

Of the 52 percent of the country’s population that lives in rural areas, 22 percent reside in or near forests. A majority of these people rely on forest resources for their livelihood, making sustainable land and forest management a critically important challenge for the Philippines. This section presents the major trends in land and forest resources management in the country over the past five to ten years. While there has been some increase in forest cover owing to reforestation efforts and natural regeneration, per capita forest cover in the Philippines is still the lowest in Asia. Moreover, the remaining primary or intact forests remain under threat.

LAND USE CLASSIFICATION

Fifty percent or 15 million hectares of the total land is classified as forestland, 47 percent of the land is classified as alienable and disposable, while three percent remains unclassified.⁷ It is now evident that significant portions of land that had been classified as forests are no longer forested, and have been put to use for agriculture or settlements (Box 1). Yet, such land has not been reclassified. Also, despite stringent laws, land continues to be converted from agriculture to other uses. From 1988 to 2000, a total of 34,207 hectares of alienable and disposable land—an average of 2,631 hectares per year—was converted from agriculture to other land uses. Inaccurate information on land classification not only impacts conservation goals, but also leads to conflicts over ownership and management, ultimately serving as a disincentive for protection.

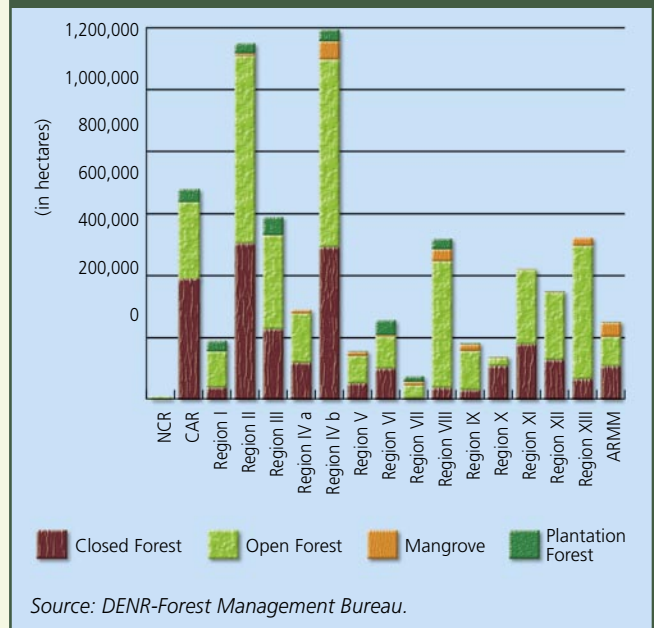
The forest cover for each region of the Philippines is shown in Figure 3. In 2003, the Philippines moved to the internationally-accepted classification system of the Food and Agriculture Organization (FAO). Consistent with this system, DENR now uses a total

Box 1. Reclassification of Pamilacan Island

Pamilacan Island is situated in the Province of Bohol. The Island has a total land area of 140,766 hectares. In 1927, it was an unclassified public forest according to cadastral maps. However, a cadastral survey done in 1963 indicated that it already had 239 lots. Based on this, DENR issued 84 Free Patents while Department of Agrarian reform issued 183 Emancipation Patents (37.8 ha). With the DENR’s Anti-Fake Title Program in 1999, 78 Free Patents and 118 Emancipation Patents were found to still be within the classified forestlands of the island. Cancellation proceedings were thus initiated in the courts. Considering that the area is almost fully settled, a draft bill has now been submitted to Congress to reclassify the island as alienable and disposable and thus legitimize existing titles/patents of residents who have long settled and tilled the area.

Source: DENR-Region 7.

Figure 3. Forest Cover by Region (in ha), 2003



of 19 categories and sub-categories⁸ under the general heading of land use status, compared with nine in the past. For example, instead of referring to primary virgin and residual forests, the categories now used are closed-canopy and open-canopy forests.

⁷ DENR-Forest Management Bureau, 2004.

⁸ DENR-Forest Management Bureau, 2004.



