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Tropical Forest Conservation Legislation and Policy: A Global Perspective

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TROPICAL FOREST CONSERVATION LEGISLATION AND POLICY: A GLOBAL PERSPECTIVE*

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I. INTRODUCTION

Tropical forests play crucial roles on the earth. These rainforests constitute one of the earth's greatest reservoirs of biological diversity;¹ more than fifty percent of plant and animal species occur in these forests, which cover only five to seven percent of the earth's land surface.² This rich diversity of plant species is reflected in their prominence in the areas of medicine and agriculture.³ Tropical forests are also home to numerous groups of indigenous peoples with long traditions of using the rainforests' resources

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** Visiting Professor, Hastings College of the Law. The authors would like to express their gratitude to Alex Dehgan for his assistance with the morass of the Russian environmental legal system. In addition, the authors would like to thank Mr. Hernan Saenz-Jimenez, Executive Secretary of the Administrative Tribunal at the Inter-American Development Bank, for his invaluable aid in "deciphering" the often cryptic quagmire of the South and Central American environmental legal system. The authors also thank Jessica T. Martin, First Year Law Student at Hastings College of the Law, for her text-editing contributions.

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1. World Wildlife Fund, *The Importance of Tropical Forest, and the Costs of Destruction*, in *TROPICAL FOREST CONSERVATION: WORLD WILDLIFE FUND INTERNATIONAL POSITION PAPER 7* (1989).

2. *Id.* at 7.

3. LESTER R. BROWN ET AL., *State of the World*, World Watch Institute 16, 75 (1993). Tribal women in India, for example, have been found to know medicinal uses for some 300

without depleting them.⁴ Moreover, tropical forests shape hydrological cycles by reducing the impact of heavy rainfall on soil, thus slowing down runoff and minimizing erosion.⁵ In addition, tropical forests help to maintain the heat balance of the earth's surface, thus playing an important role in the cycle of rainfall and evapotranspiration.⁶

There are three major regions of tropical forests. The largest is the American, or Neotropical forest.⁷ This forest begins in Eastern Mexico, continues through Central America, and into South America along the eastern side of the Northern Andes. The largest tropical mass, known as the Amazonian hylaea, has a total area of 1,369 million acres.⁸ The next largest tropical forest area is located in the Malay Peninsula and the Malay Archipelago. This area encompasses 610 million acres and extends from Sumatra in the west to New Guinea and Northern Australia in the east.⁹ The smallest rainforest area is in Africa. It covers 464 million acres and centers around the Zaire (Congo) river basin, Gabon, the Republic of the Congo, the Central African Republic, and the coastal areas of West Africa.¹⁰

Tropical forests are fragile and therefore vulnerable to disruptions of their life cycles. Rainforests are less able than temperate forests to recover from severe or repeated human disturbances; the soil in most tropical forests is easily eroded once the forest cover is

forest species. *Id.*; PHILIP HURST, RAINFOREST POLITICS: ECOLOGICAL DESTRUCTION IN SOUTH-EAST ASIA viii, viii-ix (1990). Forty percent of all drugs prescribed in the United States are based on rainforest plants: the United Nations estimates that less than two percent of tropical forest plants have been screened for medicinal properties. *Id.* *But cf.* BROWN, *supra*, at 81 (stating that tropical forest habitats provided important ecological services: they regulate hydrological cycles, maintain local and global climatic stability and harbor a wealth of biological and genetic diversity).

4. BROWN, *supra* note 3, at 80-81.

5. World Wildlife Fund, *supra* note 1, at 3-4. Tropical forests are also the "lungs of the world"; they are crucial natural regulators of the world's climate. Globally, burning tropical forests are making a significant contribution to the level of carbon dioxide in the atmosphere (although far less than emissions from the industrialized world), and hence, to global warming. At the regional level, there are numerous examples of river flows becoming less reliable following forest loss, with reduced dry season flows and greater flooding following rain. Sediment flows in rivers are increased following erosion of topsoil, and there have been reports of local climate changes attributed to forest reduction.

6. World Wildlife Fund, *supra* note 1, at 8.

7. Arnold Newman, *Tropical Rainforests*, in FACTS ON FILE 17, 20 (1987).

8. *Id.* at 21.

9. *Id.*

10. *Id.* at 22.

removed.¹¹ Loss of rainforest species occurs easily because of their scattered distribution and specific ecological requirements. Thus, destruction of tropical forests has global consequences: it causes the loss of many plant and animal species, and it contributes to changes in the world's climate.¹²

It is estimated that 100 acres of tropical forests are lost every minute.¹³ These forests once covered 9.4 million square miles in the humid equatorial belt;¹⁴ now, the three major areas of rainforest cover only 3.8 million square miles.¹⁵ Poverty and overpopulation create pressures for inappropriate development of rainforests resources.¹⁶ Thus, the main causes of deforestation and forest degradation are agriculture, livestock production, mining, dam construction, and logging.¹⁷ In fact, in some regions, deforestation has been considered a form of land improvement.¹⁸ Despite this exploitation, governments harboring rain forests often fail to recoup significant funds for forest-redevelopment.¹⁹

11. World Wildlife Fund, *supra* note 1, at 3.

12. W.V. REID ET AL., ENVIRONMENTAL POLICY INSTITUTE & THE NATIONAL WILDLIFE FEDERATION, LEAFLET NO. 57, BANKROLLING SUCCESSES: A PORTFOLIO OF SUSTAINABLE DEVELOPMENT PROJECTS 1, 10 (1988). *But cf.* BROWN, *supra* note 3, at 5 (stating that "the economic effect of environmental degradation is certain to grow as the costs accumulate and as the damage materializes from such big-ticket items as stratospheric ozone depletion and global warming. Each year this destruction of the earth's natural support systems results in some 17 million hectares of tropical forests alone. Over a decade, the destruction of tropical forests clears an area the size of Malaysia, the Philippines, Ghana, the Congo, Ecuador, El Salvador, and Nicaragua").

13. HURST, *supra* note 3, at viii.

14. Newman, *supra* note 7.

15. Newman, *supra* note 7, at 17.

16. World Wildlife Fund, *supra* note 1, at 17.

17. World Wildlife Fund, *supra* note 1, at 11.

18. World Wildlife Fund, *supra* note 1, at 17. *See also* HURST, *supra* note 3, at 12. *But cf.* BROWN, *supra* note 3, at 85 (noting that the world economy intrudes on what is left of native lands, as it has for centuries . . . each cycle of global economic expansion, specifically in the late nineteenth and early twentieth centuries, where the modern search for petroleum, strategic minerals, and tropical hardwoods have been based upon the exploitation of natural resources or primary commodities. This relentless quest has led to the displacement of indigenous peoples and the undermining of traditional cultures).

19. D.J. MAHAR, WORLD WILDLIFE FUND & CONSERVATION FOUNDATION (IN COLLABORATION WITH THE WORLD BANK), GOVERNMENT POLICIES AND DEFORESTATION IN BRAZIL 56 (1989). This "loss of return" for logging concessions illustrates that even when governments charge rent for the lands in which the forests grow, they not only collect compensatory funds for use of the land, but also for the valuable resources upon the land's tropical timber, products which are made from the timber, etc. For example, a lack of adequate reimbursement to the federal government for timber sales is a serious problem in the U.S. National Forest System, especially in western states. *Id.* *See* WORLD BANK, WORLD DEVELOPMENT REPORT 5 (1992). *But cf.* BROWN, *supra* note 3, at 86 (explaining that loggers, miners, commercial fishers, small farmers, plantation growers, dam builders all come to seek

Although many countries have promulgated forest preservation legislation, most such efforts have been ineffective due to the failure to allocate sufficient resources for enforcement. Often, this failure reflects only the general poverty of the country. Even where serious enforcement is initiated, legislative conservation policy is undercut by the forces of interest groups with a significant economic stake in rainforest exploitation.

In many undeveloped countries, the rainforest is the final refuge of the starving and the disenfranchised. For the most poverty-stricken, the only means of survival is to slash and burn a few acres of rainforest to gain, at most, a few years of crops before the undernourished soil is depleted. These unfortunates must then move on to slash and burn again in order to eke out the barest existence, leaving in their wake only rotten stumps and barren soil subject to devastating erosion. For example, one has only to take a 30 minute helicopter ride over the northern coast of Madagascar to see the barren "moonscape" over what used to be one of the world's most flourishing preserves of plants and animals.

The notion that a government which is barely able to provide basic public services should provide trained rangers and monitors, to enforce what few laws prohibit deforestation practices, reflects the typical developed-world's attitude towards their less developed sister countries: having developed our natural resources as a means of increasing our own national wealth, we now insist that you forego developing your own in order to preserve 'our' air and the diversity of all plants and creatures. That such pleas fall on the deaf ears of those struggling to find their next meal should come as no surprise to the developed world. Although governments of the Third World can pass environmental and forestry laws to pacify the First World, and thus remove political obstacles to the granting of foreign aid, the fact remains that such laws are disregarded by those to whom obedience means the deprivation of livelihood. Moreover, these laws are undercut, if not flouted, by powerful interests with economic stakes.

A solution to the world-wide devastation of the rainforests can not rely solely on the promulgation of legislation. The pressures of population and economic forces are simply too great to be stopped by pieces of paper. The population of the earth is now increasing exponentially. Projections are for the earth's population (which

their fortunes [in the tropical forests of the world] and these countries' governments, who seemingly equate progress with export earnings, aid them).

was one and a half billion in 1900) to increase to 6 billion within six years.²⁰ By 2015, over 100 million people will be added annually, increasing the population to 8 billion by 2020.²¹ In places such as Rwanda, over 2000 people will be crammed into one square mile.²² If left unchecked, these population increases will create new pressures on the rainforests, particularly by the impoverished for whom no alternative exists. A real solution to the problem of rainforest preservation must include a panopoly of state actions in the area of family planning, and programs of social and economic justice.

