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Debt-for-Nature Swaps in Brazil: Response to World Pressure to Protect the Amazon

DAVID ALLEN REISMAN*

INTRODUCTION

The controversy over the Amazon results from contrasting views in which the region is perceived. One view sees it as a dark and threatening jungle, rich in natural resources, but generally impenetrable, barring progress and leaving millions of acres of land wasted. Another view perceives the region as a crucial keystone to the environment whose absence would lead to global catastrophe. The former envisions a "clearing" of the Amazon to allow progress to move in and create economic opportunity by making use of the vast natural resources the region has to offer. The latter prefers to preserve, to the greatest extent feasible, the delicate ecological balance of the Amazonian environment.

When these views are placed within the context of complex international economic and environmental policies, the answers to important environmental concerns become more undefined. The problem is further complicated by Brazil's underdevelopment and its desire to hold onto its sovereignty. As is often the case in such dilemmas, the problem is not easily solved through a moral analysis of right and wrong. In such cases, sides must often try to find a way to come together through economic incentives. Brazil is no exception.

This paper will analyze Brazil's environmental history and its response to the international environmental pressures that led the nation to consider and complete its first debt-for-nature swap. The following topics will be addressed: I. Brazil and Its

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Natural Resources; II. Deforestation; III. Brazil as a Debtor Nation; IV. Emergence of Debt-for-Equity Swaps; V. Debt-For-Nature Swaps; VI. How Debt-for-Nature Swaps Work; VII. Brazil's Initiative Toward International Recognition; VIII. Brazil Looks Toward the Future; and IX. The Role of Environmental Law.

I. BRAZIL AND ITS NATURAL RESOURCES

Brazil is the sixth largest country in the world covering a total area of 3,286,488 square miles with a population of over 153 million.¹ The country is about the same size as the continental United States or China. Brazil also hosts approximately three-fifths of the entire Amazon Basin, the largest tropical moist forest area in the world.² The Amazon forest covers 42% of the national territory.³ The many minerals that currently exist in the region include manganese, bauxite, tin, gold, diamonds, copper, lead, and the world's largest deposit of iron ore.⁴ Thus, the Amazon basin constitutes one of the world's largest and richest areas of natural resources.

II. DEFORESTATION

Brazil is not the sole actor among the nations promoting a policy of decimating the Amazon for its wealth. The United States and Great Britain, for example, are among the largest foreign purchasers of Brazilian wood. Japan is the world's largest consumer of tropical goods and maintains a heavy reliance on tropical hardwoods.⁵ Japan is also the biggest importer of Carajas⁶ iron followed by Germany.⁷ Both nations have become dependent on this source of ore for their steel production.⁸ Brazil and the many other world nations interested in reaping the

¹ KCDW/Kaleidoscope, Feb. 24, 1992, available in LEXIS, Int'l File.

² Marc Pallemarts, *Development, Conservation, and Indigenous Rights in Brazil*, 8 HUM. RTS. Q. 374 (1986).

³ *Id.*

⁴ James Bruinsma, *Brazil Enacts New Protections for the Amazon Rain Forest*, 30 HARV. INT'L L.J. 503, 506 n.28 (1989).

⁵ Micheal Molinski, *Deforestation Slows in Amazon*, Proprietary to the UPI, Mar. 7, 1991 (International) available in LEXIS, Nexis Library, UPI File.

⁶ Carajas is a city in Brazil.

⁷ *Ecology and Investment*, INT'L REP. (IBC USA, Brazil) (Mar. 7 1990) (Spotlight On. . .), available in LEXIS, Nexis Library, International File.

⁸ *Id.*

benefits of the Amazon offer a seemingly inexhaustible supply of dollars that have been and could be used to exploit the Amazon region.

About 70%, or approximately 360 million hectares [one hectare equals one square kilometer], of the Amazon lies within Brazil. The rest is divided between Ecuador, Peru, Bolivia, Colombia, Venezuela, Guyana, and Surinam.⁹ Forty percent of Brazil's territory, or about 3.5 million square kilometers, is an area known as the "classic Amazon."¹⁰ The Amazon is vast, sparse in population, but rich in minerals, timber, energy, and other natural resources.¹¹ It is ripe for exploration. Unfortunately, exploitation of the Amazon has led to deforestation which has created world wide concern in recent years. Mining, hydroelectric power, farming/cattle ranching, oil, lumbering/logging, and colonization have all contributed to this destruction.¹²

The rate of deforestation of Brazil's rainforests is still the world's highest,¹³ due mostly to the immense size of the Amazon jungle.¹⁴ If current trends continue, some experts predict the Brazilian rain forest will have vanished by the end of this century or early into the next.¹⁵

Billions of dollars have been spent to develop the Amazon. The building of roads, hydroelectric dams, and other projects has encouraged several million small-scale farmers, cattle ranchers, miners and others to move into the region.¹⁶ The vast river systems have become polluted from industries and miners dumping mercury and other chemicals used to separate the gold into the waters.¹⁷ The release of carbon dioxide into the atmosphere

⁹ George de Lama, *Brazil Resists Campaign to Save Rain Forests*, CHI. TRIB., Mar. 12 1989, at C1.

¹⁰ Micheal S. Giaimo, *Deforestation in Brazil: Domestic Political Imperative - Global Ecological Disaster*, 18 ENVTL. L. 537, 538 (1988).

¹¹ *Id.*

¹² *Environmental Issues Pose New Challenges to Companies in Brazil*, BUS. INT'L REP. (Latin America) (June 26, 1989), available in LEXIS, Nexis Library, International File.

¹³ Molinski, *supra* note 5.

¹⁴ *Id.*

¹⁵ About 8.4% of the original size of the Amazon has been deforested solely from human intervention. This is approximately the size of Arizona, *id.*

¹⁶ Gary Marx, *Rain Forest Destruction in Brazil Slows, But Critics Remain Wary*, CHI. TRIB., Nov. 30 1990, at C 29.

