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The Environment and International Law: Rethinking the Traditional Approach

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1.0 Introduction

Protecting the global commons from acts of environmental vandalism is becoming even more urgent as we begin the 21st century. The environmental crisis has several idiosyncrasies that necessitate implementation of a new vision of environmental protection -- a vision transcending national boundaries and embracing the global collective.

A cursory examination of the legal environmental systems of some developing countries lends credibility to the argument that nation states, particularly those of the developing world, cannot be relied upon to pursue environmental objectives beneficial to the global commons. The results of some country studies, for example, Mexico, Chile, and Brazil take this position. R. Findley, in his study of Brazil, noted that the enforcement of environmental standards tended to be lax. He acknowledged that there were gaps and uncertainties in the law, as well as shortages of enforcement personnel and resources, but felt that the problem was primarily due to the lack of political will to deal with the various environmental crises.[1] Findley went on to point out that since 1973, Brazil has developed a substantial body of pollution control laws and regulations, similar in many respects to those of the United States.[2] Edesio Fernandes, in a more recent study, endorses Findley's view of Brazil. Fernandes insists that environmental legislation in Brazil could be considered sufficient to give judicial support to public policies and private actions in the field of environmental protection.[3] In essence, the problem is political rather than legal, raising questions as to the role of the economic interests of Brazil's elite, and casting doubt on the merits of passing new laws without a change in attitude.[4]

Similarly, Chile's environmental laws tended to be vague and difficult to interpret. This was particularly true in the era of General Pinochet, who took a laissez-faire approach to environmental policies.[5] The few laws that existed were largely un-enforced and ignored.[6] With the removal of Pinochet in 1990, the new head of state, Patricio Aylwin Azocar, began rectifying the situation with environmental laws. Indeed, over 2,000 laws and regulations affecting the environment were enacted.[7] Some of the laws were so stringent that enforcement was almost impossible. Yet, other laws were left without necessary regulations and, in many instances, selectively enforced.[8] Despite massive efforts to create an appropriate legal regime for protection of the environment, it was noted that unless Chile committed itself to enforcing the laws, the environment would continue to suffer.

In Central America a similar trend was observed. A study of the environmental laws of Mexico led to conclusions no different than other developing nations.[9] A survey of air and water pollution laws revealed that the failure of the legal system rose out of a lack of financial resources dedicated to legal enforcement, multiple agencies performing overlapping functions, and a general failure to implement laws.[10]

The enactment of far reaching environmental legislation can also be observed in India. Yet, a variety of problems remained; namely, uncertainty about the legislative authority of the central government to implement environmental statutes, enforcement problems, lack of private right of action, and insufficient resources to implement environmental laws.[11] In an evaluation of pollution control legislation conducted by Abraham and Rosencranz, it was emphasized that despite weaknesses in the law, the bureaucratic structure for pollution control was adequate -- the problem was non-enforcement of existing laws.[12] They observed that the failure to enforce laws operated to diminish their intended impact.[13]

The trend in Africa is similar to that which has been observed elsewhere in the developing world. Bondi Ogolla conducted a comparative legal survey of the laws of Zambia, Ethiopia, Ghana, Sudan and Kenya with regard to the control and prevention of water pollution. Ogolla concluded that there was a proliferation of pollution control legislation that created conflict in asserting jurisdiction. This resulted in difficult implementation of environmental management laws.[14] He observed that the penalties for infraction of laws were generally quite low, making it cheaper to pollute. Moreover, there appeared to be a tendency to enact framework legislation, resulting in glaring gaps.[15] In Lesotho, a study into the legal response to soil erosion concluded that many of the laws required clarification and greater regulatory powers to be effective.[16] Similarly, a review of the environmental laws of Tanzania showed a consistent pattern of behavior as with other developing nations. Mahalu reviewed a wider spectrum of laws and noted that although there were no air pollution laws, many other sectors of the environment were protected by appropriate legislation.[17] Unfortunately, these laws were not being enforced in spite of widespread non-observance by industry.[18] He also commented on the presence of extremely benign penalties, lack of institutional enforcement, and the low level of resources dedicated to environmental protection.[19]

Environmental expenditures are normally borne by the state, and it would appear that the will of the developing world is undermined by competing interests for limited financial resources. In most instances, developing countries are only motivated to adopt environmental measures when external financial and technical assistance is provided.[20] Developing countries appear to be more concerned with pursuing developmental objectives that are driven by the forces of industrialization.[21] Moreover, the pressure of the external debt negates attempts at sustainable natural resource exploitation, as these resources are perceived as the means for rapid realization of foreign exchange. Population growth and militarization add to the cocktail of problems in much of the developing world.

Further, while the developed world certainly bears responsibility for many current environmental problems, developing countries' present and future contributions to the decimation of the environment cannot be underestimated. The evidence clearly points to a significant increase in developing nations' contribution to environmental problems affecting the global commons. This contribution may prove to be the decisive factor in the battle for the environment in the 21st century.

Even more troublesome is the specter of global interdependency. Deterioration of the environment appears to hold grave consequences for the international economy, the security and health of humankind, and the stability of habitation patterns. A purely domestic focus on environmental solutions is therefore untenable.

The solution to the environmental woes now confronting humans must be found in collective international efforts. International matters surrounding protection of the environment must be handled in a spirit of co-operation between nations regardless of size or wealth. Indeed, the latter half of the 20th century rapidly embraced the notion of international solutions to environmental problems.

International law is but one dimension of the response and plays a key role in any effort to protect and preserve the global environment. In his dissenting opinion in the Advisory Opinion on the Legality of the Use By a State of Nuclear Weapons in Armed Conflict,[22] Justice Weeramantry noted that

> from rather hesitant and tentative beginnings, environmental law has progressed rapidly under a combined stimulus of ever more powerful means of inflicting irreversible environmental damage and an ever increasing awareness of the fragility of the global environment. Together these have brought about a universal concern with activities that may damage the global environment, which is the common inheritance of all nations, great and small.[23]

Table 1.1 below identifies 473 multilateral agreements dedicated to protection of the environment. This stark statistic may lead to the assumption that the prodigious output of the international community is indicative of a vigorous legal approach to environmental issues.[24] Moreover, Table 1.1 provides a breakdown of multilateral environmental agreements by decades, illustrating a rapid growth in international law-making.

Notwithstanding the burgeoning role of international law in the field of environmental protection, there is little evidence that the proliferation of legal instruments has led to an improvement in the environment.[25] Indeed, Werner has argued that the opposite has occurred.[26] Thus, the effectiveness of the emerging international legal regime for environmental protection requires close examination of contemporary attitudes, perceptions, and methodologies.[27]

Table 1.1 Chronological Listing of Multilateral Environmental Agreements[28]

Decade	Number of Multilateral Environmental Agreements
1800-1899	14
1900-1909	4
1910-1919	2
1920-1929	13
1930-1939	17
1940-1949	17
1950-1959	51
1960-1969	64
1970-1979	107
1980-1989	113
1990-1999	85
Total	*487*

2.0 Sources of International Environmental Law

The traditional sources of post-World War II international law are mainly derived from the Statute of the International Court of Justice. According to Article 38 (1):

> The Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply: (a) international conventions, whether general or particular, establishing rules expressly recognized by the contesting States; (b) international custom, as evidence of a general practice accepted as law; (c) general principles of law recognized by civilized nations; (d) subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.[29]

Today, Article 38 is generally recognized by most international law commentators as a complete statement on the sources of international law.[30]

Treaties or international conventions are one of the most deliberate mechanisms for creating international law. Fundamentally, they are written agreements to which participating states have agreed to legally bind themselves.[31] As a source of international law, treaties are the nearest equivalent to international legislation. They are also the primary mechanism for creating binding international rules relating to the environment.

International custom is viewed as a general recognition among states that a certain practice is obligatory. Customary law is an important source of international law, and its existence can be deduced from the practice and behavior of states.[32] Shaw concludes that Article 38 identifies customary law as the embodiment of a general practice. Therefore, there are two material requirements: the actual behavior of states and the psychological or subjective belief that such behavior is law.[33] One contribution to the body of customary law is the principle establishing states' rights to conduct activities within their boundaries so long as they do not harm other states.[34] In the Advisory Opinion on The Legality of the Threat or Use of Nuclear Weapons, the Solomon Islands argued that it is a fundamental obligation of every state not to cause damage to human health or the environment outside

its national territory.[35] Furthermore, principles such as intergenerational equity,[36] sustainable development,[37] and common heritage,[38] are attaining a level of prominence. Within the foreseeable future, this may ensure that the body of customary law continues to grow.

One of the more dynamic sources of international law is that of general principles of law. In the absence of legislative reference, custom, or judicial precedent, a judge may deduce a relevant rule, by analogy from existing rules or directly from general principles.[39]

In 1996, pursuant to a resolution passed by the United Nations General Assembly ("UNGA"), the International Court of Justice ("ICJ") was called upon to provide an advisory opinion on the "Legality of the Threat or Use of Nuclear Weapons."[40] Written statements were filed on behalf of twenty-nine nations with respect to the issue. Some states argued that the use of nuclear weapons would be unlawful by reference to existing norms relating to safeguarding and protecting the environment. The Court stressed the great significance of the environment and stated:

> The Court recognizes that the environment is under daily threat and that the use of nuclear weapons would constitute a catastrophe for the environment. The Court also recognizes that the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn. The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.[41]

In a 1997 matter, the ICJ reiterated the general principle of law as enunciated in its advisory opinion on the "Legality of the Threat or the Use of Nuclear Weapons." Hungary and Czechoslovakia entered into a treaty in 1977 for the construction and operation of the Gabcikovo-Nagymaros System of locks on the Danube River.[42] In 1989, Hungary sought to suspend and abandon all works on the project, and in 1992 gave notice of termination of the treaty.[43] The dispute between Hungary and Slovakia was submitted to the ICJ. Hungary argued that the treaty was terminated because the project would have caused significant environmental damage, including eutrophication and the extinction of fluvial flora and fauna.[44] Hungary contended that a state of ecological necessity existed in 1989, justifying its position. The Court[45] noted that a grave danger to the ecological preservation of all or some of the territory of a State can give rise to necessity and reiterated the general obligation enunciated in the Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons. Justice Weeramantry who delivered a dissenting opinion, pointed out that the

> environment, the common habitat of all member states of the United Nations, cannot be damaged by any one or more members to the detriment of others . . . the fact that the principles of environmental protection have become so deeply rooted in the conscience of mankind that they have become particularly essential rules of general international law.[46]

Finally, Article 38 of the Statute of the International Court of Justice mentions the role of judicial decisions and the writings of qualified publicists on issues of international law. Article 38 clearly identifies these areas as subsidiary mechanisms for establishing rules of law rather than actual sources of law. While the decisions of the ICJ are not binding, except on the involved parties, the ICJ attempts to be consistent in its pronouncements and it is not unusual to see references in one matter to previous findings.[47] International law has always had a place for the opinion of scholars, and the ICJ has not been averse to continuing a centuries-long trend in international law's evolution.

Soft law must be added to the list of sources of law for consideration by the ICJ, in addition to traditional sources derived from Article 38. Birnie has termed this a non-traditional source of international environmental law.[48] Although not a traditional source of international law, soft law has influenced the efforts of the international community to realize common rules for protecting the environment.[49]

It is necessary to further review two sources of international law, one from the traditional range and the other a non-traditional source.

2.1 Multilateral Environmental Agreements ("MEAs")

Table 1.1 provides a breakdown of MEAs by decades, illustrating a rapid growth in international law-making. Notwithstanding the burgeoning role of international law in the field of environmental protection, there is little evidence that the rise in the number of MEAs has led to an improvement in the environment.[50]

There has been little quantitative research done on the effectiveness of MEAs. The most important thus far is the survey conducted by the Preparatory Committee for United Nations Conference on Environment and Development ("UNCED").[51] This survey[52] recognized the difficulties inherent in assessing their effectiveness. It focused on issues such as objectives and achievement, participation, implementation; information, operation, review, adjustment, and codification programming. The survey's findings acknowledged the ineffectiveness of MEAs and provided extensive recommendations for rectifying the problem.[53]

2.2 Soft Law

Much to the chagrin of legal positivists, already troubled by the very idea of international law, comes the new stream of international pronouncement popularly dubbed 'soft law.'[54] Kim Boon has described soft law as "law in the process of making. It is nascent, incipient, or potential law. It may be in the form of a declaration, a resolution, a statement of principles-which is morally if not legally binding."[55] The impetus for the creation of soft law on the environment began with some vigour in 1972 at the United Nations Conference on the Human Environment ("UNCHE"), with the passage of documents such as the Stockholm Declaration of the United Nations on the Human Environment.[56]

Adede has developed a useful guide to the categorization of soft law instruments, which include

> those dealing with issues that States initially wanted to address in a treaty but could only agree on a non-legally binding instrument as a final goal; those originally conceived and produced as guidelines for States to take into account when enacting environmental legislation, or negotiating bilateral or multilateral instruments; those produced as guidelines for the implementation of an existing treaty; those produced as guidelines for implementing statutory provisions or policies promulgated by international organizations, regional or global; those produced in the form of directives, decisions, regulations or recommendations of policy-making organs of international organizations; and declarations signed by Heads of State and Government promoting certain principles relating to issues of environment and development.[56]

Today, all evidence points to the likelihood that the formulation of soft law will proliferate more rapidly than negotiation of formal international environmental agreements.

[26[Dupuy has offered three main reasons for the rapid growth in soft law.[58] The first reason is described as structural in nature and results from the existence and development of a network of permanent institutions at international and regional levels. In this area, the United Nations ("UN") has played a significant role by offering a standing structure that makes possible the organization of permanent and on-going political, economic, and normative negotiations among member states.[59] The role of the UN is enhanced by the growing importance of Non-Governmental Organizations ("NGOs") in ensuring the realization of a dynamic relationship between inter-state diplomacy and international public opinion.

The second reason offered by Dupuy is the diversification of the components of the world community.[60] The arrival of developing countries on the international stage has triggered a shift in the majority's power. Soft law instruments, such as resolutions, recommendations and, declarations, are looked at with great enthusiasm as the means for modifying main rules and principles of the international legal regime.

The third reason is the rapid evolution of the international economy and the growing phenomenon of

global interdependence, combined with progress in science and technology, creating a need for new branches of international law. These new elements of international law are that they are adaptable and applicable to each new level of technological achievement. Thus, international law relating to the protection of the environment is a prime catalyst for the emergence of soft law as a dominant feature in the changing international legal order.

Soft law offers many advantages over the more traditional forms of hard law, or treaties, and has been touted as a more effective alternative.[61] The fact that treaties tend to be narrowly drawn, take longer to negotiate, are limited in their application until ratification, and lack enforcement mechanisms to promote compliance suggests the need for effective alternatives that can respond to the immediate environmental threats of the global village.[62]

Soft law can provide an overall package based on consensus to deal with an environmental problem at a transaction cost much less than that normally required for multilateral agreements. The practical advantages of soft law are its non-legally binding and discretionary character. More importantly, soft law facilitates the further development of international environmental law, as states may not be ready to enter binding legal agreements on a particular environmental issue. Indeed, the possibility of more detailed strategies being devised, as opposed to the generality of treaties, appears to be greater due to soft law's non-binding nature.

Soft law can allow countries to move faster in addressing environmental issues. Its flexibility encourages the quick response to rapid changes in scientific understanding of environmental and developmental issues.[63] Further, international consensus can be more readily achieved in principle, if not in law, because soft law can express political statements and values rather than strict legal principles. Moreover, a state participating in the creation of international law is faced with many other than strict legal norms and principles. For example, issues such as security, economic concerns, and political expediency all influence the behavior of a particular state. Soft law allows a state to approach a given situation in a multi-disciplinary manner, circumventing the rigors of the process of international law-making.

The amorphous nature of soft law should not lead to it being summarily dismissed as a useless mechanism to deal with environmental issues. The notion of ambiguity may be anathema to international positivists, but it can promote valuable feelings of international comity and co-operation. The vagueness of standards may render third-party adjudication almost impossible.[64] Global solutions must be pursued in order to solve environmental problems, and it is far more productive for nations to deal with each on the basis of an agreement than on the basis of a series of disagreements.[65] Soft law may help define the standards of good behavior expected of a state.

Even more significantly, a soft law agreement can lead to changes in the political consideration of environmental problems. It can serve as a reliable gauge for determining the direction the international community intends to follow with regard to a particular environmental issue. It can also signal the possible contents of the agenda on an environmental issue and alter the perspectives on issues, thus causing opinion to coalesce in a particular manner.[66] In this context and given the right conditions, soft law can evolve as part of the body of customary international law or harden into treaty law. An example of this is the Helsinki Declaration on the Protection of the Ozone Layer issued in 2 May 1989, which provided the background for the hard amendments to the 1990 Montreal Protocol on Substances that Deplete the Ozone Layer.[67]

Soft law offers precedents to states seeking environmental measures' introduction into domestic legislation. If a large number of states do this, then a particular piece of soft law may be justifiably held to be part of international customary law.[68] Even more so, the repetition of soft law principles in international environmental agreements may provide support for the claim that a particular principle is now part of customary international law.