This Article provides a survey of current forest policy and legislation in Latin America, Southeast Asia, and the Russian Federation (Part II). Environmental legislation affecting the United States, Germany, and Japan is also reviewed (Part III). Part IV examines international treaties and conventions. While it is beyond the scope of this Article to assess the effects of individual pieces of legislation, one need only compare the extent of legislation with the results: 100 acres of rainforest are lost in the time it takes the reader to read this paragraph. Finally, Part V states the authors' conclusions and recommendations.

II. LOCAL FORESTRY-RELATED LEGISLATION AND AUTHORITY

Environmental management presupposes the existence of a policy to shape its priorities.²³ Environmental legislation can be an appropriate tool for both formulating and implementing environmental policy.²⁴ Awareness of the relationship between the environment and land development has begun to affect tropical forest conservation legislation and policy.²⁵ This trend may help to promote sustainable use and development of the world's tropical forests. However, most countries with tropical forests have not

20. POPULATION REPORTS, THE ENVIRONMENT AND POPULATION GROWTH: DECADE FOR ACTION, vol. XX, No. 2, at 5 (May 1992).

21. WORLD POPULATION PROFILE: 1991 U.S. DEPT. OF COMMERCE AND STATISTICS ADMINISTRATION, BUREAU OF THE CENSUS at 3 (1991).

22. *Id.*

23. L. CALDWELL, INTERNATIONAL ENVIRONMENTAL POLICY: EMERGENCE AND DIMENSIONS 23 (1984).

24. See David S. Zalob, *Approaches to Enforcement of Environmental Law: An International Perspective*, 3 HASTINGS INT'L & COMP. L. REV. 299 (1980).

25. RAUL BRANES, THE WORLD BANK, INSTITUTIONAL AND LEGAL ASPECTS OF THE ENVIRONMENT IN LATIN AMERICA, INCLUDING THE PARTICIPATION OF NONGOVERNMENTAL ORGANIZATIONS IN ENVIRONMENTAL MANAGEMENT 33, 13 (1991). The following three types of legislation form the basis of tropical forest conservation legislation: (1) recent tropical forest protection legislation, based on a modern concept that views the environment as a

currently established formal environmental polices to provide clear guidance for management of tropical forests. Instead, there is much sectorial legislation to regulate specific natural resources (e.g., water use, mining, plant life, etc.) or to regulate certain activities (e.g., industrialization, timber processing, etc.). Further, environmental legislation is often faulty because it attempts to correct individual deviation, as well as ignore social behavior and production/consumption patterns underlying the destructive processes.²⁶

The following survey of local environmental legislation and related executive authority serves to create a starting point for critical and comparative analysis of this type of legislation. This review is organized regionally (Latin America, Asia, the Russian Federation), and further subdivided in alphabetical order by country. It is difficult to become familiar with the entire corpus of forestry-related legislation because the historical process has created scattered rules throughout a large number of legal instruments. Where possible, a discussion is included of the social impact of forestry policy and legislation.

Some authority for forestry conservation legislation is found in the various constitutions of these countries. Generally, these constitutional provisions describe: (1) the governments' duty to protect tropical forests; (2) the citizens' duty to conserve at the cost of some individual rights; and (3) power for public authorities to require environmentally sound development.²⁷ Countries harboring these

systematically organized whole, referred to as "true tropical forest conservation legislation;" (2) legislation that has been promulgated to protect certain aspects of the tropical forest or to safeguard the tropical forest from the effects of certain devastating activities, referred to as "sectorial legislation with environmental relevance;" and (3) legislation that has not been promulgated expressly for environmental purposes, but which regulates behavior that has a significant influence on tropical forest conservation, has "incidental" environmental relevance. *Id.* See H. Jeffrey Leonard and David Morell, *Emergence of Environmental Concern in Developing Countries: A Political Perspective*, 17 *STAN. J. INT'L L.* 281 (1981).

26. L.F.E. Goldie, *Transfrontier Pollution—From Concepts of Liability to Administrative Conciliation*, 12 *SYRACUSE J. INT'L L. & COM.* 185, 193 (1985). See also Zalob, *supra* note 24, at 302.

27. See CONSTITUCION COLOMBIA [Constitution] art. 5 (Colom.); CONSTITUCION MEXICO [Constitution] art. 12 (Mex.); CONSTITUCION POLITICA DE LOS ESTADOS UNIDOS MEXICANOS [Constitution] art. 27, 29-32 (Mex.); see also RAUL BRANES, *DERECHO AMBIENTAL MEXICANO* [MEXICAN ENVIRONMENTAL LAW] (1987); Raul Branes, *La Política Nacional del Ambiente y su Marco Juridico-Institucional en America Latina*, in *V AMBIENTE Y RECURSOS NATURALES* (REVISTA DE RECHO, POLITICA Y ADMINISTRACION No. 3, 197 (1988)); CONSTITUCION COSTA RICA [Constitution] art. 2 (Costa Rica); CONSTITUCION VENEZUELA [Constitution] art. 14 (Venez.); CONSTITUCION BOLIVIA [Constitution] art. 2 (Bol.); CONSTITUCION PARAGUAY [Constitution] art. 8 (Para.); CONSTITUCION PANAMA [Constitution] art. VI, 110, 114-17 (Pan.); CONSTITUCION PERU [Constitution] art. 32 (Peru). See also LUISA GALARZA

forests have promulgated forestry-related legislation at various levels: national, provincial (state), and municipal. There has been recent evidence of a significant trend towards decentralizing legislative authority²⁸ to restore power over environmental management to municipalities.²⁹

A. *Latin America*

Argentina most recently attempted comprehensive forestry policy management through the National Environmental Policy Committee (NEPC). Created in 1989, this Committee reports to the Secretary General of the Office of the President.³⁰ The Committee's mandate is to assist the Secretary General in designing a national environmental policy to be organized and applied through different public bodies.³¹ The Urban Development and Environment Undersecretariat also assists the Secretary in tropical forest management programs, urban development, and local administrative assistance.³² The NEPC replaced the Environmental Policy Undersecretariat (created in 1987), which had replaced the Special Projects Undersecretariat (created in 1985).³³ Furthermore, the Planning Secretariat, under the Office of the President, participates in overall forestry management and protection.³⁴

ET AL., SITUACION DEL MEDIO AMBIENTE EN PERU [THE ENVIRONMENTAL SITUATION IN PERU] (1989); CONSTITUCION ECUADOR [Constitution] art. VI, 19, § 2 (Ecuador); CONSTITUCION CHILE [Constitution] art. 14, 18, 19 § 8, 21 (Chile); CONSTITUCION HONDURAS [Constitution] art. 12 (Hond.); CONSTITUCION EL SALVADOR [Constitution] art. 3, 117 (El Sal.); CONSTITUCION GUATEMALA [Constitution] art. XV, 97 (Guat.); CONSTITUCION NICARAGUA [Constitution] art. XXI, 60 (Nic.); *see also* EUDORA ESPINOZA & PATRICIA DE LOS ANGELES CACERES, SITUACION DEL MEDIA AMBIENTAL EN NICARAGUA [ENVIRONMENTAL SITUATION IN NICARAGUA] (1989); CONSTITUCION BRAZIL [Constitution] art. IX (Braz.); *see generally* PEDRO PABLO MORCILLO, INTER-AMERICAN DEVELOPMENT BANK, LEGISLACION Y ASPECTOS INSTITUCIONALES AMBIENTALES EN ALGUNOS PAISES MEMBROS PRESTATARIOS DEL BID 7, vol. II (1989); CONSTITUCAO FEDERAL [C.F.] art. 225 § 1-4; CONSTITUCION ARGENTINA [Constitution] art. 23, § 2, (Arg.) *reprinted in* Morcillo *supra* note 27, at 15; GUY. CONST. ch. 2, §§ 25, 36; INDON. CONST. art. 33, § 2, *reprinted in* Hurst, *supra* note 3, at 98.

28. HURST, *supra* note 3, at 17. *See also* Sanford E. Gaines, *International Principles for Transnational Environmental Liability: Can Developments in Municipal Law Help Break the Impasse?*, 30 HARV. INT'L L.J. 311 (1989).

29. Gaines, *supra* note 28, at 315.

30. REAL DECRETO LEGISLATIVO [R.D.L.] No. 6938 (Braz.).

31. BRANES, *supra* note 25, at 26.

32. BRANES, *supra* note 25, at 26.

33. BRANES, *supra* note 25, at 25.

34. BRANES, *supra* note 25, at 26.

Despite the above environmental policy authorities, Argentina is without federal legislation to regulate environmental matters. However, there is sectorial legislation to regulate land use and forestry management,³⁵ such as: the Act Regarding Forest Resource Protection,³⁶ the Act Regarding Air Quality,³⁷ the Act Regarding Forests,³⁸ and laws pertaining to national parks,³⁹ wildlife,⁴⁰ and nonrenewable natural resources.⁴¹

The Belize government implemented the National Forests Act of 1989 and the National Forest Enactments to declare as the country's first nature reserve, an 83,000 acre tropical rain forest in its southern mountains. This newly-created Bladen National Forest had been seriously threatened by mass logging concessions. The Belize government is further considering a 143,000 acre area for a world biosphere reserve.⁴²

Bolivia does not currently have legislation to systematically regulate environmental protection. However, a draft of an environment and natural resources act has been under consideration in Congress for some time.⁴³ Bolivia does have legislation to regulate different forestry-related aspects, such as renewable natural resources,⁴⁴ nonrenewable natural resources,⁴⁵ and human settlements.⁴⁶

35. Vladimir Serrano, *La Política y el Derecho en Relacion a la Ecología, in V RECURSOS NATURALES (REVISTA DE DERECHO, POLITICA Y ADMINISTRACION) No. 3, 117 (1988)*. See, e.g., Argentina's Land Conservation Act, CÓDIGO CIVIL [CÓD. CIV.] No. 22,428 (Arg.).

