1. INTRODUCTION

Skin of frog, venom of spider and saliva of leech. Ingredients for the witch's brew at the beginning of Macbeth? No, they are potentially sources of drugs. The pharmaceutical industry is going back to nature... for plants, insects and beasts that might provide chemicals to fight cancer, AIDS and other diseases. Such chemical prospecting could also provide an economic incentive for preserving rain forests and endangered species...¹

The preservation of tropical forests such as the Amazon has been identified as one of the crucial environmental challenges of our age because more species of animals and plants are found in the Amazon than anywhere else on Earth.² This growing concern has led environmental organizations to seek means of curbing the unsound exploitation of natural resources by less developed countries ("LDCs"). While the emerging interest of the pharmaceutical industry for the riches of the rain forest may one day provide the necessary economic incentive to protect the Amazon and other forests, it is becoming apparent that a more immediate form of intervention must be identified. According to some estimates, if deforestation continues at present rates, the majority of this pristine habitat will be obliterated in the near future.³ Recognizing that there is a link between the catastrophic environmental

³ It has been estimated that deforestation is occurring at a rate of 100,000 square kilometers per year which is equivalent to a net loss of two percent of all forests each year. See Ecologists Make Friends with Economists, ECONOMIST, Oct. 15, 1988, at 25.
exploitation of the LDCs' natural resources and the economic pressures under which these countries labor, environmental organizations have attempted to propose solutions that take in consideration the core economic problems that aggravate environmental degradation. Many LDCs are saddled with crushing debt burdens that are serviced at the expense of the environment. Under the combined pressure of repaying the debt and addressing critical social issues, many countries engage in the short-term exploitation of their natural resources. In an effort to counter these economic pressures, non-governmental organizations ("NGOs") dedicated to the protection of the environment have embraced the idea of debt-for-nature swaps.

In its purest form, a debt-for-nature swap involves the acquisition of LDCs' debt by an NGO and its redemption in local currency to be used for conservation purposes. Debt-for-nature exchanges have developed by analogy to debt-for-equity swaps and are saluted by politicians, commentators and environmentalists as ingenious techniques holding the promise of curing what was thought to be an intractable problem.

Scholars and activists were mesmerized by the potential of debt-for-nature swaps; in buying distressed debt on the U.S. market and, then, selling it at face value to a LDC, one could leverage the financing of conservation programs. For instance, debt bought at twenty cents on the dollar could be used to finance the equivalent of one full dollar in conservation

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4 See THE NATURE CONSERVANCY, SWAPPING DEBT FOR NATURE (n.d.) (on file with the University of Pennsylvania Journal of International Business Law).


6 As I shall discuss infra section 4, many different transactions that would not fit within the parameters of this definition but that involve both debt and conservation are at times loosely described as debt-for-nature swaps.

7 In a debt-for-equity swap, an investor buys a portion of a debtor country’s debt and exchanges the debt for an equity interest in a local firm or another local asset, instead of collecting the hard currency originally borrowed. See Robert M. Sadler, Comment, Debt-for-Nature Swaps: Assessing the Future, 6 J. CONTEMP. HEALTH L. & POL’Y 319, 326-34 (1990).
projects. In the roaring '80s, the mystique of financial engineering was very influential and people were prepared to believe that the mere shuffling around of paper could somehow create value. Unfortunately, as discussed in Section 2 of this Article, the leverage of conservation dollars that can be achieved through debt-for-nature swaps is at least in part a myth. In order to shed light on this crucial point and to provide a context for the subsequent discussion of debt-for-nature swaps, Section 2 briefly recounts the history of the debt crisis and surveys the techniques that have been developed in efforts to address the problem.

Section 3 describes some of the most representative debt-for-nature programs which have been executed since 1987. Section 3 shows that after a favorable initial reception, LDCs and NGOs became increasingly aware of the inherent problems buried in the structure of debt-for-nature swaps. Concerns about infringements of the LDCs' sovereignty, fears of repudiation and preoccupation with the economic impact of the transactions dictated the subsequent evolution of debt-for-nature swaps.

Finally, based on the disappointing results of these programs, this Article in Section 4 argues that it is questionable whether the goals of conservation are well served by debt-for-nature swaps. Although these programs benefit banks both financially and in terms of improved public image, this Article argues that debt-for-nature swaps are probably not the most cost-effective mechanism to fund conservation projects. This Article favors severing the tie between environmental protection and the debt crisis because debt-for-nature swaps do not yield economic results of satisfactory magnitude, and it is likely that linking the two crises could backfire.

In the final analysis, debt-for-nature swaps should be compared to programs that fund conservation via a straightforward transfer of moneys from the developed countries to the

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LDCs. To the extent that debt-for-nature swaps are fraught with problems that could delay the creation of cooperative regimes of conservation between the North and the South, this Article calls for NGOs to critically reexamine their decision to follow the pied piper of financial engineering.

2. EARLY ATTEMPTS TO DEAL WITH THE LDC DEBT CRISIS

2.1. History of the Debt Crisis

The genesis of the LDC debt crisis can be traced back to the first oil shock of 1973, when the Organization of Petroleum Exporting Countries ("OPEC") raised oil prices by 400%. Flushed with liquidity, OPEC deposited $200 billion into the world banking system. These large deposits, later labelled "petrodollars," posed a dilemma to money center banks. With the industrialized world mired in a deep recession, there was little or no demand for capital. The banks were unable to recycle the petrodollars domestically by lending to their traditional corporate customers, and needed a new outlet for the petrodollars.

