with the Economic and Social Council (ECOSOC) of the United Nation (UN). It is a founding member of the World Federation of Development Financing Institutions which comprises similar associations in Africa, Europe, Latin America, and the Middle East.

European Commission **Environmental Projects in the Phillipines** September 2004

	Subsector/project	Budgetary Line	Initiation	End	Counterpart	EC contribution	%	
Forest and biodiversity protection						**5,263,014**	**36%**	
1	ASEAN Regional Centre for Biodiversity Conservation (ARCBC)	Bilateral	1999	2004	DENR	1,346,000	9%	(**)
2	Integrating Forest with Local Governance	Env&TF	2001	2005	Haribon	1,268,014	9%	
3	Sharing and Promotion of Awareness and Regional Knowledge	Env&TF	2003	2006	VSO	380,000	3%	(**)
4	Rajah Sikatuna National Park Biodiversity Conservation	Env&TF	2003	2006	SWCF	653,000	4%	
5	Mt. Isarog Integrated Conservation and Development	Env&TF	2000	2004	CARE	980,000	7%	
6	Small Grants Program to Promote Tropical Forests	Env&TF	2000	2006	UNDP	276,000	2%	(*)
7	Community Forest Management Support	Env&TF	2001	2004	AFN	360,000	2%	(**)
Rural environmental protection						**5,480,000**	**37%**	
8	Central Cordillera Agricultural Programme (CECAP)	Bilateral	1996	2004	PU	2,300,000	16%	(***)
9	Caraballo&Southern Cord Agricultural Development (CASCADE)	Bilateral	1997	2004	PU	1,350,000	9%	(***)
10	Upland Development Programme for Southern Mindanao (UDP)	Bilateral	1999	2006	PU	1,830,000	12%	(***)
Urban environmental protection						**495,696**	**3%**	
11	Urban Environmental Resources Management and Food Security	Asia Urbs	2004	2005	Various	495,696	3%	
Scientific research on environment						**1,345,000**	**9%**	
12	Conservation and sustainable utilisation of plant genetic resources	AUNP	2004	2006	Various	200,000	1%	
13	Cultural and Environmental Information Exchange project	IT&C	2003	2005	Various	400,000	3%	
14	International Scientific Cooperation – Research for Development	ISC-RD	Various	Various	Various	745,000	5%	
15	Strengthening InstituteAgroforestry & Watershed Manag	Asia Link	2002	2006	DMMSU	300,000	2%	
16	Improving the Quality of Maritime Education	AUNP	2004	2006	Various	82,000	1%	(**)
Renevable Energy Promotion						**2,163,462**	**15%**	
17	COGEN 3-Activities	COGEN3	2001	2004	EDUFI	833,000	6%	(**)
18	Bagasse Cogeneration Project	EAEFP	2003	2004	FFHG	207,403	1%	
18	Field trailing and assessing the viability of energy crops	EAEFP	2004	2005	Zabaletta	193,667	1%	
18	Institutionalisation of Green IPP Network	EAEFP	2004	2005	EEEF	99,890	1%	
18	Innovative financial scheme for sustainable dev. of renewable energy	EAEFP	2004	2005	Balamiento	500,000	3%	
18	Information, Dissemination and Education campaign for biomass	EAEFP	2004	2005	GENESF	95,765	1%	
18	Rice Husk Plant	EAEFP	2004	2005	Bronzeoak	233,737	2%	
						14,747,172		

(*) *Regional project. EC contribution in the Phillipines only (actual figures)*
(**) *Regional project. EC contribution in the Phillipines only (estimation)*
(***) *Integral project. EC contribution in environment sector only (estimatative, as 10% of the total)*