36. Forest Resource Protection Act, CÓD. CIV. No. 13,273 (Arg.).

37. Air Quality Act, CÓD. CIV. No. 20,284 (Arg.). *But cf.* Land Conservation Act. CÓD. CIV. No. 22,428 (Arg.) and the Forest Act, CÓD. CIV. No. 13,273 (Arg.) (in which the Air Quality Act was designed to be enforced in conjunction with in order to monitor air quality, global warming, etc.).

38. Forest Act, CÓD. CIV. No. 13,273 (Arg.).

39. National Parks Act, CÓD. CIV. No. 22,531 (Arg.).

40. Wildlife Act, CÓD. CIV. No. 22,421 (Arg.) (which is also known as the Wildlife Protection and Conservation Act). The Wildlife Act, *supra*, not only protects wildlife, but the environment in which it exists.

41. Nonrenewable Natural Resources Act, CÓD. CIV. No. 1919 (Arg.). The Nonrenewable Natural Resources Act, *supra*, also approves the Mining and Forestry Codes.

42. Interview with David Gibson, Permanent Secretary for the Belize Ministry of Industry and Natural Resources.

43. BRANES, *supra* note 25, at 27.

44. General Water Act, CÓDIGO CIVIL [CÓD. CIV.] No. 239 (Bol.); General Forest Act, CÓD. CIV. No. 7392 (Bol.); General Act on Wildlife, National Parks, Hunting and Fisheries, CÓD. CIV. No. 1467 (Bol.).

45. Mining Code, CÓD. CIV. No. 4651 (Bol.).

46. Basic Housing Act, CÓD. CIV. No. 2347 (Bol.).

In Brazil, the creation of the National Environment System (SISNAMA) in 1981 represents a significant change in its environmental policy. SISNAMA is comprised of: (1) the National Environment Council (CONAMA), a senior body responsible for assisting the President in shaping national forestry policy; (2) the Brazilian Environment Authority (once the Special Secretariat for the Environment), a central body responsible for promoting, regulating and evaluating forestry policy; (3) the "sectorial bodies" responsible for federal public administration of forestry policy; (4) the "sectional bodies," state agencies responsible for executing conservation programs and for controlling and monitoring potentially destructive forestry projects; and (5) "local bodies," municipal entities responsible for supervising environmental activities within their spheres of jurisdiction. In particular, CONAMA is responsible for establishing environmental standards, criteria and rules, without diminishing the powers of the states to promulgate supplementary and complementary environmental standards.

Federal environmental legislation includes the Act on the Prevention and Control of Environmental Pollution (1976),⁴⁷ and Act No. 6938⁴⁸ regarding national environmental policy. Other forestry-related acts to regulate: land use,⁴⁹ water,⁵⁰ plant life,⁵¹ and agricultural chemicals.⁵² Brazil's municipalities also have authority to prepare environmental rules consistent with federal and state standards.

Chile has begun to restructure its national environmental administration through creation of a National Environmental Commission, under a Supreme Decree of June 1990. This Commission, comprised of a committee of ministers, an operations committee, and an executive secretariat, replaced the National Ecology Commission created in 1984. The Commission's main purpose is to promote, protect, and sustain Chile's natural resources. Although Chile has no general legislation regarding environmental protection, there is some legal structure to regulate forestry matters: the Forest Development Act, the Basic Constitutional Law on Mining Concessions and the Mining Code, the Hunting Act, the Water

47. R.D.L. No. 34 (Braz.).

48. R.D.L. No. 6938 (Braz.); C DIGO CIVIL [C.C.] No. 6938 (Braz.).

49. Land Statute Act, C.C. No. 4504 (Braz.).

50. National Irrigation Policy, C.C. No. 6662 (Braz.).

51. New Forest Code, C.C. No. 4771 (Braz.).

52. C.C. No. 6894 (Braz.).

Code, the Fisheries Act, and the Resolution on Minimum Sanitary Standards to Prevent and Control Air Pollution.⁵³

In Colombia, the National Population and Environment Council was created in 1973 as an advisory body to the government on population, natural resources and the environment. Until now, the most general responsibilities in this field have been shouldered by the Development Authority for Renewable Natural Resources and the Environment (INDERENA), created in 1968 as the Development Authority for Renewable Natural Resources.

Colombia was the first country in Latin America and the Caribbean to define a national forestry policy through legislation.⁵⁴ The Civil Code on Renewable Natural Resources and Environmental Protection, enacted in 1974, establishes principles governing the use of tropical forests and other renewable natural resources.⁵⁵ In the first forty Articles, the Code establishes general protective measures in national forestry policy;⁵⁶ the remaining 300 Articles pertain to the protection of renewable natural resources.⁵⁷ The mechanisms described in the Code for implementing environmental and forestry policy⁵⁸ include: economic incentives, educational activities, use of mass media, compulsory national forestry service, levies for forestry services, an environmental information system, public investments in public works to upgrade the environment, environmental impact assessments, zoning for agriculture and timber trade, and environmental emergency measures.⁵⁹

In a 1981 decree, Costa Rica created a National Environmental Protection and Improvement System under the Ministry of Planning. The System is responsible for reviewing, integrating, and harmonizing policies for the conservation, protection and improvement of tropical forests; coordinating, evaluating and following up on forestry activities; and other activities towards the objective of improving the environment for the quality of life in Costa Rican communities. In 1987, Law 7064 was enacted to create a National Committee comprised of representatives of existing ministries and other organizations concerned with environmental planning. Under Law 7152 of 1990, the Ministry of Natural Resources,

53. BRANES, *supra* note 25, at 24-25.

54. CÓDIGO CIVIL [CÓD. CIV.] art. VI (Colom.); BRANES, *supra* note 25, at 26.

55. CÓD. CIV. No. 9363, art. IX (Colom.).

56. CÓD. CIV. No. 9363, arts. 1-40 (Colom.).

57. CÓD. CIV. No. 9363, arts. 49-351 (Colom.).

58. CÓD. CIV. No. 9363, art. X, ¶ 5 (Colom.).

59. *Id.* at ¶¶ 10-18.

Energy and Mines replaced the Ministry of Industry, Energy and Mines (operating since 1986), to become the country's principal institution in environmental matters.

Ecuador has both the highest population growth and the highest deforestation rate in Latin America.⁶⁰ Yet, its environmental legislation is markedly sectorial in nature in regulating natural resources. Some of this legislation consists of: the Act on the Prevention and Control of Environmental Pollution,⁶¹ the Act on Forests and Natural Areas and Wildlife Conservation of 1981,⁶² the Agrarian Reform Act,⁶³ the Agricultural Development Act,⁶⁴ the National Reserves and Parks Act,⁶⁵ the Water Act,⁶⁶ the Fossil Fuels Act,⁶⁷ and the Mining Development Act.⁶⁸

El Salvador has some legislation regulating forestry-related matters. Besides laws pertaining to water,⁶⁹ farm chemicals,⁷⁰ and forests,⁷¹ there exists the Irrigation and Drainage Act,⁷² the Act on Integrated Water Resource Management,⁷³ the Mining Code,⁷⁴ and the Fossil Fuels Act.⁷⁵

Guatemala has had an Environmental Protection and Improvement Act since 1986.⁷⁶ This Act coexists with earlier legislation that regulates other forestry matters, such as the Forest Act

60. SIERRA CLUB, STOP THE TROPICAL FOREST ACTION PLAN 1, 3 (1990).

61. Prevention and Control of Environmental Pollution Act of 1976 (Ecuador). *See also* BRANES, *supra* note 25, at 27.

62. Forests, Natural Areas and Wildlife Conservation Act, CÓDIGO CIVIL [CÓD. CIV.] No. 23,391 (Ecuador).

63. Agrarian Reform Act, CÓD. CIV. No. 11,762 (Ecuador).

64. Agricultural Development Act, CÓD. CIV. No. 21,496 (Ecuador).

65. National Reserves and Parks Act, CÓD. CIV. No. 2683 (Ecuador).

66. Water Act, CÓD. CIV. No. 2127 (Ecuador).

67. Fossil Fuels Act, CÓD. CIV. No. 19,635 (Ecuador).

68. Mining Development Act, CÓD. CIV. No. 4106 (Ecuador).

69. Water and Sewerage Authority Act of 1961 (El Sal.).

70. Control of Pesticides, Fertilizers and Products for Farm Use, CÓDIGO CIVIL [CÓD. CIV.] No. 17,642, §§ 2-6 (El Sal.).

71. Forest Act of 1973 (El Sal.).

72. Irrigation and Drainage Act of 1980 (El Sal.).

73. Integrated Water Resource Management Act of 1981 (El Sal.).

74. CÓD. CIV. No. 312 (El Sal.).

75. Fossil Fuels Act of 1961 (El Sal.).

76. REAL DECRETO LEGISLATIVO [R.D.L.] No. 21 (iv) (Guat.); *see* BRANES, *supra* note 25, at 28.

of 1974⁷⁷ and the Mining Code of 1965.⁷⁸ In 1990, new legislation was passed creating protected natural areas.⁷⁹

Honduras has draft legislation regarding general environmental protection before its legislature.⁸⁰ Meanwhile, sectorial legislation for renewable and nonrenewable natural resources exists: the Agrarian Reform Act, the Act in Respect of the Honduran Forest Development Corporation, the Forest Act, the Plant Health Act, the Animal Health Act, the Water Act, and the Mining Code.⁸¹

Mexico enacted the General Act on Ecological Balance and Environmental Protection in 1988.⁸² This Act distributes environmental responsibilities among the federal, state, and municipal governments, while systematically regulating environmental matters under federal jurisdiction. Other federal laws regarding sectorial forestry matters include: the Agrarian Reform Act, the Agricultural Development Act, the Federal Water Act, the Forest Act, the Federal Hunting Act, and the Mining Act, which regulates Article 27 of the Constitution.⁸³

Pursuant to Nicaragua's Constitution, the General Natural Resources Act of 1958⁸⁴ was issued. Later, the Fisheries Act of 1961 and the New Act on the Protection of Our Wildlife (1977) were enacted.⁸⁵ In 1979, the Nicaraguan Natural Resources and Environmental Authority (IRENA) was created. Subsequent legislation includes the Nicaraguan Mining Development Corporation, the National Parks Service (an IRENA program), the Public Forest Corporation, and the Act in Respect of Soil Protection and Erosion Control (1983).