As noted by Dupuy, "cross-references from one institution to another, the recalling of guidelines adopted by other apparently concurrent international authorities, recurrent invocation of the same rules formulated in one way or another at the universal, regional or more restricted level, all tend

progressively to develop and establish a common international understanding."[69] Dupuy has cited the principle of information and consultation, which has manifested itself in the obligation of states to inform and consult one another prior to engaging in any activity or initiative that is likely to cause transboundary harm. This principle has been found in numerous recommendations and resolutions, and now arguably can be said to reside in the realm of customary international law.[70]

Undoubtedly, political decision makers can be influenced by soft law solutions. Soft law emerges in the public forum and is perceived as having political consequences. For this reason, soft law pronouncements should not be underestimated. An example of this is the Langkawi Declaration on the Environment, issued by the Heads of Governments of the Commonwealth in 1989.[71] Although legal liability for implementation of this declaration was not contemplated, it was taken seriously. Palmer has argued that because of the Langkawi Declaration on the Environment New Zealand and other Pacific countries in the Commonwealth relied upon Commonwealth support on the 1990 debate of UNGA Resolution on Large-Scale Pelagic Driftnet Fishing and Its Impact on the Living Marine Resources of the World's Oceans and Seas.[72]

Although soft law is often perceived as merely creating and delineating goals rather than actual duties and strict obligations, it is not always true that soft law instruments are short on substance. For example, the Langkawi Declaration on the Environment contained a fairly detailed program of action that could easily be incorporated into a treaty. Further, the fact that there are examples of soft law instruments attracting the right to have reservations formulated in the text, such as the UN 1974 Charter on Economic Rights and Duties, is evidence of the quasi legal status of soft law instruments, given that a document devoid of any legal suasion ought not to attract reservations.[73] Accordingly, although a soft law instrument may be non-binding, its moral weight may fall just short of creating legal implications. Therefore, great care is taken in the negotiations of these instruments.

While increased use of environmental soft law is not necessarily a precursor to the growing seriousness of international environmental problem-solving, it is still important to provide proper appreciation of the role of soft law in future protection of the environment. As noted, there are many characteristics of soft law that make it a useful tool for protection of the environment. Pioneers of international environmental soft law contributions must strive to ensure that it is presented in a manner that would facilitate its easy transformation into hard law. Although not legally binding, soft law is capable of asserting great moral pressure to ensure some level of compliance.

The ambiguous and amorphous nature of the framework approach to treaty making blurs the line between soft and hard law. For example, many framework agreements use language that is so 'soft' that there is great difficulty in ascertaining the precise obligation or burden on State parties.[74] There are examples of soft law instruments that are more detailed than treaty law; Dupuy has argued that future instruments for the protection of the environment should not be judged on the basis of whether they are 'soft' or 'hard', but on the commitment or behavioral change required of a state.[75]

It would appear that soft law, although a non-traditional source of international law is now a reality of international environmental law's creation. International law's challenge is to acknowledge soft law and assist in its development. This ensures that soft law is kept as close as possible to the high end of the spectrum in terms of strengthening the resolve of nations to protect the environment.[76]

3.0 The Limits of International Law and the Environmental Dilemma

States have a common interest in survival both as sovereigns and as collections of individuals. Natural resources are being rapidly depleted and ecosystems destroyed or rendered almost useless.[77] The danger to the biosphere is growing daily and the international community is turning to international law to play its role in reversing the present trend of environmental abuse. Yet, international law is primarily a set of rules or norms governing relations among states. The current approach to the creation of international environmental law is based primarily on traditional international law-making techniques.[78] Traditional techniques cannot adequately combat the threats to mankind posed by the deterioration of the environment.

3.1 The Concept of State Sovereignty

The norms of state sovereignty have always shaped the actions of the international community. In this century, the concept of sovereignty as a fundamental tenet of international law has dominated international law-making. Brownlie provides the classic statement on sovereignty:

> The sovereignty and equality of states represent the basic constitutional doctrine of the law of nations, which governs a community consisting primarily of states having a uniform legal personality. If international law exists, then the dynamics of state sovereignty can be expressed in terms of law, and, as states are equal and have legal personality, sovereignty is in a major aspect a relation to other states (and to organizations of states) defined by law. The principal corollaries of the sovereignty and equality of states are: (1) a jurisdiction, prima facie exclusive, over a territory and the permanent population living there; (2) a duty of non-intervention in the area of exclusive jurisdiction of other states; and (3) the dependence of obligations arising from customary law and treaties on the consent of the obligor.[79]

Forging effective international accords for the protection of the environment has been hampered by national sovereignty.[80] Sovereignty refers to the capacity of states to exert their own political and juridical power within their territories. These powers include protection of their own property and their citizens, the obligation not to cause damage to other states, and the ability to order their internal organization. An example of this is the exploitation of natural resources or the distribution of wealth in their societies.[81]

The traditional concept of sovereignty precludes criticism or investigation into many aspects of the domestic arrangements of nation states. At the negotiation of the Convention to Combat Desertification in Those Countries Experiencing Serious Drought And/Or Desertification, Particularly in Africa, Kenya bristled at the suggestion that its land tenure system needed re-examination. Kenya's resistance was based on the perception that such a suggestion was an intrusion on its sovereignty.[82] The recognition of the sovereignty of each state has meant that international environmental law has emerged in a fashion unaffected by the reality of global environmental interdependency. Thus, it is necessary to review some of the characteristics of sovereignty to illustrate its unsuitability as part of the international law-making framework for solving environmental problems.

From the onset, the limits of sovereignty are being pushed by the need to protect the environmental interests of other states, even when these interests are not directly linked to any interference with sovereign rights.[83] For example, climate change will fundamentally affect the quality of human life negatively. This challenges the international community to address the problem, even though specific sovereign rights are not yet identifiable. The controversial nature of the issue is also well illustrated in the area of biological diversity.

The importance of the world's biological diversity to the international community cannot be trivialized. The majority of the genetic resources are found in developing countries. These developing but biologically diverse countries have made it clear that these resources are unequivocally subject to national sovereignty, and that they have the right to develop these resources as they see fit. This attitude is permitted under international law, which maintains that state sovereignty takes precedence over global environmental concerns.[84] However, in light of global interdependency, national action with regard to genetic resources can result in adverse implications for the international community.[85]

Moreover, the notion of property as defined by principles of territoriality, and the blind adherence to national sovereignty as a defense mechanism for justifying national indifference towards genetic resources, can only undermine efforts at forging international consensus for promoting the conservation of the world's biological diversity. As argued by Susan Bragdon, "developing countries cannot afford to hide behind a principle of sovereignty in order to pursue a development path that destroys biological resources."[86] When a state harms what it considers to be its own environment, others may also suffer, even if such suffering is not readily definable within the context of sovereign interests.[87] Therefore, the challenge is to persuade nations to forego the preoccupation with sovereignty in order to provide for a more sustainable environment.[88]

Another dimension to the uneasy fit between the protection of the environment and sovereign rights is the depletion of the stratospheric ozone layer. The stratospheric ozone layer, by its very nature, cannot be defined neither as part of the territory of a particular state, nor its property. There is no obligation on the part of an individual state to protect it. If the obligation of a state is to protect its own property, and the stratospheric ozone layer is not considered part of its property and therefore under its protective cloak, then this can give rise to what Hahn has called the "prisoner's dilemma."[89] If the entire community of states protects the stratospheric ozone layer, then the international community will benefit. Incongruously, a state may benefit more from non-cooperation regardless of what is done by other states.[90] Consequently, if the majority of nations agree to protect the stratospheric ozone layer, and one nation decides not to be part of that effort, that nation can use its comparative advantage to woo investors.[91] This use of the environment as an incentive for investment has already been seen in the discussions on industrialization and foreign investment in the developing world.[92]

An international legal system based solely on interstate relations may experience some difficulty regulating effects that are not between states, or protecting aspects of the environment that lie beyond the jurisdiction of any one state. Regulating the harm caused by a state or group of states does not figure into traditional international jurisprudence, which is generally more concerned with regulating the conduct of states to prevent one state from harming another. Thus, the international system based on state sovereignty must now address the protection of an aspect of the environment existing beyond political boundaries.

An essential element in the definition of sovereignty is the duty of non-intervention in the exclusive jurisdiction of other states. Yet, states must realize that compromises on sovereignty are necessary if international solutions are to be found to environmental problems. The problem of desertification is well known, and its implications for global interdependency noted, particularly with respect to population displacement and the international economy. The Convention to Combat Desertification in Those Countries Experiencing Serious Drought And/Or Desertification, Particularly in Africa represents the culmination of nearly two decades of advocacy by United Nations Environment Program ("UNEP"). Interestingly, it appears to allow the exertion of external pressure on internal practices of states. Article 5 calls for due priority to be given to combating desertification, allocating resources properly, and addressing the underlying causes of desertification, particularly socio-economic factors.[93] Thus, it would seem that developing countries have conceded some sovereignty to deal with desertification. Because desertification affects developing countries, bargaining power therefore resides with nations called upon to assist. The situation is different in subject areas such as climate change and biological diversity, where the immediate effects are not yet apparent and developing countries are more inclined to take an emboldened approach. Iles has argued that this was due in part to developing states no longer feeling compelled to wield the sword of sovereignty as proof of independence and a new understanding of the need for accepting a more porous concept of sovereignty.[94]

Sovereignty poses a major challenge to international environmental law-making. Initially, limitations on the right of states to exploit their own natural resources or to pollute their environment were based on the need to balance the interests of competing sovereigns. Accordingly, a state's sovereign rights were limited only to the extent that exercising these rights caused significant environmental harm in the territory of another state.[95] At a later point the nature of environmental harm soon drew attention to the fact that transboundary pollution affected not only neighboring states but also entire regions and even the entire international community. The realization that acid rain may be responsible for the decimation of much of the aquatic ecosystems in Europe prompted the negotiation of the Convention on Long-Range Transboundary Air Pollution. The goal was to define the limits of state actions while considering not only harm to neighboring states, but also to an entire region.

While this approach attempts to adjust to new environmental imperatives, it remains ineffective because of the reliance on ecologically irrelevant criteria. An international legal order based on sovereignty does not readily accommodate the exposition of rules and regimes based on ecological unity. Environmental harm only attains legal relevance where it coincides with a significant interference with the territorially-based interests of other states.[96] The result has been the occurrence of ecological harm without the triggering of an international response. Obligations with respect to the

environment cannot only be defined within the parameters of transboundary impact, but must reflect actual state activity.[97]

The problems associated with the environment are not issues that can be resolved by negotiations based on states' short-term interests. This is belied by the notion that the "first function of international law has been to identify as the supreme normative principle of the political organization of mankind, the idea of sovereign states."[98] A system based on this philosophy is unsuited to collective action transcending political boundaries. The earth's environment cannot be conveniently divided into political boundaries over which separate political entities can assume rights and responsibilities.[99] Global environmental action requires states to prohibit or control certain activities within their territories that are of importance not only for the state obeying a particular obligation, but also for the international community as a whole. Adherence to sovereign interests inhibits the capacity of the international community to protect the environment.

Moreover, the rise of global interdependency diminishes traditional notions of sovereignty and the link between global interdependency and the environment may be the final push towards a re-thinking of these notions. Perkins has argued that developments in the area of the environment have revealed that human society has reached a point of increasing connectedness and interdependence.[100] Implicit in this is the recognition that states have obligations to the international community as a whole that transcend state sovereignty.[101]

This argument by Perkins is reflected in Justice Weeramanty's dissenting opinion in the Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons:

> Another approach to the applicability of environmental law to the matter before the Court is through the principle of good neighbourliness, which is both impliedly and expressly written into the United Nations Charter. The principle is one of the bases of modern international law, which has seen the demise of the principle that sovereign states could pursue their own interests in splendid isolation from each other. A world order in which every sovereign state depends on the same global environment generates a mutual interdependence which can only be implemented by co-operation and good neighbourliness.[101]

3.2 Quintessence of the State as the Legal Person in International Lawmaking

The norms of legal personality as part of the overall concept of sovereignty have perversely shaped the emergence of international law. The term "legal personality" embodies the concept that states are identical in their legal character and rights and that they exist as subjective and morally equal persons. International jurisprudence has always ascribed legal personality to states. According to Hickey, from the Peace of Westphalia in 1648 until the second half of the 20th century, states were subjects of international law and other entities were not. The only exception to this was when states specifically bestowed personality upon other entities or accepted their personality by consent.[103] The consequence is that states are perceived as the exclusive actors in the international community, with other bodies or individuals within their structures are denied the opportunity to participate fully in the international law-making process.[104] The state-centered approach to international lawmaking has been favored by the legal traditionalists who see states as the ultimate source of rights, duties, privileges, and immunities under traditional international law.[105]

It is now being recognized that the notion of the international community cannot only acknowledge the presence of nation states. Increasingly, non-state entities are proving to be important and effective participants in the international forum. These non-state entities include international organizations, NGOs, individuals, indigenous peoples, and communities.[106] As argued by Sand, the role of states in asserting legal rights on behalf of the international community as a whole is not well developed, thus leading to international law being more akin to the law of states and not of the international community, which includes non-state actors.[107] Yet, the deterioration of the environment is a problem that may affect every individual in a very real and personal manner.[108] This conflicts with the perception of the state as having a singular, abstract existence. This is based on the presumption that peoples' interests necessarily coincide with that of their states.

Modern technology has provided a forum for many non-state actors to be heard globally. Arguably, the traditional state-centered structure of the international system is already co-existing with an equally powerful multi-centric system dominated by NGOs and other transnational entities.[109] Today, there are many international corporations that wield more influence than many individual states. As a result, people embrace the idea of NGOs, which provide a voice for those who may be affected by environmental problems but are not given the opportunity to be heard.[110] Indeed, many of these non-state actors are presently playing important roles in the negotiation, implementation, monitoring, and enforcement of MEAs. NGOs are becoming more accepted as part of official government delegations, as well as having the right, albeit limited, to participate on their own in the negotiation of MEAs.[111]

This adoption of the state-centered approach to international law-making has led to the adoption of solutions to environmental problems that cannot deliver the impetus for change that resides in the peoples of the state. For example, environmental problems are influenced by factors such as population growth. While the state may be able to set broad population policies, it is accepted that mandatory measures as adopted in countries like China, have no place in modern democracies. Undoubtedly, combating population growth would also require adjustments at the local level. Thus, solving environmental problems must involve many non-state actors, such as private individuals and NGOs.

An example of changing attitudes is noticeable in the recent Convention to Combat Desertification in Those Countries Experiencing Serious Drought And/Or Desertification, Particularly in Africa ("Desertification Convention").[112] Article 3 of this convention articulates principles of participation that move beyond a state-centered approach to a broad, people-centered vision. It advocates that states should design programs to combat desertification with the participation of populations and local communities. From this spirit of co-operation and partnership, states should develop a better relationship between communities, NGOs and landowners in the battle against desertification.

The approach used in the "Desertification Convention" has been described by Danish as the "bottom-up" approach.[113] The key elements of this approach are: (1) the participation of local people intimately involved in the problem of the planning and implementation of action programs; (2) measures to improve the awareness and capacity of these local actors; (3) assurances that the importation of technology and ideas is driven by local demand; (4) a leading role for NGOs both as experts and as links to the local people; and (5) the development of coordinating and financial mechanisms to ensure access to financial resources that will allow the local actors and NGOs to implement action programs.[114] Danish has argued that the "bottom-up" approach offers the most promising set of principles, norms, and mechanisms to international law. It also provides a blueprint for future international regimes that embraces the wide range of governmental and non-governmental bodies.[115]

The issue of non-state participation in the making of international environmental law has grown more complicated in light of the growing recognition in national legal systems and, to some extent in international law, of a right to a safe and healthy environment. The emergence of the right to a healthy environment, both in international and domestic law, and the fact that there is an acknowledgement that environmental solutions must be subject to a "bottom-up" approach, lends credibility to the assertion that there must be effective non-state participation in the making of international environmental law. This principle of non-state participation is hitherto unknown to international law. It addresses the idiosyncrasies of environmental problems and the multitude of interests affected. This signals a novel approach in the re-thinking of traditional notions of the legal personality in the international law-making process. Magraw asserts that the more appropriate method of viewing environment and development is at the level of human beings and not nation states.[116] This view ought to be extended to the making of international law on the environment with the process reaching out to include those most affected-the peoples of the world. Decisive action will only occur when nations not only accept the primacy of the international community, but also reject the notion that the international society comprises a community of states rather than the persons (both legal and natural) within those states.[117]

3.3 Equity

Equity facilitates the consideration of principles of fairness and justice in the establishment, operation

or application of international law.[118] These notions of equity have begun to affect the negotiation of MEAs. Agreement on what constitutes equitable behavior is undergoing a tremendous metamorphosis in discussions today on environmental problems and their solutions. During UNCED some of the concerns with equity were aired by developing countries. The argument of equity was introduced as the basis for building the relationship between the developed and developing world in the pursuit of a future based on the principle of sustainability. In particular, they identified the need to reduce the disparity in living standards between the developed and the developing world as part of the drive for the protection of the environment.[119] In the analysis of poverty, the gulf between the developed and developing nations remains vast, a situation that will continue to occupy the attention of the policy makers of developing countries at the expense of the environment. Thus, as emphasized at UNCED, there is the need to provide priority and recognition of the special status of developing countries. Equity must intervene and assist in the resolution of the economic disparity between the developed and developing world.