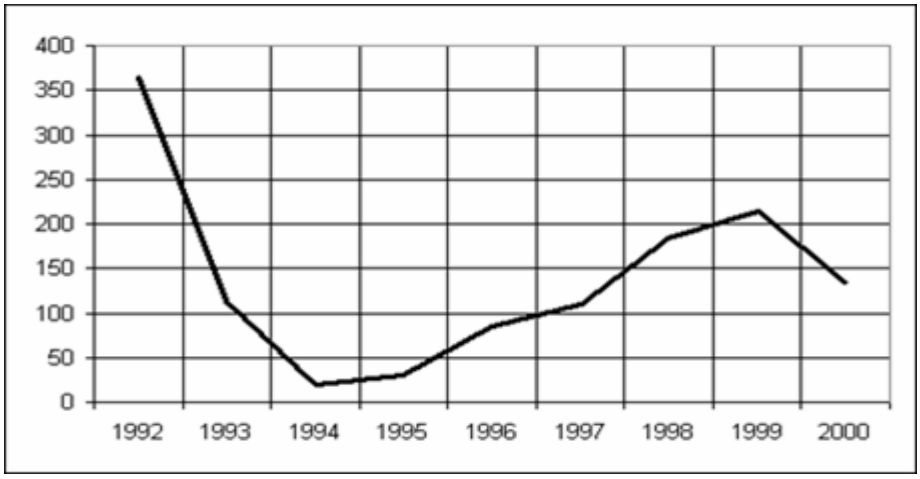
Other funding agencies

1.1. General tendencies on the involvement of other funding agencies

The international co-operation in the environment sector in the Philippines is now much smaller than in the 90's. Various donors have been reducing their fund's allocations trough the DENR in recent years, mainly because there is a certain sense of deception among some of then on the lack of clear commitments by the Government, the continuous changes in the priorities and the absence of coherence and continuity in the Department's policies. External financial resources for environment may come even fewer in the coming future. Most of the aid to the environmental and natural resources protection is now by-passing the DENR and directly channelled through NGOs and LGUs to beneficiaries.

International co-operation in the environment sector in the Philippines, 1992/2000

Year	Million euros
1992	364.5
1993	112.6
1994	18.8
1995	29.8
1996	85.5
1997	110.1
1998	183.3
1999	214.7
2000	134.6



2. Involvement of other funding agencies per sectors

2.1. Climate change

The Government of the Netherlands is supporting the **Capacity Development for the Clean Development Mechanism in the Philippines (CD4CDM)** project, that aims to develop the necessary institutional and human capabilities to allow formulation and implementation of CDM projects.

The British Government supports a communal biogas project called **Model Bio-Energy System for Rural Developmen**t in Batangas City area, as well as an **Innovative Financing for Energy Efficiency** project and an **Integrated Cane and Residue Collection Study**.

2.2. Ozone

With the grant fund from the Multilateral Fund through WB, the DENR led the

implementation of a project on non-chlorofluorocarbons technologies, having Land Bank as co-Implementing Agency and Financial Intermediary.

2.3. Air quality protection

The DoE, with the support of the USAID, is developing the **Alternative Fuels and Technology Program**, whose aim is to create public and private sector partnerships to increase awareness of sources and harmful effects of air pollution. Part of this program is the 2 years project **Root Cause Approach to control Vehicle Emissions in Metro Manila**, to promote public awareness and actions to reduce vehicle emissions. Another important initiative in atmosphere quality protection is the **Metro Manila Air Quality Improvement Sector Development Program** that aims to promote policy reforms and works in the rehabilitation of air quality stations in Metro Manila. The program is supported by the ADB and the Government of Japan.

2.4. Efficient use of energy

The **Philippine Efficient Lighting Market Transformation Project** is a 5 years long action that started at the beginning of 2004. The total budget of the project is US$ 15 million (75% national contribution plus 25% from UNDP). The project aims to promote a widespread utilization of energy efficient lights and to support management and disposal of mercury containing lamp wastes, among other results.

2.5. Renewable energy

There are several on going projects funded by bilateral and multilateral donor agencies which are aimed to promote the development and utilisation of renewable energy largely for rural electrification. The main funding agencies –besides EC- are JICA, ADB, WB, USAID and some Member States of the European Union.

2.6. Biodiversity conservation

there are various ongoing actions on biodiversity protection with foreign assistance, such as the the GTZ **Implementing the Convention on Biodiversity Project**; the **Hornbills Conservation Program**, developed by the England Zoological Society and the Dutch Vogelpark Aviafauna; the **Biodiversity Research Programme for Development in** Mindanao, sponsored by the Dutch Government; UNDP's **Samar island Biodiversity Project** and **Cebu Endemic Forest Biodiversity Restoration, Conservation and Sustainable Development Project**, among others.