Panamanian legal protection and regulation of tropical forests is found in the Agrarian Code,⁸⁶ Decree Law No. 35 of 1966⁸⁷ for

77. BRANES, *supra* note 25, at 28.

78. BRANES, *supra* note 25, at 28.

79. Vladimir Serrano, *Ambiente Y Recursos Naturales* (Revista de Derecho, Politica y Administracion), La Ley, Buenos Aires. Vol. V, No. 3, 341 (July-Sept. 1988).

80. BRANES, *supra* note 25, at 29.

81. See Branes, *supra* note 25, at 29.

82. Ley Organica del Poder Judicial Federal [L.O.P.J.F.] art. VII (Mex.).

83. BRANES, *supra* note 25, at 23.

84. Natural Resources Act, CÓDIGO CIVIL [Cód. Civ.] No. 413 (Nicar.).

85. BRANES, *supra* note 25, at 29.

86. CÓDIGO CIVIL [Cód. Civ.] No. 2193 (Pan.).

87. D.O. No. 35 (Pan.).

water, Decree Law No. 39 of 1966⁸⁸ for forestry, and Decree Law No. 23 of 1967⁸⁹ to protect wildlife.

Paraguay's legislation governing renewable natural resources is Act No. 422 of 1973,⁹⁰ which regulates matters ranging from protection of forests to the conservation of land and aquatic wildlife. Other important forestry legislation are the Rural Code of 1931⁹¹ and the Agrarian Statute of 1963.⁹²

In Peru, the authority most responsible for the environment is the National Office for Natural Resource Evaluation (ONERN), which answers to the National Planning Authority (headed by the Minister of State). The recent Environment and Natural Resource Code introduced a National Environment System. The national executive is responsible for designating a body to coordinate the System (Article 128). Within the System are: government institutions engaged in research, assessment, monitoring and controlling of natural resources and the environment, and offices of different ministries and public authorities on national, regional and local levels.

Peru's Environment and Natural Resource Code⁹³ seeks to provide complete legislation regarding environmental protection. In fact, Article 12 states that the Code takes precedence over legislation that runs counter to protection of the environment and natural resources.⁹⁴ The Agrarian Reform Act, the Forestry and Wildlife Act, the General Industries Act, the General Water Act, the Basic Rural Sanitation Act, the General Mining Act, and the General Fisheries Act are all consistent with this Code. The Code mandates that the Forestry and Wildlife Act be updated within 60 days (second transitory provision),⁹⁵ and that the Executive Branch draw up regulations within this deadline (third transitory provision).⁹⁶

88. D.O. No. 39 (Pan.).

89. D.O. No. 23 (Pan.).

90. D.O. No. 422 (Para.).

91. CÓDIGO CIVIL [CÓD. CIV.] No. 101 (Para.).

92. Cód. Civ. No. 331 (Para.).

93. CÓDIGO CIVIL [CÓD. CIV.] No. 7120 (Peru).

94. Cód. Civ. No. 7120, art. XII (Peru).

95. Cód. Civ. No. 7120, art IX, ¶ 2 (Peru).

96. Cód. Civ. No. 7120, art. IX, ¶ 3 (Peru).

Since 1954, Suriname has had a Nature Protection Act.⁹⁷ The Act led to the establishment of protected areas,⁹⁸ and laws concerning forestry matters, such as the Hunting Act,⁹⁹ the New Forest Act,¹⁰⁰ the Land Use Act,¹⁰¹ and the Planning Act.¹⁰²

Uruguay's tropical forests are also regulated under sectorial legal instruments: the Rural Code (promulgated in 1875, updated in 1941),¹⁰³ the Water Code of 1979,¹⁰⁴ the Forest Resources Act (Law No. 13723 of 1968),¹⁰⁵ the Hunting Act (Law No. 9481 of 1935),¹⁰⁶ and the Mining Code of 1982.¹⁰⁷

Venezuela created the Ministry of the Environment and Renewable Natural Resources (MERNR) in 1976. The Ministry operates through fourteen national administrative zones created based on ecological socioeconomic affinity. The Basic Act Governing the Central Administration gives the Ministry responsibility to plan and implement federal action to: improve the quality of life, the environment, and renewable natural resources; prepare and implement programs to conserve, protect, improve, regulate and utilize resources such as water, forest, land and soil; maintain wild-life inventory; and conserve, protect, improve and regulate national parks.

Venezuela's Basic Environmental Act (1976) was concerned with "establishing guidelines for the conservation, protection and improvement of the forest and the environment to upgrade the quality of life as part of the nation's comprehensive development policy."¹⁰⁸ The Act created the National Plan for Conservation, Protection, and Improvement of the Environment¹⁰⁹ as part of the National Plan.¹¹⁰ It also led to the Basic Land Use Management

97. CÓDIGO CIVIL [CÓD. CIV.] No. 515 (Surin.).

98. Nature Protection Act, Cód. Civ. No. 515. § XI (Surin.).

99. Cód. Civ. No. 8124 (Surin.).

100. Cód. Civ. No. 12,743 (Surin.).

101. Cód. Civ. No. 4122 (Surin.).

102. Cód. Civ. No. 9140 (Surin.).

103. CÓDIGO CIVIL [CÓD. CIV.] No. 3130 (Uru.).

104. Cód. Civ. No. 41,230 (Uru.).

105. Cód. Civ. No. 13,723 (Uru.).

106. Cód. Civ. No. 9481 (Uru.).

107. Cód. Civ. No. 61,980 (Uru.).

108. CÓDIGO CIVIL [CÓD. CIV.] No. 21,340, art. 1 (Venez.).

109. *Id.* at art. 3.

110. *Id.* at arts. 5-7.

Act of 1983,¹¹¹ which was passed to regulate land management process consistent with the long-term economic and social development strategy.¹¹² Other laws which regulate environmental matters include: the Agrarian Reform Act,¹¹³ concerned with subsistence agriculture within forestry areas; the Act in Respect of Forests,¹¹⁴ providing for general forestry policy and stringent timber industry regulation; the Plant and Animal Health Acts; and the Wildlife Protection Act, to protect the biodiversity within the tropical forest areas.¹¹⁵

B. *Asia*

In Indonesia, the tremendous variations between the ecology and soils of Java and those of the outer islands exacerbate the country's deforestation problems. In addition, the imposition of inappropriate farming systems on the outer islands, a rampant and corrupt logging industry, and a callous disregard for the wishes of indigenous tribal groups, contribute to the present environmental and social degradation. Indonesia's present forestry policy evolved primarily from its national Constitution of 1945 (the Pancasila). This Constitution continues to form the philosophical base for Indonesia's development goals. Current government forestry policies are outlined in five-year plans known as Replitas. While the Replitas have been a success in improving the country's GNP, there has been no major shift in the distribution of wealth and control over natural resources. Thus, the middle and upper income groups gain more from forest exploitation than the rural poor.

The Basic Agrarian Law of 1960¹¹⁶ provides one basis for Indonesia's forestry regulation, and focuses primarily on land-use rights. As its basic premise, this law states that all forested land and natural resources are ultimately owned by the state as "an Authoritative Organization of the Whole People."¹¹⁷ Section 12 of the law states, "[i]n order not to harm the public interest, excessive ownership and control of land are not permitted".¹¹⁸ Moreover, the law has specific provisions limiting forest products: "[t]he right of opening up

111. Cód. Civ. No. 19,742 (Venez.).

112. *Id.* at art. 4.

113. Cód. Civ. No. 31,211 (Venez.).

114. Cód. Civ. No. 31,274 (Venez.).

115. BRANES, *supra* note 25, at 24.

116. Basic Agrarian Law, MINPO No. 212 (Indon.).

117. *Id.* at § 1.

118. *Id.* at § 12.

land and collecting forest products may only be possessed by Indonesian citizens;"¹¹⁹ and, "[t]he right of [timber] exploitation is granted for a period of no longer than 25 years."¹²⁰ Timber concessions may also be revoked because of neglect, abandonment, and "the destruction of the land."¹²¹ It is important to note that, although the Basic Agrarian Law purports to preserve forest products for Indonesian citizens, tribal people are classified as "isolated and alien."¹²² Hence, their land claims are neither secure nor protected.¹²³

In 1967, Indonesia enacted the Basic Forestry Law.¹²⁴ The self-described purpose of the Law is "obtaining the highest possible benefits . . . on a sustained yield basis . . . to develop a prosperous and just Indonesian society."¹²⁵ Under this Law, all forests were designated either "production forests," "protection forests," or "wildlife and other reserves."¹²⁶ Production forests are left open for timber exploitation or agricultural purposes.¹²⁷ Protection forests are designated to remain untouched in order to provide general environmental services (e.g., soil retention and flood alleviation).¹²⁸ Wildlife and other reserves are protected for genetic resources, or to save a particularly rare species.¹²⁹ In an effort to keep timber profits within Indonesia,¹³⁰ the Basic Forestry Law provides for (1) the production of annual and five-year plans by timber concession holders, as well as an overall strategy covering the concession period;¹³¹ (2) some attempt by concession holders to establish a processing plant (e.g., a saw or plywood mill);¹³² and (3) provisions for replanting, sustainable yield, and for greater research by concession holders.¹³³ Failure to comply with these provisions may result

119. *Id.* at § 14, ¶ 3.