Forest land. Forest cover had declined from an estimated 21 million hectares or 70 percent of the country's total land area in 1900, to only 5.4 million hectares or 18.3 percent by 1988. However, recent official estimates, based on the 2002 satellite images of the entire country (Figure 4), show the country's forest cover increasing to 7.168 million hectares or 24 percent of total land area in 2002. This forest cover is broken down into 2.56 million hectares of closed canopy forest, 4.03 million hectares of open canopy forest, 247,362 hectares of mangroves, and 329,578 hectares of plantations. According to the Forest Management Bureau (FMB), 91 percent of this forest area has been validated on the ground. However, estimates from other sources disagree with FMB. An alternative estimate of 5.789 million hectares has been published by FAO.⁹

The DENR attributes the rise in forest cover to stronger public awareness about the value of forests, especially after the Ormoc flashfloods in 1991. The floods led to public pressure for reforestation, and renewed reforestation efforts by national government agencies, local government units, communities (through the community-based forest management program), and the private sector. Massive reforestation efforts were also undertaken by the donor-supported National Forestation Program and Forestry Sector Program Loans. The overall success of these programs compared to past reforestation efforts has been attributed to the following factors:

- (i) Shift in government policy from reforestation by the administration, where individual upland settlers were merely employed as daily workers,

- to contract reforestation¹⁰ where upland settlers are given three-year contracts to plant and maintain an area. Communities now have a greater incentive to ensure the survival of what they plant, since they may eventually receive a grant to manage these planted areas for 25 years;
- (ii) The fact that 645,000 hectares of this forest cover is found in privately titled lands; and
- (iii) Stricter enforcement of the reforestation requirements for various DENR licensees/lessees.

While the total amount of forest cover remains a matter of some debate, there is widespread agreement that the overall decline in forest cover over the past three decades is alarming. Among 89 tropical countries, the Philippines is one of 11 with the lowest forest per capita (at 0.085 hectare/capita)¹¹—and most of its watersheds are considered degraded. Land conversion is the principal cause of deforestation; other causes include slash-and burn farming, illegal logging, forest fires, pest infestations, and typhoons.

Land Degradation. Of the total land area, 76 percent faces some extent of degradation. Forty five percent of the total arable land, and 66 percent of non-agricultural land, have been moderately to severely eroded, triggering the movement of subsistence farmers to marginal lands to meet their daily food requirement. Approximately 5.2 million hectares are seriously eroded, resulting in 30-50 percent reduction in soil productivity and water retention capacity. This situation predisposes degraded lands to drought and other water availability problems.

