

Environmental Reform: Gateway to Green Markets

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Environmental conflicts were previously relegated to the category of "low politics" in the field of international relations. Environmental problems were seen as minor issues to be properly addressed in scientific and technical meetings rather than in high-level diplomatic and trade negotiations.¹ The decline of Cold War politics starting in the 1980s and the rise in citizen awareness in many countries regarding the transborder impact of environmental damages on economic productivity and health security were vital factors which contributed to the elevation of the environment as a major area of international policy concern in the 1990s.

In industrial countries, lobbying efforts by environmental groups is driving the expansion of green trade. This should be located within the context of the globalization of ecology and the corresponding transformation and internationalization of environmental activism.² The growth in global demand for environment-friendly products and emerging trends toward the application of certification procedures to determine whether or not goods are produced under environmentally-sustainable conditions could be harnessed by policy reform advocates in developing societies like the Philippines in support of measures to internalize the social costs of resource depletion and pollution in the production process. Anderson, Folke, and Nystrom suggest that environmental cost internalization could be accomplished in three ways: (1) through the passage of laws which regulate products and production technology; (2) through the strengthening of markets for emission rights, environmental charges and taxes; and (3) through the delineation of clear property rights to control resource use, waste and pollution.³

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In the Philippines, significant efforts have been made in the last few years to internalize the environmental costs of resource extraction and processing activities through the pursuit of policy initiatives to undertake the proper pricing of natural resources and the institutionalization of property rights reforms. It is argued in this article that by pushing for such reform measures, the Philippines would be in a good position not only to defend the environment, but to tap into emerging green markets as well.

The study initially traces the historical and institutional shifts in natural resource policy directions in the Philippines. Secondly, it focuses on the forestry sector and outlines the various ways by which government could support alternative forest management regimes based on community resource management principles. Thirdly, the study explores the linkages between environmental protection goals and trade objectives.

Natural Resource Policies

The use of environmental criteria in the formulation of natural resource policies in the Philippines is of fairly recent vintage. In the past, the natural resource agencies of the government, such as the Bureau of Forestry, Bureau of Fisheries, and Bureau of Mines existed simply to provide access to private concessionaires who engaged in logging, fishing, and mining activities in areas belonging to the public domain. The Philippine state's power to distribute rights to utilize natural resources for economic purposes is based on its legal ownership over all lands and resources within the public domain.

It has been acknowledged that historically a privileged elite sector was able to acquire lucrative resource concessions from the government through powerful patronage linkages and economic ties. While big profits were amassed through unhampered resource extraction, forest, fishery and mining charges were kept at very low levels, thereby failing to reflect the true social costs of resource depletion. The depressed resource taxes served as an incentive for private concessionaires to overexploit natural resources. At the same time, the resource extractors were not sufficiently regulated to pressure them to restock the resources in their concession sites. In the forestry sector, for example, the holders of Timber License Agreements (TLAs) were required to reforest their concession areas only in the mid-1970s. Even then, the compliance rate was dismal.

Since Philippine development was heavily anchored on natural resource extraction and exports, forest degradation, overfishing and mining pollution were experienced in the country since the postwar period, and particularly intensified during the Marcos regime (1965-1986). To hide the severe loss of forests during this period, the government issued gross overestimates of the forest resource stocks in the country. As late as 1978, for instance, the Ministry of Human Settlements claimed that the Philippine forest cover was still around 52 percent when independent estimates already claimed that the remaining forested areas in the country had gone down to 30 percent in the late 1970s.

It was also during the Marcos period when big ecologically destructive and pollution-causing development projects were initiated like the Chico River Dam Project in Kalinga-Apayao, the Kawasaki Sintering Plant in Cagayan de Oro, the Copper Smelter Plant in Batangas, and the Cellophil Pulp and Paper Plant in Abra. Interim environmental coalitions were organized to oppose these development projects. People's organizations (POs) and nongovernment organizations (NGOs) proliferated during the last years of authoritarian rule. While these groups were at the outset anti-authoritarian in character, an incipient environmentalism, galvanized by the ecologically destructive policies of the state, had seeped into the NGO ranks by the mid-1980s.