¹⁷ *Id.*

has further contributed to the greenhouse effect.¹⁸ In addition, dozens of indigenous Indian tribes have been decimated by disease and confrontation with colonists.¹⁹

Lumbering is a major contributor to the deforestation of the rainforests, although much of the timber cut in the forests is wasted. Large amounts of trees are cut in highway construction, large-scale agriculture, and colonization schemes. Most often this timber is burned or left to rot in the jungle because neither the government nor the ranchers are willing to invest the time or money to transport the timber from remote areas.²⁰ The smaller enterprises usually cut timber from floodplain areas so they can float logs out during the flood season, contributing only a small percentage to Brazil's deforestation. Regeneration is rapid in the rich soil of the flood plains, so this type of logging is compatible with rainforest survival.²¹ However, large-scale lumbering still occurs where corporate timber cutters use large machinery to clean the highlands where there is poor soil and slow regeneration.²²

The largest impact on deforestation is large-scale ranching. This activity accounted for 38% of the region's forest loss from 1980 to 1988.²³ The intended result of clearing millions of acres of jungle for use as ranching operations was to increase food production for export,²⁴ primarily to produce cheap beef for North American markets. Scientists estimate that efforts to create grazing land for ranching by cutting and burning down the rain forests has resulted in about 30,000 square kilometers (about 12,000 square miles) being lost every year.²⁵ Ironically, a forest left undisturbed produces approximately ten times as much food in the form of tropical fruit, game and fish.²⁶

¹⁸ Derek Asiedu-Akrofi, *Debt-for-Nature Swaps: Extending the Frontiers of Innovative Financing in Support of the Global Environment*, 25 INT'L LAW. 557, 561 (1991).

¹⁹ Stephen Powell, *Brazil Could Win Back Prestige with New Rain Forest Policy*, REUTERS, March 4, 1990.

²⁰ Giaimo, *supra* note 10, at 550.

²¹ *Id.* at 551.

²² *Id.*

²³ *Id.* at 549.

²⁴ Some studies suggest that intensive foreign investment in livestock projects has helped Brazil's foreign exchange rate, *id.*

²⁵ Mathew Pearce, *Brazil Calls For Help to Protect Amazon Rain Forest*, THE REUTERS LIB. REP. (June 2, 1989).

²⁶ *Id.* at 549.

Another great contributor to the destruction of the Amazon is the construction of highways and rail transportation. One example is the Brazilian government's current consideration of the construction of a 500-mile road across the Amazon rain forest to link the Peruvian Andes to the Pacific Coast.²⁷ This project is to be funded by the Japanese government at a cost of \$300 million.²⁸ Intended to create a shorter supply route for Japan, the construction will decimate hundreds of miles of forests and open the Amazon to further settlements, small farms, large-scale ranches, and mining operations.²⁹ The creation of more roads alone contributed to 26% of the deforestation of the Amazon by 1980.³⁰

Yet another significant contributor to Amazon deforestation is the development of the energy industry. Of particular concern is the construction of huge hydroelectric dams along the massive river system. Building large dams, such as the mega projects at Itaipu and Tucurui, destroys large swaths of forest and displaces Indian Tribes because of the flooding of vast acreage of the tropical rain forest.³¹ For example, the plant at Tucurui, although proving highly successful, results in a reservoir which covers more than 1,000 square kilometers, causing significant ecological disruption despite developers' efforts to minimize the damage.³²

Initially, these dams were preferred over other types of power due to the non-polluting nature of hydroelectric power.³³ Recently, however, concern has been expressed that such hydroelectric projects could destroy vast tracts of rainforest.³⁴ Thus, the present trend in Brazil is toward use of nuclear and gas power.³⁵

²⁷ Asiedu-Akrofi, *supra* note 18, at 579.

²⁸ *Id.*

²⁹ Molinski, *supra* note 5, at 546.

³⁰ Giaimo, *supra* note 10, at 546.

³¹ *The Ecology War*, INT'L REP. (Jan. 12, 1989), § III, available in LEXIS, Nexis Library, International File.

³² *Id.*

³³ *Ecology and Investment*, *supra* note 7.

³⁴ *Id.*

³⁵ *The Ecology War*, *supra* note 31. The last major hydroelectric project proposed, the Xingu River Plant, was put on hold in 1989 primarily because of these environmental concerns which dried up bank support for project funding.

III. BRAZIL AS A DEBTOR NATION

Despite currently existing resources, the Brazilian economy is one of the world's weakest. These resources enabled the nation's economy to flourish between 1964 and 1978.³⁶ The country was once called the most dynamically developing nation in the world.³⁷ However, Brazil's dependence on the importation of the oil it consumes helped give it the largest foreign debt in the world.

When the oil shock struck in late 1973, Brazil was the largest oil importer among the developing countries.³⁸ To maintain and permit domestic expansion, external borrowing was an attractive alternative. Because Brazil had expanded its gross national product in 1973 by almost 13.6%, had started some large investment projects, and had strained its current capacity to its maximum, a sudden stop in spending would have created havoc and slowed the process of political liberalization.³⁹

The decision to "borrow through the crisis" proved successful to simultaneously meet two crises head-on during the epidemic of the oil shock as well as the endemic crisis of underdevelopment.⁴⁰ However, after 1979, conditions worsened when an increasing portion of foreign borrowing had to be used to pay for growing oil and interest bills, a fact aggravated by the world recession.⁴¹

In 1979, the second oil shock occurred. The price of oil climbed again, but markets for Brazil's exports diminished with the onset of world wide recession.⁴² During the early 1980's, the situation became critical due to skyrocketing interest rates, deterioration of world markets and commodity prices, and a prolonged recession.⁴³ By the end of 1982, Brazil's outstanding

³⁶ Daniel P. Caswell, *The Promised Land: Analysis of Environmental Factors of United States Investment in and Development of the Amazon Region in Brazil*, 4 N.W. J. INT'L LAW & BUS. 517, 518-19 (1982).