120. *Id.* at § 13.

121. *Id.* at § 14.

122. HURST, *supra* note 3, at 52.

123. HURST, *supra* note 3, at 53; Joseph Weinstock, *quoted in* HURST, *supra* note 3, at 57.

124. MINPO No. 3121 (Indon.).

125. *Id.* at art. I.

126. HURST, *supra* note 3, at 58.

127. HURST, *supra* note 3, at 59.

128. HURST, *supra* note 3, at 59.

129. HURST, *supra* note 3, at 59.

130. MINPO No. 3121, art. VI (Indon.).

131. HURST, *supra* note 3, at 60.

132. HURST, *supra* note 3, at 60.

133. HURST, *supra* note 3, at 61.

in confiscation of equipment and harvested forest produce, and/or imprisonment.¹³⁴

Weaknesses with the Basic Forestry Law have been observed. Although amended numerous times, the Law yet failed to mention any environmental impact assessments for forest projects, influence of the transmigration program, or public participation in replanting schemes. Moreover, the classifications of forested areas are frequently overridden by government departments with conflicting goals. The Forestry Department of Indonesia, which enforces the Basic Forestry Law, is more concerned with timber production than general forest development.¹³⁵ Furthermore, the four government departments responsible for implementing the Law, Agriculture, Social Affairs, Interior, and Environment have failed to coordinate their efforts, thus, contributing to Indonesia's tropical forest loss.¹³⁶

Malaysia is divided into two distinct regions, West Malaysia (covering the Malay Peninsula), and East Malaysia (occupying North Borneo). Although Malaysia is a constitutional monarchy with a federation of eleven states, the individual state governments have a high degree of autonomy, particularly in forestry issues.¹³⁷ The states individually control all land development policy, and their various enactments form the basis of current Malaysian forest law and policy. However, typical state forestry legislation has focused on administration rather than conservation.¹³⁸ With their independence in 1957, the federal authorities still regarded forests as a state government affair. The British, however, had already established the Federal Land Development Agency (FELDA), which continues to be the main federal body involved with forest clearance. The Agency's goals were to solve the landless farmer problem, relieve rural poverty, and continue to develop plantations. Within months after independence, the National Land Council was established as the other major rural development agency.

Proposed in 1972, the National Forestry Policy was accepted by the National Council in 1978. The goal of the Policy is to establish a sustainable forestry industry throughout Malaysia. Numerous regulations on replanting, enrichment planting, extraction methods, and

134. See Zalob, *supra* note 24.

135. HURST, *supra* note 3, at 65.

136. UNESCO, *Environment et droits de l'homme*, § 24 (1988). See also FRANCOIS NECTOUX & YAMAGUCHI KURODA, WORLD WILDLIFE FUND, *TIMBER FROM THE SOUTH SEAS* 23 (1988).

137. HURST, *supra* note 3, at 113.

138. HURST, *supra* note 3, at 120.

proper planning schedules for concessions are outlined in the Policy. The Policy also includes schemes for local communities to obtain control of exploitation rights, and to restrict trade in non-timber forest produce. It calls for stronger protection for water courses, aboriginal rights to use forest resources, urban expansion policy, and national parks. This far-reaching Policy with its integration of forestry issues was seen by state departments as encroaching on their territory. Thus, at the time of this writing, not all of the state forestry departments were signatories to the Policy, most notably Sarawak in East Malaysia.

In 1972, the Wildlife Act was passed.¹³⁹ Under this Act, states could establish two kinds of protected forests: wildlife reserves, and/or wildlife sanctuaries.¹⁴⁰ In wildlife reserves, general environmental protection is required, e.g., in critical watersheds, or areas suitable for recreation.¹⁴¹ Wildlife sanctuaries are set aside to protect rare or endangered species, and therefore are also subject to strict laws on hunting and collecting. Although entry into both types of areas is restricted, permits may be granted for any kind of exploitation, including logging.¹⁴² Thus, through permits, the Wildlife Act is open to abuse. An example of this abuse is the Endau-Rompin wildlife reserve.¹⁴³ In 1977, the state government of Pahang granted a logging permit for 6,000 hectares of the core area. The loggers felled more than twenty-five hectares per day, and in less than eight months the area was devastated. Though the core of Endau-Rompin has suffered this severe damage, it is still not declared a protected area.¹⁴⁴

With each state concerned only with its share of the timber market, no national policy regarding forestry was developed until the 1980s. The rapid growth of the timber industry from the mid-1960s to the early 1980s prompted the Malaysian plan to note for the first time the dangers of overexploiting the forests. Such exploitation, however, cannot be allowed to be excessive as a portion of the country's forests must be reserved to avoid the danger of sudden climatic changes in the country, safeguard water supplies and soil fertility, and prevent flooding and erosion.

139. MINPO No. 31,450 (1972) (Malay.).

140. HURST, *supra* note 3, at 123.

141. HURST, *supra* note 3, at 125.

142. HURST, *supra* note 3, at 125.

143. E.B. Weiss, *Environmental Disasters in International Law*, ANUARIO JURIDICO INTERAMERICANO 1986 (1988).

144. *Id.* at 135.

The National Parks Act, enacted in 1980,¹⁴⁵ sought to establish national parks to protect key wildlife areas and sites of historical and cultural significance.¹⁴⁶ However, this Act has never been applied in West Malaysia, and the only national park (Taman Negara) was established in 1939 under the British administration. In 1984, the National Forestry Act¹⁴⁷ was enacted to give some legal force to the National Forestry Policy of 1972. Under the Act, the Forest Development Fund was established as a federal research and coordinating body on timber management and production. The National Forestry Act aims to standardize the development policies of the various state forestry departments and recognizes that forestry is a federal regulation matter rather than a state matter. The Act calls for reclassifying forests into major categories: production, protection, wildlife, recreation, research, and federal. Unclassified forests are presumed "production" and are open for timber exploitation. Since state governments have much to gain from the timber industry, there seems little incentive to reclassify the forests into protected areas. While the Act provides an initial framework for future forest-conservation legislation, it lacks strict rules regarding timber extraction, or aboriginal land rights.

As in Indonesia, the aboriginal peoples of Malaysia have suffered from various forestry-related laws. In 1954, the British administration enacted the Aboriginal Peoples' Act of 1954,¹⁴⁸ which purported to "provide for the protection, well-being and advancement of the aboriginal people of West Malaysia."¹⁴⁹ Despite its superficial appearance of benevolence, the Act narrowly defined "aboriginal," effectively excluding certain groups from its "benefits." Moreover, the British concept of land ownership providing for reserves was inappropriate for the nomadic and seminomadic forest societies (the "Orang Asli").¹⁵⁰ Under the Act, a state appointed Commissioner for Aboriginal Affairs had broad discretion in allowing the Orang Asli to obtain rights over their inhabited forest lands.¹⁵¹ Although the state may establish "aboriginal reserves" in which the Orang Asli have full rights over forests and their resources, these rights exclude timber extraction, and the state

145. MINPO No. 28,172 (1980) (Malay.).

146. *Id.* at § 3.

147. MINPO No. 71,477 (1984) (Malay.).

148. MINPO No. 410 (1954) (Malay.).

149. *Id.*

150. HURST, *supra* note 3, at 122.

151. *See* Zalob, *supra* note 24.

may revoke the reserve at any time.¹⁵² Furthermore, the Commissioner has the power to evict entire villages from state lands or forest reserves.¹⁵³

Although there is a recent legislative framework for implementing private and communal ownership of forest areas, the plight of the Orang Asli has not improved. The Forestry (Private Dwellings) Act of 1971 and the Forestry Act of 1973 seem to ensure full land rights for clans and tribes over any forest areas they inhabit and/or use. Under these acts, individual tribes may choose their own representatives to negotiate directly with timber mining companies. Contracts with such companies must be ratified by the Forestry Minister, who must be satisfied that: (1) the interests of the communal group as a whole are protected; (2) the plans do not infringe upon the national interest; and (3) the prospects for economic development are feasible. The Act further stipulates that no contract may overrule certain land rights, including: rights of access to all forest areas; rights to collect firewood; rights to practice traditional gardening; and rights to hunt in a restriction-free environment. Logging concessions are further disallowed near villages or sacred sites, and claims for protection of individual trees must also be respected. Although these Acts appear to favor the traditional rights of indigenous tribes, their efficacy is largely diminished by the Forestry Minister's broad discretion in, and actual lack of, enforcement.

Moreover, the Orang Asli have no rights to collect forest produce without permits, which are also revocable at any time. In addition, these permits stipulate that no forest produce may leave the boundaries of the forest reserve. Thus, the centuries-old tradition of bartering forest produce with coastal Malays is made illegal. Today, Orang Asli not in a reserve are considered trespassers,¹⁵⁴ thus, their oppression remains despite new Malaysian administrations.

Unlike Indonesia and Malaysia, Papua New Guinea's legislation stringently protects tribal land rights. The protection of tribal land rights may have contributed to forest conservation in Papua New Guinea. The legislation attempts to ensure that tribal groups

152. See Chian Ho, *UN Recognition of the Human Right to Environmental Protection*, 2 EARTH L.J. 225 (1976).

153. HURST, *supra* note 3, at 123.

154. HURST, *supra* note 3, at 116.

receive a fair price for their resources, and makes it extremely difficult for the Forestry Minister to impose logging in an area where the local tribe is opposed to it. In the event tribal owners are willing to sell their timber rights, the Forestry Act of 1973 empowers the government to buy these rights. This Act does not, however, authorize compulsory purchase.

The government may sell the rights to a timber company and demand royalties from the extracted timber. Initially, the tribal clan received twenty-five percent of these royalties. Recently, this percentage has increased to seventy-five percent. Moreover, the government may issue logging licenses only if certain environmental criteria are met: (1) no felling within twenty meters of any permanent water course, or within fifty meters of a river; (2) no felling on slopes of 30 degrees or more; (3) no blocking of water courses to make bridges; (4) restrictions on the disposal of sawdust waste from sawmills; and (5) erosion control along all roads and tracks.