With the ascendancy of the Aquino presidency in 1986, dramatic changes occurred in the environmental field. A law was passed creating a new Department of Environment and Natural Resources (DENR) in 1987. The strong environmental advocacy groups which emerged in 1986, combined with the worldwide renaissance in environmentalism, promoted the notion of sustainable development in the Philippines.⁴ In 1987, human rights lawyer Fulgencio Factoran became DENR secretary. Significant restructuring of the department was soon undertaken. The functions of the Bureau of Forest Development (BFD), which functioned as a mini-fiefdom under Martial Law, was integrated into the DENR. The logging permits of irresponsible concessionaires were cancelled reducing significantly the number of TLAs in the country. These changes, in tandem with international calls for environmental assistance to countries experiencing severe ecological problems resulted in an avalanche of loans, grants and technical assistance to the country.⁵ It was during Factoran's term when the Contract Reforestation Program supported by the Asian Development Bank (ADB) was launched.

The DENR under Factoran undertook innovative environmental programs, many of them community-based in orientation. This was facilitated

by the fact that Factoran brought with him a management team consisting of a coterie of NGO personalities, development technocrats and popular democrats. This management team presided over the institution of the Community Forestry Program which provided for the participation of NGOs in organizing forest communities, and the devolution of forest management functions to local communities. In 1990, a national environment program called the *Philippine Strategy for Sustainable Development* was adopted by the DENR. It outlined 10 major strategies for ecological recovery: (1) the integration of environmental considerations in decision-making; (2) the proper pricing of natural resources; (3) property rights reform; (4) the establishment of a National Integrated Protected Areas System (NIPAS); (5) the rehabilitation of degraded ecosystems; (6) the strengthening of residuals management in industry; (7) the integration of population concerns and social welfare in development planning; (8) the inducement of growth in the rural areas; (9) the promotion of environmental education; and (10) the strengthening of citizens' participation and constituency building.

While Factoran was elevated by President Aquino from being Deputy Executive Secretary in the Office of the President to DENR Secretary, Angel Alcala who served as the Ramos administration's environment chief from 1992 to 1995, was recruited from academe and was in fact the nominee of the environmental NGO sector.⁶ He was later on replaced by Victor Ramos who had previously served as DENR Undersecretary. Both Alcala and Ramos continued to pursue the forest tenure reforms and community resource management programs initiated during the time of Factoran. With respect to the forest rehabilitation program however, the DENR has decided to refrain from granting short-term reforestation contracts especially if long-term forest tenure cannot be guaranteed.

Even the National Economic and Development Authority (NEDA), the main economic planning agency of the government, has vowed to pursue an "environmentally responsive management approach to resource use" under its *Development Framework for the Medium-Term Philippine Development Plan, 1993-1998*. Certainly, the new dynamics within the natural resource policy community and the pro-environment pronouncements of official agencies have engendered hopes regarding the institution of more responsive administrative actions and management initiatives in dealing with the serious ecological problems confronting the country. However, reversing the Philippine forestry crisis, as a case in point, demands the sustained application and implementation of policy reforms particularly in the area of environmental cost internalization.

Forestry Sector

The total land area of the Philippines is 30 million hectares, of which 16.8 million hectares (56%) are found in the uplands. In 1993, a total of 14.12 million hectares were certified alienable and disposable land (47.07%), while 15.88 million hectares (52.93%) were classified as forest land. Forest land are of two types: classified and unclassified. Classified forest land cover 15 million hectares (94.46% of total forest area); and unclassified land, by default, is categorized as forest land and cover 881,157 hectares (5.54% of total forest area). Alienable and disposable lands were concentrated in the Southern Tagalog, Bicol and Western Visayas regions; classified forest land in the Southern Tagalog and the Northern and Southern Mindanao regions; and unclassified forest land in the Cagayan Valley, Southern Tagalog and Western Mindanao regions.