Lending to LDCs seemed a very promising proposition to money center banks for several reasons. First, because of their assumption that countries, such as Mexico, Argentina and Brazil, will not go bankrupt, bankers held the belief that sovereign lending was risk-free. These countries ap-

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10 As used herein, the term North refers generally to countries whose economies are industrially and technologically advanced. Most of the countries that comprise the North are located in Europe, North America and Japan. The terms South and LDCs refer to all other countries.


13 Id.


peared to have substantial industrial bases and healthy rates of economic growth. Moreover, the creditworthiness of LDCs was bolstered by the rising world prices for the natural resources exported by these countries. Because of the unwarranted assumption that lending to LDCs was risk-free, loans were not granted for specific projects or industries. These "no-strings attached" loans ended up being invested in state-owned industries that were often inefficiently run.

Second, bankers were encouraged to lend to LDCs because of the profitability of these loans. Although the loans were originally priced at a modest margin over the banks' cost of funds (the London Interbank Offered Rate), the upfront syndication fees deducted from the principal were a tantalizing incentive. Competition for loans to LDCs heated up because banks were permitted to take these fees in income during the year of the closing. The resulting feeding frenzy produced terms and conditions that were grounded in increasingly aggressive projections of future growth and in loose credit agreements.

From the point of view of LDC governments, these loans held the promise of fueling economic growth at a faster pace and at a low cost. In hindsight, the glaring miscalculation made by both lenders and borrowers is hard to explain. It bears emphasis, however, that when the loans were initially incurred, two key economic indicators conspired to mislead the LDC governments. First, at the time the loans were initiated, high rates of inflation largely offset the rates on the loans, and in real terms, the loans appeared very inexpensive. Second, a weak dollar misled the LDCs. The debt was to be repaid

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\(17\) Santos, *supra* note 15, at 72.


\(20\) *Id.* at 40.

\(21\) According to one study, the real rate of interest was negative in 1976 and 1977 and did not surpass one percent until 1981. ALFRED J. WATKINS, *TILL DEBT Do Us Part: WHO WINS, WHO LOOSES, AND WHO PAYS FOR THE INTERNATIONAL DEBT CRISIS* 51 (1986).

\(22\) *Id.*
in U.S. currency, and the assumptions made at the time with regard to future exchange rates turned out to be widely off the mark.

In 1979, when the second oil shock hit, the banks recycled another $200 billion from OPEC to the LDCs. In 1981, however, the United States reverted to a restrictive monetary policy which produced a doubling of interest rates and appreciation of the dollar. The increase in the exchange and currency rates hit the LDCs with the force of a one-two punch. Larger interest payments were required because the loans were priced on the London Interbank Offered Rate which varies with the level of dollar interest rates generally. Moreover, the value of these payments expressed in the LDCs' currencies had augmented because of the appreciation of the dollar.

Additionally, two developments conspired to weaken the LDCs' ability to manage their financial destiny. First, because of the recession in the industrialized world, the price of the commodities which represented a large share of the LDCs' exports took a plunge. Second, the rise in the rates of interest available in the United States accelerated the flight of capital from the LDCs.

By 1982 the debt crisis had matured into a tragedy that finally caught the attention of the public opinion when the Mexican Minister of Finance informed the banks that his "country can't pay anymore." Although the magnitude of the problem called for a concerted response to the crisis, the industrialized nations chose to ignore it until 1985. In the interim, money center banks were left to their own devices. In a futile effort to protect their reported profitability, banks

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23 Angermueller, supra note 12, at viii.
24 Id. at ix.
25 CONGDON, supra note 18, at 113.
26 Id.
27 See WATKINS, supra note 21, at 29.
28 Schirano, supra note 14, at 20 (quoting Finance Minister Jesus Silva Herzog).
29 Between 1982 and 1985, then U.S. Secretary of the Treasury Donald Regan dismissed inquiries about the debt crisis with the following stock response: "This is not a debt crisis, it is a liquidity problem. People go bankrupt, not nations." See James Srodes, Banana Bonds, the Movie, FINANCIAL WORLD, June 13, 1989, at 24.
extended new loans so that the LDCs could meet the interest payments when due.\textsuperscript{30} This policy of "gap financing" was aimed at preserving the fiction that the loans were still viable. However, no new money was provided to the LDCs,\textsuperscript{31} and as a result, the economies of these countries stagnated and their ability to meet their obligations deteriorated.

Recognizing that gap financing was a failure, then U.S. Treasury Secretary James Baker proposed a "Program for Sustained Growth" (the "Baker Plan").\textsuperscript{32} The plan provided some new funds to the LDCs and was designed to encourage private sector initiatives to address the crisis. During the subsequent three years, from 1985 to 1988, the amount of interest paid by the LDCs exceeded the infusion of fresh money provided by the Baker Plan, and led most commentators to conclude that the plan failed.\textsuperscript{33} As time passed, both the banks and the LDCs became willing to experiment with different techniques to reduce the debt. Debt buy-backs\textsuperscript{34} and debt-for-equity\textsuperscript{45} were the first financial mechanisms that were used to alleviate the crisis. At the time, both techniques were hailed as clever market-oriented responses to a crisis that had previously seemed unmanageable. It soon became apparent, however, that these techniques were having only a marginal impact on the total debt burden. Between 1982 and 1989, these strategies reduced the LDCs debt by


\textsuperscript{32} \textit{See generally} CONGDON, supra note 18.