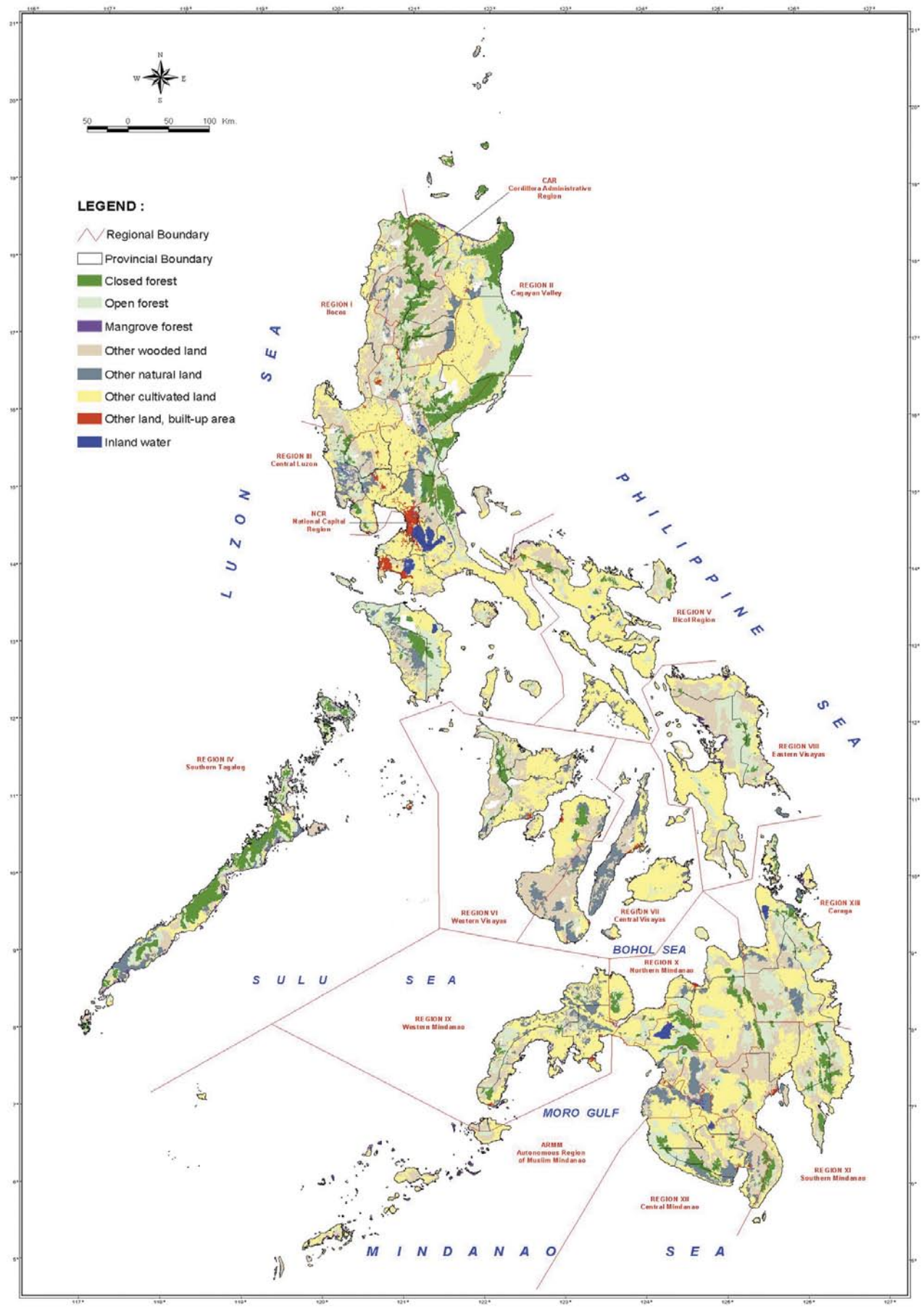
⁹ FAO, 2001. The assessment was "largely based on information provided by the countries themselves and a remote-sensing survey of tropical countries, supplemented by special studies undertaken by FAO."

¹⁰ An assessment of reforestation efforts in the 1980's had shown that survival rates are very low. One of the reasons was that local communities hired to undertake the reforestation actually burned the plantations so that they would again be hired by government in the succeeding years.

¹¹ Guiang, E.S., 2001.



Figure 4. Land/Forest Cover Status, CY 2003



Source: DENR-Forest Management Bureau.

Note: Satellite images only capture higher density growth, it is difficult to see open forest areas.



Areas classified as having no apparent erosion are mainly prime agricultural lands in Region III; while 35 percent of the total area of Regions IV, V, and VII are characterized as slightly eroded. Moderate erosion accounts for approximately 8,446 hectares or 28 percent of the country's soil-eroded area; and these are classified as marginal lands. Other types of soil degradation associated with soil erosion are loss of soil nutrients and organic matter, river erosion, flooding, and water logging.¹²

From 1988 to 2000, there was a doubling in the economic value of nutrient loss due to soil degradation (from PhP635 million in 1988 to PhP1.16 billion in 2000). To compensate for this loss, outlays for fertilizer have increased; from PhP41.7 million to PhP154 million over the same period.¹³ Also, land degradation has played an increasingly significant role in the incidence of natural disasters in the country during the past decade. The World Bank values direct damage caused by disasters between 1970 and 2000 at PhP15 billion per year. In 2000 alone, damage to property due to flooding is an estimated PhP1.67 million.

BIODIVERSITY

The Philippines is one of the world's 18 "mega-diversity" countries, which together account for between 60 and 70 percent of global biodiversity. It has also been identified by the International Union for Conservation of Nature (IUCN) as a biodiversity "hotspot"—a country where biodiversity is extremely threatened by deforestation, conversion, fragmentation of natural habitats, unregulated trade, and overall low environmental quality.

¹² Bureau of Soils and Water Management, 2004.

¹³ National Statistical Coordination Board, 2003.