Forest cover was down to 5.79 million hectares as of 1993 (19.30% of the country's total land area), of which 804,900 hectares were old growth dipterocarp; 3.04 million hectares were second growth dipterocarp; 232,700 hectares were pine; 1.08 million were mossy; 503,900 hectares were submarginal; and 123,400 hectares were mangrove forests. Most of the remaining forests are found in the uplands of Mindanao.

The dominant forest type in the Philippines and Southeast Asia is the dipterocarp, which accounts for more than 90 percent of commercial forest products in terms of economic value.⁷ Dipterocarp trees have high commercial yield and value, of which old growth trees command the highest price. The remaining dipterocarp forests are located in Regions 2, 4, 10, and 11, and are largely of the Philippine mahogany type. Dipterocarp forests are composed mostly of small diameter trees. Large diameter old growth dipterocarp trees (at least 55 centimeters at breast height) comprise only 16 percent.

The second growth dipterocarp forest area increased slightly by 217,000 hectares (6.31%) from an opening area of 3.33 million hectares in 1970 to 3.54 million hectares in 1989 or an increase of 10,850 hectares annually. The increase was attributed primarily to the reforestation of logged over old growth dipterocarp forests, which outweighed the reduction in forest area of 105,000 hectares annually due to logging and forest conversion. The highest increase was experienced during the early half of the seventies and the latter half of the eighties. However, the combined area accounts of old and second growth forests showed a net decline.

Dipterocarp forests in the Philippines have been heavily logged primarily for export after World War II, until the ban on export of logs and lumber in the 1980s. Opening volume for old growth dipterocarp forests was 1,323.6 million cubic meters in 1970 and closing volume was 280.7 million cubic meters in 1989. The decline in stock over the 20-year period was 1,042.9 million cubic meters (79%) or an average annual rate of decline of 52.14 million cubic meters. Consistent with area accounts, logging accounted for the larger portion of the reduction in volume (62%) as compared with conversion (38%).

Second growth dipterocarp forests had an opening stock of 377.05 million cubic meters in 1970 and closed at 622.37 million cubic meters in 1989. This implies that stock addition from net stand growth, which averaged 23.94 million cubic meters annually, exceeded stock reduction from logging and conversion, which averaged 11.67 million cubic meters annually, by 12.27 million cubic meters.

Despite huge profits from timber production, investment in reforestation was limited. Latest available data from the Forestry Management Bureau showed that only 19,211 hectares of forest land in 1993 were reforested by government and private sectors. The total reforested area from 1960 to 1993 was 1.38 million hectares while the total deforested area was 2.23 million hectares. Establishment of forest plantations was low (37%).⁸ Seedlings had high mortality rates and plantation fires destroyed a huge portion of the surviving trees.

In the past decades the forestry sector made significant contributions to gross national product (GNP) and export earnings. However, as forest resources began to decline, so too did their contribution to the economy. Total roundwood production has been on a continuous decline — falling down from an average of 10 million cubic meters annually in the early 1970s to 1.15 million cubic meters in 1993. The share of forestry to GNP had dropped from 2.48 percent (P2,833 million) in 1975 to less than one percent in the 1990s. Gross value added in forestry was 0.37 percent (P5,570 million) in 1993 or 12 percent less than the 1992 share of 0.49 percent (P6,763 million).

Estimated government revenues from forest charges on logs harvested was P497.39 million in 1993 or an increase of 6.58 percent over revenues from 1992 of P466.69 million due to the increase in stumpage fees from \$1.00 per cubic meter of wood to \$37.04. Forest charges from nontimber forest products was P12.17 million pesos, 93 percent of which was from unsplit rattan. This is a substantial decrease of 16.9 percent over the previous year's revenues of P14.65

million. Direct nature recreation activities, such as coral reef diving, beach use or seashore use, and visitation of national parks, also garnered some P1.58 billion worth of government revenues in 1988.