2.7. Protected Areas

The project **Agencies Working or Ecological Sustainability of Mount Malindangs Environs (AWESOME)** tries to protect the resources of the Mt Malindang National Park by increasing awareness of the value of biodiversity, taking action in environmental conservation and, increasing household security and income of the families in the buffer zone communities.

Major DENR externally assisted on-going projects

*The larger DENR externally assisted projects are financed by the ADB (**Metro Manila Air Quality Improvement Sector Development Programme** and the **Integrated Coastal Resources Management Project**), the WB (**Laguna de Bay Institutional Community Participation Project; the River basin Development Project** and the **Land Administration and management Project**) and Japan's JBCI (**Southern Mindanao Integrated Coastal Management Project; Forestry Sector Project**).*

The **Debt reduction and Tropical Forest Agreement** was signed by the US and Filipino authorities in 2002. It agreement guaranteed US$ 8.2 million for forest conservation activities during the next 15 years.

2.8. Reforestation and agro-forestry

AECI and AusAid supports the **Land care Project** by World Agro forestry Centre (WAC, former ICRAF), a long term project in agro-forestry to support the development of land-care in three upland communities in southern Philippines.

2.9. Marine protection

GTZ is supporting DENR developing the **Integrated Visayan Sea Coastal Resources and Fisheries Management Program.** Other projects on coastal management are the **Coastal Resources Management Project**, -developed by DENR with the financial support of USAID- and UNDP's **Conservation of the Tubbataha Reef National Marine Park and World Heritage Site Project** as well as the **Biodiversity Conservation and Management of the Bohol Islands Marine Triangle**, also run by the UNDP.

Regarding marine pollution, the DENR hosts the **Regional Programme for the Prevention and Management of Marine Pollution** in East Asian Seas, and the **Manila Bay Comprehensive Coastal Strategy** that aims to rehabilitate Manila Bay's ecosystem. Both are under the Global Environment Facility by UNDP.

2.10. Water quality and water waste

The multilateral agencies are the main donors in the water sector in the Philippines. The main WB actions on this field are the US$76 million **Metro Manila Second Sewerage Project of Maynilad Water Services Inc**. (**MWSI**) and the US$60 million **Second Local Government Unit Urban Water and Sanitation Project worth**. ADB funds the US$175 million **Pasig River Rehabilitation Project**; **Small Towns Water Supply and Sanitation Sector II** and the **Technical Assistance for the Interim Water Supply Sources for Metro Manila**. Various other bilateral Agencies are also providing support in the field of waste water treatment, such as Spanish Co-Operation Agency **Vigan Water and Sanitation Project** or Japan's **Provincial Cities Water Supply Project**.

2.11. Solid waste management

A US$1.25 Million **Technical Assistance for Metro Manila Waste Problems** from the ADB and the **Solid Waste Management System and Sanitary Landfill in Surigao City**, Northern Mindanao, developed by the Swedish International Development Agency (SIDA) has been allocated for implementation of this act. Among the objectives are improving the social conditions of the scavengers and improving the management of waste, including sorting and recycling possibilities. SIDA's total contribution is US$ 0.4 million. The **Industrial Waste Exchange Programme** - with funding from USAID- is based on the concept that wastes generated by one company can still be useful for another one.

2.12. Environment and transport

The Philippines and the World Bank signed recently an agreement for a US$ 60 million loan and a US$ 1.3 million equivalent grant from the Global Environment Facility (GEF) The project will focus on improving the overall urban street transport environment in Manila.

2.13. Capacity building support

There are various DENR capacities building support projects developed recently in the country. The Swedish

International co-Operation Agency has been supporting an **Environmental Management and Fiscal Administration Project** for the DENR. The USAID **Philippine Environmental Governance Project** activities focus on increasing great transparency and accountability in competing and awarding contracts and permits; collecting and spending revenue; and enforcing environmental laws. GTZ's project **Advisory Support to the Environmental Sector** supports the DENR top levels in improving internal leadership, communication and administration capacities, and in building up a corporate culture aimed at delivering development-oriented services efficiently in Eastern Visayas. There are also some on going efforts supported by various agencies aiming to increase the local capacities of LGUs in environment protection management. For example, UNDP is targeting the Local Governments capacities trough the **Private Sector Participation in Managing the Environment Project** and the **Strengthening the Local Environmental Planning and Management project,** respectively.