³⁷ *Id.* at 518.

³⁸ See generally, Walter Douglas Stuber, *The Brazilian Debt-Equity-Swap Program*, 12 HASTINGS INT'L & COMP. L. REV. 613 (1989).

³⁹ DEVELOPING COUNTRY DEBT AND ECONOMIC PERFORMANCE, COUNTRY STUDIES, 274 (Jeffrey D. Sachs, ed. 1990).

⁴⁰ Marcilio Marques Moreira, *THE BRAZILIAN QUANDRY* 15 (1986).

⁴¹ *Id.*

⁴² *Id.* at 22.

⁴³ *Id.* at 27.

foreign debt totaled \$85.3 billion.⁴⁴ The debt proved increasingly more difficult to manage, and from 1982 to 1987 foreign creditors restricted new lending.⁴⁵

During this time period, the Brazilian government, facing a growing population and escalating inflation, began developing more and more of the Amazon basin to utilize its vast natural resources. In this massive development effort, the seemingly impenetrable Amazon forest began to give way to the increasing pressure of fortune hunters, road builders, farmers and loggers. Millions of people, seeking to exploit the resources of the region, found their way up the massive river complexes to settle in the hearts of the basin, and road builders plundered tracts of forests in their effort to pave the way for even more settlers.

IV. EMERGENCE OF DEBT-FOR-EQUITY SWAPS

With soaring foreign debt problems in the 1980's and the resulting restrictions on new lending, smaller creditors and local corporations in Brazil, interested in a cheaper source of funding and an expansion of existing facilities, began trading debt instruments on the secondary market at less than par value.⁴⁶ This resulted in blocking the inflow of new resources to Brazil as governments and creditors were able to use this more advantageous and cheaper alternative to invest.⁴⁷ In 1984, Brazil discontinued registration for these conversions on the secondary market in an attempt to prohibit the transfer, assignment and sale of credits.⁴⁸

In 1987, "Bacen"⁴⁹ revoked the original creditor requirement and eventually simplified the conversion process by separating the Debt-Equity-Swap Program from the project for the securitization of Brazil's foreign debt.⁵⁰

The Debt-Equity-Swap Program was intended to help restore flexibility to the country's debt situation and bring debtors and creditors back together in the competitive marketplace. Like other debt-exchange concepts, this program allowed a debtor country, unable or unwilling to pay its foreign debts on time, to offer its creditor something of value in exchange for volun-

⁴⁴ *Id.* at 31.

⁴⁵ Stuber, *supra* note 38, at 614-15 (1989).

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ "Bacen" is the Central Bank of Brazil.

⁵⁰ Stuber, *supra* note 38, at 616.

tarily canceling those foreign currency debts.⁵¹ The program became possible when a growing number of lender banks began to conclude that sizable portions of their debt portfolios, especially in Latin America, were uncollectible. These banks began to write down or sell high-risk debts at substantial discounts, fueling increased activity in the secondary debt market. The incentive for creditors often lay in the fact a small but growing marketplace valued foreign currency debt of less developed countries at substantially below its full principal amount.⁵² Debt-for-nature swaps soon developed from the concept of debt-for-equity exchanges.

V. DEBT-FOR-NATURE SWAPS

Although debt-for-nature swaps developed from these early debt/equity programs, they differ in that most of the specific debt-for-nature transactions have been made by international conservation organizations, not multi-national corporations.⁵³ Further, they represent one of the few types of Latin American debt transactions in which all participants can claim benefits.⁵⁴ Where there is a debt for nature swap, "[t]he conservation groups are able to establish or finance conservation projects at a favorable cost, the debtor countries can reduce their external debt service burdens while supporting public interest programs [and] commercial banks willing to assist such transactions, either by providing free financial advice or by donating debt, can obtain favorable publicity and in some cases tax benefits."⁵⁵

However, like debt/equity swaps, "debt-for-nature exchanges are sophisticated business deals that require a careful evaluation of the financial, as well as conservation, aspects of the transaction."⁵⁶ Structured properly, debt-for-nature swaps can significantly reduce the cost of promoting conservation.

The concept of debt-for-nature swaps was "invented" in 1984 by an ecologist, Thomas Lovejoy, as a way of linking foreign debt relief to the financing of environmental projects in

⁵¹ Micheal Chamberlain et al., *Sovereign Debt Exchanges*, 2 U. ILL. L. REV. 415, 417 (1988).

⁵² *Id.* at 417-18.

⁵³ *Id.* at 440.

⁵⁴ *Id.* at 441.

⁵⁵ *Id.*

⁵⁶ *Id.* at 445-46.

debtor nations.⁵⁷ The World Wildlife Fund then pioneered the concept of using a less developed country's debt for financing conservation activities.⁵⁸ Generally, a country agrees not to develop certain tracts of land for a reduction of a specified amount of debt.⁵⁹ The concept has been relatively successful, thus far, because those countries heavily indebted tend to be those countries with the most diverse ecological endowments.⁶⁰

These ecological endowments exist along with an often delicate and complex ecosystem. The huge debts amassed by these countries result in an effort to increase export-oriented programs.⁶¹ Establishing such programs increases the capacity to pay for imports as well as debt service. These efforts then lead to environmental degradation from exploitation of resources and further complicates the delicate ecological balance of the region.⁶²

Thus, debt-for-nature swaps allow these less developed foreign countries to reduce this foreign debt by setting aside and/or maintaining certain acreage. The swaps also promote domestic awareness of protection from further degradation⁶³ and provide debtor countries with an opportunity to redefine their environmental and development policies.⁶⁴

VI. HOW DEBT-FOR-NATURE SWAPS WORK

Debt-for-nature swaps typically involve "a purchase of commercial bank debt by a foreign non-profit organization or a foreign government agency acting in conjunction with a local private conservation or environmental organization."⁶⁵ Funds are raised to purchase the debt through conservation organiza-

⁵⁷ Peter Passell, *Washington Offers Mountain of Debt to Save Forests*, N. Y. TIMES, Jan. 22, 1991, at C1.