The Annual Survey of Establishments in 1990 showed that there were 1,205 large establishments involved in the manufacture of wood and wood and cork products, and the repair of furniture and fixtures, with output valued at P14.39 billion, and employing an average of 81,623 persons. In addition, according to the 1991 Family Income and Expenditures Survey of the National Statistics Office, there were 45,034 families who depended on forestry and hunting as their main source of income. Based on a national family count of 11.98 million, this comprised 0.38 percent. Compared with 1988 figures of 40,119 families, this represents an increase of 12.25 percent, but the percentage to total family count of 10.53 million remained the same at 38 percent.

Fuelwood and agricultural production are nontimber forest benefits, a significant portion of which is nonmarketed. Fuelwood or charcoal is the primary cooking fuel that is used in most of the rural households. It is estimated that fuelwood accounts for 70 percent of total wood consumption, and 33 percent of total energy consumption.⁹ Average annual per capital consumption is 0.75 cubic meters. The estimated value of nonmarketed fuelwood production was P4.3 billion while upland agricultural production was estimated at P5.15 billion, bringing the combined total to P9.0 billion. On the other hand, on-site losses from fuelwood consumption and upland cultivation was P34.12 billion, assuming an average loss of P140,660 per hectare.¹⁰ Thus, the net effect is a loss of P25.12 billion.

On the other hand, the need for increased food supply in response to a growing population have resulted in the conversion of vast areas of forest land into agriculture. Results of the time series analysis conducted by the DENR support the significant positive relationship between population and depletion of forest cover from the 1930s to the 1980s and reduction in forest area from the 1800s onward.¹¹ Where population growth proceeded at a high rate, so too did depletion and deforestation. Since land was plentiful at that time and did not pose a constraint to production, agricultural expansion was carried out in the extensive margin through the conversion of forests, which then composed the larger percentage of unused land. Population growth until the end of the century is projected to remain high due to declining mortality and the country's long history of high birth rates.¹²

Rapid population growth with its concomitant effect on poverty and unemployment created pressure for migration to urban areas and the uplands, where land and employment opportunities were available. It has been observed, for instance, that upland areas which received the largest amount of migrants were the same areas which had the largest area of forest land available for occupancy.¹³ Upland population was 17.8 million in 1988, at least half of whom were residing or farming on forest land. The upland population is unevenly distributed among the 12 regions of the country, with the Cagayan Valley and Southern Mindanao regions accounting for more than half of the total upland population. Population growth in the uplands was three percent from 1948 to 1970, and declined to 2.6 percent during the period from 1975 to 1980. Population growth in concession areas was particularly high (3.5%).

Immigrating farmers and the majority of the established upland population utilize shifting cultivation, which substitutes land for labor and other cash inputs, such as fertilizer, i.e. land is extensively used while other inputs are used to a minimum. Rice, corn, and root crops are the dominant agricultural output. The open access nature of most of the upland areas discourage investment in more productive and sustainable agricultural methods since the benefits from such activities will not fully accrue to them. And even if they wanted to, most farmers who engage in shifting cultivation are poor and do not have the capital to invest in alternative cropping methods that counter or diminish soil erosion.¹⁴

The large-scale conversion of forest land into agriculture indicates that the expected economic benefits from agriculture exceeded that from forestry. Oftentimes, forestry benefits were defined exclusively in terms of timber and the potential agricultural uses of the land, undervaluing the whole range of benefits accruing from forests as standing resources, most of which are nonmarketed.¹⁵ Such benefits are also referred to as externalities. Several studies reveal that seldom has the exclusive focus on timber use been economically justified.¹⁶ Net present value and cost-benefit calculations of four perennial crops (rubber, oil, cocoa and coconut) and timber in Malaysia yielded higher returns for agriculture, except at zero or very low discount rates.¹⁷ The same results were obtained for the Amazon. The inclusion of minor forest products (fruit and latex) yielded comparable to higher returns for forestry.¹⁸ The socially optimal land use is achieved by including into the economic analyses timber as well as amenity benefits from the forest land, otherwise, forest benefits will remain undervalued, unsustainable forest management will continue, and agriculture and other land uses will be more viable alternatives.