Developing countries are quick to point out that while the developed countries pursued their economic ends largely through industrialization, the environment suffered as a result. Indeed, the bulk of the greenhouse gases were emitted during the industrial drive of the developed world.[120] Now that poor developing countries are at the brink of initiating the exploitation of their own natural resources for purposes of uplifting the conditions of their people, the developed nations are calling for a cessation of such activities on the basis of the potential harm to the environment.[121] They argue if the developing world is allowed to pursue a mad rush to development, it may wreak greater environmental havoc than the relatively slower industrial revolution that transformed the developed world.[122] Equity demands, however, that developing countries receive proper compensation for foregoing development opportunities inherent in the activities such as the reduction of resource exploitation in order to ensure that the environment is not further affected.[123]

The situation is further influenced by the fact that a shared colonial past has left many developing countries with an inequitable share of the distribution of the world's limited wealth. Cheng has argued that the underdevelopment of the developing world is largely a result of prolonged colonial plunder, control and exploitation.[124] Based on historical behavior, the developed world has the greatest concentration of wealth and dominates the international economic system. The domination of trade, money, and finance issues bestows the most power to create international law. Therefore, there is the moral obligation to address international problems without regard to purely national concerns.[125] This calls for an equity that considers the injustice of past distribution of the world's wealth and the present concentration of the world's wealth in the hands of developed nations.

Moreover, the traditional notion of equity or fairness must contemplate the historical debt owed by developed nations for their contribution to the deterioration of the environment.[126] As seen with the issue of climate change, historical responsibility rests with the developed world, although this does not relieve the developing world of partial current responsibility. Common but differentiated responsibilities, should be pursued to redress the historical imbalances. This has been clearly contemplated by the Framework Convention on Climate Change,[127] whereby Article 4 states "All Parties, taking their common but differentiated responsibilities . . . shall,"[128] where the use of the word "shall" implies an obligation on the part of member states. The Framework Convention prescribes different responsibilities for dealing with climate change and this was manifested in the Kyoto Protocol to the Framework Convention where developed countries accepted certain specific restrictions on green house gas emissions but to which developing nations were not required to adhere.

Although not articulated as a principle of common but differentiated responsibilities, the Montreal Protocol on Substances that Deplete the Ozone Layer addresses the special position of developing countries. The Preamble to the Montreal Protocol requires special provisions for meeting the needs of developing countries. This includes the setting up of the Multilateral Fund for the Implementation of the Montreal Protocol ("MFIMP") and the exemption of developing countries from making contributions to the MFIMP, as per Article 10(6) of the amended Montreal Protocol. This is entirely defensible since many environmental evils can be placed on the doorsteps of developed nations. Present trends show no major shift in apportionment, as these countries continue to consume a disproportionate share of the world's resources. Shearer has observed that today, the U.S. has the world's

largest economy, the largest consumer of natural resources, and the largest producer of energy and carbon dioxide.[129]

Without some effort to recognize the plight of developing countries and provide appropriate incentives, little would be accomplished. Developing countries show a marked propensity to engage in activities geared towards protection of the environment where external assistance is forthcoming.[130]

This is largely due to the demands of competing problems afflicting these nations. The inability to pursue environmental objectives may even affect the expeditious ratification of MEAs. While international agreements may at times be negotiated within a short timeframe, the period of ratification often remains inordinately long, thus undermining the potential effectiveness of the agreement.

In many instances the root cause of delays to ratification reside in problems of financial resources and technology.[131] It seems that the most serious constraint on environmental protection in the developing world is the absence of financial resources or the competition for scarce financial resources. Even if willing, developing countries lack the financial resources to implement positive environmental measures.[132] Furthermore, technology to improve the state of the environment, due to its sophistication, is often more expensive or not readily available. The requirement is not just for technology to improve the environment, but also for environmentally friendly technology to facilitate economic development. The technology incentive has emerged as a vital part of international efforts to solve environmental problems.[133]

Article 10A of the amended Montreal Protocol on Substances that Deplete the Ozone Layer provides for the transfer of the best available, environmentally safe substitutes, and related technologies, to developing countries.[134] Furthermore, not only has an international agreement provided for environmentally suitable technology, but also another has provided for the transfer of technology to gain commercial returns as an incentive for ensuring participation of developing nations. Although written in somewhat confusing language, Article 16 of the Convention on Biological Diversity goes some distance to promote the transfer of technology to enable developing countries to benefit from the exploitation of their biological resources. More so, Article 19 of the Convention on Biological Diversity encourages the transfer of technology through biotechnological research, particularly where it involves genetic resources from a particular country.

The process of creating incentives can be seen in the development of the international environmental legal order for protection of the stratospheric ozone layer. At the time of the negotiation of the Convention for the Protection of the Ozone Layer, very little effort was made to ensure that developing countries were part of the process. Within two years, new evidence suggested that without the participation of developing countries, consumption would drop by 35 percent instead of the targeted 50 percent.[135] As the situation deteriorated and fears grew that efforts to protect the stratospheric ozone layer by means of international law would be undermined by developing countries, steps were taken to ensure their full involvement. In the negotiation of the 1990 amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, the developing countries agreed to the proposed legal steps for protection of the stratospheric ozone layer on the condition that the MFIMP be established.[136]

Thus, it is indisputable that developing countries only showed interest in the protection of the stratospheric ozone layer after the 1990 London amendments to the Montreal Protocol. After these amendments, the vast majority of developing nations accepted the Convention for the Protection of the Ozone Layer, a fact undoubtedly linked to the technological and financial concessions made to the developing world.[137] Even if the element of fault and historical responsibility is ignored, the developed world must provide sufficient incentives for action by developing countries, as the developing nations do not have the means to assume the environmental obligations demanded of them to protect the global environment.[138]

The need to develop a system of incentives must be translated into the creation of an efficient funding mechanism. The Global Environment Facility ("GEF") and MFIMP have been identified as major funds created to address environmental problems in developing countries. The potential for additional new funds cannot be ignored. Article 11 of the Framework Convention on Climate Change, and Article 21

of the Convention on Biological Diversity, both contemplate the establishment of new financing mechanisms. Although both conventions have agreed to use the GEF on an interim basis, there is no guarantee that this would become a permanent arrangement. There are inefficiencies inherent in using the multiple fund approach such as incremental administrative costs, and overlapping project supervision. Resolution of this problem of multiple funds would benefit developing countries by making more funds available for actual projects.

Additionally, equity seems to demand preferential treatment of developing countries in the pursuit of effective solutions to environmental problems. This preferential treatment includes different technical standards and time frames for compliance for developed and developing countries in order to provide recognition for the interaction between environmental protection and economic development.[139] For example, in the 1990 negotiation of the amendments to the Montreal Protocol, this was conceded by the developed nations, as Article 5 provided for a delay in compliance on the part of developing nations, and within certain parameters, for the application of lower technical standards.

Ultimately, recognizing the notion of common but differentiated responsibilities is a useful step forward and reflects a form of international equity that can assist in resolving some of the environmental problems besieging the international community today. This equity must continue to acknowledge the need to provide adequate incentives to encourage developing countries to embrace positive environmental values. No doubt, the developed world bears historical responsibility for the problem, but their contribution may be overshadowed by unrestrained industrialization among developing countries in the first half of the 21st century. Traditionally, multilateral agreements did not include incentives for nations to enter the treaty making process; however, this had to be changed in light of the identifiable barriers to reaching agreements on global solutions to environmental problems.[140] The challenge facing the international community today is to accelerate the use of general principles of law, such as equity in focusing on the new requirements confronting today's society, and acknowledging the idea of common but differentiated levels of responsibility for environmental protection based on the particular condition of developing countries.

3.4 The Concept of Unanimous Decisions and Negotiation of All Changes

One of the cornerstones of the process of international law-making is the requirement of unanimity. This dictates that the final legal product must always be agreed upon by all parties in order to achieve binding status.[141] The positivists argue states should only be bound when they have given their express or tacit consent to an international right or obligation.[142] A nation cannot be bound by an agreement to which it did not agree, as that would be a direct infringement of its sovereignty.[143] The majority of nations of the world may support the imposition of new obligations with respect to the environment, but no individual nation would be compelled to act, even if the participation of that nation is crucial to the finding of an effective solution for a particular environmental problem. Under the existing tenets of international law, state sovereignty supersedes the interests of the international community.[144] For example, in relation to climate change, for different reasons many nations play pivotal roles in what is a very complex situation. The US is responsible for a large percentage of the emissions of carbon dioxide, but conservation of the rain forests of Brazil is also a crucial part of the solution. From the viewpoint of sovereignty, Brazil cannot be compelled to protect its rain forests even if provided with all necessary incentives.

Another problem arises where a state consents to an initial agreement, but subsequent developments point to the need for the expeditious introduction of changes to the original text. Discussions on air pollution suggest that science plays perhaps the most critical role in the understanding of the environmental challenges facing the international community. Yet, scientific knowledge constantly evolves, and the basis under which an agreement is reached may change dramatically in response to new scientific understanding. The Convention for the Protection of the Ozone Layer came into force on September 22, 1988, but changes in the understanding of the problem between signature and entry into force necessitated the negotiation of the Montreal Protocol on Substances that Deplete the Ozone Layer in May 1987.[145]

The traditional method of dealing with this problem is to negotiate all changes. If there were schedules

to an agreement, these could only be amended through negotiation by all parties and subsequent ratification by the number of parties as prescribed in the parent instrument.[146] This cumbersome procedure, while satisfying the requirements of sovereignty, can be a stultifying handicap in the development of an international legal order for the protection of the environment. The challenge today is to find creative means for ensuring that vital adjustments, predicated by changes in scientific understanding, are not held to ransom by the traditional dogmas of the international law-making process.

International efforts to deal with the problem of the depletion of the stratospheric ozone layer provide a more effective method of dealing with scientific changes in future agreements for protection of the environment. The amended Montreal Protocol contains many provisions that cater to the role of science. Article 11 provides for parties to the Convention for Protection of the Ozone Layer to meet at regular intervals to respond to scientific changes. Articles 2(9) and 2(10) provide adjustment procedures by which parties can agree to reduce consumption of listed chemicals, beyond that stipulated by the text, without having to resort to formal amendment procedures.[147] Importantly, Article 2(9)(c) of the amended Montreal Protocol rejects the customary rule of consensus when consensus is not possible, in favor of a two-thirds majority in the procedures for reaching agreement on amendments, after every effort has been made. This rule on a majority consensus was further refined in the 1990 amendments to reflect the concern of developing countries that they may be forced into unreasonable positions. The result was the inclusion of language that effectively provided a veto to both developed and developing countries.

While the delays inherent in the process for obtaining ratification of MEAs may undermine efforts to speedily bring into effect key environmental accords, there is evidence of an alternative that may serve to lessen the impact of the tardiness of some nations. The new approach questions the traditional notion that a treaty can only come into force when a specified number of states accept or ratify the treaty. This new approach is found in the somewhat unique process of provisional implementation. Provisional implementation is illustrated by the resolution of the parties to the Convention on Long-Range Transboundary Air Pollution, which allows for action to be taken on an interim basis for implementation of the convention, and to fulfill obligations arising from the convention to be fulfilled to the maximum extent possible pending entry into force of the convention.[148]

Another method of circumventing the need for unanimous decisions is the use of central supervisory bodies with authority to issue binding resolutions. An example of this can be seen in the work of the International Whaling Commission, established by Article III of the 1946 International Convention for the Protection of Whaling. This commission was imbued with the authority to issue regulations capable of adoption by a three-fourths majority and binding on all states that are party to the convention.[149]

Developments like majority vote, provisional implementation, and the use of central supervisory bodies, alter somewhat traditional international law jurisprudence which promote the view that states are only bound by the international norms to which they have consented. Such developments are of profound interest to the future of international environmental law. They recognize the need to forego traditional notions of unanimity and avoid the international community being held at ransom by nations whose delay may lead to degradation of the environment to critical levels. Though it is accepted that unanimity has remained dominant for primary MEAs, an irreversible and immediate threat to the global environment may one day make even further inroads into the supposed infallibility of this concept.

3.5 Focusing on Systems Rather Than Objects

Traditionally, efforts directed at international law-making have focused on specific and easily identifiable objects as subjects of international law.[150] The idea of harm to the environment is generally expressed within the context of the protection of human property rights in the environment, and not harm to environmental systems themselves.[151] This view is being challenged by the emerging order of international environment law, such as the Convention on Biological Diversity,[152] which seeks to protect ecosystems in their own right. The bulk of the early MEAs focused on specific pollutants or the conservation of particular species.[153] This approach

reflected the traditional thinking on what are proper subjects for international law. Today, the issue of biological diversity is providing an indication of how international law should be responding. Much of the biological diversity that exists today is in danger of becoming extinct even before understanding is reached on the potential role of many species in the preservation of the biosphere in general, and human kind specifically. Moreover, the emphasis is now shifting from species and pollutants to ecosystems and habitats.[154] Thus, it is hardly surprising that the Convention on Biological Diversity addresses the conservation of ecosystems and habitats in order to acknowledge that many species, which ought to be conserved, remain outside the realm of existing human knowledge.[155] However, the problem here is that natural ecosystems do not fit neatly into political divisions. The Amazon ecosystem does not fall entirely within Brazil, nor is its importance limited to South America. Any shift from specific objects to wider concepts like ecosystems would challenge the notions of state interests and state divisions upon which traditional international law is based.

3.6 State Responsibility

To quote Shaw, "State responsibility is a fundamental principle of international law, arising out of the nature of the international legal system and the principles of state sovereignty and equality of states."[156] It is necessary to review the principle of state responsibility within the context of modern international environmental law, especially since it has traditionally occupied a major point of prominence in the legal regime governing the relationship of nation states.

At its simplest, state responsibility contemplates the situation where one state commits an internationally unlawful act against another, thus establishing international responsibility as between the two states. Accordingly, the breach of an international obligation gives rise to a requirement for reparation.[157] The foundation of state responsibility in environmental cases would normally be based on the breach of any obligation voluntarily contracted by virtue of a treaty or imposed by customary international law.[158]

The requirements for state responsibility were made clear in early rulings of the Permanent Court of International Justice. In the Spanish Zone of Morocco Claims, Judge Huber stated quite succinctly, "responsibility is the necessary corollary of a right. All rights of an international character involve international responsibility. Responsibility results in the duty to make reparation if the obligation in question is not met."[159] The principle of state responsibility was re-iterated in the Trail Smelter Arbitration, where the Tribunal noted that

> under principles of international law . . . no state has the right to use or permit the use of territory in such a manner as to cause injury by fumes in or to the territory of another or the properties of persons therein, when the case is of serious consequences and the injury established.[160]

There are certain features of the principle of state responsibility that must be noted. On the issue of fault, some international scholars have adopted the viewpoint that there is objective responsibility and that the liability of a state is strict.[161] Others contend that there is subjective responsibility and advocate a notion of fault with an emphasis on intentional or negligent conduct.[162] This issue has not been clearly settled although the strict liability theory appears to have gained some ascendancy.[163] Further, the liability of a state can be imputed whenever officials are involved, whether or not the activity in question was sanctioned by the state.[164]

One point that must be noted in the debate on liability is that much of the existing law on state responsibility for environmental harm revolves around the performance of lawful activities within the territory of a state. Fundamentally, it would appear that what is being frowned upon is not the activity itself, but the harm which it causes. Birnie has noted that the Trail Smelter Arbitration never suggested that the operation of such industrial plants was wrongful or prohibited. The thrust of the judgment was that the smelter be prevented from causing damage through fumes and that a control regime be implemented. In addition to the issue of harm, there must be clear establishment of the identity of the injured state, which is the state that had its rights infringed by the act of another state.[165]

Having settled the framework for the application of state responsibility, the next step is reparation, which, as emphasized in the Chorzow Factory Case, "must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability have existed if that act had not been committed."[166] The view expressed in the Chorzow Factory Case, while still holding some validity, must be considered in light of the later Trail Smelter Arbitration, where the issue of the wrongfulness or negligence of the act causing the harm, was not brought into issue.[167] Therefore, it might more be accurate to say that the consequences of the act causing the harm must be removed.

The classical view on state responsibility, for several reasons, may not be tenable in the context of modern environmental law. In reviewing the application of the principle of state responsibility for environmental damage, most notable is the relative absence of litigation based on the principle. Take, for example, the Chernobyl Nuclear Accident; it was clear that the former U.S.S.R. was the perpetrator, the victims were known and material damage occurred. Yet no claims were lodged by any neighboring state affected by the nuclear accident. The reasons for the reticence in applying the principle of state responsibility in environmental matters must be understood.

First, Birnie has highlighted the fact that cases involving the principle of state responsibility are only brought by states.[168] The decision to bring such a case, in environmental matters, is discretionary and may be influenced by non-environmental issues.[169] For example, in matters which may create precedents that could adversely affect the future conduct of a state, there may be a general unwillingness of such a state to be a plaintiff. A state that is a victim today may be a perpetrator tomorrow. Further, Birnie has argued that the jurisdiction of international tribunals is rarely compulsory as no state can be brought before an international tribunal without its consent, and therefore without agreement, participate in a third party settlement.[170] Negotiations, which are often quite expensive and cumbersome, may be the only viable alternative for an injured state.[171] Since there is no proper enforcement mechanism to ensure that a state honors a judicial determination, there is also the problem of compliance with a judicial decision. In addition, the principle of state responsibility cannot be relied upon by individuals or corporate bodies, and these are often the victims of environmental damage. Thus, there is greater use of domestic civil liability regimes to which victims can readily have access.