⁵⁸ Asiedu-Akrofi, *supra* note 18, at 564.

⁵⁹ Bruinsma, *supra* note 4, at 511.

⁶⁰ Asiedu-Akrofi, *supra* note 18, at 577. Countries rich in resources are primarily developing countries that have not yet developed those resources and have a dependence on foreign resources, such as oil, that escalate in price during situations of international economic crisis.

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.* at 578.

⁶⁵ Roseanne Model, *Debt-For-Nature Swaps: Environmental Investments Using Taxpayer Funds Without Adequate Remedies for Appropriation*, 45 U. MIAMI L. REV. 1195, 1201 (1991).

tions, foundations and country donors. Basically, the transaction consists of a five step process:

The investing non-governmental organization (NGO) must seek approval from the debtor country,
The NGO must acquire the debt instrument,
It must then transfer title to the debt,
The debt must be converted into a local currency instrument,
The NGO's must implement environmental investment programs.⁶⁶

The process a non-governmental organization and a debtor country undergo to negotiate debt-for-nature swaps can be time-consuming and complicated. One of the primary reasons is that the government of the debtor country is leery of entering into a debt conversion agreement due to the potential impact on the country's fiscal budget.⁶⁷ These negotiations create conflict between the government's monetary representative and the natural resource representative. Each has a different agenda. The monetary representative wants to negotiate as low a price as possible for the debt. The natural resource representative wants the central bank to pay more to the non-governmental organization for the debt rate to increase funding for natural resource programs.⁶⁸

The negotiation process for debt-for-nature swaps can be critical to their success. Before consummating a swap, the non-governmental organizations and the government should consider their respective incentives. Generally, two things to be considered are: 1) whether the debt must be available in the secondary market at a low enough price, and 2) whether the government will convert the debt at a high enough price to make the transaction feasible.⁶⁹ A low-discount rate alone may not be sufficient to assure the swap is financially feasible. Therefore, the debt conversion should take place at the free-market rate, otherwise, the exchange rate considerations can outweigh the discount available at the time of the conversion into local currency.⁷⁰ In addition, the parties to the transaction must also be assured that

⁶⁶ *Brazilian Groups Plan Programme of Debt-for-Nature Swaps*, THE FIN. TIMES LTD., Aug. 23, 1990.

⁶⁷ J. Eugene Gibson and Randall K. Curtis, *A Debt-for-Nature Blueprint*, 28 COLUM. J. TRANSNAT'L L. 331, 350 (1990).

⁶⁸ *Id.* at 348-49.

⁶⁹ *Id.* at 350.

⁷⁰ *Id.* at 347.

“the converted funds support conservation and sustainable development; listing general categories of eligible conservation programs and projects (twenty five percent land acquisition, twenty five percent research and education, twenty five percent reforestation, and twenty five percent habitat protection).”⁷¹

Debt-for-nature swaps are extremely complex. Therefore, countries familiar with financial transactions of this nature are better candidates for a successful swap. There are other signs that may indicate whether a country would make a good prospect for such a financial transaction. The non-governmental organization should weigh carefully the strengths and weaknesses of the various factors to make its decision on a case-by-case basis.

Not every country that possesses a rain forest or other environmental treasure is a good candidate for a debt-for-nature swap. The best prospects are those countries that have environmental programs in which the government is interested but cannot afford to fund on its own.⁷² The candidates can then be narrowed to those debtor countries that have “a low debt rating, so creditor banks are willing to discount the debt, and with debt that is not easily convertible, so the creditor bank does not have as many opportunities to sell the debt on the secondary market to other for-profit institutions.”⁷³

The international secondary debt market is an important factor in the swap transaction. Originally, the secondary debt market developed so banks could swap loans among themselves, thereby avoiding overexposure to any single troubled economy.⁷⁴ However, the secondary debt market proved useful in debt-for-nature swaps, allowing debtor countries to capture discounts on debts sold on the secondary market and convert such debts into conservation-related investment.⁷⁵

Since the first debt-for-nature swap in 1987, approximately \$100 million has been converted of the \$1.2 trillion in debt owed by developing countries.⁷⁶ Although this represents only a minuscule portion of world debt, the amounts are expected to in-

⁷¹ *Id.*

⁷² Model, *supra* note 65, at 1201.

⁷³ *Id.* at 1198-99.

⁷⁴ *Id.* at 1198-99 n.31.

⁷⁵ *Id.* at 1199.

⁷⁶ *Debt-for-Nature Strategy Said to Remain Underused by Countries, Banks*, INT'L ENVTL. DAILY (BNA) (May 31, 1991).

crease as solutions to many of the problems associated with the debt are answered.⁷⁷

One problem associated with debt-for-nature swaps is inflation. Generally, inflation results following debt-for-nature swaps when the debtor government, lacking cash reserves, prints more money to service the debt conversion. Local currency then falls as a result of the greater money supply and inflates the prices for goods. Attempts to control the inflation include limiting the dollar amount available for swap, issuing local currency bonds to avoid one large payment in the beginning, or including a non-financial component in the debt-for-nature swap such as an agreement to undertake environmental action or reforms in lieu of making local currency payments.⁷⁸

Another problem that may occur is enforcement. A country may not be willing to agree to strict enforcement provisions that put the country in the position of being at risk of not being able to uphold the agreement or being forced to breach the agreement due to circumstances beyond its control. The small amount of debt being exchanged is, basically, not enough of an incentive for a country to agree to the amount of that risk. In these situations, the non-governmental organization and the government of the debtor country may negotiate to involve the non-governmental organization in the design and implementation of the project, thereby alleviating some of the risk.