Papua New Guinea's Environmental Planning Act, passed in 1978, required all major development projects to have an environmental impact assessment (EIA) completed prior to the signing of any commercial agreement. The developer bears the costs of the EIA research, and all are submitted to the Minister for the Environment. For smaller operations, the EIA is optional because of the administrative burden. The EIA provisions are not without problems. Not only is there no redress in the event of noncompletion or poorly researched EIAs, prosecution under the Act is possible only if damage has been recorded. Thus, though the EIA is designed to prevent environmental damage, the Act allows redress only after damage has been done. Moreover, once the EIA has been submitted and accepted, the developer is virtually absolved of any responsibility for unforeseen environmental problems. Only by proving direct negligence or non-compliance with the schedule can a developer be prosecuted.

The New Conservation Areas Act was also passed in 1978. This Act enables the government to exclude certain areas from development solely for reasons of conservation. Commercial timber or logging licenses may not be granted in such areas. This Act also provides for the establishment of a network of national parks.

These Acts provide the most thorough basis for forest conservation in the South-East Asian region. However, while they have successfully protected the forests from recent development efforts, there are some notable procedural problems. First, most logging

agreements were signed before these Acts existed (though many are reaching the end of their leases). Also, the EIAs present some difficulty because there is little scientific data on the country's ecology, and there is an acute shortage of qualified personnel for research.

In the Philippines, the Land Registration Act of 1902 was originally designed to limit the extent of privately owned land. Under the Act, individuals were required to register land claims with the United States colonial authorities. However, few Filipinos knew of this requirement because the law was not widely publicized, and it was written in English. The Act initiated a period of intense land hoarding by wealthy and well-educated individuals, and furthered large-scale American interests.

The Public Lands Act of 1905 ordained that any land not registered under the 1902 Act was "public land." Because "public" meant central government, and not local communities, many small farmers and tribal groups lost all claims to their traditional farms and forests. Furthermore, the Mining Law of 1904 freely opened all "public lands" for exploitation and purchase by citizens of the United States and the Philippines. However, because western concepts of land ownership were alien to most of the indigenous people, they refused to involve themselves in this system. Moreover, they lacked the capital with which to buy their traditional lands back from the government. United States mining companies, however, did possess the requisite resources, and the Philippine timber industry developed initially to feed the demand for mine crops.

In 1929, Executive Order No. 27 designated almost all of the mountain areas in Northern Luzon as public parks and forest reserves. This served to give the central government complete control over development. The Commonwealth Act, passed in 1935, placed severe restrictions on indigenous rights to enter forests reserved for timber. However, this Act allowed for so many exceptions that it was never effectively enforced. Also, Mining exploitation rights were granted only on the basis of individually registered land-ownership claims. The cumulative effect of these various pieces of legislation was to alienate local populations and concentrate land holdings in the hands of a few. With no recognition of communal land claims, exploitation of the country's tropical forests has been wide open to foreign interests.

C. *The Russian Federation*

Although the forests in the Russian Federation are not true tropical rainforests in terms of their latitudinal position, they are characterized by a high species diversity, and thus are ecologically similar to temperate rainforests. Like most rainforests, these forests are in danger of extinction. Historically, past leaders, including Lenin, made efforts to preserve the natural environment. However, Stalin's intense drive toward industrialization diminished public advocacy and state practice of nature conservation. This trend led to substantial environmental degradation, and widespread disregard of environmental regulations.¹⁵⁵

The Soviet Constitution of 1977 (amended 1988)¹⁵⁶ is a basis for nature conservation policy, and continues to play an important role. Specifically, articles 18, 67, and 68 establish the basis for the rights and duties of the citizens of the U.S.S.R. to protect the environment. These articles provide:

Article 18: In the interests of present and future generations, the necessary measures are taken in the U.S.S.R. for the protection and the scientifically-sound and rational utilization of the land and its mineral wealth, water resources, the plant and animal world, for the preservation of the purity of the air and water, for safeguarding the reproduction of natural resources, and for the improvement of the human environment.¹⁵⁷

Article 67: Citizens of the U.S.S.R. are bound to protect nature and safeguard its riches.¹⁵⁸

Article 68: Concern for the preservation of historical monuments and other cultural treasures is the duty and obligation of citizens of the U.S.S.R.¹⁵⁹

Current forestry legislation in this region reflects a greater concern for environmental problems.¹⁶⁰ The 1977 Fundamentals of Forest Legislation of the U.S.S.R. and the Union Republics, as well as the 1978 Union Republic forestry codes, provide the primary body of law governing forestry in the Russian Federation. Other pertinent laws include: the Fundamentals of Land legislation

155. O. S. Kolbasov, *The Concept of Ecological Law*, 4 CONN. J. INT'L L. 267, 268 (1989).

156. KONST. SSSR [Constitution] (U.S.S.R.), translated in 16 REV. SOCIALIST L. 167 (1990).

157. KONST. SSSR [Constitution] art. 18 (U.S.S.R.).

158. *Id.* at art. 67.

159. *Id.* at art. 68.

160. W.E. Butler, *Forests and Forestry*, in ENCYCLOPEDIA OF SOVIET LAW 333 (F.J.M. Feldbrugge et al. eds., 1985).

(1968); Fundamentals of Water Legislation (1975); the Air Protection Act (1980); and the Wildlife Protection and Use Act (1980). Although forests are traditionally exclusively owned by the state, recent privatization efforts by the Russian Federation may soon alter this fact.

Forestry protection is largely the responsibility of those bodies which have primary jurisdiction over a particular forest tract which has historically been the State Forestry Protection Service of the U.S.S.R. However, the recent political instability has led to jurisdictional confusion, posing a new threat to Russia's forests. Local development pressures are no longer impeded by uniform and stringent enforcement of environmental laws.

Recently with the implementation of *glasnost*, the Central Committee and Council of Ministers of the Soviet government introduced substantive reforms for Russia's environmental protection system.¹⁶¹ One main goal of these reforms was the development of the State Committee on Environmental Protection (Goskompriroda) to oversee and unify the changes in environmental law and protection. Goskompriroda's effectiveness, however, was also severely hampered by political infighting and the August coup of 1991.

After Boris Yeltsin's accession to power as President of the Russian Federation, the reforms implemented by *glasnost* were incorporated into a new law.¹⁶² This new act attempts to provide comprehensive protection to all aspects of the environment. However, environmental problems are not a high priority for the Russian Federation which now faces an economic crisis; for example, a polluting factory will be kept open in order to save jobs.¹⁶³ The new law does, however, embrace the market system to control the environment; it uses an elaborate system of environmental taxes, and rejects Western regulatory approaches.¹⁶⁴

161. Alex Dehgan, *To Russia With Love: An Analysis of the New Comprehensive Environmental Statute "On the Protection of the Natural Environment"* (Dec. 1, 1992) (unpublished manuscript, on file with author).

162. Vedomosti RSFSR [On the Protection of the Natural Environment] (1992).

163. Douglas Stanglin, *Ailing Land*, *MOSCOW MAG*, Jun.-July 1992, at 42.

164. J. Andrew Horner, *Russia Seeks to Harness Market Forces to Clean-Up Environment, Choosing Taxes Over Regulation*, 4 *TAX NOTES INT'L* 1025 (1992).

III. ACTIONS BY MAJOR INDUSTRIALIZED COUNTRIES

Many countries that do not harbor endangered forests have joined in the fight against deforestation.¹⁶⁵ Their legislative actions promoting conservation also provide bases and authority to promote environmental policy towards decreasing deforestation. Discussed below are various enactments of the United States, Germany, and Japan enacted towards furthering conservation policy and forestry regulation.

A. *The United States*

The United States has enacted a U.S. Congressional Joint House Continuing Resolution to increase attention to deforestation issues.¹⁶⁶ The U.S. has also enacted the Western Hemisphere Debt for Nature Conversion Act,¹⁶⁷ authorizing debt for nature conversion agreements with western hemisphere countries. Furthermore, the Tropical Forest Consumer Information and Protection Act of 1991,¹⁶⁸ prohibits the use, manufacture, or distribution of tropical wood or tropical wood products, unless they are labelled in accordance with the Act's provisions.¹⁶⁹

B. *Germany*

Germany has an express policy towards conservation of forests. The German Timber Importers' Federation¹⁷⁰ announced a voluntary code of conduct ("VDH") for its members, advocating that:

165. WORLD WILDLIFE FUND, *supra* note 1, at 24. In fact, the European Parliament formulated a motion in 1989 for resolution on regulation of trade in Tropical Woods and Tropical Wood Products as a means of Tropical Forest Management and Conservation which calls for the European Commission to: (1) draft a regulation on the management, conservation and import of tropical hardwoods and hardwood products, and (2) create a community budget line to be known as the Tropical Forest Management Fund. See EAR PAL Doc. COM 462/3 (1989) (the aim of the proposed regulation is to support the preparation and implementation of plans for the conservation and sustainable management of tropical forests and introduce a new system for regulating imports of tropical hardwoods and hardwood products into the community).

166. H.R. 465, 101st Cong., 2d Sess. § 540 (1985). *But cf.* Pub. L. 101-5 174, 104 Stat. 2013, *codified as amended* 22 U.S.C. § 2627 (1990).

167. H.R. 5088, 101st Cong., 2d Sess. (1990).

168. H.R. 2854, 101st Cong., 1st Sess. (1991).

169. *Id.* at § 4.