Since benefits and costs are mirror images (i.e. benefits are costs prevented, and costs are benefits foregone), externalities may also be internalized by including the environmental costs of converting forest land into agriculture.¹⁹ Such costs have often been excluded, leading to overestimated expected net benefits from conversion. These costs include soil erosion; depletion of soil nutrients, which results in declining yields, losses, and eventual abandonment of the area; and the massive fertilizer requirements for sustained agricultural yield since soils in the remaining forests of the Philippines and elsewhere in the tropics are nutrient poor.²⁰ The socially optimal land use is achieved by including financial and environmental costs of conversion into economic valuation schemes.

Forestry Reforms

Reform measures geared toward internalizing the ecological costs of resource use, particularly in the Philippine forest zones, would require the strengthening of the government's fiscal, regulatory and developmental functions in environmental management. One of the most important functions of government that can be harnessed in support of community forest management lies in its power to generate financial resources. Financial assistance from the government would be used to cover the mobilization fund requirements of NGOs serving as assisting organizations in the organization of local communities preparatory to direct local management of Community Forestry Program (CFP) sites. The mobilization fund will serve as the financial support mechanism that will enable the assisting NGO workers to organize the local communities, undertake community resource inventories, update the existing census of forest occupants in the CFP sites, prepare community resource management and development plans, and conduct training programs on resource planning and conservation. In the case of the Forest Land Management Program (FLMP), government financial assistance would come in the form of short-term incentives to help forest communities to defray the initial costs incurred to reforest denuded and degraded lands.

The financial resources required to support the various community-based forest management programs could be raised in a number of ways. First, funding could come from the regular budget of the DENR. In this regard, it is important that the slice of the national budget given to the DENR, which has traditionally been low, be increased to sustainable levels. Within the DENR, on the other hand, financial support for community forestry should be stabilized.

Second, the collection of green fees could be actively and adequately undertaken. In the past, the forest charge on timber extraction was kept ludicrously low such that it did not reflect the true economic and social costs of resource depletion. Considering that there are still around 27 timber companies operating in one million hectares of forest land, the government should tax the remaining large resource extractors heavily.

Third, the government could harness environmental funds from official bilateral and multilateral sources. For instance, the Philippines was able to avail itself of a \$20 million grant from the Global Environment Facility (GEF) in the aftermath of the 1992 Rio Summit on Environment and Development. The GEF money is being used to finance the implementation of the National Integrated Protected Area Systems (NIPAS) law which requires, among other things, the placement of the last primary forests in the country under a regime of protection. Through active environmental diplomacy, the government can increase funding for forest protection.

Lastly, it has been observed that prevailing modes of natural resource taxation are restricted to existing extractive sites and cannot address, for example, the lost and uncompensated resources in cancelled forest concessions. Under the principle that resource compensation is the responsibility of all beneficiaries, it has been innovatively suggested that the government should go after past concessionaires and processors and present a bill of damages to past administrations and importing nations.²¹

Aside from its fiscal role, the government has to exercise regulatory functions in support of community forestry. Being still the national administrator of the forests from a national standpoint, the government has to constantly update land use data and conduct periodic national forest resource inventories. With an effective information system, the government would be able to undertake land use classification and review existing forest policies more expeditiously. In this sense, information on rock-soil conditions, slope stability, proneness to landslides and erosion of the uplands must be compared with current land use data, natural resource inventories, and the relative availability or depletion of different resources in various types of forest land.²² Through accurate forestry data, the government will be in a better position to identify primary forest areas that shall be placed under strict protection and determine secondary and residual forests that will be placed under community governance.²³

Definitely, the government should fortify its information and research infrastructure and strengthen its cooperative linkages with the academic and NGO environmental research community. In this way, government becomes more effective in conducting process documentation of community forestry operations. In pursuit of its regulatory function, the government should also review the prevailing land uses of sloping lands under private ownership. There have been instances in the past when, either due to improper land use classification or to patronage connections, public lands were certified as alienable and disposable, and thereby released for private use.