\textsuperscript{33} Santos, supra note 15, at 77.

\textsuperscript{34} From 1982 to 1989, debt buy-backs by private companies resulted in an estimated eight billion dollar reduction of the total debt. In 1988, debtor governments also bought back loans. For example, Bolivia purchased $240 million of its own debt at 11% of its face value and Chile purchased $300 million at 56% of the original value. J.P. Morgan & Co., LDC Debt Reduction: A Critical Appraisal, WORLD FIN. MARKETS, Dec. 30, 1988, at 6.

\textsuperscript{35} \textit{See} discussion \textit{infra} section 2.2 on the debt-exchange approach; see also J.P. Morgan & Co., supra note 34, at 7 (Debt-for-equity swaps were entered into by Chile ($2.35 billion), Mexico ($2.4 billion) and Brazil ($5.89 billion)).
$38.9 billion, a trivial amount given that the estimated total of the LDC debt is now well over $500 billion.  

In 1989, while the debt crisis continued to grow, Nicholas Brady, who succeeded Baker as Secretary of the Treasury, proposed a new program (the "Brady Initiative") which recognized for the first time the harsh reality that most of the LDC debt is truly uncollectible. The Brady Initiative tried to encourage write-offs of the loans by providing guarantees on the remaining portions of the loans.

While it may still be too early to pass judgment on the Brady Initiative, commentators have remarked that so far the program has not impacted the net capital outflow that is holding back the development of LDCs. More importantly, the Brady Initiative did not diminish the incentives to engage in practices that cause damage to the environment.

2.2. The Debt-Exchange Approach

The legal and financial structure of debt-for-nature swaps mirrors the model created by debt-for-equity exchanges. Thus, understanding how the latter functions sheds light on the issues embedded in the former.

The first voluntary exchange of debt for equity or some other form of consideration took place in 1985. The raison d'être of such exchanges is that while a debtor country may be unable to repay its loans on time and in the original currency of the transaction, it may be willing to swap the debt for something else that the bank, in turn, can resell to a third party. These transactions were made possible by the development of a secondary market for the trading of sovereign debt. This market values LDCs' debt at prices that are

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36 Santos, supra note 15, at 78.
37 Id.
38 See Santos, supra note 15, at 80.
40 The economic and legal analysis of the debt-exchange approach summarized in this section of the article was first developed in the seminal article by Michael Chamberlin et al. See Michael Chamberlin et al., Sovereign Debt Exchanges, 1988 U. ILL. L. REV. 415.
41 On the secondary market, traders sell LDC loans at discounted prices that reflect the estimated collectability of the obligation.
substantially below the principal amount of the debt.

The cornerstone of a debt-exchange program is the willingness of the debtor country to exchange the debt purchased on the secondary market for local currency to be deployed in an approved investment. For instance, a loan having a face value of one million dollars could be purchased on the secondary market for $200,000. It might then be swapped in Brazilian cruzeiros worth one million dollars with the proviso that the cruzeiros must be invested in a specific project for a prescribed number of years.42

The exchange appears to benefit all the parties involved. Banks clearly gain in three ways. First, they reduce their foreign debt exposure on terms that are substantially more favorable than those that would have been available in the secondary markets. Second, they earn a merchant banking fee for arranging the transaction. Third, the banks' traders earn the broker's spread on the sale of the debt. The party interested in making an equity investment in the LDC appears to gain because it managed to purchase cruzeiros at a discount, thereby decreasing the cost of the investment and increasing the return that will be earned on the project. Finally, the LDC seems to gain because it attracted a project that will generate jobs and hard currency, and it reduced its debt load. This rosy picture of the transaction has led some commentators to argue that:

the existing debt has become the new currency of asset deployment and investment throughout Latin America and elsewhere. Debtors, commercial banks, and other investors are now using cheaply obtained debt from secondary loan markets as a discounted currency substitute for use in a variety of complex and innovative merchant banking transactions. Although the country debt problem continues, there are signs of vigorous life after restructuring throughout Latin

Thus, depending on the economic position of the obligor, loans have traded at discounts of as much as 95% of their original value. See Richard Evans, Secondary Markets: Anomalous But Profitable, EUROMONEY, Jan. 1988, at 25 (Supp. Jan. 1988).

42 Chamberlin et al., supra note 40, at 418.
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To the extent that the logic of debt-exchanges constitutes the underpinning of debt-for-nature transactions, it is important to critically question the assumptions underlying the argument in favor of debt-for-equity swaps. The starting point of my analysis is a two-pronged query. First, a pragmatic observation: if debt-exchanges are indeed the panacea that they are reputed to be, why have so relatively few transactions been consummated? Are there hidden legal and political costs that have offset the advantages of these exchanges? Second, setting aside the form of the transactions, and focusing on their substance: shouldn’t one expect that, over time, competition in the financial markets will reduce and eventually eliminate the arbitrage opportunity that debt-exchanges seem to be exploiting?