Second, as claims are only made by states with standing, and remedies available may be inadequate or limited, international claims may not be a useful mechanism for protecting the environment of common areas.[172] In addition, even where transboundary environmental damage is involved and the costs of such damage may be recoverable through international claims, state responsibility cannot adequately allocate such costs. As noted by Birnie, the uncertainty surrounding liability standards, the type of environmental damage which is recoverable, and the role of equitable balancing renders the outcome of any such claim somewhat capricious and incapable of determining who should bear transboundary costs.[173]

Third, it has been asserted that state responsibility is an inadequate remedy for the international standards of environmental protection.[174] The use of state responsibility cannot displace the need for environmental regulation. This, according to Birnie, is a failing "which explains the emphasis states have placed on the development of treaty regimes of environmental protection and their supervision by international institutions and the failure to develop or reform the law of state responsibility for environmental harm."[175] What is being sought in the area of global environmental issues is regulation of conduct, and not compensation or reparation, thus further undermining the efficacy of traditional state responsibility principles.

Fourth, state responsibility places liability on a state where it can be clearly established that damage incurred by another state was caused by its own conduct.[176] In dealing with modern environmental problems such as depletion of the stratospheric ozone layer, this state of affairs is almost impossible to establish. The problem of depletion of the stratospheric ozone layer cannot be allocated to any one nation; therefore, the principle of state responsibility cannot be readily used to address non-compliance or breach of obligations emerging in the international legal regime, which protect the ozone layer. The effects of global environmental change, such as depletion of the ozone layer, extends world-wide and all

people and states are simultaneously victims and polluters. One cannot apply traditional principles of state liability to such a scenario. Emphasis must be placed on principles of prevention and mitigation.[177]

Fifth, a review of the existing literature on liability for harm in international law shows that the liability of the states, for damage caused to another is generally expressed in terms of compensation for repair of the damage occasioned.[178] This model fits somewhat uncomfortably in the realm of international environmental law. There are myriad difficulties inherent in adopting the harm-compensation model, with the first and most important arising from the reality that many acts directed against the environment are capable of causing irreversible damage.[179] In the Case Concerning the Gabcikovo-Nagymaros Project, the ICJ noted that "in the field of environmental protection, vigilance and prevention are required on account of the often irreversible character of damage to the environment and of the limitations inherent in the very mechanisms of reparation of this type of damage."[180]

Climate change will contribute to the decimation of the biological diversity contained within the global village. The loss of a species is irreversible. The emerging question is, therefore, what level of compensation is adequate to deal with the loss of a specie that may lead to an impact, not only on present, but future generations. Even if it is possible to repair an environmental harm, the costs might be staggering or at least beyond the means of any one nation.[181] Also, the causal link between a harmful activity and damage to the environment may be difficult to establish.[182] For example, in respect of acid rain, how can one firmly establish the causal link between the emission of air pollutants in the UK and the decimation of aquatic ecosystems in Sweden? Further, the identification of the source in terms of legally convincing evidence may be impossible to ascertain.[183] In the area of depletion of the stratospheric ozone layer, it is impossible to pinpoint whose CFCs are causing damage to the stratospheric ozone layer at any given time.

Moreover, international law-makers must strive to create a concept of damage and compensation based on rules that recognize the special characteristics of environmental harm. Only then will states find themselves operating within a system of sanctions, which provides an incentive to change their behavioral patterns in dealing with environmental issues. Justice Weeramantry, in his dissenting opinion in the Advisory Opinion on the Legality of the Use By a State of Nuclear Weapons in Armed Conflict (WHO), made the claim that "there is a State obligation lying upon every member State of the community of nations to protect the environment, not merely in the negative sense of refraining from causing harm, but in the positive sense of contributing affirmatively to the improvement of the environment."[184]

Sixth, there is the argument that state responsibility addresses the problem between parties harmed and injuring parties. As noted in the discussions below on monitoring, implementation and the emergence of non-compliance regimes, state responsibility, which is essentially a bilateral concept, can be of limited use in a multilateral scenario.[185] With the rise of global interdependency, the scope and range of problems, such as depletion of the stratospheric ozone layer and climate change, extend beyond the boundaries of a single state and can in fact encompass the entire global village.

Indeed, it is apparent that the principles of state responsibility cannot be applied to global environmental problems due to the cumulative nature of these problems, the diversity of victims and polluters, the undoubted role of natural forces, and the continuing scientific uncertainty with respect to some of these problems.[186] The multitude of sources, parties and issues involved makes it unlikely that in the event of the breach of an obligation by a state, with respect to its obligations to protect the environment, would allow for effective recourse to the traditional doctrine of state responsibility. Even on the evidentiary level problems abound as the evidence required to substantiate a claim can be rendered dubious in light of the multifaceted nature of environmental issues and the involvement of complex scientific and technical issues.[187]

Seventh, and related to the nature of global environmental problems, is the case of the global commons. The common space of mankind includes the high seas, outer space, and, in the view of many nations, the polar regions. Again, the protection of the global commons is vital to human kind and the emergence of international environmental law to serve such a purpose is inevitable. The Convention on

the Law of the Sea is an example of the emergence of a normative regime designed to protect areas that are not part of the territorial constraints of nation states. The emergence of international environmental law to protect the common spaces cannot be supported by the traditional doctrine of state responsibility, as there would be no locus standi for a state bringing an action for damage to the global commons.[188]

The doctrine of state responsibility is one of the pillars of international law. Unfortunately, it would appear to be of limited value in the struggle to protect the environment. Even when a state breaches its obligations to protect some aspect of the environment, the use of the doctrine of state responsibility is of little or no value in dealing with the transgressions of such a state.[189] Further, in light of the need to pre-empt environmental problems, utilizing a doctrine that depends on the breach of an international obligation, is short-sighted as the larger issue is the prevention of such breaches as the potential damage may be irreversible. For the doctrine of state responsibility to achieve greater relevance, it must adapt to the special circumstances surrounding environmental issues. Furthermore, the international community must act with courage to forge a new doctrine capable of responding decisively to the fast emerging environmental challenges to the sustainability of the international community.

4.0 All-Embracing Versus Sectoral Approach

The sectoral approach has long been favored in the development of international law.[190] This trend, illustrated in Table 1.2, has continued in the emerging international legal regime for protection of the environment.[191] However, this approach requires re-examination in light of the special characteristics of environmental problems. Consideration should be given to an all-embracing approach to the protection of the environment, organized around a single international instrument that encompasses the entire notion of what is the "environment" and the best way to protect it. Very few international jurists have come out in support of the idea of a change in the manner of negotiating MEAs from the sectoral to a single all embracing accord; however, the idea has attracted support.[192]

The idea of a comprehensive all embracing accord is not new and was articulated as early as 1986. The World Commission on Environment and Development ("WCED") commissioned a report on the legal principles necessary for the achievement of sustainable development. Within the context of this request, a recommendation was made that an international instrument be drafted on sustainable development that would contain a comprehensive and overarching set of principles. This idea was taken up by the International Union for the Conservation of Nature ("IUCN") Commission on Environmental Law and a draft text first published in 1995. A member of the IUCN Commission on Environment Law has claimed that the draft covenant represented the first attempt, in the history of international environmental law-making, to depart from the traditional approach of piece-meal and sectoral law-making to a more holistic approach. This IUCN draft covenant addresses issues such as: climate change, depletion of the stratospheric ozone layer, soil, water and natural ecosystems; biological diversity; waste issues, and the cultural and natural heritage of man.[193]

Perhaps the holistic view of environmental planning had its most spectacular manifestation at UNCED, where an attempt was made to dispense with the sectoral approach and to pursue the path of an all-embracing approach. To date, Agenda 21, which emerged from UNCED, remains the most significant official attempt by the international community to dispense with the sectoral approach. A precedent now exists for the forging of an all-embracing environmental protection accord. But the likelihood of this approach being adopted depends on addressing some of the key issues that may influence the practicality and usefulness of such an ambitious proposal. These issues include the time factor involved in negotiating a single treaty, which encompasses several environmental problems. By the time a solution is reached for all the problems collectively, the consequences of an individual problem would have already manifested itself. If one wishes to deal with ozone depletion and climate change in one treaty, the consequences of one may have become aggravated during the time of negotiation. Another example pertains to the evidence required to justify international action to address an environmental problem. It is often the case that the impetus for international action is based on scientific certainty; therefore, as environmental problems are at different levels of scientific certainty, and in some cases, like climate change, where the debate is still ongoing, it would be impossible to incorporate the various environmental problems in one single accord.

Table 1.2 Sectoral Analysis of Number of Multilateral Environmental Agreements[194]

Sector of the Environment	Number of Multilateral Environmental Agreements
Air	19
Space	9
Chemicals	5
Biological Agents	32
Nuclear	35
Waste	5
Land	20
Freshwater	62
Marine	179
Biological Diversity	47
Indigenous People	20
Natural and Cultural Heritage	18
Common Heritage	10
Work Place	26
Noise	3*
Total	*487*

4.1 Synergism

The environment is an interrelated system and harm to a particular link can affect the integrity of the entire chain. It would be best protected by an all embracing accord which can effectively address the synergism inherent in the environment.[195] In analyzing climate change and depletion of the stratospheric ozone layer, the nature of environmental synergism was discussed.[196] In 1985, efforts were made to deal with the problem of the depletion of the stratospheric ozone layer with the negotiation of the Convention for the Protection of the Ozone Layer. Inadvertently, this would have dealt with the problem associated with one of the greenhouse gases, namely CFCs, an example of accidental benefits derived from the synergies in the environment. Yet, in 1992 when the Framework Convention on Climate Change was negotiated, no similar agreement was reached on forest management, except for the issuance of the Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests. Having regard to the fact that forests are vital in the struggle to combat the problem of climate change, the failure to reach agreement on a suitable accord can only serve to diminish the effectiveness of the Framework Convention on Climate Change.

Moreover, due to the inherent synergism in environmental problems, passing a law on one aspect of the environment will necessitate addressing concerns with another, leading to some level of duplication. It is clear that there are synergies inherent in climate change, forest management and biological diversity. Yet these three issues were subjected to separate agreements. It required informal efforts to ensure that obligations contained in the Framework Convention on Climate Change, the Convention on Biological Diversity, and the Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests, were consistent with each other. The negotiators of the Convention on Biological Diversity expressly addressed the problem of potential conflict by including in Article 22, which sets out the governing principle for dealing with any such conflict.[197] The problems described would certainly be circumvented by the adoption of an all embracing approach as opposed to the sectoral.

4.2 Common Objections Obstacle

The negotiation of MEAs is often marked by certain objections raised by developing countries. The non-legal factors that influence the will of developing countries to pursue sound environmental objectives, based on questions of population growth, poverty, development, industrialization, and

external debt, are ever present at the negotiations of MEAs, and dominate the developing world's presentations. Shearer has argued that developed nations have little or no understanding of the perspective from which developing countries view environmental problems. In the developed world, confronting an environmental problem leads to the question, "how much will it cost us to fix this problem?" Among developing countries, the question is more like, "how can we possibly afford to fix this problem when there are so many other problems to address?"[198]

Developing countries frequently object to MEAs on the grounds that these agreements impair their right to development. They argue that developed countries have decimated their own environment to achieve their present prosperity and now want developing countries to maintain theirs in pristine condition at the expense of their developmental aspirations. Thus, it is not surprising that issues of poverty and development dominate the negotiation of MEAs. Climate change is one problem that fully exemplifies this situation. A convention on climate change would affect the industrial activities of nation states. Industrialization is perceived as one of the more effective measures of achieving socio-economic prosperity and shaking off the shackles of poverty.[199] Not surprising, developing countries have been reluctant to sign an agreement limiting greenhouse gas emissions without proper incentives. This may account for the fact that the best that was obtained at Rio in 1992 was a framework agreement on climate change. A similar situation exists on the issue of conservation of biological diversity, where the preamble to the Convention on Biological Diversity recognizes that "economic and social development and poverty eradication are the first and overriding priorities of developing countries."

The full impact of these common objections within the context of external debt can be seen in the analysis of the negotiation of certain important MEAs within the last two decades. While the developed world is calling for improved management of tropical forests because of their impact on climate change and biological diversity, the developing world has adopted a view that recognizes the worth of tropical forests as commodities.[200] Tropical forests are seen as a form of natural resources that can be readily converted to foreign exchange, which then can be used to satisfy external debts.[201] Deforestation has been examined in the context of countries with large external debts. Indeed, one Malaysian diplomat stated in 1992 that if developed countries wanted their developing counterparts to preserve their forests, they should address the crushing issues of poverty, famine and external debt which compel the felling of trees.[202] Interestingly, developing countries were quite adamant that references to tropical rain forests, despite their synergistic relationship with biological diversity, be excised from the Convention on Biological Diversity.[203]

Using a sectoral approach to creating MEAs results in further inefficiencies due to these common objections. Much time at the negotiating table is spent on finding creative means to postpone addressing these issues. The ultimate result is an even more delayed process leading to indecisive action. A comprehensive accord would allow these issues to be confronted once and for all, and promote efforts at finding appropriate measures for dealing with them.

4.3 North-South Divide

One of the unfortunate manifestations of the North-South divide is the underlying feeling on the part of developing countries that only environmental issues considered important by the North reach the international agenda for environmental protection.[204] While world-wide concern with the environment is growing, developed and developing countries must find common ground in the pursuit of environmental objectives.[205] In terms of climate change and depletion of the stratospheric ozone layer, it would seem that the developed world is much more interested in these issues than the developing world. Not surprisingly, these issues have dominated headlines in the developed world and obtained priority status on the international environmental agenda.

Yet, the problems confronting developing nations are somewhat different. Indoor air pollution remains a more immediate threat to the health and well-being of many people in the developing world. There are also serious problems associated with water and sanitation in developing countries. The domination of the developed world in the process of agenda setting, agreement articulation and international institutions, ensures that these issues are not given any prominence on the international agenda for

environmental protection.[206] By adopting a comprehensive approach to defining the environment and dealing with environmental issues on an all embracing basis, the objections of agenda manipulation and lack of sympathy for the most virulent problems affecting developing countries would be undermined and provide much needed optimism among developing nations that their issues are also important.

4.4 Treaty Congestion

While the proliferation in MEAs could point to the interest in the international community for protection of the environment, this unharnessed enthusiasm may cause more problems than offer solutions. Weiss has argued that success in negotiating a large number of new MEAs has led to a side effect best described as 'treaty congestion.'[207] Treaty congestion may result in the development of crippling inefficiencies in the treaty making and implementation process. The cost of negotiating agreements is high. When staggered over a two-year period,[208] negotiations can put a serious strain on the financial and human resources of developing countries and impair the successful conclusion of an agreement. Moreover, an agreement may be negotiated concurrently with others, further straining the developing countries' resources.[209] Between 1990 to 1992, negotiations were underway with respect to the Framework Convention on Climate Change ("FCCC"), the Convention on Biological Diversity ("CBD"), and the Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests. During this period other international agreements were also being negotiated, such as Agenda 21, and the Arctic Environmental Protection Strategy. This treaty congestion can only lead to a minimal level of participation by developing countries, resulting in a diminution in the value of the final output of the negotiating process.

The problem of simultaneous negotiations is accentuated by the fact that there is no mechanism for ensuring that environmental efforts are coordinated and integrated with other efforts that are proceeding at the same time at the international level.[210] Sir Geoffrey Palmer has cogently stated that negotiations must start afresh each time, with negotiations proceeding differently due to the absence of a coordinating body. Palmer has pointed out that negotiations on depletion of the stratospheric ozone layer and climate change, although possessing several similarities, were conducted in different ways and by different organizations. The situation is worsened by the fact that there is no standing body to identify and evaluate gaps that might exist in the international framework of agreements, or to prioritize competing claims for international attention.[211]

The problems faced by developing countries in participating in multiple simultaneous negotiations also continue after the conclusion of many of these agreements. Imbalances noted in the actual governance of existing agreements and instruments, including program activities, working groups, and regular review meetings reflect this problem. This was observed during the 1991 meeting on the Convention on the Conservation of Migratory Species of Wild Animals. Although this convention boasts of a balanced membership of 18 developed and 19 developing countries, this review meeting was attended by only 14 developed and 6 developing countries.[212] This situation is exacerbated by the demand on human, financial, and technical resource constraints affecting developing countries within the context of simultaneous multiple treaty negotiations.

Thus, treaty congestion and its difficulties may be avoided by the abandonment of the sectoral approach and the employment of an all-embracing approach. This will improve efficiency and allow valuable human and financial resources to be more effectively deployed in the battle against environmental abuse of the global village.