Currently, successful debt-for-nature swaps have occurred in seven countries, including Bolivia, Costa Rica, Ecuador, the Philippines, Madagascar, Poland and Zambia.⁷⁹ In addition, Mexico and Brazil have authorized their first swap programs.

The first debt-for-nature swap took place in Bolivia when Conservation International, a United States based environmental group, bought \$650,000 worth of Bolivia's foreign debt for \$100,000 on the Wall Street secondary debt market during July of 1987.⁸⁰ In return, the Bolivian government agreed to establish three conservation areas totaling 3.7 million acres to serve as buffer zones to the existing Beni Biosphere reserve in the Bolivian Amazon.⁸¹ In addition, the government agreed to provide

⁷⁷ See Bruinsma, *supra* note 4, at 511.

⁷⁸ Gibson and Curtis, *supra* note 67, at 351-52.

⁷⁹ Each country has successfully completed a debt-for-nature project pertaining to independent projects and various amounts. Asiedu-Akrofi, *supra* note 18, at 565-71.

⁸⁰ *Id.*

⁸¹ *Id.*

the highest degree of legal protection, as well as establish a \$250,000 fund to administer and manage the reserve.⁸²

Ecuador also announced a \$10 million debt-for-nature program in 1987.⁸³ This program varied from Bolivia's in that the debt authorized was converted by the Central Bank into currency bonds to be held by Fundacion Natura.⁸⁴ Bonds were issued instead of cash for several reasons. First, by issuing bonds with a nine-year term Ecuador reduced the likelihood of inflationary impacts on its economy while donors could support long-term development of a strong local conservation organization.⁸⁵ Also, since the bonds have a nine-year term, the planning and implementation of long-range programs can proceed without fear that project funding could be cut off.⁸⁶

Thus far, the biggest swap occurred in Costa Rica in 1987. Costa Rica was the third country to announce a debt-for-nature swap. This swap was a \$5 million deal provided by the Bank of the Netherlands, who bought \$24.5 million in debt. The deal went through after the Central Bank of Costa Rica authorized up to \$5.4 million in debt-for-nature swaps. This authorization drew contributions from a number of donors, including World Wildlife Fund, Conservation International, and the Nature Conservancy.⁸⁷ Proceeds from these bonds finance conservation programs, such as the expansion of Guanacaste National Park and the Monteverde Claude Forest Reserve, as well as other programs and projects.⁸⁸

The success of the swaps in Bolivia, Ecuador, and Costa Rica led to a number of other transactions: the World Wildlife Fund and the Philippine government agreed in June 1988 to implement a joint program for a debt-for-nature swap;⁸⁹ the World Wildlife Fund and the Central Bank of Madagascar entered into an agreement in August 1989 involving a total commitment of \$3 million;⁹⁰ Zambia and the World Wildlife Fund

⁸² *Id.*

⁸³ *Id.* at 567.

⁸⁴ Kathryn S. Fuller & Douglas F. Williamson, *Debt-for-Nature Swaps: A New Means of Funding Conservation in Developing Nations*, INT'L ENVTL. REP. (BNA) (May 11, 1988).

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.* The total amount of the debt was purchased at 15 to 17 cents on the dollar.

⁸⁹ Asiedu-Akrofi, *supra* note 18, at 568.

⁹⁰ *Id.* at 569.

entered into a debt-for-nature swap agreement in August 1989;⁹¹ and finally, Mexico agreed to a swap in February 1991.⁹²

Given the success of these transactions, combined with the growing environmental concerns and increasing foreign debt, many individuals and environmental groups began to focus on Brazil as a possible party to a debt-for-nature swap transaction. The scope for a swap of this type is considerable since Brazil has developed the world's largest foreign debt (nearly \$115 billion)⁹³ and is home to the world's biggest rain forest.

VII. BRAZIL'S INITIATIVE TOWARD INTERNATIONAL RECOGNITION

Historically, "Brazilians have maintained an attitude of sovereignty over the Amazon region. Brazilians have been taught since early childhood that the Amazon ensures their future and that foreigners, going back to the 17th Century Portuguese and Spanish gold prospectors, have been trying to steal it away."⁹⁴ The Amazon has thus become an emotional matter that relates directly to their sense of national identity.⁹⁵ It is this sense that has fueled the Brazilian agreements over the future of the Amazon development for decades.

Officially, Brazil's attitude towards environmentalism prior to the 1980's was one of resistance to a perceived plot by wealthy countries to keep the poor from developing. Determined to proceed on its own course, despite criticism from abroad, the Brazilian government spent hundreds of millions of dollars under a development policy for the Amazon region that encouraged pioneers to resettle the jungle and share in its riches.⁹⁶

In retaliation to foreign disapproval, the Brazilian government pointed to the United States, Japan, France, West Germany and Britain as rich nations that plundered their own forests and devastated the earth's environment while developing their respective territories.⁹⁷ An official of the Interior Ministry said,

⁹¹ *Id.* at 570.

⁹² *Id.*

⁹³ Rene Villeges, *Brazil Now Favors Debt-For-Nature Swaps*, REUTERS, May 8, 1990.

⁹⁴ de Lama, *supra* note 9.

⁹⁵ *Id.*

⁹⁶ See Asiedu-Akrofi, *supra* note 18, at 580.

⁹⁷ See de Lama, *supra* note 9.