With respect to the first issue, it is well established that debt-for-equity swaps had a very limited impact on the debt crisis. 44 LDCs have resisted these transactions out of fear that debt-for-equity programs would subsidize investments that would have taken place even in the absence of this incentive. 45 Thus, from the LDCs’ perspective, the subsidy might turn out to be a dead-weight loss. 46 Alternatively, the LDCs expressed concerns that the programs would encourage investments that may not be viable. 47 The LDCs, in pursuing debt-for-equity swaps, would be throwing good money after bad money. The consequence of these rational preoccupations is that the LDCs have structured their regulation of debt-exchanges with a view to exercise control over the investments that they will authorize. 48

43 Id. at 419.
44 Santos, supra note 15, at 78.
46 There is substantial controversy as to whether debt-equity swaps lack “additionality,” i.e., whether they result in investments that would not be made in their absence. The International Finance Corporation, an arm of the World Bank, has found in a study that the swap mechanism induced additional investments only in 50% of the cases. Id.
47 See Chamberlin et al., supra note 40, at 426.
48 Id. at 425.
The principal goal of these regulations appears to be that of “splitting the discount.” In other words, LDCs sought to extract part of the value realized by the investors who purchased the debt at a discounted price in the secondary market. This result was often achieved by imposing a sliding scale on the rate of exchange at which the U.S. denominated debt was converted into the foreign currency. The Mexican program, for instance, provides that the foreign exchange rate to be applied will be either the free market rate for high priority investments, or the free market rate minus 40% for the lowest priority investments. It does not take a great leap of imagination to realize that high priority investments are likely to be investments that yield lower rate of returns to the investors. So that even in the case of high priority investments, the discount is split by compelling investments that have a reduced earning potential. In sum, the regulations enacted in most countries have created a framework that effectively curtails any arbitrage profit.

Another economic factor which offsets the ostensibly profitable profile of a debt-for-equity swap is inflation. Investors who purchase large amounts of local currency in one transaction may be paying more than what they really need to pay. Because inflation in some LDCs has been very high, periodic purchases of local currency to meet the cash flow needs of the project are likely to yield a lower average rate of exchange than the discounted rate obtained through the swap. Incidentally, it should be noted that a by-product of a massive debt-for-equity program could be an increase in the rate of inflation because the LDC would have to print large amounts of currency to retire the debt.

At its core, the debt-for-equity mechanism presupposes that one can, over a protracted period of time, buy debt at a low price in one market and sell it at a high price in another market. If this money machine truly existed, arbitragers would actively engage in trading until the two markets were

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49 Id.
50 Id. at 426.
51 Id. Most Latin American countries, including Brazil, Argentina, Chile, Venezuela and Ecuador, have adopted similar mechanisms.
brought into equilibrium. The fact that such trading is not occurring strongly suggests that other factors work their way into the process and render debt-for-equity transactions a much less attractive proposition than it was originally proclaimed to be.

A debt-exchange is essentially a foreign currency transaction that is initiated with the expectation that the mechanism will lower the cost of purchasing local currency for a specific purpose. The lackluster performance of debt-exchanges supports the hypothesis that the following factors often offset the lower cost of the local currency:

(i) LDCs' regulations that either limit the investments to lower yielding projects or mandate an arbitrary currency exchange rate that captures part of the discount;
(ii) the effect of high rates of inflation on the purchasing power of the local currency; and
(iii) high transaction costs incurred in order to obtain debtor and creditor country approval and to comply with the provision of the original loan agreement.

The poor results of debt-for-equity programs are consistent with the notion that a rational LDC government does not want to lose the opportunity to attract new money to its economy. Thus, only those projects which would not occur in the absence of a subsidy should be eligible for a debt-for-equity swap.

3. EVOLUTION OF DEBT-FOR-NATURE SWAPS PROGRAMS

3.1. Genesis of Debt-for-Nature Swaps

A 1984 op-ed piece in the New York Times first discussed the correlation between environmental degradation and the debt crisis.53 Dr. Thomas Lovejoy of the World Wildlife Fund (the "WWF") argued in the article that the financial crisis in developing nations had resulted in catastrophic reductions in the already meager environmental budgets of these countries. Moreover, because of their economic situation, the LDCs channeled most of the foreign developmental aid that they

received into businesses that generated hard currency rather than funding environmental projects. Given these dismal developments, Dr. Lovejoy proposed that the twin problems of debt and the environment be addressed simultaneously with a bold strategy of swapping debt for nature.\(^{54}\)

The article stimulated the debate concerning the link between conservation and the debt crisis. In response to the growing debate, the World Bank established a new department charged with the responsibility of integrating environmental concerns into the bank's overall lending policies.\(^{55}\) Even though a transaction had not yet been consummated, there was great interest and enthusiasm for an idea that presented considerable appeal both intellectually and emotionally. The notion that one crisis could be used to solve the other seemed very satisfying intellectually. From the point of view of environmental activists, debt-for-nature seemed to promise the much needed funding for the myriad of projects that have become increasingly urgent. Enthusiasm aside, as of 1986, there was no clear understanding of how such a transaction would work or whether it would be feasible.

3.2. Examples of Implemented Debt-for-Nature Swaps

3.2.1. Bolivia: The First Swap

In 1987, Conservation International ("CI"), a Washington based NGO, launched the first debt-for-nature swap.\(^{56}\) With the assistance of Citicorp, CI purchased approximately $650,000 worth of Bolivian debt for $100,000 in the secondary loan market. Subsequently, CI agreed to cancel the debt in exchange for a package of measures which established a biosphere reserve in the foothills of the Bolivian Andes. The Bolivian government agreed to (1) raise the legal status, from protection by decree to protection by legislative enactment, of the 334,200-acre Beni Biosphere Reserve, the adjoining 877,205-acre Yacuma Regional Park and Cordebeni Water Basin and an additional 2,870,561-acre Chimane Forest

\(^{54}\) Id.