4.5 More Effective Monitoring and Enforcement: Searching for a Non-compliance Regime

The next and perhaps most daunting challenge in developing an appropriate international legal framework concerns implementation and compliance.[213] This is especially crucial for developing countries where enforcement of national laws leaves much to be desired. Despite the proliferation of MEAs on protection of the environment, very little data exists on actual implementation and compliance in states bound by the precepts of such instruments. Increasingly, international scholars

contend the plethora of MEAs is not accompanied by adequate monitoring and enforcement, resulting in growing disillusion at the prospect of the international community responding effectively to environmental crises.[214] The importance of implementation and compliance must be underscored in light of the potential global consequences of a country's decision to ignore its international obligations. Thus, it is hardly surprising that the term "compliance control" has become part of the current environmental nomenclature.[215]

Compliance control addresses the international monitoring, supervision, status and implementation of international treaty-derived obligations.[216] As argued by Handl, compliance control exists in areas covered by international law, such as arms control and international labor relations; but now, due to a combination of factors, it is making its way into the environmental field.[217] Handl sees this situation emerging as a result of three main factors. First, the technical characteristics of international environmental law and the propensity for greater complexity and detail require increased control of state compliance.[218] Second, due to the economic cost of compliance with international environmental law, it is in the interest of complying states to ensure all other states comply, thus promoting fair competition.[219] Finally, because normative changes frequently occur within environmental treaty regimes, there are inevitably questions as to the scope of the obligations at stake.[220] Thus, compliance control not only verifies a state's own compliance but also ascertains the existence of the disputed legal norm as well as the nature and scope of the state's obligations.[221]

States' monitoring, implementation and compliance of existing environmental obligations point to a need for adoption of strict international environmental enforcement standards. As argued by Philippe Sands, this must be done at two levels. First, at the national level, MEAs require states to develop, adopt, or modify relevant national legislation.[222] This makes enforcing national compliance a matter for public authorities. Second, international enforcement is required once it is established that states have failed to uphold their environmental obligation.[223]

Implementation and compliance together forge a dynamic process, and many factors impact on the effectiveness of MEAs. These factors include the following: the economic and social culture of a particular state; the interaction among local bureaucracies; the availability of technical and financial capabilities; the ability of non-state actors to operate within a country; ready access to information; the functions and powers of the specific secretariat established to supervise the particular agreement in question; and incentives in the agreement to promote implementation and compliance.[224] Recognizing the multiple factors involved, the continued use of a sectoral approach renders monitoring a more onerous burden for the international community.

4.5.1 Introduction of Non-Compliance Regimes in MEAs

4.5.1.1 Montreal Protocol

An important development that must be noted is the introduction of non-compliance regimes. Although not yet a common feature of MEAs, they appeared in the 1980s with the adoption of the Montreal Protocol. For example, Article 8 of the Montreal Protocol provides the mechanism for establishing such a regime.[225] This procedure for addressing non-compliance is independent of the provision for settlement of disputes.[226] The non-compliance regime itself is contained in Annexes IV and V of the Montreal Protocol,[227] and will be examined to illustrate the international community's thinking on the critical issue of observance of treaty obligations.

4.5.1.2 Reservations about Implementation of Obligations

Annex IV, Paragraphs 1, 2, 3, and 4 of the Montreal Protocol provides a party having reservations about another party's implementation of its obligations a right to notify the Secretariat with its concerns and supporting information. The Secretariat is then required to request from the party under scrutiny a response to the allegations. The Secretariat then submits the initial inquiry, the relevant response, and all supporting information to the Implementation Committee. In addition, the Secretariat can independently write to a non-complying party requesting information. If not satisfied that the issue has been satisfactorily resolved, the Secretariat can report the matter to the Meeting of the Parties and inform

the Implementation Committee. A party may also voluntarily indicate its non-compliance, and the Secretariat will in turn consider the party's submission. The Implementation Committee should be able to bring an issue under scrutiny when it obtains independent evidence of non-compliance. But the Montreal Protocol does not contemplate this regime.

4.5.1.3 Scope of Authority

It is also important to note that the Implementation Committee's scope of authority extends beyond mere compliance issues to encompass the wider concept of non-implementation of obligations. Annex IV,[228] Paragraph 1 of the Montreal Protocol refers to "reservations regarding another Party's implementation of its obligations ...; Annex IV,[229] Paragraph 2 refers to "implementation of a particular provision of the Protocol," and Annex IV,[230] Paragraph 3 refers to "possible non-compliance by a Party with its obligations under this Protocol." This is a far more satisfactory position than simply limiting the scope of authority to compliance issues.

4.5.1.4 Membership on Implementation Committee and Transparency

The Implementation Committee was created to ensure the perception of fairness. Members are selected for a period of two years based on equitable geographic distribution. The membership of the Implementation Committee is limited to ten parties. The Implementation Committee is required to meet at least twice per year with meetings arranged by the Secretariat. There are four aspects of the Implementation Committee that deserve further description. First, the small size of the Implementation Committee is important, since in general, large committees tend toward ineffectiveness.[231] Second, Handl argues that, in addition to equitable geographic representation, special attention should be given to countries whose interests will be most affected. Third, Handl observes that attendance at the Implementation Committee is problematic and suggests that members ought to serve in their individual rather than representative capacity.[232] Fourth, Implementation Committee membership should not be limited only to states. With respect to the Montreal Protocol this might be the best way forward; however, with respect to other MEAs that impact directly on communities, the prudent course forward would be to consider expanding membership to NGOs and other key stakeholders.[233]

Lack of transparency of the proceedings of the Implementation Committee relates to the fairness of the non-compliance regime as a whole. According to Annex IV, Paragraphs 10 and 11[234] of the Montreal Protocol, the widest possible participation should be permitted to ensure transparency while bearing in mind the non-confrontational approach of the non-compliance regime. A member party of the Implementation Committee under investigation should not be allowed to influence a Committee decision. However, a non-member party who is under scrutiny for non-compliance should be allowed to participate in the Implementation Committee's consideration process. Further, Annex IV, Paragraph 16[235] advances the goal of transparency by making available reports to any person upon request. This appears admirable but contains two vital limitations. First, the report cannot contain any information received in confidence, ruling out a substantial portion of the report. Second, the report is only available upon request from a party. This approach rules out non-state actors from accessing reports generated by the Implementation Committee.

4.5.1.5 Information Gathering

The Implementation Committee of the Montreal Protocol is vested with the power to either seek further information about parties through the office of the Secretariat, or conduct information-gathering activities upon invitation from parties suspected of non-compliance.[236] This is an unnecessary limitation on the ability of the Implementation Committee to fully investigate non-compliance. Ideally, the Implementation Committee would be able to perform fact-finding activities independently.

4.5.1.6 Consideration of All Non-Compliance Submissions and Recommendations

The Implementation Committee's ability to consider all non-compliance submissions and make recommendations to the Meeting of the Parties is another feature of the Montreal Protocol's non-compliance regime. The Implementation Committee's review focuses on "securing an amicable

solution."[237] The Implementation Committee reports to the Meeting of Parties with its findings and recommendations. Parties may then decide on steps to ensure full compliance, including measures to assist a party in achieving such compliance. Non-complying parties must submit remedial steps to the Meeting of the Parties through the Secretariat. In some instances, the non-compliance regime also provides for interim measures to be adopted even before deliberations are concluded. The Meeting of the Parties can also force the Implementation Committee to suggest recommendations. Thus, the non-compliance regime provides the necessary power for the Implementation Committee to arrive at a settlement prior to the issue being sent to the Meeting of the Parties. This facilitates the Meeting of the Parties' consideration of the matter.

4.5.1.7 Listing of Non-Compliance Scenarios

One of the troubling issues facing non-compliance regimes is whether possible scenarios of non-compliance and/or non-implementation should be listed. In 1992, at the Fourth Meeting of the Conference of Parties to the Montreal Protocol, the parties were unable to agree on a provisional list identifying seven situations of non-compliance.[238] Such a list may be perceived as restrictive and counter-productive to the goal of establishing a non-compliance regime with maximum flexibility. Due to the Montreal Protocol's extremely technical nature and rapidly changing requirements, it might be more prudent to simply identify the elements of compliance. This will help nations' understanding of their obligations and types of behavior that must be avoided to ensure compliance.

4.5.1.8 Measures to Deal with Non-Compliance

Annex V, Paragraphs A, B, and C of the Montreal Protocol provide measures that may be adopted by the Meeting of the Parties to deal with issues of non-compliance. These measures include providing assistance in achieving compliance, issuance of cautions, and suspension in accordance with the applicable rules addressing treaty suspension. The overall intent is to bring parties into compliance for the good of the entire normative regime rather than take punitive measures against a non-complying party.

4.5.1.9 Conflict Between Non-Compliance Regime and Dispute Resolution Mechanism

In assessing the non-compliance regime of the Montreal Protocol, an interesting problem arises regarding the dispute resolution mechanism in the stratospheric ozone depletion legal regime. The Preamble to Annex IV makes it clear that that the operation of the non-compliance regime is independent of and without prejudice to the dispute resolution mechanism contained in Article 11 of the Vienna Convention for the Protection of the Ozone Layer ("VCPOL"). This can create some concern as it is possible for a state not suffering material harm to invoke the non-compliance regime but, due to the absence of material harm, is unable to access the dispute resolution mechanism. Additionally, it is possible for a state to invoke the dispute resolution mechanism even while the Implementation Committee considers its dispute. Clearly, parallel proceedings are possible. If there is jurisdictional conflict, some writers argue that it should be resolved in favor of the dispute resolution mechanism even though there is no provision for this in the VCPOL or the Montreal Protocol.[239]

4.5.2 Advantages of Non-Compliance Regimes

There are several advantages to compliance regimes like the Montreal Protocol. Under such a regime the emphasis is more on assisting a party to fulfill its obligations than on imposing sanctions or providing remedies for past breaches. The use of a non-compliance regime can help the breaching party achieve compliance. This fosters a collective approach that rejects the traditional dependence on bilateralism, where the relationship is merely between the non-complying state and the directly injured state. This is a major shift in thinking, and Handl argues that such a shift is required due to the frequent changes in the normative provisions of an environmental regulatory regime. As a result of scientific and technological developments, compliance issues are bound to occur regularly and differ vastly in their individual importance for the regime as a whole.[240]

According to Handl, it is counter-productive to invoke traditional dispute settlement procedures to deal

with the wide range of non-compliance and non-implementation issues. Invoking state responsibility must be a last resort as it is often seen as adversarial and weighty. A state's non-compliance may not necessarily be due to negligence or callous disregard for an international legal obligation, but rather to a state's incapacity to honor its obligations. In such a context, the invocation of the principle of state responsibility might not be the appropriate response.

Moreover, it can be argued that most MEAs cannot adequately address the issue of non-compliance as they lack an appropriate reciprocity between the injured and injuring parties. For example, suspension of an MEA for breach of an important obligation is unwise, as the greater goal of environmental enhancement is not advanced. In addition, the traditional principle of state responsibility places non-compliance under a multilateral treaty within the framework of a bilateral legal relationship between the injured and injuring parties. As noted by Handl, "the vindication of international community interest in protecting environmental resources may be beyond the individual state's ability to invoke the defaulting state's international responsibility to obtain redress for non-compliance, unless the incriminated conduct rises also to the level of infringing the rights of the complaining state concerned."[241] Handl further argues that even if obligatory breaches of other parties' rights occur, the resulting problem determines which remedies might be available.[242] Finally, a major benefit of the non-compliance regime is the Meeting of the Parties' ability to enforce the normative standards of the MEA. This may be significant. While this flexibility may weaken the MEA somewhat, the overall relaxation of normative standards may also ensure the survival of the MEA as a whole.[243]

The many advantages of the non-compliance regime for the Montreal Protocol have created a precedent that is gaining support in the environmental field. It served as the model for the non-compliance regime contained within the 1994 Protocol[244] to the 1979 UN ECE Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions.[245] In addition, there have been calls for the model to be used as the basis for developing non-compliance regimes for the FCCC, UN Convention to Combat Desertification, and the Basel Convention on Transboundary Movement of Hazardous Wastes and Their Disposal.[246]

4.5.3 Emergence of Non-Compliance Regimes - New Problem?

However, the proliferation of non-compliance regimes is also disturbing. As noted above, treaty congestion creates inefficiencies and a strain at the national level in implementing MEAs. Nation states must dedicate political, administrative, and economic capacity to ensure effective implementation of MEAs.[247] The current state of affairs, where a large number of international environmental institutions-including the different secretariats that have some claim on the administrative capacity of nation states -- has overwhelmed many developing nations and adversely affected their ability to fullfil international obligations.[248]

The monitoring and administrative requirements imposed by the passage of multiple international and regional environmental laws places increased pressure on the scarce resources of the international community. Every time a new MEA is negotiated for protection of some aspect of the environment, new machinery is deemed necessary for assessing implementation and compliance.[249] The result of these requirements-having separate monitoring and non-compliance processes, meetings of parties, financing mechanisms, scientific sources and advice, dispute resolution systems, and technical assistance schemes-can only lead to chaos.[250]

Sachariew observes that of the 200 international legal instruments in force in 1991, more than forty created new international bodies. Additional oversight, co-ordination, and secretarial functions were entrusted to these new, as well as existing bodies.[251] This trend towards widespread institutionalism undermines efforts at effective implementation monitoring and compliance. The resulting demand on resources must be viewed within the current context of the financial difficulties facing most IGOs, particularly the UN.

It is readily apparent that the objectives of implementation monitoring and compliance are better accomplished by using a single institution rather than multiple teams from different secretariats. Incremental advantages would result from this unified approach. For example,

chlorofluorocarbons ("CFCs") are greenhouse gases as well as ozone depleting substances. Conceivably, one secretariat could assume responsibility for all aspects of this issue by monitoring CFC emissions as part of the general analysis of greenhouse gas emissions.

An all-embracing accord may assist in rationalizing attempts at implementation monitoring and compliance with MEAs. However, this accord must transcend the existing trend in international law-making where issues of implementation and monitoring are sometimes deliberately left vague. If the accord inherits this common deficiency it may prove to be ineffective.

4.6 Inappropriate Legislative Agenda

One of the obstacles to forging a single all-embracing agreement dedicated to environmental protection, pertains to the appropriateness of the agenda. For example, issues such as climate change and depletion of the stratospheric ozone layer are global in character, indoor air pollution is national in character, and acid rain is regional in character. The different characters of these environmental problems can prove problematic for the construction of an agenda for an all-embracing accord. However, the diverse character of environmental problems should not deter efforts at developing an all-embracing accord.

The biggest obstacle to an all-embracing accord is the inclusion of national environmental problems;[252] however, there is justification for including these issues. National environmental problems, such as water quality, are common to many countries. Efforts to combat these common problems could be shared between countries. This sharing of information and technologies would be better facilitated under the framework of a single comprehensive accord. Furthermore, there are national issues that require outside expertise and financing, particularly those affecting developing countries. These may be more effectively provided through the adoption of a comprehensive approach.

In the process of resolving international environmental problems, developed countries could engender goodwill by helping developing countries implement solutions for pressing domestic problems. Creation of an all-embracing accord would result in more effective mechanisms to deal with national issues. It would also ensure that developing countries are included in a comprehensive effort towards solving environmental issues that affect not only the global community, but also the local populace.[253]

Finally, there are some domestic issues that are incapable of resolution without international co-operation. The problem of the international transport of hazardous waste can be theoretically rectified by individual states, but in practice no state could successfully deal with this issue without international consensus and support.[254]

4.7 Notion of Unacceptable Delays in Negotiating All-embracing Accord

A fundamental objection to an all-embracing agreement for environmental protection is that it may be subject to extensive delays. It can be argued that such an agreement may never come into being. While throughout most of the twentieth century, negotiating international agreements has been a cumbersome process fraught with numerous delays, this has certainly changed in the last decade, particularly with respect to MEAs.[255]

Negotiations for The Law of the Sea Convention commenced in December 1973 and concluded in December 1982, a period of nine years. However, delay is not the current trend, and with the international community becoming more skilled in the negotiation of international agreements, a slightly different picture has emerged. For example, the Framework Convention on Climate Change was negotiated from February 1991 to May 1992, a mere fifteen months. Additionally, negotiations for the Protocol on Environmental Protection to the Treaty Regarding Antarctica-including its four complex annexes-and the Convention on Biological Diversity, were both completed within two years.[256]

Varied reasons explain the speed at which some negotiations are currently being concluded. Since many countries belong to regional blocs and modern communication promotes more efficient collaboration, countries often (such as those of the developing world) arrive at the negotiating table

with common positions. As a result, an increased flow of information ensures that the nature and context of environmental problems are well understood, and more time is spent on solution building rather than denial. Moreover, due to the proliferation of MEAs, there now exists an extensive pool of human expertise to draw upon both in the developing and developed world. Thus, it is not a foregone conclusion that delay resulting from the pursuit of an all-embracing agreement on the protection of the environment would derail attempts at creating an international agenda for safeguarding the environment.

Another dimension of the problems associated with delays stems from scientific uncertainty. There is often a failure to act when the agents of science cannot reach consensus on a particular environmental problem. Indeed, science may be most culpable for delays affecting the development of international legal solutions to environmental problems, as policy makers depend on science to provide necessary evidence before taking action. In the discussion on depletion of the stratospheric ozone layer, it was pointed out that the problem was first identified in 1974, yet due to the scientific community's failure to be fully convinced, very little was done until the dramatic appearance of the ozone hole in 1985. At this time the international community was forced to respond swiftly with the Vienna Convention for Protection of the Ozone Layer.

A dependence on science, while necessary, must not be allowed to cause delays as scientists search for consensus. There are signs of change with the emergence of the precautionary principle.[257] When faced with irreversible environmental harm but scientific uncertainty, this principle advocates that the international community must act to protect the environment.[258] The principle is clearly illustrated in the Bamako Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa. Article 4(3) of this convention calls for the adoption of a preventative, precautionary approach to pollution problems that curbs the release of substances without waiting for scientific proof.[259]

The growing acceptance of the precautionary principle led to its adoption in the FCCC. According to Article 3(3), precautionary measures are a guiding principle for the implementation of the convention.[260] Thus, the adoption of the precautionary principle in the case of the stratospheric ozone layer may have avoided a decade of inactivity while man waited at the altar of science for confirmation of the nature of the problem. The inclusion of the concept of the precautionary principle in a single, all-embracing accord on environmental protection would help to alleviate fears of delays in reaching such an agreement.