“there is no rich country in the world whose wealth did not come from its natural resources, or from the resources it took from other nations.”⁹⁸ However, building pressure from abroad eventually caused Brazil’s staunch indifference toward the environment to wane.⁹⁹

The pressure put on Brazil was not only rhetoric but economic as well. Both government leaders and international environmental organizations took part. The United States took the lead in the international campaign against the unregulated development of the Amazon interior.¹⁰⁰ The basic intent was to disrupt foreign lending to Brazil by the World Bank.

Despite a greater awareness of environmental concerns, the military government of Brazil, prior to the mid 1980’s, was slow to implement any significant environmental measures concerning the Amazon region. During the 1970’s, the government made some effort to set aside forest reserves. The most ambitious plan would set aside 5% of the region for a park or preserve land. The Brazilian government designated less than 1% for protection.¹⁰¹ In April 1985, however, Brazil experienced a transition from military to civilian rule. Tancredo Neves, elected under a constitutionally prescribed electoral college, died and Vice President Jose Sarney took office before the inauguration.¹⁰²

Prospects for a clear Brazilian mandate appeared better under civilian government. However, President Sarney maintained a tough stance against foreign intrusion and refused to heed foreign concern over the shrinking Amazon rain forests.¹⁰³ Sarney considered the encroachment from abroad as an infringement on national sovereignty.¹⁰⁴ This policy appears to have been maintained despite the proposed inclusion of several Articles in a new Constitution in 1987 that clearly called for attention to environmental concerns and the preservation of the Amazon.¹⁰⁵

⁹⁸ *Id.*

⁹⁹ See generally, Villeges, *supra* note 93.

¹⁰⁰ See generally, *US/Brazilian Relations at Low Ebb*, INT’L REP. (Feb. 23, 1989).

¹⁰¹ Giaimo, *supra* note 10, at 555.

¹⁰² Roger W. Findley, *Pollution Control in Brazil*, 15 *ECOLOGY L.Q.* 1, 42 (1988).

¹⁰³ de Lama, *supra* note 9.

¹⁰⁴ Powell, *supra* note 19.

¹⁰⁵ Giaimo, *supra* note 10, at 557-58.

Still apparent in the 1980's was a belief by government officials that, in spite of development, damage to the rain forests would be tolerable.¹⁰⁶ Inherent in this belief was the theory that leadership would tend naturally toward conservation methods as a result of increasing knowledge about environmental harm. The former head of Brazil's Land Colonization program more bluntly stated, "our inefficiency will prevent us from cutting down too much of the forest."¹⁰⁷ These beliefs, however, were not sufficient to relieve the international pressure mounting on the Brazilian government.

It was not until 1988 that President Sarney responded to the international pressure against Brazil. In October, Sarney announced a plan to restrict government subsidies for agriculture in the Amazon region.¹⁰⁸ Concessions were relatively minor, however, causing environmental organizations, especially those in the United States, to continue the focus on preservation of the Amazon.¹⁰⁹ Continuing into 1989, the international ecology movement maintained pressure by threatening to disrupt disbursements of international credit, particularly World Bank loans targeted for Amazon development.¹¹⁰

These pressures on Brazil, as well as other Latin American nations, prompted the Presidents of the States Parties to the Treaty for Amazonian Cooperation to meet in Manaus, Brazil in May of 1989 where they signed the Amazon Declaration.¹¹¹ The countries signing the Declaration included Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam, and Venezuela.¹¹² Their purpose was to reflect a common interest in the Amazon region and promote a future of cooperation for the development and protection of the rich heritage of their respective Amazon territories.¹¹³

Furthermore, in the early 1990's the issue of nuclear power development underwent a subtle transformation as environmen-

¹⁰⁶ *Id.* at 569.

¹⁰⁷ *Id.*

¹⁰⁸ Kevin Fox, *Disappearing Amazon: Brazil's Policies*, L. A. TIMES, Sept. 10, 1991, at 2.

¹⁰⁹ See generally, Powell, *supra* note 19.

¹¹⁰ *Id.*

¹¹¹ The Amazon Declaration, 28 I.L.M. 1303 (1989).

¹¹² *Id.*

¹¹³ *Id.* While the Declaration reaffirms the sovereign rights of nations with respect to the natural resources, it also directs that attention be paid to cultural, economic and ecological concerns of the nation's people and its environment, *id.*

talists shifted their concern from nuclear power to the hydroelectric power projects planned within the Amazon basin. These projects posed a severe threat to the rain forests due to the flooding of large tracts of land.¹¹⁴ The first half of 1990 would prove to be a period of transition for Brazil.

Although national policy appeared to be shifting, President-elect Fernando Collor de Mello denounced foreign intrusion into Brazilian affairs as did the presidents that served before him. Immediately prior to his pre-inaugural world trip, he proclaimed Brazil would not cede one inch from its sovereignty on the ecology question.¹¹⁵ However, international condemnation of President Collor's position caused him to change his stance by the end of the trip.¹¹⁶ Nevertheless, by 1990, Brazil was on the verge of a dramatic turnaround in environmental policy. President Collor's appointment of Joseph Lutzenberger to head the Environment Secretariat of the forthcoming government was evidence of this change.¹¹⁷

The appointment of Lutzenberger was expected to recover the world prestige lost during Brazil's years of rampant destruction to the rainforest, thereby winning back opportunity for foreign loans.¹¹⁸ Lutzenberger was popular among the environmentalists. Originally an agronomist, he became a crusader against chemical pollution in Brazil.¹¹⁹ Immediately after his appointment he pledged to preserve the Amazon.¹²⁰

Once stating he wanted the Amazon to remain "untouchable" Lutzenberger later clarified his position and said, "no one wants to convert the Amazon into a museum but what I propose is its occupation in a rational, human and ecological manner."¹²¹ In addition, Lutzenberger voiced his opposition to large dam projects, as well as the construction of a road through western Brazil to Peru and additional hydroelectric power plants, such as the giant Itaipu plant on the border of Paraguay and the Tucuruí plant in the Amazon.¹²²

¹¹⁴ *West German Outlook*, 1990 INT'L REP. (March 7, 1990), § V, available in LEXIS, Nexis Library, International File.