A classic example in this regard is the release of the upland areas surrounding Ormoc City in the province of Leyte to private landowners in the 1970s where, consequently, the forest was cleared and cash crops like sugar were planted on the hilly slopes. In 1991, a strong typhoon led to the drowning of 6,000 people as an avalanche of water and soil from the bald mountains inundated the coastal city of Ormoc.

In situations like these, it is demanded of government to review the current uses of former public forest lands under private ownership, and determine whether such uses meet the standards of sustainability, especially if these lands are located in critical ecological zones. By virtue of its power of eminent domain, the government can always revoke the titles of ownership in privately-controlled upland areas requiring urgent forest restoration efforts if negotiations fail to convince the landowners to return a significant parcel of the land to forest use.

From being a basically regulatory agency in the past, the DENR has now increased its developmental functions. Through the Community Forestry Program and the Forest Land Management Program, local communities are given equitable access to forest resources and tenure to forest lands. Under these programs, organized communities are provided opportunities to engage in livelihood activities such as agroforestry, livestock production, harvesting of non-timber products and prospective small-scale timber extraction in secondary and residual forest zones.

The power of the DENR to provide long-term tenure security to local communities is perhaps the most critical government role in support of community forestry. However, there is the real possibility that there might be several claimants to being "the community" in certain forest sites. In this regard, the DENR should have a clear idea of the history of forest occupancy in these specific forest areas

before making decisions. In areas occupied by indigenous communities, the DENR should facilitate the process of delineating ancestral lands. After mapping out the area covered by ancestral land rights, the DENR should immediately release these lands from the public domain and recognize indigenous governance of the delineated forest zones.

As part of its developmental function, the DENR should provide technical assistance to forest communities by helping them upgrade their capacities in applying silvicultural treatment and timber stand improvement techniques and by transferring to these communities agroforestry and reforestation technologies. Another possible area of cooperation between the government and local communities pertain to medicinal plant cultivation. A large number of medicines are extracted from forest plant species. The Department of Health, for instance, had initiated the establishment of processing centers based on these plants. A program being undertaken by the health sector is the production of quinine and derivatives from cinchona trees.²⁴ In this regard, the Department of Health can ink agreements with local communities stipulating that the latter will supply the raw materials for the medicine production centers through the cultivation of medicinal plant species in community forestry sites.

Green Trade

The pursuit of environmental reforms could result in potential trade gains with the emergence of green markets in developed countries. The expansion of green trade is expected to continue even with the conclusion of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT). On environment-related trade measures, Article XX of GATT provides that import restrictions could only be allowed if ecological damage is generated by the product, and not if it originates from the production process or method.²⁵ Understandably, the GATT dispute resolution panel ruled in a 1991 decision against the United States (US) ban on tuna imports from Mexico (based on the allegation that a great number of dolphins are killed in catching tuna in Mexico compared to the US) since the US action was based on the application of unilaterally-defined environmental standards to the process (method of catching tuna) rather than simply to the product (tuna).²⁶

Even as GATT rules disallow the use of unilateral trade sanctions to influence the environmental policies of other nations, it does not mean that trade measures are completely removed from governments in advancing global environmental goals. Specific multilateral agreements such as the Convention

on International Trade in Endangered Species (CITES) and the Montreal Protocol on Substances that Deplete the Ozone Layer permit the employment of trade instruments as enforcement tools.²⁷ At the same time, GATT itself was not insulated from the flurry of post-Rio environmental lobbying such that a work program on the environment and trade was adopted in 1994 when the Uruguay Round agreements were signed. The work program furthermore stipulated the creation of a Committee on Trade and the Environment to address the need for rules to support the positive linkage between trade, environmental protection and sustainable development.²⁸