\(^{55}\) See Chamberlin et al., supra note 40, at 440.

Reserve (a buffer zone for sustained development) and (2) establish an operational fund for the management and protection of the Beni Biosphere in the local currency equivalent of $250,000.\(^7\)

Under the terms of the agreement, CI committed to providing ongoing technical, financial, and managerial assistance in connection with the biosphere. However, CI did not receive title to the land or any form of specific right to the project itself. In fact, the Beni Biosphere was to be administered by the Bolivian government in conjunction with a Bolivian NGO.

The subsequent history of the Bolivian experiment highlights one of the most serious pitfalls of debt-for-nature swaps. The agreement between CI and the Bolivian government permitted commercial logging in the buffer zone subject to specified reforestation requirements. Unfortunately, the local commercial logging interests have ignored the reforestation requirement.\(^5\)

3.2.2. Ecuador: The First Debt-for-Debt Swap

The second debt-for-nature swap was spearheaded by the WWF and involved a number of different conservation projects in Ecuador.\(^9\) The first step in this deal was the purchase by Citicorp, on behalf of the WWF, of about one million dollars of Ecuadorian debt for approximately thirty-five cents on the dollar. Subsequently, the debt was assigned to Fundacion Natura ("FN"), an Ecuadorian conservation organization. Finally, FN exchanged the debt for nine-year bonds issued in local currency and worth one million dollars. The bonds were purchased at Ecuador's official rate of exchange and yielded, at the time, a rate of 31% per annum. Under the agreement, interest on the bonds was to be used by FN to finance conser-

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\(^7\) See Chamberlin et al., supra note 40, at 441.


vation in a number of Ecuadorian National Parks. The principal, when repaid at maturity, would be used to endow a fund in support of FN's conservation activities.

The Ecuadorian debt-for-debt swap was saluted as a significant improvement over the Bolivian transaction because it addressed some of the emerging concerns of LDCs considering the possibility of starting debt-for-nature programs. First, because the debt was exchanged for other debt rather than cash, it was argued that this transaction did not produce inflation as a cash transaction would.\textsuperscript{60} Second, because the funding was provided to a local NGO, charges of ecological imperialism were deflected by an arrangement that enlisted the local population activists.\textsuperscript{61} Furthermore, some thought that the Ecuadorian pure investment in conservation rather than in a mix of conservation and sustainable development, as in the Bolivian case, was preferable.\textsuperscript{62}

The Ecuadorian swap was the first installment of a large program that called for a series of transactions. In 1989, in fact, the WWF and the Nature Conservancy purchased, for twelve cents on the dollar, approximately nine million dollars worth of additional debt.\textsuperscript{63} Incidentally, it is important to note that the market value of Ecuadorian debt lost two thirds of its value between the first and the second transaction. This is significant because it suggests that the purchasing power of the interest generated by the first bonds acquired by the WWF must have also declined. FN's ability to fund those meritorious projects has also declined due to the loss in value.

\textsuperscript{60} See Conservation Groups Help Bail Out the Big Banks, supra note 59, at 34.

\textsuperscript{61} The choice of the projects to be financed with the bonds was delegated to Ecuadorian state agencies. Debt-for-Nature Agreement dated as of March 22, 1989 between The Nature Conservancy and Fundacion Natura (on file with the University of Pennsylvania Journal of International Business Law).

\textsuperscript{62} Id.

3.2.3. The Costa Rican Swaps

The first Costa Rican swap took place in 1987 and presents several unusual characteristics. First, the deal was initiated by the Costa Rican Minister of Natural Resources, and did not involve any foreign NGO. The National Parks Foundation, a local NGO, purchased $5.4 million worth of Costa Rican debt for $918,000. Then, the Central Bank of Costa Rica exchanged the $5.4 million debt for local currency bonds valued at 75% of the original amount. At the time this transaction was consummated, Costa Rican debt was trading in the secondary market at approximately seventeen cents on the dollar. However, in subsequent transactions, the Costa Rican government issued local currency bonds valued at only 30% of the original amount. Moreover, the bonds were exchanged for original debt that was now trading at sixteen cents on the dollar in the secondary market. In sum, the evolution of the terms exacted by the Costa Rican government confirms the trend toward "splitting the discount" that was already observed in the debt-for-equity context. Not surprisingly, the Costa Ricans have over time sought to extract more and more of the value that NGOs thought they could realize by purchasing the debt at a discount.

Costa Rica completed a different type of debt-for-nature swap. In 1989, the Dutch government bought thirty-three million dollars of Costa Rican debt for five million dollars, and signed an agreement with the government establishing a joint trust fund managed by a commission composed of representa-

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64 See Alagiri, supra note 8, at 495.
67 See Chamberlin et al., supra note 40, at 445.
68 See Umana, supra note 66, at A11.
69 See supra note 49 and accompanying text.
Costa Rica's conservation efforts have been fairly successful\(^\text{71}\) for reasons that, at least indirectly, confirm some of the problems embedded in debt-for-nature swaps. First, Costa Rica has taken an active role in initiating many of the programs that are now in place. As a result, charges of eco-imperialism have been defused from the outset. Second, Costa Rica has a stable government and has been a democracy for almost 100 years.\(^\text{72}\) As a consequence, NGOs investing in Costa Rica are less concerned about expropriation risks.