2.14. Environmental spatial planning

There are two main projects on spatial planning in the pipe-line now. The US$ 57.2 million loan by the Japan Bank for International Cooperation (JBIC) **Geo-Spatial Information Network in the Philippines**, a 7 years project that aims to establish a national Common Database and a Comprehensive Geo-Spatial Information Network, focusing on Geographic Information System (GIS), based on the analysis of various data and digitization to support the Philippines' integrated planning for natural resources and environment for sustainable development. The loan is now is under review for approval by the Philippine government. The **Integrated Geo-Spatial Referencing Facility** (**IGRF**) project (US$ 6.80 million), that aims to provide a common, consistent and cost-effective reference facility for all users of geographic data.

3. Procedures for co-operation between funding agencies

There is no formal co-ordination forum between donors in the environmental sector. The only existing forum is among those working in the UNDP Global Environmental Programme –GEF- micro projects facility (UNDP, New Zealand, and Netherlands). There is however a donor group on water issues, leaded by GTZ.

Recommendations

The general state of the natural environment in the Philippines has reached dangerous proportions. Most worrying is the rapid speed at which the country's natural resource base has declined in the last 30 years, despite innovative developments. The country will fall major man-made natural calamities unless drastic action is taken now. The EC, like the rest of the donor community needs to focus on how to best approach this issue, as there can almost certainly be no second chance.

1. Cooperation policy and programming

EC policy on development cooperation in the Philippines aims to foster sustainable development designed to eradicate poverty in the country and to integrate it into the world economy. These EC development cooperation objectives cannot be met on a sustainable manner unless environmental degradation is prevented and reversed.

1.1. Political dialogue

The EC should develop efforts to ensure that the Government integrates natural resource management as a horizontal discipline within their sector policy and public investment strategy. This should be defended in donors meetings, bilateral contacts with the Governmental agencies and other political dialogue forums. This should include not only DENR but NEDA, the Presidency and the Department of Foreign Affairs, as well as line agencies such as DA, DLR, DTI and DoE too. The EC should continue to join forces with concerned civil society actors and the donor community in their attempts to make the Government and the private sector take a more pro-active environmental stance and to effectively tackle the key issues of enforcement of and respect for environmental legislation.

1.2. Planning and programming

The EC should ensure that the CSP, NIP as well as the identification and formulation missions incorporate the environment as a cross-cutting issue on appropriate manner. The EC Delegation staff responsible for overall management of policy development, programming and project work is responsible for ensuring that environmental considerations are integrated systematically into these activities.

1.3. Visibility

There is a need to step up efforts in communicating the advantages of sustainable development to the Filipino people, by promoting its real benefits and potentials through mass media coverage and educational channels, or dedicate their main objective to this issue. The Delegation visibility actions (newsletter, website, Europe month, etc.) will continue to promote sustainable development as one of the EC key messages.

Environmental considerations need to be integrated into all aspects of EC development cooperation activities in the Philippines, where appropriate.

Exploring alternatives

Before taking a decision on how to integrate the environment actions within the various EC development instruments, the Delegation analyzed various alternatives.

Continuing with the traditional bilateral environmental projects?

The Review Mission on the EC environmental projects conducted in March and April 2005 concluded that the overall performance of EC and MS environmental actions over the last 15 years has been less successful than originally planned. Despite considerable effort, resources and time, most environment-related actions have only managed to produce a temporary or localised reduction in the rates of natural resource depletion. This, plus thee low level of local ownership and the lack of political will by the Philippine Government justify not to pursue traditional bilateral co-directed site-based projects (like PTFPP, NIPAP, etc) in the environmental sector in the short and medium term.

Initiating an environmental good governance sectorial approach programme?

During the early stages of the definition of priorities for the CSP 2007-2013, the Delegation prospected the possibility of including environmental good-governance actions as one of the sectors to work in the future. There is a need to support environmental legal reforms so as to remove conflicts of interest, or grey areas that currently exist within existing laws and develop DENR law enforcement capability. The EC could, theoretically, work on this either trough a traditional project or trough a sector-wide approach –in line with WB interest on working in the Philippines on environmental good governance trough a SWAP mechanism(*).