Environmental Champion — WILD BIRD CLUB OF THE PHILIPPINES



A group of bird watchers started **WBCP**. Soon members realized that the only way they could continue watching the many birds in the country was to ensure the protection of habitats. This led to the transformation of WBCP into an advocacy group—identifying critical habitats and raising awareness about the need for their protection. Recently, some of the Club's volunteers were part of the scientific expedition that discovered an unknown bird species—the Calayan Rail in Babuyan Islands in the province of Batanes.

Through their efforts, and working in partnership with other environmental groups, members have identified about 100 bird species and their habitats within Metro Manila. They organize bird watching trips, attend various meetings, and set up exhibits to bring Philippine bird biodiversity, and the threats to bird habitats, to the public's attention.

Source: Authors.

The 1997 National Biodiversity Strategy and Action Plan (NBSAP) set forth concrete policy and management measures for developing programs and projects that would address pressing issues and concerns in biodiversity conservation and management. The NBSAP noted that the most effective way to conserve biodiversity is to protect habitats and strengthen the National Integrated Protected Area System (NIPAS). It also listed 91 critically endangered species, 74 endangered, and 253 vulnerable species.

In 2002, an iteration of the NBSAP was undertaken through the Philippine Biodiversity Conservation Priorities Program. Integral to this program are five strategic actions that the government needs to take to



ensure that the biodiversity crisis is addressed. Foremost is the need to enhance and strengthen the Protected Area System. The program also recommends the prioritization of 206 sites which would need to be established under NIPAS, of which 132 sites overlap with the 209 initial components of NIPAS.

A subsequent study in 2004 provides an empirical examination of how, and to what extent, population variables influence biodiversity and the environment. The study also provides maps illustrating the vulnerability of conservation-priority sites to socio-economic and demographic pressures; and identifies 13 Conservation Priority Areas with an “extremely high/urgent” index of priority. It recommends the integration of population and socio-economic dimensions in conservation strategies and programs at the national and local levels.¹⁴

Illegal logging. Illegal logging has not ceased, despite the logging-ban imposed in many parts of the country (Box 2). A large volume of illegally-cut logs and lumber is apprehended by DENR field personnel, the military, NGOs, and other partners. The volumes of confiscations were highest in 1996 (14,499 m³), 2001 (14,368 m³) and 2002 (12,957 m³). However, the number of apprehensions and volume of logs and lumber apprehended or confiscated are not very good indicators of the extent of illegal logging and poaching. A more reliable and scientific basis for assessing illegal logging is needed.

Commercial logging. The number of Timber License Agreements (TLAs) granted for commercial logging (and allowable cuts) has continued to decline—from over 137 in 1987 to 14 TLAs in 2004, covering 566,589 hectares (with only six of these actually operating). A total of 195 Integrated Forest Management Agreements (covering 704,328 hectares),

Box 2. Illegal Logging in Isabela, 1988 – 2000

Isabela is the largest province in northern Luzon, with a land area of 13,643 km² and a population of nearly 1.3 million, settled mainly in the Cagayan river valley in the eastern part of the Province. The western part, mountainous and densely forested, is the location of the 395,500 hectares Northern Sierra Madre Natural Park. This park is considered one of the Philippines's most intact and important protected areas. According to a detailed field study carried out in 1997, illegal logging and encroachment by small farmers are the main threats to the park, which has 24,000 inhabitants.

The local furniture industry, with 13 cooperatives and numerous shops, is the driving force behind illegal logging in Isabela and the corruption that it engenders. Narra (*Pterocarpus indicus*) is the timber of choice for the furniture industry, but the species is increasingly rare and is subject to a variety of DENR harvest restrictions. Thus, industry buyers mainly rely on illegally cut sources provided by small teams of loggers. Because such transactions are illegal, the principals involved—middlemen, sawmills, furniture makers, cooperatives, and the Cagayan Valley Chamber of Furniture—must make regular payments to a variety of civilian and military officials (including some DENR community and provincial offices). The Isabela case is unique only in that it has been so carefully documented. An investigation of fraud in the awarding of integrated forest management agreements (IFMA), for example, concluded that “a widespread pattern of fraud in the awarding of the agreements has resulted in rampant tree-cutting in areas intended for forest protection.”