### 3.2.4. The Malagasy Case

The Malagasy case illustrates yet another variation on the debt-for-nature theme. The distinguishing feature is that the transaction was financed by the U.S. government. In 1989, the government of Madagascar and the United States Agency for International Development (the "AID") coordinated a swap to protect the endangered status of the Malagasy tropical forest.\(^\text{73}\) The novelty of this transaction is not limited to the fact that the U.S. taxpayers provided the bulk of the financing. It is also noteworthy that the AID was not a direct party in the deal. Instead, the funds were channeled through the NGO. The one million dollars contributed by the AID was used to redeem $2.1 million in Malagasy debt. The local currency proceeds are held in an interest bearing account and are used for various conservation projects.\(^\text{74}\)

The Malagasy case represents a crucial development by showing the support of the executive branch for debt-for-nature swaps. This support has been continued in subsequent proposals like former President Bush's plan to establish a $100 million facility to be operated by the U.S. Department of Treasury for the purpose of encouraging debt reduction

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\(^{70}\) See Post, *supra* note 11, at 1071.


\(^{72}\) Id.

\(^{73}\) Id.

programs (including debt-for-nature swaps) in Latin America.\footnote{Bush Sends Legislative Proposal to Congress to Implement Initiative for Latin America, 7 Int'l Trade Rep. (BNA) (Int'l Trade Rep. Current Rep.) 1444 (Sept. 19, 1990).}

3.2.5. Other Debt-for-Nature Swaps

Several other debt-for-nature programs should be mentioned in order to give a flavor of the scope and characteristics of these programs.

In 1989, the WWF executed the first debt-for-nature swap outside of Latin America.\footnote{See Chamberlin et al., supra note 40, at 446.} The Philippines case involved the acquisition of approximately two million dollars in debt, at fifty-one cents on the dollar, and the transfer of the local currency equivalent of the principal amount to an account available to domestic NGOs engaged in conservation projects.\footnote{WORLD WILDLIFE FUND, THE PHILIPPINES CASE (on file with the University of Pennsylvania Journal of International Business Law).} The noteworthy feature of this deal is that the consideration received for the swap was in the form of immediately available local currency.\footnote{World Wildlife Fund Term Sheet (n.d.) (available from the World Wildlife Fund).}

In 1989, the government of the then Federal Republic of Germany wrote off approximately $405 million of Kenya's debt in exchange for Kenya's generic commitment to protect nature.\footnote{Ramesh Jaura, Finance: West Germany in "Debt-for-Nature" Deal With Kenya, Inter Press Service, Oct. 4, 1989, available in LEXIS, Nexis Library, Omni File.}

In 1991, the Brazilian government announced plans to create a $100 million debt-for-nature program.\footnote{Brazil to Create $100 million Fund for Environment, UPI, June 25, 1991, available in LEXIS, Nexis Library, Omni File.} The program, however, has encountered many difficulties. Until 1991, Brazil resisted all attempts to initiate a debt-for-nature program out of fear of its inflationary impact.\footnote{Julia Michaels, Brazil Opens Door to Environment Funding, THE CHRISTIAN SCI. MONITOR, May 12, 1992, at 4.} Moreover, the Brazilians opposed efforts to restrict their commercial activities in the rain forest as forms of "environmental
imperialism" that imposes a unilateral burden on their country. After announcing the creation of the program, the Brazilians have proceeded very slowly. As of this writing, the only swap that has been sanctioned involves the purchase of $2.2 million of Brazilian debt in the secondary market. The debt will be donated to a local NGO which will exchange it for $2.2 million in long-term Brazilian "Environmental Government Bonds" paying interest at the annual rate of six percent. The funds will be used to help conserve and protect the 200,000 acre Grande Sertao Veredas Park which is located in a unique region of cerrados, or savannah lands.

The thinly veiled reluctance of the Brazilians to embrace debt-for-nature programs is not the only obstacle that has emerged in this program. While the Nature Conservancy planned to raise $850,000 to purchase the debt, so far it has only secured $150,000 from American Express. As a result, the first year of the bond issue was underfunded by $250,000.

As of March 1992, approximately $110 million worth of debt has been purchased worldwide for about $22 million. In theory, these programs have generated $71 million for conservation projects.

3.3. Taxonomy of Initiated Debt-for Nature Swaps

Based on the transactions surveyed, it appears that at least four forms of swaps have developed:

(a) The Philippine swap is a basic exchange of debt for immediately available local currency. This form of swap is the exception rather than the norm because LDCs are concerned with the inflationary effects of printing currency to retire the

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83 Hobert Rowen, Heading Off an Amazon Disaster, WASH. POST., Apr. 2, 1989, at H1.
83 Id.
84 Id.
debt;

(b) the Bolivian swap is an outright cancellation of debt in exchange for a governmental commitment to protect the environment coupled with the allocation of funds for this purpose;

(c) the Ecuadorian swap is a conversion of a dollar denominated debt into a local currency bond that throws off interest dedicated to environmental projects; and

(d) the first Costa Rican swap exemplifies the growing trend by LDCs to retain most of the discount whereas the Dutch-Costa Rican transaction is an example of a government to government exchange.