Nevertheless, the Delegation finally concluded that the conditions required for this kind of action are not in place at this stage. DENR is reluctant to conduct internal reforms, or fight its corner in terms of arguing the need for more funds to promote sustainable development. In addition, DENR has shied away from modernising its internal capacity, introducing new ways of boosting its internal revenues, devolving certain responsibilities to the LGUs, improving its enforcement, regulation and control capacity, or introducing internal controls to curb corruption. This has left the Department relatively isolated and ineffective in influencing or collaborating with key government departments such as NEDA, DoF, and line agencies closely associated with environmental matters such as the DA, DLR, NCIP, NWRB, or the Local Government Units.

Using a mix of instruments?

Taking into account the reasons mentioned above and in order to increase the capacities of the Commission to explore more innovative approaches and sectors –such as green production and trade, environmental education, etc- it is clearly better to reinforce the use of existing instruments (sectorial programmes, thematic budget lines and regional programmes, etc.) that may enhance the sustainable use of natural resources and ease pressure on them rather than to continue with the traditional bilateral environmental projects or to initiate an environmental good governance sectorial approach programme . This was, finally, the option adopted.

(*) WB is planning to design and eventually implement a Sector-wide Approach Programme (SWAP) in the environmental sector in the Philippines. The process is at a very early stage and final decision still need to be taken.

1.4. Donor co-ordination

EC funds are limited. It is not possible for the Commission to tackle the multiple environmental problems of the Philippines alone. Other donors will continue working on the environmental sector in the Philippines in the years to come. Greater

donor co-ordination is required to ensure that there will not be overlaps between the donors. The Commission should support the conformation of a formal co-ordination forum between donors in the environmental sector.

2. Development instruments

2.2. Instruments for environmental co-operation

Thematic budget lines and regional programmes

Demand driven instruments will have a key role in the implementation of the EC environmental strategy for the Philippines. The thematic and regional programmes proposal's selection is not de-concentrated, but Delegations' are invited to make their assessments on the proposals during the evaluation process. The recommendations should be fully integrated in the evaluation process.

The Delegation assessments should ensure that priority will be given to project proposals with a high chance of sustainability which can foster mutual interest between the EC and the Philippines, particularly among private investors and qualified NGOs. These projects should support successful developments such as the co-management approach to natural resources management, or the outsourcing of the private sector for a specific service (in some cases this could also include a competent NGO, Research Institute or University Faculty).

Environment budget lines and regional programmes

There are two main EC programmes focused on environmental protection that apply to the Philippines: **Asia pro Eco II**, whose focus is more urban-related and **Environment and Tropical Forests in Developing Countries**, more oriented to forest, marine or rural contexts. The types of projects that could be eligible would have to be in conformity with the EC's overall co-operation policies, but could include, as priority sub-sectors:

Environment and Tropical Forests in Developing Countries: Running and administration of Protected Areas, monitoring of environmental data and improvements in land administration service delivery.

Asia pro Eco II: Waste management, with an emphasis on income generation from recycling; industrial ecology concept or *green production*, including pollution prevention, eco-efficiency; waste minimization; recycling, eco-labelling, Green Procurement, etc.

Finally, the European Commission has approved a regional project of EC contribution € 6 million to boost biodiversity conservation in the South East Asian region. This grant will cover three years and six months and is expected to support the newly-established **ASEAN Center for Biodiversity**, based in the Philippines. Support to the ACB responds to the need to have a sustainable institution strengthening the capacity of the ASEAN member countries to formulate and coordinate biodiversity-related policy, strategy and action, to fulfil relevant treaty obligations, and to promote and advance common positions on matters related to biodiversity conservation, management and sustainable use.

Other budget lines and regional programmes

Asia Invest: Particular attention should be given to projects promoting the protection of the environment in the framework of economic and commercial relations, such as the promotion of trade based on international environmental standards; fair

trade opportunities for organic and other *green* products, etc.

Asia Link: Research and Development on alternative forest or marine products and bio-prospecting - which should be given special status because of the potentially very lucrative products that could be derived from the country's forests, which happen to be some of the most biodiversity rich in the world- should be priority areas of support.

Bilateral Co-operation

In addition to projects funded from thematic budget lines and/or the regional programmes directly or indirectly related to the environment, emphasis will be on mainstreaming environmental concerns in projects and programmes funded from current and future CSP and NIPs. It should be noted that the CSP for 2007-2013 is now under preparation.