170. VEREIN DEUTSCHE HOLZEINFUHRHAUSER (VDH) (F.R.G.).

tropical rainforests be exploited and managed only according to the principles of sustainability on the basis of the extensive practical and scientific experience gained in the course of the past 100 years in tropical forestry, i.e., that the substance of the forests including their species of flora and fauna be preserved and a sound equilibrium be established between ecology and economy.¹⁷¹

The code offers political support for processing capacity development in producer countries, and for the notion of greater market transparency (a guiding principle in the International Tropical Timber Agreement, discussed below).¹⁷²

C. Japan

For nearly two decades, Japan has been the world's top tropical timber importer.¹⁷³ In 1986 alone, Japan imported 15.7 million of tropical hardwood products;¹⁷⁴ this represented twenty-nine percent of the total world trade, which is equal to the amount imported by the entire European Community (EC), and exceeding that imported by the United States.¹⁷⁵ Japan mainly imports tropical timber products from Southeast Asian countries.¹⁷⁶ In 1987, ninety-six percent of its tropical hardwood imports came from three Southeast Asian areas: Sarawak and Sabah (Malaysian states), and Papua New Guinea.¹⁷⁷ The impact of the Japanese timber trade on the environment and indigenous peoples of Southeast Asian forest regions has been largely negative.¹⁷⁸

Recently, however, Japan has adopted a growing international role in development aid policies and legislation.¹⁷⁹ In fact, the

171. *Id.* at 2.

172. *Id.* at 24.

173. Julian Gresser, *A Japan Center for Human Environmental Problems: The Beginning of International Public Interest Cooperation*, 3 *ECOLOGY L.Q.* 759 (1973).

174. *Id.* at 760.

175. Kenneth S. Komoroski, *The Failure of Governments to Regulate Industry: A Subsidy Under the GATT?*, 10 *HOUS. J. INT'L L.* 189, 189-209 (1988).

176. Owen J. Lynch, Jr. and Kirk Talbott, *Legal Responses to the Philippine Deforestation Crisis*, N.Y.L. SCH. J. INT'L & COMP. L. 462 (1988).

177. HURST, *supra* note 3, at 11.

178. Interview with Gus Gatmaytan, Chief of Direct Legal Services, Legal Rights and Natural Resources Center, Quezon City, Philippines (July 7, 1992). See also M. Prieur, *Environmental Regulations and Foreign Trade Aspects*, 3 *FLA. J. INT'L L.* 85, 85-90 (1987).

179. THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, *OUR COMMON FUTURE* 193 (1993). The Japanese corporate culture of "quality management," in which waste is avoided, materials are managed as carefully as possible, and processes are constantly improved, is a key ingredient of the Japanese (sound economics equals rich environmental rewards) industry miracle. This philosophy, which reflects a shift towards environmental

development aid program's budget has grown to \$11 billion. Although Japanese aid goes largely to Southeast Asian countries (with Indonesia receiving the largest proportion), there are movements to direct a greater amount of funds to Africa's less developed countries.¹⁸⁰ Thus, the expanding Japanese aid program could become a significant factor in the future development and conservation of the tropical environment. Furthermore, the Japan Federation of Bar Associations (JFBA) provides political influence and international pressure for Japanese legislators to restrict deforestation projects.¹⁸¹ Most notably, in March 1992 the JFBA passed resolutions for the conservation of tropical forests; its members collectively brainstormed with other international environmental organizations to create and effectively implement these conservation measures.¹⁸² The JFBA has also strongly urged that the funding of logging infrastructure for the sole benefit of Japanese trading companies be discontinued, and that more efforts be made for sustainable forest management.¹⁸³

IV. INTERNATIONAL AGREEMENTS, TREATIES, AND CONVENTIONS

Destruction of ecosystems, leading to climatic change and loss of biological diversity should be a matter of international concern. Thus, environmental issues once considered strictly local are being recognized as regional and global problems.¹⁸⁴ However, theoretical principles of sound environmental policy are difficult to translate into international agreements; thus, international laws have not

cleanup and careful resource consumption, has allowed Japanese companies to make steady gains. *Id.*

180. A. Kiss, *Survey of Current Developments in International Environmental Law*, UCN, Environmental Policy and Law Paper No. 10 (1986).

181. Global Environmental Management Initiative, *Total Quality Environmental Management: The Primer* (Washington, D.C., 1992).

182. Research Institute on Technology for the Earth, *New Earth 21* (Tokyo, 1990); Keidanren, *Keidanren Global Environment Charter* (Tokyo, Apr. 23, 1991).

183. John Newhouse, *The Diplomatic Round: Earth Summit*, THE NEW YORKER, June 1992, at 72.

184. The Rio Earth Summit in 1992 may have been a progressive step in many respects for forestry protection, but much more remains to be done. Stricter adherence and enforcement of the existing agreements, combined with new, creative legal regulatory mechanisms which realistically deal with the economic and environmental constraints of many of the world's countries, should reward sustainable development and conscientious forestry protection (as opposed to rewarding deforestation, as many of these legal instruments indirectly do). Future legal instruments must take these considerations into account, as this may eventually be the only safeguard that our world's rainforests have against impending annihilation.

developed enough to provide effective and long-term protection of the world's rainforests.¹⁸⁵ Their inefficacy stems from: lack of participation by local and regional authorities, dependence on domestic law for implementation, lack of appropriate international jurisdictions for enforcement, and lack of coordination and cooperation among neighboring countries sharing tropical forest regions.¹⁸⁶ Despite these weaknesses, many countries have joined in an effort to establish in an appropriate international legal framework for rainforest protection; these efforts include international, regional, and subregional treaties and agreements, some of which are outlined below.

A. *General Agreement on Tariffs and Trade*

Through the United Nations, the General Agreement on Tariffs and Trade (GATT)¹⁸⁷ was established in 1947 to promote global free trade.¹⁸⁸ GATT signatories, including many Third World countries, agreed to provide equal market access to other signatory nations.¹⁸⁹ Free trade is considered a means of increasing trade since it reduces the price of many goods, particularly tropical timber. To promote free trade, tariffs are gradually reduced on all products, including raw materials. However, Third World raw commodity producers may not benefit from the GATT because the Agreement fails to recognize the disadvantages faced by the Third World. Consequently, free trade "equality" may actually maintain the current economic relationship between signatory countries.¹⁹⁰

B. *The Washington Convention*

In July 1975, the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) became effective.¹⁹¹ An independent secretariat based in Lausanne, Switzerland oversees CITES, which is structured largely by the 1951 Rome International Plant Health Conventions and the

185. THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, *supra* note 179, at 163.

186. *Developments in the Law - International Environmental Law*, 104 HARV. L. REV. 1484, 1490 (1991).

187. GATT Doc. L/1279 (1947).

188. HURST, *supra* note 3, at 265-66.

189. HURST, *supra* note 3, at 266.

190. HURST, *supra* note 3, at 266.

191. Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora, July 1975, 14 U.N.T.S. 185; see also BRANES, *supra* note 25, at 33.

1972 Paris Convention for the Protection of the World Cultural and Natural Heritage. In November of 1991, 112 countries were parties to the Convention.

CITES recognizes that loss of habitat is the greatest factor contributing to species' decline, including tropical timber species. To ensure the rational and sustainable utilization of the earth's living resources, CITES seeks regulation of international trade in wildlife and wildlife products. Regulation is generally implemented through a permit system to monitor and control trade according to the degree of a product's endangered status. Each CITES party is responsible for implementation of the Convention in its own country, and for cooperating with other parties to enforce the rules of the Treaty. Domestic trade of listed species is not affected by CITES.

In March 1992, at the eighth meeting of the conference in Kyoto, Japan, sixteen proposals to include or delete certain tropical timber species from CITES appendices were considered. These appendices also specify different levels of protection or control. Recently, numerous organizations have become interested in the role that CITES could play in global tropical timber conservation.¹⁹²

C. *The Treaty on Amazonian Cooperation of 1978*

The environmental problems of Latin America and the Caribbean threaten to have major adverse effects on the region's natural resources. In 1978, countries of this region enacted the Treaty On Amazonian Cooperation¹⁹³ to deal with the protection of natural ecosystems and biodiversity. The Treaty's purpose is to take joint action to develop and protect the environment through the exchange of information, development of operational agreements and understandings, and establishment of pertinent legal instruments.¹⁹⁴ For example, under the Treaty, poachers and developers who violate its provisions may be prosecuted and fined up to

192. *Report of the United Nations Conference on the Human Environment*, U.N. Doc. A/ Cong. 48/14/Rev. 1, ch. 1 (1972). Some examples of interested organizations have been: the United Nations Environment Programme (UNEP), the World Health Organization (WHO), and the International Tropical Timber Council (ITTC).

193. Colecao de Atos Internacionais art. IX, reproduced in 17 I.L.M. 1045 (1978).

194. Colecao de Atos Internacionais art. II.

5000.00 U.S. dollars.¹⁹⁵ Although enforcement mechanisms for the Treaty are few, this agreement is an important step for Latin American sovereign cooperation in tropical forestry protection.

D. *International Tropical Timber Agreement*

In November 1984, the International Tropical Timber Agreement (ITTA)¹⁹⁶ was negotiated and adopted by thirty-six timber producing countries and thirty-three timber consuming countries.¹⁹⁷ These countries represent ninety percent of the world timber trade, valued at over \$5 billion during fiscal year 1985. Today, forty-three countries are parties to the Agreement.¹⁹⁸ Under the aegis of the United Nations Convention on Trade and Development (UNCTAD), the ITTA is run by the International Tropical Timber Organization (ITTO).¹⁹⁹ In turn, ITTO answers to the International Tropical Timber Council (ITTC), which is comprised of the signatory nations of the Agreement.²⁰⁰

The ITTA seeks to establish a system of consultation and cooperation between consuming and producing countries. The Agreement recognizes the importance of sustainable use of the tropical forest and seeks to protect commodity resources.²⁰¹ Of particular importance is the fact that the ITTA is the only international commodity agreement to include conservation as a major objective. The Agreement's preamble notes that it "[r]ecogniz[es] the importance of, and the need for, proper and effective conservation and development of tropical timber forests with a view to ensuring their optimum utilization while maintaining the ecological balance of the

195. *Id.* at arts. XIV, 23. See also art. IV (stating that "economic development and sound environmental management are complementary aspects of the same agenda. Without adequate environmental protection, development will be undermined: without development, environmental protection will fall").