¹¹⁵ *Ecology and Investment*, *supra* note 7.

¹¹⁶ *Id.*

¹¹⁷ Powell, *supra* note 19.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ Villeges, *supra* note 93.

¹²² *Id.*

President Collor continued through 1990 in his quest to put Brazil in the vanguard of the environmental movement.¹²³ During this year he renewed consideration of debt conversions for investment in environmental projects.¹²⁴ In June 1991, President Collor took two major steps toward his environmental policy initiations. First, he dismissed the head of Brazil's Indian protection agency and unveiled a program to allow foreign financing of environmental projects in Brazil.¹²⁵ Second, he abolished tax subsidies that had made it profitable to cut down Amazon rain forests for farming and ranching.¹²⁶

With increased scrutiny of environmental issues under the international microscope, Lutzenberger's tenure drew more and more controversy. Since the appointment, there had been a continual confrontational relationship between Lutzenberger and President Collor. Lutzenberger, as well as the environmental lobbies, was very vocal about opposition to certain projects and the commitment of executive agencies. Lutzenberger charged that ecological programs are often announced with a great deal of fanfare and later not adequately funded. In addition, Lutzenberger criticized the military commander of the Amazon region, calling him a "fool" in response to charges made by the commander that the Amazon was losing its sovereignty to powerful international interests and environmentalists.¹²⁷ Other issues, such as the continuation of a road through the Amazon and a proposal to carve military zones out of Indian lands, have brought threats of resignation from Lutzenberger subject to President Collor's intention of proceeding with these policies.¹²⁸

Lutzenberger's final attack was a charge he made in March 1992, that there was widespread corruption within Brazil's national environment agency, known as IBAMA.¹²⁹ Following this charge President Collor fired Lutzenberger on March 21, 1992 and replaced him with Jose Goldemberg, the former Minister of Education.

¹²³ Marx, *supra* note 16.

¹²⁴ *Id.*

¹²⁵ James Brooke, *Brazilian Leader Acts to Protect the Amazon*, N.Y. TIMES, June 26, 1991, at 9.

¹²⁶ *Id.*

¹²⁷ *Top Environmental Official Fired: Environmentalists Praise Replacement*, INT'L ENVTL. DAILY (BNA) (Mar. 31, 1992).

¹²⁸ *Id.*

¹²⁹ *Id.*

Goldemberg is internationally respected and is seen as possessing the managerial and administrative experience Lutzenberger lacked.¹³⁰ He has experience in organizing international conferences on the environment and is a proponent of increased international cooperation to protect the environment. In addition, Goldemberg knows the history of Brazilian environmental policy and is critical of past policies of the Brazilian government that promoted rampant deforestation through road building, logging, ranching and hydroelectric dam projects.¹³¹

Both Lutzenberger and Goldemberg have promoted the use of debt-for-nature swaps. Their cooperation made it easier for the proposal of the first debt-for-nature swap announced by Collar in 1991. The swap consisted of \$100 million in foreign debt that would be exchanged every year for the financing of environmental projects.¹³²

The limit for the swaps was set at \$100 million per year because of concern the projects would force a rise in inflation. Inflation became a huge concern for the Brazilian government. For the five months prior to 1990, inflation was 82%. In 1990, inflation approached 1,800% and was approximately 1,400% in 1991.¹³³ Thus, when Brazil decided to propose money for the swap it was forced to balance the estimated effects a large swap would have on the future economy through increased inflation with the potential international good will that would result from the implementation of such an initiative.

VIII. BRAZIL'S LOOKS TOWARD THE FUTURE

Debt-for-nature swaps have been an integral part of President Collar's environmental initiative. On June 26, 1991, the President submitted a plan to a Group of Seven (G-7) leaders in London drawn up by the Brazilian government, the World Bank and the European Community.¹³⁴ The Plan was entitled

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² Brooke, *supra* note 125. Prior to this time, although debt-for-nature swaps were already in use, they were not initiated because of the opposition of Brazil's Economy Minister, Zelia Cardoso de Mello, *id.* The new Economy Minister, Marilio Marques Moriera, supported debt-for-nature swaps allowing the initiation of the first financial proposition. *Brazil to Create \$100 Million Fund for Environment*, PROPRIETARY TO THE UPI, June 25, 1991, (BC cycle) available in LEXIS, Nexis Library, UPI File.

¹³³ *Id.*

¹³⁴ Micheal Stott, *Brazil Hopes G-7 Will Approve Plan to Save Amazon Forest*, REUTERS, Jul. 16, 1991, (BC cycle).

the "Pilot Program for the Protection of the Tropical Forests of Brazil" and called for \$1.57 billion to save the Amazon rainforest from burning and logging and to promote "green" development.¹³⁵ The Plan requested that the G-7¹³⁶ finance the entire \$1.57 billion with cheap loans and donations. Although not a principal source, debt-for-nature swaps were also listed as a possible source of finance. The dollars raised would then be utilized for measures ranging from environmental awareness campaigns to the purchase of large tracts of land to create national parks and preserves. The Plan's central theme is environmentally-sound development that allows the inhabitants a decent and sound life, without devastation of the rain forest's interior.¹³⁷

The proposal of this plan, as well as the announcement that \$100 million a year will be designated for a debt-for-nature swap program, was part of a series of initiatives by the Brazilian government to prepare for the United Nations Conference on Environment and Development, held in July 1992 in Rio de Janeiro. Heads of state from over 100 nations attended the international meeting in an effort to sign a common agenda for the protection of the environment into the 21st century.