In addition to the possible delays associated with negotiation of an all-embracing accord on the environment, there are legitimate concerns as to the time required for ratification of such an important international legal instrument. Typically, multilateral treaties take between two and twelve years to become effective once a formal agreement has been reached.[261] An all-embracing accord for protection of the environment may find itself at the upper end of the scale. This may be avoided by utilizing concepts such as a provisional treaty application or delegated law making.[262] At the signing of the Convention on Long-range Transboundary Air Pollution, the signatories agreed on an interim basis to initiate the provisional implementation of the convention. A somewhat less proactive approach was used in the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, and their Disposal, where a resolution by the signatories called for states to refrain from activities inconsistent with the objectives of the convention pending ratification.[263]

5.0 The Use of the General to Specific Approach of Law Making

Solving environmental problems generally requires changes in human behavior to correct or limit the impact of particular activities. Thus, international environmental agreements require detailed provisions to ensure effectiveness. However, the present approach to international environmental lawmaking shows a predilection to enacting agreements that are very general in content and incapable of proper enforcement. These framework agreements merely state the overall goals of the conventions; establish general obligations concerning such matters as scientific research and exchange of information; discuss the broad measures necessary to correct the situation; and provide a skeletal legal and institutional framework for future action.[264]

Framework agreements are then followed by protocols, which seek to address the deficiencies in the parent text by adding the specific measures required and more detailed implementation mechanisms. An early example of the trend of framework agreements can be seen in the negotiations of the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, held in 1976. This convention established the general principles for protection of the Mediterranean Sea against the ravages of pollution and was followed by more detailed protocols, for example, the 1979 Convention on Long-Range Transboundary Air Pollution, the Convention for the Protection of the Ozone Layer, and the Framework Convention on Climate Change.[265]

The framework approach to international environmental law making has wide support. As the number of parties to an agreement grows, so does the difficulty associated with finding agreement.[266] New parties bring different agendas, interests, and reservations. The result is often more protracted negotiations, greater transaction costs, and problems of coordinating complex negotiations.[267] In light of the difficulties in finding international solutions to environmental problems, the framework approach allows states to begin addressing an environmental issue in an incremental manner.[268] Countries can start taking coordinated actions to deal with environmental problems, while avoiding premature negotiations on issues that might hinder the achievement of even the most basic agreement. The contention is that initial agreement among states, especially when developing countries are involved, is more easily accomplished through framework agreements with low commitments and enough generality to promote broad interpretation. In addition, the framework convention approach can lead to positive feedback loops, making the adoption of specific substantive commitments more likely. Provisions for scientific research in framework agreements assist in the reduction of uncertainties and provide the foundation for more detailed action.[269]

Sometimes the deficiencies in a framework agreement are minimized by having the agreement provide for over-achievement. In the Convention for the Protection of the Ozone Layer, Article 2(1) and (2) set out the general obligations of the parties. Yet, Article 2(3) makes it clear that the "provisions of this Convention shall in no way affect the right of Parties to adopt, in accordance with international law, domestic measures additional to those referred to in paragraphs 1 and 2 above." On other occasions, the deficiencies in a framework agreement are mitigated by the adoption of one or more annexes or appendices, which may include scientific, technical, and administrative provisions.[270]

Notwithstanding the support for the framework approach and strategies to minimize its shortfalls, this approach is far from satisfactory. Environmental problems subject to framework conventions are precisely those that require specific action to redress existing imbalances. The causes of climate change are well known and accepted almost unanimously at the scientific level, and the levels of greenhouse gases emitted are readily identifiable.[271] Dealing with this problem within the context of a framework convention can lead to disputes in interpretation and permit evasion or deferment of the measures required to achieve a reversal in the present trend of climate change. This has led to the charge that by signing the Framework Convention on Climate Change, international leaders were merely trying to divert attention from their failure to arrive at a sound and lasting legal solution to a grave environmental problem.[272]

The framework approach is a manifestation of the reliance on the sovereignty-of-state philosophy for international environmental lawmaking. Pandering to the whims of sovereign assertions results in the passage of agreements couched in terms of the lowest common denominator, making it difficult to actually enforce or introduce mechanisms designed to ensure meaningful change.[273] The creation of basic documents only serves to postpone serious issues. The result, as seen in the case of the Convention for the Protection of the Ozone Layer, was the need for rapid negotiation of a protocol even before the primary instrument came into force. Science had already identified the problem and the remedial measures necessary. Yet state-centered interests prevailed, making it necessary for tremendous efforts at additional costs to be exerted by means of a protocol to ensure the establishment of, and compliance with, specific standards.[274] The emerging picture points to the inadequacy of lowest common denominator agreements for solving existing environmental problems and preventing future environmental crises.

Another key weakness in framework type agreements is that they sometimes promote the neglect of

available scientific and technical information, or eschew requirements that are technically unfeasible or illogical. Susskind points to the negotiation of the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, as an example of this phenomenon.[275] The technical wisdom of the day made it clear that Romania and Bulgaria ought to be included in any effort to combat pollution in the Mediterranean Sea. Yet, political considerations dictated otherwise.[276] When dealing with scientific and technical advice, the citing of scientific evidence that supports a country's particular policy at that stage of the negotiation is important. As the framework approach does not always lead to proper usage of scientific and technical resources, such chicaneries can pass without much questioning.

Finally, negotiations conducted through the framework approach are typically dominated by the most powerful states.[277] Susskind has argued that the absence of a formal negotiation system defining the rights of each state and an outline of the minimum threshold of support required from all nations has allowed powerful states to dominate the negotiation process. This can lead to agreements that promote the interests of the dominant states at the expense of less powerful ones. At the negotiations of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, African states felt that the convention was unfair because of the failure of developing countries to include certain provisions they considered important.[278] Consequently, developing countries could be left with an international legal solution that does not adequately address the problem confronting them. This development can lead to questions regarding the legitimacy of the agreement itself. Thus, while the framework approach may prove to be politically expedient, it may achieve such expediency at the expense of the environment.

6.0 The Need For An Interdisciplinary Approach to International Environmental Law Making

Today many nations simply fail to address environmental issues, as they are often not seen as important enough in comparison with other high-priority domestic issues. In the developing world, issues such as population expansion, high external debt, poverty, development, industrialization, and technology dominate the domestic agenda and are very much part of the baggage taken to negotiations on MEAs.[279] It is questionable, therefore, whether the international community can continue to use a single disciplinary approach.[280] The problems associated with protection of the environment cannot be solved solely by laws. Instead, a comprehensive approach to environmental protection that focuses on legal and non-legal factors in tandem is obligatory.

UNCED suggested that the world is entering an era of international environmental law in which environmental and economic issues are joined.[281] The reconciliation of environmental protection and economic development, seen as divergent objectives by the international community, must occur to encourage a new and effective international environmental order.[282] In a separate opinion delivered in the Case Concerning the Gabcikovo-Nagymaros Project, Vice-President of the ICJ, Justice Weeramantry, noted that "the problem of steering a course between the needs of development and the necessity to protect the environment is a problem alike of the law of development and of the law of the environment."[283] Included in the rich cocktail of economic and environmental factors are those of social, cultural, gender, and demographic dimensions.

The international law-making community has started taking tentative steps in the direction of interdisciplinary thinking. The interdisciplinary approach was adopted at UNCED and can be found in many soft law instruments, such as Agenda 21. Interestingly, it has now appeared in a more traditional "hard law" instrument. During the debate on the Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, there was heated controversy over the extent to which discussions should cover socio-economic factors and require affected state parties to change national practices and institutions in order to give deference to such factors.[284]

This convention proceeds further than any other international legal agreement in utilizing the interdisciplinary approach. The preamble starts by "Noting also that desertification is caused by complex interactions among physical, biological, political, social, cultural and economic factors."[285] The convention goes on in Article 2(a) and (c) to call for the adoption of an integrated

approach addressing the physical, biological, and socio-economic aspects of desertification, while integrating poverty alleviation measures into efforts at combating desertification and mitigating the effects of drought. This reflects acceptance of the position that an effective anti-desertification program must not focus exclusively on ecological causes but also on the social and human factors that influence people to degrade land.[286]

The interdisciplinary approach to environmental protection has also confronted gender related issues. Tinker has stated that the Convention of Biological Diversity is the only MEA that acknowledges a fundamental link between women's participation and the implementation of the treaty itself.[287] The Preamble to this convention gave credence to the "vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation."[288] Ignoring the special impact of gender on conservation of biological diversity could only serve to undermine the effective implementation of the convention.

Thus, it is vital for international lawmakers to respond to the special dictates of environmental problems and develop new skills to ensure effective and efficient legal responses. In discussions on protection of forests, it has been noted that the problem is based on a complex set of socio-economic causes that are not primarily legal in their genesis.[289] Wilson, Jr. has argued that the interdisciplinary nature of the issues raised with respect to the problem of deforestation, makes successful resolution dependent on co-operation among environmental, economic, and development groups.[290]

Thus, solutions cannot be pursued within the strictures of legal dogma. As observed by Hunt,

> If lawyers have tended to be isolated within their discipline, this cannot continue to be the case. An ecosystem view mandates that we develop deeper ties with, and a better understanding of many other disciplines . . . While law is clearly not the only player in the sustainable development game, it will be called upon to make a major contribution.[291]

The sentiments of Hunt were cogently articulated by Justice Weeramantry in the Case Concerning the Gabcikovo-Nagymaros Project:

> Moreover, especially at the frontier of the discipline of international law, it needs to be multi-disciplinary, drawing from other disciplines such as history, sociology, anthropology, and psychology such wisdom as may be relevant for its purpose . . . As this vital branch of law proceeds to develop, it will need all the insights available from the human experience, crossing cultural and disciplinary boundaries which have traditionally hemmed in the discipline of international law.[292]

7.0 Conclusion: Pursuing the Legislative Agenda

It is beyond dispute that the environmental crisis is an international one. In most of the scientific reviews of climate change and depletion of the stratospheric ozone layer, current evidence suggests that these problems are capable of generating international, regional, and national consequences. It would seem only a cohesive global effort can ensure meaningful progress in the establishment of an effective international legal regime for the protection of the environment.

However, it is not surprising that the international community largely ignores the fundamental difficulties of environmental protection in the developing world. It is debatable whether the already considerable international legal exertions to address environmental issues have been successful. The prodigious output of the international community in the making of MEAs and soft law instruments is indicative of a strong interest in the environment. However, the effectiveness of these instruments suggests the need for re-thinking the present approach, which is dominated by the making of framework conventions (with protocols emerging to add specificity) and soft law instruments. Moreover, this current approach utilizes well-known international law principles including that of sovereignty, quintessence of the state as the legal person in international law-making, equity, focus on objects rather than systems, and state responsibility. These well-known principles, while serving the international

community well in other areas of global concern, appear to be somewhat miscast when applied in a traditional manner to the problems of the environment.

International law making also seems to have shown a predilection to use the sectoral approach when making laws that impact on the environment. This approach must be reviewed and consideration must be given to the adoption of a more all-embracing approach. Factors such as synergism, the common objections obstacle, the North-South divide, and treaty congestion can all be positively addressed within the framework of an all-embracing accord. This is not to say that the issue is beyond dispute, as the presence of questions surrounding the appropriateness of the agenda for such an accord and the prospect of delays make the possibility of an all-embracing agreement more difficult.

Furthermore, in the making of international environmental law, it would appear that the use of an interdisciplinary approach to law making is more suitable for dealing with environmental problems than is a strict law approach. Environmental problems involve issues pertaining to non-legal areas such as science, politics, sociology, and economics. It is simply not realistic to expect legal solutions to environmental problems to emerge from a purely legal setting. Therefore, there is the need to develop and promote an approach to international law making that would include non-legal disciplines.

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[1] Roger W. Findley, *Pollution Control in Brazil*, 15 ECOLOGY L.Q. 1, 30 (1988).

[2] *See id.* at 64.

[3] Edesio Fernandes, *Law, Politics and Environmental Protection in Brazil*, 4 J. ENVTL. L. 41, 42 (1992).

[4] *See id.* at 43.

[5] Karin Ranta, *Balancing Hardrock Mining and the Environment: The Chilean Model*, 6 COLO. J. ENVTL. L. & POL'Y 423, 429 (1995).

[6] *See id.* at 430.

[7] *See id.*

[8] *See id.* at 443.

[9] Charles T. DuMars & Salvador Beltran Del Rio M., *A Survey of the Air and Water Quality Laws of Mexico*, 28 NAT. RESOURCES J. 787, 809-10 (1988).

[10] *Id.*

[11] Kilaparti Ramakrishna, *The Emergence of Environmental Laws in the Developing Countries: A Case Study of India*, 12 ECOLOGY L.Q. 907, 930 (1985).

[12] C. M. Abraham & Armin Rosencranz, *An Evaluation of Pollution Control Legislation in India*, 11 COLUM. J. ENVTL. L. 101, 101-102 (1986).

[13] *See id.* at 118.

[14] Bondi D. Ogolla, *Water Pollution Control in Africa: A Comparative Legal Survey*, 33 J. AFRICA. L. 149, 155 (1989).

[15] *See id.* at 151-53.

[16] Guenter Witzsch, *Some Legal Problems Concerning Soil Conservation and Range Management in Lesotho*, 5 LESOTHO L. J. 411, 432 (1989).

[17] Costa R. Mahalu, *Environmental Degradation and the Laws in Tanzania*, 22 VERFASSUNG UND RECHT IN UBERSEE 460, 469 (1989).

[18] *Id.* at 470.

[19] *Id.* at 472.

[20] Antoinette M. Mannion & Sophia Bowlby, *Perspective and Prospect*, in ENVIRONMENTAL ISSUES IN THE 1990S 328-329 (Antoinette M. Mannion & Sophia Bowlby eds., 1994).

[21] Rajendra Ramlogan, *Protection of the Environment in Cuba: Piercing the Caribbean Iron Curtain*, 29 U. MIAMI INTER-AM. L. REV. 37, 100-101 (1998).

[22] Legality of the Use By a State of Nuclear Weapons in Armed Conflict, 1996 I.C.J. 95 (July 8) [hereinafter Nuclear Weapons].

[23] This Advisory Opinion was sought by WHO. *See* Legality of the Use By a State of Nuclear Weapons in Armed Conflict, 1996 I.C.J. 95 (July 8) (Weeramantry, J., dissenting), *available at* http://www.icj-cij.org/icjwww/idecisions/isummaries/ianwsummary960708.htm [hereinafter Weeramantry].

[24] Philippe Sands, *Principles of International Environmental Law: Volume I Frameworks Standards and Implementation* 105 (1995); Peter M. Haas & Jan Sundgren, *Evolving International Environmental Law, Changing Practices of National Sovereignty, in* GLOBAL ACCORD: ENVIRONMENTAL CHALLENGES AND INTERNATIONAL RESPONSES 405-407 (Nazli Choucri ed., 1993).

[25] LAWRENCE J. SUSSKIND, ENVIRONMENTAL DIPLOMACY: NEGOTIATING MORE EFFECTIVE INTERNATIONAL ENVIRONMENTAL AGREEMENTS, 143 (1st. ed. 1994).

[26] Matthew Werner, *A New World Order in Environmental Policy Making? A Review of the State and Social Power in Global Environmental Politics*, 25 ENVTL. L. 239, 242 (1995).

[27] See Paul Szasz, *International Norm-Making*, *in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: NEW CHALLENGES AND DIMENSIONS (Edith Brown Weiss ed., 1992) for a general discussion on the international norm-making process.

[28] *See generally* INTERNATIONAL ENVIRONMENTAL LAW (Michael R. Molitor et al. eds., 1991); DOCUMENTS IN INTERNATIONAL ENVIRONMENTAL LAW, VOLS. II AND III (Philippe Sands et al. eds., 1st ed. 1995); BASIC DOCUMENTS OF INTERNATIONAL ENVIRONMENTAL LAW, VOLS. 1-3 (Harold Hohmann ed., 1st ed. 1992); PATRICIA W. BIRNIE & ALAN E. BOYLE, BASIC DOCUMENTS ON INTERNATIONAL LAW AND THE ENVIRONMENT (1st ed. 1995); INTERNATIONAL PROTECTION OF THE ENVIRONMENT: TREATIES AND RELATED DOCUMENTS, BINDERS I-XVII (Bernd Ruster et al. eds, 1994); INTERNATIONAL PROTECTION OF THE ENVIRONMENT: TREATIES AND RELATED DOCUMENTS, BINDERS I-VI (Bernd Ruster et al. eds, 1975); Fletcher School of Law and Diplomacy, *Multilaterals Project* (1996), *at* http://www.tufts.edu/fletcher/multilaterals/html; Consortium for International Earth Sciences Information Network, *Environmental Treaties and Resource Indicators* (1996), *at* http://sedac.ciesin.org/entri; UN, MULTILATERAL TREATIES DEPOSITED WITH THE SECRETARY-GENERAL (1996); UNEP, REGISTER OF INTERNATIONAL TREATIES IN THE FIELD OF THE ENVIRONMENT (1996); WOLFGANG E. BURHENNE, INTERNATIONAL ENVIRONMENTAL LAW: MULTILATERAL TREATIES, VOLUMES I-VII (1995).

[29] Statute of the International Court of Justice, *available at* http://www.icj-cij.org/icjwww/ibasicdocuments/ibasictext/ibasicstatute.htm.

[30] IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 3 (4th ed. 1996).