Source: World Bank, 2003.

and 1,635 Socialized Forest Management Agreements (covering 41,872 hectares) have also been awarded. The total allowable cut in 2003 for all these agreements was around 880,000 m³, down from 4.3 million m³ in 1990 for TLAs alone.

Although the number of TLAs has declined, encroachment and illegal extraction continue, and upland areas remain threatened. Reports indicate that the country now imports about 60 percent of the wood and wood products it consumes. To address the need for wood and wood products, classified forestlands have been further delineated into protection forests and production forests. Production

¹⁴Lasmarías, N.O. et. al., 2004.



forests are to be offered to the private sector for industrial tree plantations. Guidelines are now being revised to streamline procedures, provide incentives, and make industrial tree plantations more attractive to the private sector. On the other hand, protection forests are to be rehabilitated and protected under co-management with LGUs and communities.

RESOURCE MANAGEMENT

Community-based forest management.

Expansion of community-controlled forests is one of the main official strategies for reforming the once TLA-controlled timber industry. The Community-based Forest Management (CBFM) Program consolidated the Integrated Social Forestry Program, Community Forestry Program (Box 3), Coastal Environmental Program, and the Ancestral Domains Program. For the Government, CBFM represents a fundamental shift from seeing forest dwellers as enemies who destroy natural resources, to partners in the protection of the forests (Box 4). However, the actual performance of this program, in terms of forest protection and health, has not been rigorously analyzed.

The 1990 Philippine Master Plan for Forestry Development stipulated that 1.5 million hectares (54 percent of the remaining 2.8 million hectares of secondary growth forest below 50 percent incline slopes) would be placed under CBFM during the 1990s. In addition, current and potential open access areas, estimated at 5.9 million hectares, were also slated to be placed under community-based management. A DENR plan for CBFM currently envisions that nine million hectares of forest land—30 percent of the country's total land area—will be placed under community management by 2020.

As of June 2004, there are 5,503 CBFM sites, covering a total tenured area of about 4.9 million hectares. Of these sites, 1,577 (1.5 million hectares) are covered by agreements which contain resource management

Box 3. Philippine-German Community Forestry Project – Quirino

The Philippine-German Community Forest Project-Quirino or CFPQ started in 1988 as a Social Forestry Component of the Philippine-German Dipterocarp Forest Management Project. The project was renamed as Philippine-German Integrated Rainforest Management Project in 1991 when a new phase expanded the coverage to five barangays. It focused on organizing and strengthening communities in preparation for the issuance of a forestry management agreement. The Project used an integrated approach with the communities managing the natural forest and utilizing the resources. Other components were included – natural forest management, sustainable agriculture, alternative income generation and community organizing.

Among its accomplishments, the Project has 19 peoples' organizations (PO) and 12 CBFMAs, 15 municipal councils have adopted CBFM as a core natural management program, and GIS has been installed. The POs have been provided with technical assistance on financial and business management with 10 modules on financial management having been prepared. They are now marketing their agricultural products and effectively protecting and managing their areas. Their experience is recognized as a best practice in CBFM implementation and was featured during the Forestry Forum in Geneva in 2004.

Source: World Bank, 2003.

Box 4. Community-based Forest Management in Bayombong, Nueva Vizcaya



The project "Developing Tropical Forest Resources through CBFM" in Bayombong, Nueva Vizcaya transformed grasslands into plantation/ agroforestry, and enhanced natural regeneration within the 3000 ha forestlands. With secured tenure, existence of livelihood options, and strengthened POs, there are indications that the gains of the project will be sustained by the community.

Source: DENR-Forest Management Bureau.



frameworks and work plans. In addition, there are 180 ancestral lands with Certificates of Ancestral Domain Claims covering an area of 2.5 million hectares, some of which already have Certificates of Ancestral Domain Titles. The Government envisions that while these communities will still be allowed to benefit from the forests, the residents will gradually need to rely more on alternative sources of livelihood. However, such alternative livelihoods are currently not available to the majority of such communities.

Although CBFM is an alternative to top-down management, many areas set aside for community forestry are currently not under effective communal management. Conversion of degraded forest lands to agriculture remains a common practice. Local governments continue to lack the technical and manpower resources to assist communities in drafting or implementing forest management plans.