On May 12, 1992, only months prior to the "Earth Summit," Brazil approved its first debt-for-nature swap.¹³⁸ The financial transaction entailed the purchase of \$2.2 million of Brazilian debt in the secondary market, financed by the Nature Conservancy, who raised \$850,000 in private donations for the purchase.¹³⁹ The debt will then be donated to FUNATURA, who will exchange it for \$2.2 million in dollar-adjusted, long-term Brazilian "Environmental Government Bonds" paying 6% interest per year.¹⁴⁰ The bonds will be used to create an endowment fund for the Grand Sertao Veredas National Park located in the "cerrado" region of northern Minas Gerais.¹⁴¹ The interest, es-

¹³⁵ *Id.* at July 16, 1991 (AM cycle).

¹³⁶ The G7 consisted of the United States, Japan, Germany, France, Britain, Italy, and Canada.

¹³⁷ *Id.*

¹³⁸ *Brazil Approves First Debt-For-Nature Swap*, PR News, May 12, 1992, available in LEXIS, Nexis Library, International File.

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

timated at \$132,000 will be used to fund conservation, management, and educational projects at the park.¹⁴²

The Brazilian government benefits from the swap through its ability to retire \$2.2 million in hard-currency debt held outside the country in exchange for domestically held local-currency debt spaced out over more years. However, the government also greatly benefits from the international exposure of the swap. The approval of the swap occurred just prior to the Earth Summit, where Brazil and other debtor nations sought financial assistance from leading economic nations to tackle these tough and expensive environmental problems. The approval appears to have been an attempt to show the world that Brazil's government is willing to participate in the global environmental initiative.

Despite these initiatives, however, the actual destruction of the Brazilian rain forest is not projected to slow and may even increase.¹⁴³ The causes of the destruction still remain. The impact of the one debt-for-nature swap on the environment will be small compared to the huge effects of the continued burning, clearing and logging of the Amazon.¹⁴⁴ The actual accomplishment in this case, therefore, appears to be only a moral one. The real benefit is derived from a shift in philosophy by those in control over the future of the Amazon. Whether this shift is merely a small offering to appease world concern or the first step in a genuine initiative toward ecological concern will only be answered by future policies and initiatives of the Brazilian government.

IX. THE ROLE OF INTERNATIONAL ENVIRONMENTAL LAW

The potential international effects of the devastating impacts of deforestation leads to possible applicability of international declarations and treaties that may be used to protect the Amazon. One such declaration is Principle 21 of the United Nations Declaration on the Human Environment, written in Stockholm in 1972. Generally, the declaration is an international legal mandate that provides assurances from the signing states that their jurisdiction will not cause damage to the environment. This

¹⁴² *Id.*

¹⁴³ Tova Chapoval, *Brazilian Amazon Burnings Likely to Rise This Year*, REUTERS, Aug. 13, 1992.

¹⁴⁴ One of the main points of discussion at the U.N. sponsored summit was the continued burning and cutting of the rain forests, *id.*

declaration is criticized as being of little value with respect to the issue at hand, however, since it is not legally binding and it recognizes that lesser developed countries may favor development over the environment.¹⁴⁵

Another alternative may be the Treaty for Amazonian Cooperation.¹⁴⁶ This treaty was signed by the eight countries whose territories include portions of the Amazon Basin. However, this treaty is also criticized because it does not address the exploitation of the Amazon, as far as initiating substantive constraints, rather only with respect to the outside intervention of other countries.¹⁴⁷

A third alternative may be the United Nations World Charter for Nature signed in 1982.¹⁴⁸ This charter does address the adverse impacts on nature permitted by nations. However, this alternative, although comprehensive in scope and compulsory in its language, has no binding force. In addition, the Amazonian nations, including Brazil, have expressed their opposition to this charter.¹⁴⁹

Thus, it is apparent that international environmental law has not discovered the answer the ecologists and governments are looking for to address the Amazon rain forest problem. Perhaps this is why governments and non-governmental agencies have tended to take alternative means, such as debt-for-nature swaps, to address environmental concerns. However, effective legal remedies must be found so that debt-for-nature swaps can continue in an efficient manner without abuse.

Without an effective legal duty to continue the swap agreement, the principal motivation for the developing countries' adherence to the agreement stems from their fear of political and economic reprisal by creditor nations. On the other hand, this fear is an insufficient deterrent in the face of developing nations' tremendous domestic economic and political pressures. Often a country may not be willing to accept strict enforcement provisions. For example, Bolivia was reluctant to accept stricter terms based in part on the risk of not being able to live up to the agreement due to circumstances beyond its control. Because

¹⁴⁵ Giaimo, *supra* note 10, at 559.

¹⁴⁶ *Id.* at 559-60.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.* at 560-61.

¹⁴⁹ *Id.* at 561.

the small amount of debt being exchanged would not have been enough of an incentive for Bolivia to agree to stricter terms, Conservation International consented to maintain an extensive involvement throughout the design and implementation of the project.

Thus, in order to eliminate the economic and political risk factors, some form of multilateral or regional treaty is required that would establish codes of behavior and create dispute settlement procedures requiring negotiation between parties. Without this security arrangement in the environmental investment, debt-for-nature swaps, may not prove to be as beneficial in the long run. However, with regional and/or international agreements, the strength of a debtor nation's sovereignty may improve due to the improved fiscal health of the nation.

CONCLUSION

Although it appears that Brazil's destruction of its Amazon rain forest has slowed only slightly over the past two decades, the nation has become increasingly aware, if not of the grave environmental consequences of the destruction, at least of the seriousness of international concern over the matter. Brazil's reluctant obedience of international environmental initiatives by only recently approving its first debt-for-nature swap is perhaps a signal to the rest of the world that it wants to, and indeed needs to, participate in the world economy. The actual environmental effects of the swap will likely be minimal. Its apparent indication to those seeking environmental initiatives from the nation of Brazil is that another lumbering step forward has been taken in the long way towards global environmental security.