Rural development and livelihood

The major ongoing rural development programmes like the the **Upland Development Programme** (**UDP**) - will actively pursue replication of proven environmental best practices.

Mindanao Trust Fund (MTF): If implemented, the MTF shall support livelihood projects and agribusiness programs that will encourage the link between production and predetermined markets foreseen to contribute to a reduction in human pressure on fragile environments, especially in the uplands. The MTF shall also implement activities that will clean up debris left from armed conflict, pursue formulation of environmental management plans and implement agro forestry and reforestation actions as well.

Economic co-operation

The **Small Projects Facility (SPF)** will continue to target the environment among its priority areas for funding, especially in terms of incorporating environment within public procurement; participatory planning in LGUs (ex.: land use plans; development plans, etc). Corporate governance, including environmental responsibility will continue to be another priority area.

Trade Related Technical Assistance Programme (**TRTA**): Trade and environment should be one of the areas of the World Trade Organization capacity building component of the project.

Good governance

The **Border Management project** Following the EC FLEGT initiative recommendations, the project should included illegal timber exportation and importation[70] -as well as protected animal and plants trafficking- among the illegal trade woods subject to the border control measures under the customs component (f.i. training of Bureau of Customs staff, particularly in the 4 pilot areas)

The **Anti Money Laundering project**: Also in line with the FLGET initiative, the Anti money laundry project should target illegal timber trade and criminal syndicates behind such activities while disrupting the flows of money involved in such transactions through the inclusion of

[70] In July 2004 the EC adopted the **Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT),** which consists of a comprehensive set of measures to combat the growing problem of illegal logging and the related trade in illegally harvested timber. The FLEGT Action Plan suggest the inclusion of verification systems ("In countries with weak forest law enforcement, reliable systems which can distinguish legal from illegal production will be essential in order to provide credible guarantees to the market that timber has been legally harvested") trough activities such as training of customs officials and others related.

references on relations between environmental crime and money laundry in the awareness program and training. Political dialogue by the Delegation linked to the project should include designating illegal logging and illegal timber trade as a predicate offence under money laundering legislation.

The **Corruption Prevention project** should include the DENR among the institutions that will participate in National Corruption Prevention conferences, public corruption surveys and other transversal actions. The project might eventually consider to include DENR among the selected government agencies to sign agreements on areas of co-operation with the Ombudsman (component 3 of the project), assisting DENR to set up a joint corruption prevention group an integrity development review and to train Department officials in anticorruption issues.

The **Access to Justice** project's aim to enhance the poor and vulnerable groups' ability to pursue justice should include their right to have fair and sustainable access to the environmental resources. The project training activities on the Local Code for council members in the barangays should include basic training on environmental rights and illegal activities denunciation (e.g. illegal logging, illegal fishing practices, etc.).

Social sector

The **Health sector-wide approach** will contribute to a government programme which targets environment as part of a health risk reduction strategy. Moreover, the programme focus on systems development and capacity building can be expected to decrease environmental hazards in health care (e.g. disposal of outdated drugs and medicines).

The **Education sector-wide approach,** if implemented, should incorporate environmental concerns and use then as vectors to effectively encourage awareness and combat the linkages between poverty and a deteriorating environment. For example, there is still a high need to give environmental education to school children and young adults.

Integration of environment education at the primary level, promotion of the "green schools" concept, training activities for teachers on environmental issues, creating an environmental focal point and establishing a green procurement system within the Ministry of Education are some of the ideas that could be developed to ensure the incorporation of the environment in the education sector in a sector wide approach.

Other bilateral projects and programmes

The EC will include environmental protection as crosscutting issue into all the EC-supported projects the uprooted people programme, humanitarian aid actions and other sectorial actions, where appropriate and possible.

Integration of the environment in the project cycle management

Findings and recommendations of the environmental work will be incorporated into the projects identification, design, implementation and evaluation phases when appropriate, including the integration of environmental concerns on the problem tree during the logical framework workshops; the insertion of environmental indicators in the project's log-frames; the conduction of Environmental Impact Assessments when necessary, the inclusion of environment assessments as part of the evaluation missions; etc. This will ensure that natural resources protection is taken into account from project identification to financing, implementation and evaluation.