While it is now possible for communities to gain formal, legal tenure to forest land if they agree to abide with conservation rules, the hand-over to communities has not been smooth. There is an apparent lack of social preparation. A recent assessment of community-based forestry identified the following key legal and institutional problems:¹⁵

- Communities are dependent on DENR clearance and approval for acquisition of land rights. Even where such rights have been granted, the long and complicated process of securing the “Environmental Compliance Certificate” makes it difficult for communities to exercise their rights. Communities can only take advantage of land rights after DENR approves their resource management frameworks and annual work plans. These documents are too complex to be prepared independently by

communities, and are often produced by NGOs or consultants.

- Local governments’ role relative to the DENR is unclear, as the former is unable to issue resource-use permits, file cases, or award land tenure.
- Community-based groups not only face bureaucratic barriers, but they do so with very limited physical, human, and financial resources. Given the limitations within which they continue to operate, it is difficult to see how they can be expected to manage forest resources—a task that much better funded government agencies and timber companies have failed to accomplish. In reality, communities that are unable to use their land rights to gain access to forest land for conservation or reforestation tend to bring more forest lands into crop production since DENR does not regulate the production and marketing of cash crops.

Forestry authorities, including those within DENR, have acknowledged many of these shortcomings. New programs, such as the Community Livelihood Assistance Special Program or CLASP, are being developed to provide alternative sources of livelihood and access to micro-financing. Since its inception in 2002, a total of 113 CLASP projects have been funded, benefiting around 6,000 families in CBFM areas all over the country.

Protected areas management. At least half the identified protected areas still have no Protected Area Management Boards (PAMBs), which are responsible for developing and implementing area-specific management plans. Unless an area assessment is completed and the management plans subsequently developed are adopted, there will be no clear operational guidelines to protect core zones, restore degraded zones, or develop multiple use and buffer zones.

¹⁵ World Bank, 2003a.



In 2002, the combined budget for protected areas and wildlife management, and DENR's Protected Areas and Wildlife Bureau, accounted for about four percent of DENR's total budget. Between 1998 and 2003, protected areas received PhP1.4 billion from the DENR budget and from government counterpart funding (for projects receiving official development assistance). Allocations to protected areas peaked in 1998, but had fallen by 25 percent by 2003. The Protected Areas and Wildlife Bureau budget was almost halved, from PhP151.786 million to PhP80.592 million between 1998 and 2003 due to reductions in the maintenance and operating expenses of some projects.

The Integrated Protected Areas Fund (IPAF) generated PhP62 million between 1998 and 2001. This fund was set up to provide resources to PAMBs to implement local management and protection plans. However, the decision of the original IPAF Governing Board to include IPAF in the General Appropriations Act—which goes through executive and legislative approval, has made the process of accessing the fund very tedious. Local communities and governments

view the process as a disincentive to actively support protected areas within their jurisdiction.

NGO/PO-initiated forest management.

Community forestry projects have also been independently initiated by NGOs and POs. These projects are different from NGO-assisted projects that are funded by the Government. Detailed documentation of such projects is not easily available. Long-standing examples include the Kalahan Educational Foundation in Luzon, and the Mag-uugmad Foundation in Visayas. Active in community forestry since 1973, Kalahan Educational Foundation manages 14,730 hectares of ancestral lands covering five barangays in Santa Fe municipality, Nueva Vizcaya Province.

Private sector management. Perhaps the most important change in forestry management has been the shift away from TLAs to community-based forestry, and the granting of land rights to communities. However, the private sector has also undertaken initiatives in conjunction with the DENR to manage small but important plantations and

Environmental Champion — ASIN

The folk music group "**ASIN**" (Salt) was formed in the late 1970's. It was a group of innovative musicians who offered alternative Filipino music, using indigenous musical instruments to celebrate Filipino culture. Composed of Lolita Carbon, Cesar Banares, Mike Pillora, and Pendong Aban Jr., ASIN was the first popular group to write songs containing environmental messages at a time when environmentalism was not yet well understood.

Aban and Banares came from Mindanao in Southern Philippines. Their experiences in their hometowns inspired their songs. They witnessed what was happening in the uplands—rampant illegal logging as well as violence.