Despite GATT's resistance to the use of environmental criteria in evaluating the production process governing the extraction and/or creation of commodities, the issue of harmonizing production standards are being seriously discussed in trade-environment meetings and workshops within the context of regional organizations, national governments, firms and NGO communities. The Austrian government was forced to rescind its 1992 law requiring mandatory labeling of tropical timber imports after the tropical timber exporters led by Malaysia and Brazil threatened to boycott Austrian products. In the aftermath of this episode, the private sector in Austria and other European countries have been actively promoting the use of eco-labeling and certification procedures in tradeable goods.

In countries where environmental advocacy groups are strong such as Austria, Germany, the Netherlands, Switzerland, and the United Kingdom, joint actions have been taken by industry to verify the environmental dimensions of their timber products. In a number of cases, environmental groups have succeeded in pressuring selected retail outlets, particularly do-it-yourself (DIY) chains to ensure that their wood products emanate from sustainably-managed forests. Another instructive example is the group of Dutch companies who signed the Netherlands Framework Agreement on Tropical Timber to signify their commitment to phasing out unsustainable timber sources²⁹

The strengthening of domestic environmental protection measures has to be earnestly pursued in order for the Philippines to be well-positioned to participate in the expanding green trade network. A recent study, however, indicates that Philippine exporters have still very limited knowledge about eco-labeling programs in other countries.³⁰ The government, through the DENR and the Department of Trade and Industry, could launch an information drive to emphasize the need to adjust to and benefit from emerging green markets.

In reconciling the objectives of environmental protection, community resource management, and green trade, policy initiatives could be undertaken in the direction of providing marketing assistance to local communities. In the case of community forestry, for instance, the government could support the establishment of marketing infrastructure to enable local communities to trade "sustainably-produced" timber and nontimber products. Under an integrated community forest management program, local communities can produce a wide array of forest resources ranging from timber to nontimber products such as rattan, bamboo, pandan, anahaw, fruits, spices, gums, resins, and essential oils. Studies indicate that in a variety of settings nontimber forest products can be extracted with little harm to the environment while guaranteeing the economic needs of local people at the same time.³¹

Conclusion

The history of natural resource extraction in the Philippines has been characterized by the overuse and overexploitation of resources. In a large sense, this has been encouraged by resource pricing policies which externalized the environmental costs of economic activities, as well as by resource tenure systems which favored large-scale extractors over small-scale community users. Policy initiatives aimed at environmental cost internalization and property rights reform, among other things, should be continued and actively supported.

As the Philippines embarks on programs to revive its severely depleted natural resource base, it should engage in rather than resist efforts to link trade and environmental issues in the international arena. The country would be in a better position to participate in green trade by joining debates and negotiations on certification procedures and the harmonization of environmental standards. Strengthening environmental protection programs serves not only to arrest natural resource decline but may also reap potential trade benefits in the near future. Comparative advantage is gained no longer on the basis of simply harnessing cheap labor and operating under minimal production costs, but more importantly on being able to produce goods under environmentally sustainable conditions.

Notes

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²⁰ Repetto, *The Forest for the Trees?*

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²² *Ibid.*, p. 9.

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²⁹ Markku Simula, "The Case of Timber" in *Trade and Environment: Processes and Production Methods* (Paris: OECD, 1994), p. 78.

³⁰ Ponciano Intal, Jr. and Paul Quintos, "Adjusting to the New Trade and Environment Paradigm: The Case of the Philippines," *Journal of Philippine Development*, Vol. XXI, Nos. 1-2 (1994), p. 554.

³¹ For example, see Mark Plotkin and Lisa Famolare (ed.), *Sustainable Harvest and Marketing of Rain Forest Products* (Washington, D.C.: Island Press, 1992).