[31] MALCOLM M. SHAW, INTERNATIONAL LAW 80 (4th ed. 1994).

[32] *Id.* at 61.

[33] *Id.* at 63.

[34] Ensign Florencio J. Yuzon, *Full Speed Ahead: International Law Concerning Marine Pollution and the United States Navy-Steaming Towards State Responsibility and Compliance*, 9 PACIFIC INT'L REV 57, 70 (1997).

[35] Government of the Solomon Islands, *Written Observations on the Request by the General Assembly for and Advisory Opinion*, 372 (1996) [hereinafter Solomon Islands].

[36] Intergenerational Equity, as employed in current international instruments, contains two distinct components regarding the utilization of resources. The first calls for fairness in the utilization of resources between human generations past, present and future...the second component is referred to as "intra-generational" equity, namely, fairness in the utilization of resources among human members of present generations, both domestically and globally. Gregory F. Maggio, *Inter/Intra-Generational Equity: Current Applications Under International Law for Promoting the Sustainable Development of Natural Resources*, 4 BUFF. ENV. L. J. 161, 163-164 (1997).

[37] Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. *See* World Commission on Environment and Development, *Towards Sustainable Development, in* GREEN PLANET BLUES: ENVIRONMENTAL POLITICS FROM STOCKHOLM TO RIO 211 (Ken Conca et al. eds., 1995).

[38] The term common heritage has caused great consternation in international law, especially with regard to the high seas, where it had its genesis. *See* Gennady M. Danilenko, *The Concept of "the common heritage of mankind" in International Law*, 13 ANNALES OF AIR AND SPACE LAW 247, 247-263 (1988). The elements of what constitutes a common heritage of mankind are "1. the area under consideration cannot be subject to appropriation; 2. all countires must share in its management; 3. there must be an active sharing of the benefits reaped from the exploitation of the resources; 4. the area must be dedicated exclusively for peaceful purposes; and 5. the area must be preserved for future generation." *See* Edwin W. Paxson III, *Sharing the Benefits of Outer Space Exploration: Space Law and Economic Development*, 14 MICH. J. OF INT'L L. 487, 502 (1993).

[39] Shaw, *supra* note 31, at 84.

[40] Nuclear Weapons, *supra* note 22.

[41] *Id.*; see generally Solomon Islands, *supra* note 35, at 15; Government of the Solomon Islands, *Written Observations on the Request by the General Assembly for an Advisory Opinion*, 7:2 CRIM. L. FORUM 299 (1996).

[42] Aaron Schwabach, *Diverting the Danube: The Gabcikovo-Nagymaros Dispute and International Freshwater Law*, 14 BERKELEY J. INT'L L. 290, 294 (1996).

[43] *Id.* at 297-298.

[44] *Id.* at 301-303.

[45] Case concerning the Gabcikovo-Nagymaros Project (Hung v. Slovk) 28 (Sept. 25, 1997), *available at* http://www.icj-cij.org/icjwww/idocket/his/ihsjudgement/his_ijudgement_970925_frame.htm [hereinafter Gabcikovo-Nagymaros Project].

[46] Weeramantry, *supra* note 22, § 10(e), at 45.

[47] For example, in the dissenting opinion of Judge Vereshchetin in the Case Concerning the Gabcikovo-Nagymaros Project, (Hung v. Slovk), 1997, the Judge cited the matter of Military and Paramilitary Activities in and against Nicaragua (Nicar. v. United States of America), 249, 128 (1986). *See also* the Fisheries Jurisdiction Case (Spain v. Can.) 4 (December 1998). General List No. 96. paragraph 29 of this judgment illustrates the use of previous decisions. "There is no doubt that it is for the Applicant, in its Application, to present to the Court the dispute with which it wishes to seise the Court and to set out the claims which it is submitting to it. Paragraph 1 of Article 40 of the Statute of the Court requires, moreover, that the "subject of the dispute" be indicated in the Application; and, for its part, paragraph 2 of Article 38 of the Rules of Court requires "the precise nature of the claim" to be specified in the Application. In a number of instances in the past the Court has had occasion to refer to these provisions. It has characterized them as "essential from the point of view of legal security and the good administration of justice" and, on this basis, has held inadmissible new claims, formulated during the course of proceedings, which, if they had been entertained, would have transformed the subject of the dispute originally brought before it under the terms of the Application. Certain Phosphate Lands in Nauru (Nauru v. Austl.) Preliminary 1992 I.C.J. 226-267; *see also* Prince von Pless Administration, Order 1933, P.C.I.J. (ser. A/B) No. 52, at 14 (Feb. 4); and Société Commerciale de Belgique, Judgment 1939, P.C.I.J. (ser. A/B) No. 78, at 173. In order to identify its task in any proceedings instituted by one State against another, the Court must begin by examining the Application. *See* Interhandel, Preliminary Objections, Judgment, 1959 I.C.J. 21; Right of Passage over Indian Territory, Merits, Judgment, 1960 I.C.J. 27; Nuclear Tests (Austl v. Fance), 1974 I.C.J. 260. However, it may happen that uncertainties or disagreements arise with regard to the real subject of the dispute with which the Court has been seised, or to the exact nature of the claims submitted to it. In such cases the Court cannot be restricted to a consideration of the terms of the Application alone nor, more generally, can it regard itself as bound by the claims of the Applicant. Even in proceedings instituted by Special Agreement, the Court has determined for itself, having examined all of the relevant instruments, what was the subject of the dispute brought before it, in circumstances where the parties could not agree on how it should be characterized. *See* Territorial Dispute (Libyan Arab Jamahiriya/Chad), 1994 I.C.J. 14-15, 19, and 28.

[48] PATRICIA BIRNIE & ALAN BOYLE, INTERNATIONAL LAW AND THE ENVIRONMENT 26 (1994) [hereinafter BIRNIE & BOYLE].

[49] *Id.* at 27-30.

[50] Susskind, *supra* note 25, at 143.

[51] *Survey of Existing Agreements and Instruments and its Follow-Up*, Preparatory Committee for the U.N. Conference on Environment and Development, U.N. GAOR, 4th Sess., Agenda Item 2, U.N. Doc. A/ CONF.151/PC/WG III/L.32 (1992). [hereinafter Preparatory Committee for the UNCED].

[52] This survey examined 100 MEAs in its sample.

[53] *Id.*

[54] *See generally* Pierre-Marie Dupuy, *Soft Law and the International Law of the Environment*, 12 MICH. J. INT'L. L. 420 (1991); BIRNIE & BOYLE, *supra* note 48, at 26-30.

[55] Foo Kim Boon, *The Rio Declaration and its Influence on International Environmental Law*, SINGAPORE J. LEGAL STUD. 347, 350-51 (1992).

[56] U.N. Environmental Programme, *Declaration of the United Nations Conference on the Human Environment*, June 1972, *available at* http://www.unep.org/Documents/Default.asp?DocumentID=97& ArticleID=1503.

[57] Andronico Adede, *Lessons from Twenty Years of International Law-Making in the Field of the Environment 1972-1992, in* A LAW FOR THE ENVIRONMENT: ESSAYS IN HONOUR OF WOLFGANG E. BURHENNE 14 (Alexandre Kiss & Francoise Burhenne-Guilmin eds., 1994).

[58] Dupuy, *supra* note 54, at 420-21.

[59] Alexander Timoshenko, *International Environmental Law: Fundamental Aspects*, 59 REV. JUR. U.P.R. 653, 665-66 (1990).

[60] Dupuy, *supra* note 54, at 420-421.

[61] Marc Levy, *Remarks at the Conference on Environmental Law: When Does it Make Sense to Negotiate International Agreements, in* PROCEEDINGS OF THE 87TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF INTERNATIONAL LAW 389-90 (1993).

[62] Catherine Tinker, *Environmental Planet Management By the United Nations: An Idea Whose Time has not yet Come*, 22 N.Y.U. J. INT'L L. & POL. 793, 803 (1990).

[63] Edith Brown Weiss, *International Environmental Law Contemporary Issues and the Emergence of a New World Order*, 81 GEO. L.J. 675, 708 (1993).

[64] Geoffrey Palmer, *New Ways to Make International Law*, 86 AM. J. INT'L. L. 259, 269 (1992).

[65] *Id.*

[66] *Id.*

[67] *See* UNEP, HANDBOOK FOR THE INTERNATIONAL TREATIES FOR THE PROTECTION OF THE OZONE LAYER, (5th ed. 2000).

[68] Kim Boon, *supra* note 55, at 351.

[69] Dupuy, *supra* note 54, at 424.

[70] *Id.*

[71] *See* DEPARTMENT OF ENVIRONMENT MALAYSIA, MINISTRY OF SCIENCE, TECHNOLOGY AND THE ENVIRONMENT, THE LANGKAWI DECLARATION ON THE ENVIRONMENT (October 21, 1989), *available at* http://www.jas.sains.my/doe/egdeclar.htm.

[72] Palmer, *supra* note 64, at 270.

[73] Dupuy, *supra* note 54, at 429.

[74] *Id.*

[75] *Id.* at 431.

[76] Palmer, *supra* note 64, at 270.

[77] Krista Singleton-Cambage, *International Legal Sources and Global Environmental Crises: The Inadequacy of Principles, Treaties and Customs*, 2 ILSA J. INT'L & COMP. L. 171, 173 (1995).

[78] David A. Wirth, *Re-Examining Decision-Making Processes in International Environmental Law*, 79 IOWA L. REV. 769 (1994).

[79] BROWNLIE, *supra* note 3, at 287.

[80] David Potter, *Environmental Problems in their Political Context, in* ENVIRONMENTAL POLICY IN AN INTERNATIONAL CONTEXT: PERSPECTIVES ON ENVIRONMENTAL PROBLEMS 106 (1995).

[81] Alastair Iles, *The Desertification Convention: A Deeper Focus on Social Aspects of Environmental Degradation*, 36 HARV. INT'L L.J. 207, 211 (1995); Philippe J. Sands, *Environment, Community and International Law*, 30 HARV. INT'L L.J. 393, 399 (1989) [hereinafter Sands 2].

[82] *Id.* at 215.

[83] Jutta Brunnee, *Environmental Security in the Twenty-First Century: New Momentum for the Development of International Law?*, 18 FORDHAM INT'L L.J. 1742, 1744 (1995); Potter, *supra* note 80, at 106.

[84] Singleton-Cambage, *supra* note 77, at 178.

[85] Victor M. Marroquin-Merino, *Wildlife Utilization: A New International Mechanism for Protecting Biological Diversity*, 26 LAW AND POLICY IN INTERNATIONAL BUSINESS 303, 308-318 (1995).

[86] Susan H. Bragdon, *National Sovereignty and Global Environmental Responsibility Can the Tension Be Reconciled for the Conservation of Biological Diversity*, 33 HARV. INT'L L.J. 381, 382-385, 390 (1992).

[87] Toru Iwama, *Emerging Principles and Rules for the Prevention and Mitigation of Environmental Harm, in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: NEW CHALLENGES AND DIMENSIONS 111 (Edith Brown Weiss ed., 1992).

[88] Ranee K. L. Panjabi, *From Stockholm to Rio: A Comparison of the Declaratory Principles of International Environmental Law*, 21 DENV. J. INT'L L. & POL'Y. 215, 219 (1993).

[89] Robert W. Hahn & Kenneth R. Richards, *The Internationalisation of Environmental Regulations*, 30 HARV. INT'L L.J. 421, 429 (1989).

[90] *Id.*

[91] *Id.*

[92] *See* Potter, *supra* note 80, at 107.

[93] Convention to Combat Desertification in those Countries experiencing Serious Drought and/or Desertification, Particularly in Africa (1994), 33 INTERNATIONAL LEGAL MATERIALS 1328.

[94] Iles, *supra* note 81, at 218.

[95] Brunnee, *supra* note 83, at 1744.

[96] *See generally* Rudiger Wolfrum, *Purposes and Principles of International Environmental Law*, 33 GERMANY B. INT'L L 308 (1990).

[97] Brunnee, *supra* note 83, at 1745.

[98] Singleton-Cambage, *supra* note 77, at 175.

[99] *Id.*

[100] John Perkins, *The Changing Foundation of International Law: From State Consent to State Responsibility*, 15 B.U. INT'L L.J. 433, 452 (1997).

[101] *Id.*

[102] Weeramantry, *supra* note 22, § 10(e), at 47.

[103] James E. Hickey, Jr., *The Source of International Legal Personality in the 21st Century*, 2:1 HOFSTRA L. & POLICY SYMPOSIUM 1, 3 (1997).

[104] Iles, *supra* note 81, at 211.

[105] Hickey, Jr., *supra* note 103, at 13; Gregory F. Maggio, *Recognising the Vital Role of Local Communities in International Legal Instruments for Conserving Biodiversity*, 16 UCLA J. ENVTL. L. & POLICY 179, 183-184 (1998).

[106] Maggio, *supra* note 105, at 183.

[107] Sands 2, *supra* note 81, at 397.

[108] *See generally* Rajendra Ramlogan, *Environment and Human Health: A Threat to All*, 8:2 J. ENVTL. MGMT. & HUM. HEALTH 51-66 (1997).

[109] Karen Litfin, *Ecoregimes: Playing Tug of War with the Nation-State, in* THE STATE AND SOCIAL POWER IN GLOBAL ENVIRONMENTAL POLITICS 95 (Ronnie D. Lipschutz & Ken Conca eds., 1993).

[110] Sands 2, *supra* note 81, at 401.

[111] Ben Boer, *The Globalisation of Environmental Law: The Role of the United Nations*, 20 MELB. U.L.R. 101, 115 (1995); Gareth Porter & Janet Welsh Brown, GLOBAL ENVIRONMENTAL POLITICS 56-64 (1991).

[112] Iles, *supra* note 81, at 218.

[113] Kyle W. Danish, *International Environmental Law and the Bottom-Up Approach: A Review of the Desertification Convention*, 3 IND. J. GLOBAL LEGAL STUD. 133, 134 (Fall 1995).

[114] *Id.* at 158.

[115] *See id.* at 134-135.

[116] Daniel Magraw, *A Response to Elliot Richardson: Institutions, Developing Countries, and Functions*, 25 J. MARSHALL L. REV. 13, 17 (Fall 1991).

[117] Steven Anderson, *Reforming International Institutions to Improve Global Environmental Relations, Agreement, and Treaty Enforcement*, 18 HASTINGS INT'L & COMP. L. REV 771, 778 (1995) (quoting Philippe J. Sands, *Environment Community and International Law*, 20 HARV. INTL. L.J. 393, 399 (1989)).

[118] Sands, *supra* note 24, at 124.

[119] Robert V. Makaramba, *A Commentary on the Rio Declaration on Environment and Development*, 8:1 LESOTHO L.J. 95, 101 (1992).

[120] Peter Pearson, *Greenhouse Gas Scenarios and Global Warming: The Role of Third World Countries, in* INTERNATIONAL ASPECTS OF ECONOMIC DEVELOPMENT 126 (Graham Bird ed., 1992).

[121] Peter Usher, *Climate Change and the Developing World*, 14 S. ILL. U.L.J. 257, 260-261 (Winter 1990).

[122] Panjabi, *supra* note 88, at 236.

[123] Phillip Saunders, *Moving On From Rio: Recent Initiatives on Global Forest Issues*, 32 CAN. Y.B. INT'L L. 143, 151 (1994).

[124] Lai Peng Cheng, *The Legislation and Implementation of International Environmental Law and the Third World: The Example of China, in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: NEW CHALLENGES AND DIMENSIONS 187 (1992); *see also* Russell Shearer, *International Environmental Law and Development in Developing Nations: Agenda Setting, Articulation, and Institutional Participation*, 7 TUL. ENVTL. L.J. 391, 412 (1994).

[125] *See* Shearer, *supra* note 98, at 411-12.

[126] Paul R. Williams, *Issues Relating to the 1992 Brazil Conference on the Environment*, 86 AM. SOC'Y INT'L PROC. 401, 401-05 (1992) (remarks by Gozalo Biggs).

[127] Conference of the Parties to the Framework Convention on Climate Change: Kyoto Protocol (Dec. 10, 1997), 37 INTERNATIONAL LEGAL MATERIALS 22.

[128] Makaramba, *supra* note 119, at 102.

[129] Shearer, *supra* note 124, at 413 (citing Russell E. Train, *A Call for Sustainability*, 18 EPA J. 7, 7 (Sept./Oct. 1992)).

[130] United Nations Environmental Programme, SAVING THE OZONE LAYER: EVERY ACTION COUNTS 30 (1996).

[131] *See generally* Peter H. Sand, *Lessons Learned in Global Environmental Governance*, 18 B.C. ENVTL. AFF. L. REV. 213, 220-24 (1991); Theron A. Mehr, *International Technology Transfer: Constructing and Financing an Environmental Program*, 15 LOY. L.A. INT'L & COMP. L.J. 731, 731-60 (1993).

[132] Cheng, *supra* note 124, at 187 (stating the technological and financial constraints of developing countries have also been addressed within the concept of common but differentiated responsibilities. In this context, differentiated responsibilities represent the acknowledgement by the developed world of the different capacity of the developing countries to pursue environmental policies). *See* Ileana M. Porras, *The Rio Declaration: A New Basis for International Cooperation, in* GREENING INTERNATIONAL LAW 20, 29 (Philippe Sands ed., 1993).