In their own words, they say that they "just wrote about what they knew." Their simple lyrics and melodies spoke of a reality with which people could identify.

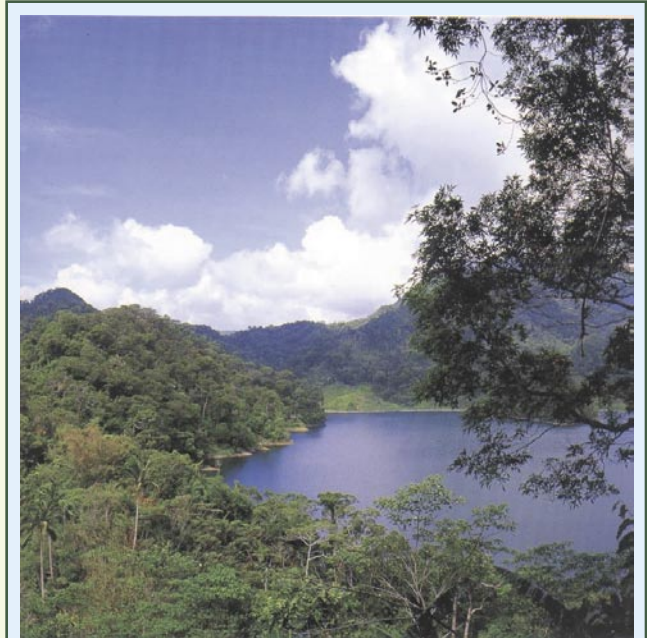
Their most famous song *Masdan Mo Ang Kapaligiran* (literally means, *Look at Your Surroundings*) released in the late 70's, made people realize that environmental degradation was a commonly-felt problem about which something had to be done. This song has now become a battle cry of the environmental movement in the Philippines. Now in its 25th year, ASIN remains an active advocate for the environment and Filipino culture.

Source: Authors.



watersheds. Notable among these initiatives is a program started by the Manila Electric Company (Meralco), in association with the DENR. Since 1992, Meralco has been sponsoring the Tree Plantation Project in Montalban, Rizal, to reforest some 930 hectares of rugged land with 700,000 acacia and bagras trees. In addition, it has also invested in two large nurseries for acacia and mahogany trees.

The ABS-CBN Foundation, through its Bantay Kalikasan, has adopted the 2,700 hectare La Mesa watershed and mobilized cross-sectoral support for rehabilitation and protection of 1,400 degraded portions of the watershed, as well as the development of some areas as an ecopark. Executive Order No. 233 (Series of 1997) gave the Philippines National Oil Company (PNOC) the responsibility to manage watershed areas within its four geothermal exploration sites. The social forestry program started by PNOC-EDC in 1985 now benefits 73 communities



A panoramic view of a watershed.

Source: DENR-Protected Areas and Wildlife Bureau.

Environmental Champion — RAUL ZAPATOS

In 1990, **Raul Zapatos**, a forest guard in the DENR was involved in a shooting incident in Bayugan, Agusan del Sur. His team was manning a DENR checkpoint when it apprehended a truck that lacked the necessary permit to transport logs. It was alleged that the Mayor owned the truck and that the logs were supposed to go to the Mayor's sawmill. Even when the Mayor talked to him, Raul refused to change the report he had submitted to his superior, the Community Environment and Natural Resource Officer (CENRO). Upon the Mayor's request, CENRO released the truck but confiscated the logs. A few months later, Raul Zapatos' team again apprehended the same truck and confiscated both the logs and the truck. Raul Zapatos' refusal to give in to the Mayor's demands angered the Mayor. One night, the mayor and his men went to the checkpoint and fired at it. Raul, fired back in self defense, not knowing who had fired at him. He later discovered that he had shot and killed the mayor and wounded one of his bodyguards. Raul surrendered and was



brought to trial. While he won the case at the Regional Trial Court, the Mayor's family filed another case with the Sandiganbayan. Raul Zapatos was found guilty, sentenced to life imprisonment, and committed to the New Bilibid Prison in Metro Manila.