196. International Tropical Timber Agreement, 23 I.L.M. 257 (1984) [hereinafter ITTA].

197. WORLD WILDLIFE FUND, *supra* note 1, at 20.

198. WORLD WILDLIFE FUND, *supra* note 1, at 20.

199. WORLD WILDLIFE FUND, *supra* note 1, at 20.

200. WORLD WILDLIFE FUND, *supra* note 1, at 20.

201. WORLD WILDLIFE FUND, *supra* note 1, at 20.; *International Conference on Tropical Timber, Statement submitted by the Chairman of the International Conference on Tropical Timber*, U.N. Doc. TT/LEG/SER.C.9/525 (1977). For example, Dr. Tatsuro Kunugi, Chairman of the United Nations conference on Tropical Timber, referred to tropical timber "as a unique commodity that requires special treatment from the perspective of global resource management because the sustainable development of tropical timber resources would have far-reaching beneficial effects on other key sectors such as agriculture, food and water supply, energy, and the preservation of the ecosystems for future decades." *Id.*

regions concerned and of the biosphere."²⁰² Another objective noted in Article I(H) is "[t]o encourage the development of national policies aimed at sustainable utilization and conservation of tropical forests and their genetic resources and at maintaining ecological balance in the regions concerned."²⁰³

The voting structure within the Agreement encourages sustainable use of forests. Countries which conserve their forest resources are not penalized in terms of their voting strength on the grounds that they do not export large quantities of timber. Instead, votes are proportional to the total area of forest as well as the quantity of the timber trade.²⁰⁴

The ITTO has not been very efficient and has produced little activity. It took two years just to decide to place its secretariat in Yokohama, Japan, and its most significant development has been to establish a special projects fund for research into forestry development.²⁰⁵ Partly due to pressure from conservationist nongovernment organizations (NGOs), ITTO has come to define its mission largely, but not exclusively, in terms of promoting conservation and sustainable management of tropical forests.²⁰⁶ Thus, it has conducted a review of the status of tropical forest management in timber production. Based on disappointing results of this review, the ITTO funded two model projects for forestry management in Bolivia and Brazil.²⁰⁷ These modest initiatives reflect a relatively small budget amounting to only \$2.0 million in past years; however, international governments pledged a further \$8.9 million at the ITTO Council meetings in May of 1989.²⁰⁸

The ITTO provides a relatively new and invaluable international forum for those involved in the tropical timber trade. This forum allows foresters to work directly with those who shape government policies regarding forestry. Moreover, the world's tropical

202. ITTA, *supra* note 196, at art. I.

203. ITTA, *supra* note 196, at art. I.

204. BRANES, *supra* note 25.

205. BRANES, *supra* note 25, at 267. *But cf.* R. REPETTO, THE WORLD RESOURCES INSTITUTE, THE FOREST FOR THE TREES? GOVERNMENT POLICIES AND THE MISUSE OF FOREST RESOURCES 105 (1988).

206. REID, *supra* note 12, at 24.

207. World Wildlife Fund, *supra* note 1, at 21.

208. World Wildlife Fund, *supra* note 1, at 21.

timber producers can gather in a non-competitive arena to collectively formulate a forestry strategy. Cooperative efforts by all parties involved in the tropical timber trade may ultimately provide for realistic and enforceable strategies in forest protection policies.

E. *Tropical Forest Action Plan*

In 1985, the United Nations Food and Agriculture Organization's Committee on Forest Development in the Tropics published the Tropical Forest Action Plan (TFAP).²⁰⁹ The TFAP identifies five priority areas for the development and conservation of tropical forest resources: forestry in land use, forest-based industrial development, fuelwood and energy, conservation of tropical forest ecosystems, and institution building.²¹⁰ A group of U.N. agencies, including the World Resources Institute, the World Bank, and the United Nations Development Programme convened a task force to prepare a five-year accelerated action program (1987-91) "to lay the groundwork for longer-term investment" in fifty-three tropical forest countries.²¹¹ The estimated level of public and private investment needed to affect tropical deforestation over the five-year period was \$8 billion; of this, only \$550 million (8 percent) would be allocated to conservation of tropical forest ecosystems.²¹² As of January 1990, seventy-four tropical countries and twenty government aid agencies have been involved in TFAP.

The TFAP is effectively a mechanism for coordinating aid expenditure.²¹³ The World Bank and regional multilateral development banks (MDBs), such as the Inter-American Development Bank, the Asian Development Bank, and the African Development Bank, are international treaty organizations that loan money from wealthy nations to developing countries and projects. Although these loans are to help develop strong economies,²¹⁴ the MDB-funded projects are neither sustainable, environmentally sound, nor

209. *Tropical Forest Action Plan*, U.N. FAO Comm. on Forest Development, 4th Sess., Agenda Item 56, at 1-19, U.N. Doc. TFAP E.42. XVI. 14 (1985). See also World Wildlife Fund, *supra* note 1, at 20.

210. World Wildlife Fund, *supra* note 1, at 21.

211. World Wildlife Fund, *supra* note 1, at 20.

212. SIERRA CLUB, *supra* note 60.

213. SIERRA CLUB, *supra* note 60, at 1. See also Zygmunt J.B. Plater, *Damming the Third World: Multilateral Development Banks, Environmental Diseconomies, and International Reform Pressures on the Lending Process*, 17 DENV. J. INT'L L. & POL'Y 121 (1988); Bruce M. Rich, *The Multilateral Development Banks, Environmental Policy, and the United States*, 12 ECOLOGY L.Q. 681 (1985).

214. SIERRA CLUB, *supra* note 60, at 1, 3.

sensitive to local communities.²¹⁵ Moreover, MDB investments often favor forest-industry projects such as road construction and logging, and disregard important environmental considerations.²¹⁶

Amidst claims that TFAP has allowed more money for tropical forestry aid agencies (now reported to be \$900 million per year), the plan is heavily criticized by NGOs; not only are local forest communities not consulted, funded forest industry projects are not based on sustainable utilization, but instead, degrade the forests through conversion to plantations.²¹⁷ Thus, what began as a global initiative to slow tropical deforestation has become a threat to the world's remaining tropical forests. Moreover, local populations fighting to control their resources are faced with governments who refuse to implement land reform, yet can claim cooperation with the United Nations plan for conservation.²¹⁸

Initially at the 1989 Economic Summit in Paris, the TFAP was strongly endorsed by the world's leading economic powers (known collectively as the "G-7" countries: the United States, Canada, Japan, Germany, France, the United Kingdom, and Italy).²¹⁹ These countries, as members of the World Bank and the primary source of TFAP loans, had supported a tripling of funding for the plan. Today however, many of these countries have rejected the TFAP for being ultimately counter-productive to its purported goals.²²⁰

V. CONCLUSION

International and national policies and legislation to preserve the rainforests have been inefficient and ineffective. Just as the industrialized nations have exploited forest reserves over the course of several centuries, developing nations see the rainforest as a natural resource to be exploited as a source of national wealth. While not unmindful of the environmental needs, the poorest nations place a higher priority on the urgent problems of poverty, starvation, and disease, seeking to achieve a higher standard of living. Thus, developing nations have viewed cynically the industrialized world's demand for forest conservation. These nations demand

215. Rich, *supra* note 213, at 792.

216. SIERRA CLUB, *supra* note 60, at 1.

217. SIERRA CLUB, *supra* note 60, at 1.

218. Rich, *supra* note 213. See also George P. Smith II, *The United Nations and the Environment: Sometimes a Great Notion?*, 19 TEX. INT'L L.J. 335 (1984).

219. Smith, *supra* note 218, at 337.

220. A. Geddes, *1992 and the Environment—Sovereignty Well Lost?*, 138 NEW L.J. 826 (1988).

that the world's wealth be shared in return for the preservation of the globally important rainforests. However, at the Rio Conference of 1992, the suggestion that western corporations pay royalties for rainforest products was rebuffed, particularly by the United States. Some western nations, however, professed sympathy for the principle of western financial support in return for the sacrifices suffered by developing nations in preserving the rainforests.

The response of the poorer nations to what they perceive as a lack of adequate commitment from the industrialized nations has been to press forward with rainforest exploitation. Although many countries have promulgated environmental legislation relevant to rainforests, much of this legislation has done little more than regulate exploitation and ensure a fair economic return to the host country. Legislation which does express a rainforest preservation purpose lacks the resources necessary for effective enforcement. Moreover, enforcement of conservation laws is impractical for countries with poverty stricken populations who "slash and burn" their rainforests for subsistence farming, and are then forced by soil erosion to move on to other forest sections.

International attempts at rainforest regulation are as yet inadequate and ineffective. American initiatives such as the Tropical Forest Consumer Information and Protection Act (requiring labeling of tropical wood products) are a step in the right direction but hardly a substitute for effective conservation policy. Such unenforceable or cosmetic laws may even do more harm than good by making it appear that some action towards forest preservation is being done.

Meanwhile, rainforest destruction continues unabated at an alarming rate, threatening the very source of mankind's sustenance on earth. It is suggested that any permanent solution to the problem of rainforest destruction must include a concerted and worldwide policy of population control, supplemented with programs of income redistribution, and social justice. As long as desperate human beings can find relief from starvation only in the nutrient-poor soils of rainforest ecosystems, and as long as impoverished national governments can find wealth only in the exploitation of their limited natural resources, no amount of programs, policies, legislation, or initiatives can hold back the tide of humanity demanding a decent standard of living. The world community must recognize that it can either accommodate two billion new people in the next two decades, or it can preserve the rainforests and other

fragile ecosystems in a world of stabilizing population; but it cannot accommodate both.