[133] *See generally* Karen Anne Goldman, *Compensation for Use of Biological Resources Under the Convention for Biological Diversity: Compatibility of Conservation Measures and Competitiveness of the Biotechnology Industry*, 25 L. & POL'Y INT'L BUS. 695 (1994).

[134] *See* United Nations: Protocol on Substances that Deplete the Ozone Layer (Sept. 16, 1987), 26 INTERNATIONAL LEGAL MATERIALS 1541.

[135] Margaret M. Pinkham, Note, *The Montreal Protocol: An Effort to Protect the Ozone Layer*, 15 SUFFOLK TRANSNAT'L L.J. 255, 269 (1991).

[136] Philippe Sands, *International Law in the Field of Sustainable Development*, 65 BRIT. Y.B. INT'L L. 303, 316 (1994) [Sands 3].

[137] BURHENNE, *supra* note 28, at 7; MARIAN A. L. MILLER, THE THIRD WORLD IN GLOBAL ENVIRONMENTAL POLITICS 81-82 (1995).

[138] *See* Saunders, *supra* note 123, at 151.

[139] John Ntambirweki, *The Developing Countries in the Evolution of International Environment Law*, 14 HASTINGS INT'L & COMP. L. REV. 905, 910 (1991).

[140] A review of MEAs by the author would suggest that prior to 1980, little or no consideration was given to supporting the implementation of MEAs by developing countries with respect to access to financial and technical resources. Negotiations in the 1990s, concerning the regime to deal with depletion of the stratospheric ozone layer revealed the presence of technological and financial assistance to developing countries to ensure the effectiveness of the global solution. This was due to the recognition that the developing world, occupying a position outside the Vienna Convention for Depletion of the Ozone Layer, would have resulted in a mere reduction of 35% of ODS and that the only way to have included the developing world as part of this regime was to have provided them with technical and financial assistance. *See* Pinkham *supra* note 135, at 267; PORTER & BROWN, *supra* note 111, at 75-77.

[141] Szasz, *supra* note 27, at 40-41; Palmer, *supra* note 64, at 264.

[142] Anderson, *supra* note 117, at 778 (citing FREDERIC KIRGIS, INTERNATIONAL ORGANIZATIONS IN THEIR LEGAL SETTING 274 (2d ed. 1993)).

[143] Geoffrey Palmer, *An International Regime for Environmental Protection*, 42 WASH UNIV. J. URB. & CONTEMP. L. 5, 8-11 (1992) [Palmer 2].

[144] Palmer, *supra* note 64, at 270-271.

[145] David Freestone, *The Road from Rio: International Environmental Law after the Earth Summit*, 6:2 J. ENVTL. L. 193, 202 (1994).

[146] Weiss, *supra* note 63, at 688.

[147] *Id.* at 689.

[148] Jeffery L. Dunoff, *From Green to Global: Toward the Transformation of International Environmental Law*, 19 HARV. ENVTL L. REV 241, 249 (1995).

[149] *See* International Convention for the Regulation of Whaling, Dec. 2, 1946, art. III & V, 62 Stat. 1577, *available at* http://www.iwcoffice.org/Convention.htm.

[150] Examples of international concerns, which states have managed to address with some degree of success, include areas such as genocide, slavery and principles of state succession. The nature of environmental problems creates new complexities that make finding international solutions more challenging. Freestone, *supra* note 145, at 195-196.

[151] Freestone, *supra* note 145, at 196.

[152] *See id.* at 194.

[153] See generally BURHENNE, *supra* note 28, for a review of MEAs.

[154] Dunoff, *supra* note 148, at 247; Edith Brown Weiss, *Global Environmental Change and International Law: The Introductory Framework, in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: NEW CHALLENGES AND DIMENSIONS 17 (Edith Brown Weiss ed., 1992) [hereinafter Weiss 2].

[155] Weiss, *supra* note 63, at 690-691.

[156] SHAW, *supra* note 31, at 481; *see also* Sompong Sucharitkul, *State Responsibility and International Liability Under International Law*, 18 LOY. L.A. INT'L & COMP. L.J. 821, 821 (1996).

[157] SHAW, *supra* note 31, at 481.

[158] Sucharitkul, *supra* note 156, at 832.

[159] Spanish Zone of Morocco Claims (United Kingdom v. Spain), 2 R.I.A.A. 615, 650-51 (1929).

[160] United States v. Canada, 9 Ann. Dig. 315, 317 (1938) [hereinafter U.S. v. Canada].

[161] SHAW, *supra* note 31, at 485-486.

[162] *Id.*

[163] BROWNLIE, *supra* note 30, at 435.

[164] *Id.*

[165] BIRNIE & BOYLE, *supra* note 48, at 141.

[166] Case Concerning the Factory at Chorzow, 1928 P.C.I.J. (ser. A) No. 17, at 47 (Sept. 13).

[167] *See* Trail Smelter Case (U.S. v. Canada) 3 R.I.A.A. 1905 (1937), *available at* http://www.american.edu/TED/TRAIL.HTM.

[168] BIRNIE & BOYLE, *supra* note 48, at 158-59.

[169] *Id.* at 159.

[170] *Id.*

[171] *Id.*

[172] *Id.*

[173] *Id.*

[174] *Id.* at 160.

[175] *Id.*

[176] SHAW, *supra* note 31, at 532-544.

[177] Iwama, *supra* note 87, at 111.

[178] Alexandre Kiss, *The Implications of Global Change for the International Legal System, in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: NEW CHALLENGES AND DIMENSIONS 315, 329 (Edith Brown Weiss ed., 1992).

[179] Perkins, *supra* note 100, at 16; *see also* Nick Barnes, *Conflicts Over Biodiversity, in* 2 ENVIRONMENTAL POLICY IN AN INTERNATIONAL CONTEXT: ENVIRONMENTAL PROBLEMS AS CONFLICTS OF INTEREST 223 (Peter Sloep & Andrew Blowers eds., 1996).

[180] Gabcikovo-Nagymaros Project, *supra* note 47, at 54.

[181] Iwama, *supra* note 87, at 111.

[182] Kiss, *supra* note 178, at 329.

[183] *Id.*

[184] Weeramantry, *supra* note 23, § 4(d), at 20.

[185] See section 4.5 below.

[186] Perkins, *supra* note 100, at 449-52.

[187] BIRNIE & BOYLE, *supra* note 48, at 136-39.

[188] *Id.* at 154-57.

[189] *Id.* at 150-54.

[190] See table 1.2 below.

[191] Alan S. Miller, Comment, *"An International Regime for Environmental Protection" by RT HON Professor Sir Geoffrey Palmer*, 42 WASH. U. J. URB. & CONTEMP. L. 31, 381 (1992).

[192] Adede, *supra* note 57, at 11; ALEXANDRE KISS & DINAH SHELTON, INTERNATIONAL ENVIRONMENTAL LAW 97 (1991).

[193] Boer, *supra* note 111, at 123.

[194] This table is derived from information contained in Table 1.1. See *supra* note 24, and accompanying text. Some treaties can be accurately placed in more than one sector, however this was not followed so there is no duplication in the counting of treaties. * Furthermore, the figure for noise pollution was not included in the total as the agreements relevant to noise were included in those for the atmosphere.

[195] Iwama, *supra* note 87, at 110; NORMAN MYERS, ULTIMATE SECURITY: THE ENVIRONMENTAL BASIS OF POLITICAL STABILITY 204-13 (1993).

[196] KENT PORTNEY, CONTROVERSIAL ISSUES IN ENVIRONMENTAL: POLICY SCIENCE VS. ECONOMICS VS. POLITICS 92-93 (1992).

[197] Weiss, *supra* note 63, at 699.

[198] Shearer, *supra* note 124, at 408.

[199] Daniel Bodansky, *The United Nations Framework Convention on Climate Change - A Commentary*, 18 YALE J. INT'L L. 451, 476 (1993).

[200] Hugo M. Schally, *Forests: Toward an International Legal Regime, in* 4 YEARBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 30, 33 (1994).

[201] *See* Saunders, *supra* note 123, at 147.

[202] Ranee K. L. Panjabi, *Idealism and Self Interest in International Environmental Law: The Rio Dilemma*, 23 CAL. W. INT'L L.J. 177, 194 (1992).

[203] Lakshman Guruswamy, *International Environmental Law: Boundaries, Landmarks, and Realities*, 10 NAT. RESOURCES ENV'T 43, 48 (Fall 1995).

[204] Dunoff, *supra* note 148, at 288; J. Patlis, *The Multilateral Fund of the Montreal Protocol: A Prototype for Financial Mechanisms in Protecting the Global Environment*, 25 CORNELL INT'L L.J. 181, 225-226 (1992); Ntambirweki, *supra* note 139, at 924.

[205] *See generally* Ved P. Nanda, *International Environmental Protection and Developing Countries' Interests: The Role of International Law*, 26 TEX. INT'L L.J. 497 (1991).

[206] *See* Shearer, *supra* note 124, at 417-418.

[207] Weiss, *supra* note 63, at 697.

[208] United Nations Conference on the Environment and Development: Convention on Biodiversity (June 5, 1992), 31 INTERNATIONAL LEGAL MATERIALS 818 [hereinafter Biodiversity].

[209] Dunoff, *supra* note 148, at 291.

[210] *Id.* at 272.

[211] *Id.*; Palmer, *supra* note 64, at 263.

[212] Preparatory Committee for the UNCED, *supra* note 51, at 8.

[213] *See generally* Sands, *Compliance with International Environmental Obligations: Existing International Legal Arrangements, in* IMPROVING COMPLIANCE WITH INTERNATIONAL ENVIRONMENTAL LAW 48 (James Cameron et al. eds., 1996) [hereinafter Sands 4].

[214] Eric Louka, *Cutting the Gordian Knot: Why International Environmental Law is not only about the Protection of the Environment*, 10 TEMP. INT'L & COMP. L.J. 79, 79 (1996).

[215] Gunther Handl, *Compliance Control Mechanisms and International Environmental Obligations*, 5 TULANE J. INT'L & COMP. L. 29, 30 (1997).

[216] *Id.*

[217] *Id.*

[218] *Id.* at 30-31.

[219] *Id.* at 31.

[220] *Id.* at 31-32.

[221] *Id.*

[222] Philippe Sands, *Enforcing Environmental Security, in* GREENING INTERNATIONAL LAW 53 (Philippe Sands ed., 1st ed. 1993).

[223] Gary L. Scott, *Success and Failure of Components of Global Environmental Co-operation: The Making of International Environmental Law*, 2 ILSA J. INT'L & COMP. L. 30, 31 (1995).

[224] Weiss, *supra* note 63, at 697.

[225] Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1541, Article 8, *available at* http://www.unep.org/ozone/mp-text.shtml.

[226] The non-compliance regime is contained in Annexes IV and V of the Montreal Protocol and the dispute resolution mechanism is contained in Article 11 of the Vienna Convention. The preamble to Annex IV makes it clear that the operation of the non-compliance regime is independent to Article 11 of the Vienna Convention. Annexes IV and V are reproduced in BIRNIE & BOYLE, *supra* note 28, at 244-47. Article 11 of the Vienna Convention is reproduced in BIRNIE & BOYLE, *supra* note 28, at 219-20.

[227] BIRNIE & BOYLE, *supra* note 28, at 244.

[228] BIRNIE & BOYLE, *supra* note 28, at 244-245.

[229] *Id.* at 245.

[230] *Id.*

[231] Handl, *supra* note 215, at 39.

[232] *Id.* at 40.

[233] *Id.* at 39-40.

[234] BIRNIE & BOYLE, *supra* note 28, at 246.

[235] *Id.* at 247.

[236] *Id.* at 245-246.

[237] *Id.* at 246.

[238] Handl, *supra* note 215, at 44.

[239] MARTTI KOSKENNIEMI, BREACH OF TREATY OR NON-COMPLIANCE? 159 (1993).

[240] Handl, *supra* note 215, at 34.

[241] *Id.* at 34-35.

[242] *Id.* at 36-37.

[243] *Id.* at 37.

[244] UNECE, 1979 Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions (amended 1994), *available at* http://www.unece.org/env/lrtap/protocol/94sulp.htm.

[245] UNECE, 1979 Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions (Nov. 13, 1979), *available at* http://sedac.ciesin.org/entri/texts/transboundary.air.pollution.1979.html.

[246] *Id.* at 33-34.

[247] Dunoff, *supra* note 148, at 291.

[248] Weiss, *supra* note 63, at 702.

[249] *See* Anderson, *supra* note 117, at 780-81.

[250] *Id.* at 700.

[251] Kamen Sachariew, *Promoting Compliance with International Environmental Legal Standards: Reflections on Monitoring and Reporting Mechanisms*, Y.B. INT'L ENVTL. L. 31, 33 (1991).

[252] The reasoning behind the justification for the inclusion of national problems in an international accord may be equally applied to regional problems.

[253] Cheng *supra* note 124, at 185 (discussing the importance of the developing world to the successful negotiations of international environmental agreements).

[254] For example, states could elect to ban the export of hazardous waste and promote internal disposal. This could lead to a situation where there is no international transport of waste. Richard L.

Williamson, *Building the International Environmental Regime: A Status Report*, 21:3 U. MIAMI INTER-AM. L. REV. (1990); Paul C. Szasz, *Restructuring the International Organizational Framework, in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: NEW CHALLENGES AND DIMENSIONS 750 (Edith Brown Weiss ed., 1992).

[255] Constance D. Hunt, *The Changing Face of Environmental Law and Policy*, 4 U. NEW BRUNSWICK L.J. 79, 82-83 (1992).

[256] Weiss, *supra* note 63, at 685-86.

[257] Edward Primosch, *Innovations in International Law: A Quest for Survival*, 49 AUS. J. PUB. INT'L L. 125, (1995). *See generally* O'Riordan, *The History and Contemporary Significance of the Precautionary Principle, in* INTERPRETING THE PRECAUTIONARY PRINCIPLE 12 (1994); Louka, *supra* note 214, at 82. The precautionary principle is defined by the 1990 Bergen Ministerial Declaration in Sustainable Development to mean that: "Environmental measure must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as reasons for postponing measures to prevent environmental degradation." BIRNIE & BOYLE, *supra* note 28, at 97.

[258] *See generally* Daniel M. Bodansky, *International Law and the Protection of Biological Diversity*, 28 VAND. J. TRANSNAT'L L. 623, 627 (1995).

[259] Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa, Jan. 29, 1991, 30 I.L.M. 775.

[260] BIRNIE & BOYLE, *supra* note 48, at 256.

[261] Peter H. Sand, *Lessons Learned in Global Environmental Governance*, 18 B.C. ENVTL. AFF. L. REV. 213, 237 (1991).

[262] For an analysis of the concept of delegated law-making, see *supra* notes 148-149, at accompanying text and notes.

[263] Sand, *supra* note 261, at 239.

[264] Bodansky, *supra* note 258, at 494.

[265] Weiss, *supra* note 63, at 687-88.

[266] Gunther Handl, *Environmental Security and Global Change: The Challenge to International Law, in* ENVIRONMENTAL PROTECTION AND INTERNATIONAL LAW 61 (Winfried Lang et al. eds., 1991).

[267] Hahn & Richards, *supra* note 89, at 437.

[268] Bodansky, *supra* note 258, at 494.

[269] *Id.* at 495.

[270] Sands, *supra* note 24, at 106 (citing 1985 Vienna Convention); Iwama, *supra* note 87, at 112.

[271] Robert T. Watson, *Greenhouse Gases and Aerosols, in* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE: THE IPCC SCIENTIFIC ASSESSMENT 24 (John Theodore Houghton et al eds., 1st ed. 1993).

[272] Susskind, *supra* note 25, at 147.

[273] *Id.*

[274] Patricia W. Birnie, *Environmental Protection and Development*, 20 MELB.U.L.REV. 83, 83 (1995).

[275] Susskind, *supra* note 25, at 148.

[276] *Id.*

[277] *See* Shearer, *supra* note 124, at 419.

[278] Susskind, *supra* note 25, at 148-49.

[279] Gunther Handl, *Environmental Protection and Development in Third World Countries: Common Destiny-Common Responsibility*, 20 N.Y.U. J. INT'L L. & POL. 602, 604 (1988).

[280] Linda C. Reif, *Multidisciplinary Perspectives on the Improvement of International Environmental Law and Institutions*, 15 MICH. J. INT'L L. 723, 723-45 (1994).

[281] Weiss, *supra* note 63, at 679.

[282] Birnie, *supra* note 274, at 70.

[283] Gabcikovo-Nagymaros Project, *supra* note 45, at 92 (Vice-President Weeramantry, separate opinion).

[284] Iles, *supra* note 81, at 215.

[285] BIRNIE & BOYLE, *supra* note 48, at 515.

[286] William C. Burns, *The International Convention to Combat Desertification: Drawing A Line in the Sand?*, 16 MICH. J. INT'L L. 832, 871 (1995).

[287] Catherine Tinker, *A "New Breed" of Treaty: The United Nations Convention on Biological Diversity*, 13 PACE ENVTL. L. REV. 191, 193 (1995).

[288] Biodiversity, *supra* note 208, at 819.

[289] Saunders, *supra* note 123, at 149.

[290] Phillip E. Wilson, Jr., *Barking Up the Right Tree, Proposals for Enhancing the Effectiveness of the International Tropical Timber Agreement*, 10 TEMP. INT'L & COMP. L.J. 229, 251-52 (1996).

[291] *See* Hunt, *supra* note 255, at 100.

[292] *See* Weeramantry, *supra* note 23, at 7, 22.