During the years of his imprisonment, his wife and seven children struggled to survive. With the help of his superiors, fellow workers, and sympathizers, Raul appealed his case with the Supreme Court. In September 2003, after thirteen years, the Supreme Court reversed the decision of the Sandiganbayan and acquitted Raul. After his release, the DENR gave him a spot promotion, back salaries, and he was

honored in official ceremonies. In spite of management's concerns for his safety, Raul remained steadfast in his commitment to protect the forest and immediately wanted to get back to work. He continues to work at the DENR Region X office where he is an inspiration to all his colleagues and clients.

Source: Authors.





Kaliwa Watershed.

Source: DENR-Public Affairs Office.

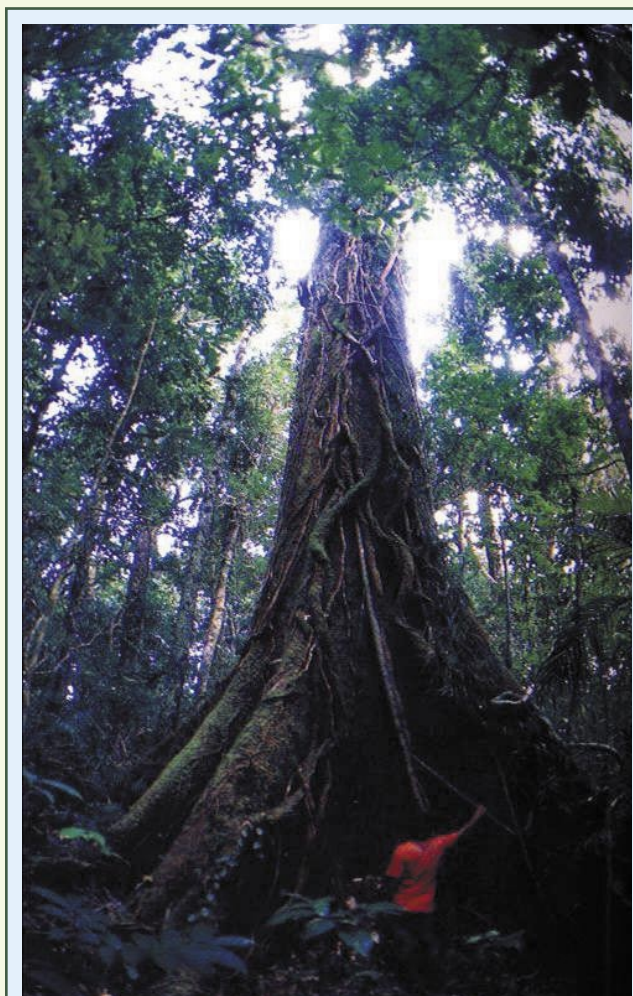
and more than 3,000 families in Leyte, Negros Oriental, Bicol, and North Cotabato. The company has established 8,049 hectares of plantations to replace the 445 hectares it has developed for geothermal projects. It allocates 67 percent of its annual environment budget to watershed management, and has been recognized nationally by both government and non-governmental groups for its contributions.

LEGISLATION AND INSTITUTIONS

In June 2004, the Government issued Executive Order No. 318 entitled “Promoting Sustainable Forest Management in the Philippines”. It updated PD 705 (Revised Forestry Code of the Philippines). The order identified watersheds as ecosystem management units to be managed through a scientific and community-based approach that would involve LGUs, and recognize and respect the rights of indigenous peoples. The order aims to clarify the categorization of state forests and stem the conversion of forests into non-forest uses. An updated Sustainable Forestry Act is under discussion in Congress. The DENR has recently adopted the criteria and indicators for sustainable forestry, developed with the International Tropical Timber Organization (ITTO).

These will be implemented under the recently-approved ITTO-GoP pilot project.

Despite the issuance of several acts, bans on logging, and apparent promotion of community-based forestry, forested areas and biodiversity are under constant threat in the country. Significant hurdles against effective natural resources management include: conflicting agendas; lack of national and local government capacity to effectively monitor forests, implement policies, and engage local communities in effective dialogue and decision-making; lack of livelihood for poor upland and lowland settlers; and insufficient funds for protected areas management.



An endangered, old tree.

Source: DENR-Public Affairs Office.