LDCs and NGOs have continuously experimented with various forms of debt-for-nature swaps in an effort to alleviate some of the problems that they perceive in the transactions. All this tinkering with the structure of the deals indicates the serious limitations of debt-for-nature swaps.

4. LIMITATIONS OF DEBT-FOR-NATURE SWAPs PROGRAMS

4.1. Debt-for-Nature Swaps are Often Incompatible with the Economic Realities of LDCs

Efforts to protect environmental treasures such as the rain forests are generally commendable. But the success of these efforts depends on the identification of strategies that are compatible with the fundamental economic interests of the parties involved. To the extent that developed countries and NGOs cannot impose their values on LDCs, conditions must be created that provide economic incentives for LDCs to conserve. The third principle of the Rio Declaration on Environment and Development adopted by the nations participating in the 1992 environmental summit in Brazil (the "Declaration") proclaims that "[t]he right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."88 The seventh principle of the Declaration, however, emphatically stresses that "[t]he developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development

in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.\textsuperscript{89}

Most LDCs' economies depend on natural resources. For instance, ninety-eight percent of Bolivia's exports are so-called primary products.\textsuperscript{90} Similarly, commercial activities which contribute to the destruction of the Amazon are an intrinsic part of the Brazilian economy.\textsuperscript{91} Therefore, inasmuch as debt-for-nature programs fund projects that foreclose access to natural resources and slow down the economic development of the South, they will face strong opposition.

For this reason, it has been argued that pure debt-for-nature programs should be rejected and that debt-for-sustainable development should be implemented.\textsuperscript{92} In essence, this approach calls for strategies that provide incentives to environmentally sound commercial activities and force currently profitable commercial activities to become more environmentally sound.\textsuperscript{93} Thus, for instance, proponents of debt-for-sustainable development have argued that strategies which increase agricultural efficiency and promote the efficient use of energy resources will do more to protect the environment than the establishment of nature reserves.\textsuperscript{94}

4.2. Debt-for-Nature Swaps Infringe on the Sovereignty of LDCs

Supporters of debt-for-nature swaps argue that there is no sovereignty issue because the transactions do not contemplate foreign ownership or dominance of LDCs' resources.\textsuperscript{95} This argument ignores the concerns that LDCs have openly expressed about this issue.\textsuperscript{96} For example, Jose Sarney, the former President of Brazil, characterized the swaps as

\textsuperscript{89} Id.
\textsuperscript{91} See id. at 70-71.
\textsuperscript{92} Id. at 83.
\textsuperscript{93} Id.
\textsuperscript{94} Id. at 84-85.
\textsuperscript{95} See Hrynik, \textit{supra} note 9, at 152.
\textsuperscript{96} Id.
unacceptable forms of "colonialism"."97 Other commentators have persuasively argued that NGOs rarely consult with the local population with respect to the impact of their involvement.98 In the Bolivian transaction, for instance, the new environmental program changed the way of life of the local population. The enacted program prohibited many traditional activities that were inconsistent with conservation goals.99

Some degree of interference is unavoidable, because NGOs often supervise the use of funds and also act as technical advisors to the programs. The issue of whether this interference amounts to a legally cognizable violation of sovereignty depends on one's definition of sovereignty. In order to argue that all forms of swaps violate the sovereignty of the LDCs, one would have to equate sovereignty with a nation's right to be free from economic coercion. However, this notion ignores the prevailing practices in today's world. Threatening to withdraw economic aid is a form of coercion that is perhaps morally questionable, but is probably not legally objectionable because the countries withholding the benefit are not under a legal obligation to provide assistance.

LDCs governments actively participate and consent to the swaps. Therefore, arguing that economic coercion by itself is an infringement of sovereignty is unpersuasive. Nevertheless, the issue of sovereignty has had an impact on the development of the structure of swaps. Due to sovereignty concerns, LDCs prefer swaps that involve local NGOs rather than foreign NGOs, and they oppose the inclusion of enforcement provisions and stabilization clauses in the swaps agreements.100

4.3. Debt-for-Nature Swaps Agreements are not Enforceable

Sovereignty concerns foreclose the inclusion in the swap agreement of provisions protecting the NGOs against the

97 Hobert Rowen, supra note 82, at H10.
98 See Alagiri, supra note 8, at 499.
threat of repudiation or expropriation. For example, the Bolivian agreement does not include an arbitration, choice of law, or choice of forum clause in any of its provisions. Therefore, if the Bolivian government repudiates the agreement with CI, CI could not compel performance. Furthermore, under U.S. law, foreign sovereign immunity protects Bolivia in any suit in a U.S. court. To make matters worse, CI would not have standing to bring an action before the International Court of Justice because CI is not a state.

4.4. Debt-for-Nature Swaps do not Promote the Creation of Regimes of Cooperation

A 1991 report to the U.S. Congress prepared by the General Accounting Office concluded that "[s]o-called debt for environmental development or nature swaps, while generating a good deal of publicity, did not actually accomplish much . . . ." The General Accounting Office expressed the belief that the list of disadvantages for debtor countries is lengthy and includes: the potential inflationary impact of debt swaps, the relatively high price that is often paid for the debt, the implicit subsidy provided to private voluntary organizations, the perceived loss of sovereignty, and the potential for debt swaps to restrict remunerative development projects. All of these disadvantages can be attenuated by modifying the structure of the swap. For instance, inflationary concerns can be addressed by an exchange of foreign currency debt for local currency debt. Such an exchange does not completely eliminate the inflationary impact of the swap but it does stretch the negative side-effects over a longer period of time. Similarly, the concerns about the high price that could be paid

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101 See Alagiri, supra note 8, at 495.
102 See supra note 56 and accompanying text.
106 Id.
107 See supra note 52 and accompanying text.
for the debt and the implicit subsidy provided to private voluntary organizations can be alleviated by "splitting the discount."\textsuperscript{108} In the end, however, the government of the LDCs via regulations that impose fees or mandate an arbitrary currency exchange rate have often eliminated most, if not all, of the leverage that justified the transaction costs of the swaps. Over time, the LDCs governments realized that "splitting the discount" is not enough.\textsuperscript{109} Whenever an LDC government paid more than the secondary market price to repurchase its own debt, it was simply conferring a disguised subsidy to the project.

Proponents of the swaps mistakenly believed that these transactions were generous forms of assistance provided by the North to the South. In reality, the economic substance of the swaps appears to benefit the North more than the South.

Based on this newly acquired perspective on the problem, LDCs, NGOs and developed countries need to reassess the validity of these swaps by measuring their impact against the objective of developing regimes of cooperation in the conservation area between the North and the South.

4.5. Direct Financing as an Alternative

While debt-for-nature swaps have played some role in promoting micro-conservation efforts, I suspect that any effort to address the macro-economic dimensions of the environmental crisis will require direct financing.

In order to protect the global commons, LDCs and developed countries need to develop responses to situations in which the pursuit of "interests defined in purely individualistic terms regularly leads to socially undesirable outcomes."\textsuperscript{110} Debt-for-nature swaps do not promote cooperation because they may be both inefficient and unfair. By contrast, straightforward financing of conservation by the North for the benefit of the South seems a more promising alternative. Promoting conservation and restricting environmentally destructive activities in the South will ultimately necessitate the transfer

\textsuperscript{108} See supra note 48 and accompanying text.

\textsuperscript{109} See supra note 49 and accompanying text.

\textsuperscript{110} ORAN R. YOUNG, INTERNATIONAL COOPERATION: BUILDING REGIMES FOR NATURAL RESOURCES AND THE ENVIRONMENT 84 (1989).
of vast resources from the North. A transfer of the required magnitude cannot be accomplished through a debt-for-nature swap without causing inflation and political backlash in the LDCs. If, at some point in the future, the developed countries finally realize that their survival may well depend on investing large sums in the sustainable development of the South, they will not invest via a swap because the transaction costs involved would be staggering. In addition, the inflationary effect would be unacceptable to the people in the LDCs.

Undoubtedly, direct financing of conservation projects will encounter some of the same difficulties which have emerged in the context of the debt-for-nature swaps. Sovereignty questions and problems of economic dislocation clearly remain difficult issues that probably need to be addressed on an ad hoc basis. On the other hand, direct financing will reduce transaction costs and will eliminate the risk that the political recriminations connected with the debt crisis will hamper the prospects of promoting conservation efforts. One example of this trend toward direct financing of conservation projects is offered by the Mbaracayu project in Paraguay. After attempting to negotiate a swap for over two years the Nature Conservancy ended up buying a tract of tropical forest from the International Finance Corporation, which had acquired title to the land after the bankruptcy of a Paraguayan firm.111

In essence, the problem of promoting conservation in the South is grounded in a market failure. The long-term value of the trees to humanity is not impounded in their market price. Therefore, LDCs do not have sufficient incentives to engage in sustainable development practices. Debt-for-nature swaps do not contribute to the solution because they raise the additional problems that have been discussed. From the perspective of world welfare, direct financing makes more economic sense. Developed countries must step in and pay a price for the trees that reflects their long-term value.

To the extent that issues of sovereignty and economic dislocation will remain problematic even under a regime of direct financing, the lesson to be learned from the debt-for-nature experiment is that conservation must be promoted

through local intermediaries, such as in the Costa Rican swaps, in a manner that is compatible with economic growth. Regimes of cooperation often develop as product of trial and error processes. Recognizing that debt-for-nature swaps have been relatively unsuccessful in fostering cooperative regimes of conservation is perhaps the first step in one of such processes. It is a step in the direction of acknowledging that financial wizardry is not a substitute for the inevitable redistribution of wealth that the conservation of the rain forest will ultimately require.

5. CONCLUSION

Debt-for-nature programs have promoted a number of valuable conservation projects. However, the magnitude of the environmental crisis will require political commitments and economic resources that are largely incompatible with the complex legal and financial framework that the swaps necessitate.

The delivery of conservation funds through the vehicle of debt-for-nature programs involves difficult and, therefore, costly negotiations between multiple parties on the terms of the swaps. In some cases, the transaction costs may have been partially or totally offset by the multiplier effect of the swaps. Nevertheless, there is little doubt that LDCs have quietly, but firmly, imposed limits on the size of the swaps to avoid inflation. Thus, a meaningful level of funds dedicated to the conservation and sustainable development cannot be delivered through the swap mechanism.

The seventy-one million dollars raised through debt-for-nature programs during the last seven years are a first step in the direction of recognizing that the North must be involved in the protection of the resources of the South. The next step is acknowledging that there are no easy and painless solutions to this problem. The pied piper of debt-for-nature swaps does not drown the harsh reality of the costs involved.

\footnote{112 See YOUNG, supra note 110, at 86.}