THE INTERNATIONAL LAW OF THE ENVIRONMENT: AN EXAMINATION OF ITS EVOLUTION TO THE RIO CONFERENCE AND BEYOND

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TABLE OF CONTENTS

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ABSTRACT

The past twenty years have witnessed the rapid rise of international environmental law from a modest collection of customary principles and treaties to a considerable body of law composed of both traditional and non-traditional sources.

This thesis considers the legal sources which have contributed to the development of international environmental law. It reveals how traditional sources of international law are subject to inherent limitations which inhibit their usefulness for future development. It then goes on to analyze a non-traditional source, 'soft law', and its efficacy in the context of the environment. In particular, five principles of environmental 'soft law' are evaluated in depth. Special attention is paid to the international legal instruments produced at the 1992 United Nations Conference on Environment and Development, and their contributions to the evolution of international environmental 'soft law' principles.

PRÉCIS

Les vingts dernières années ont temoignées une hausse rapide en droit international de l'environnement, établi d'un ensemble modeste de principes habituelles et de conventions qui maintenant sont devenus un domaine législative considérable composé de ressources traditionelles et non-traditionelles.

Cette thèse examine les ressources légales contribuées au developpement du droit international de l'environnement. Celle-ci explique comment les ressources traditionelles de droit international sujet à des limitations inhérentes, empêchent leur utilité envers une croissance. Une ressource non-traditionelle dit «soft law» est analysée et son efficacité toujours dans le contexte de l'environnement. Cinq principes de ce «soft law» qui ont rapport à l'envirronnement seront particulièrement évalués en détail. Une attention particulière est prêtée aux instruments légales internationaux venant de la conférence des Nations Unies de l'environnement et développement en 1992, et leur contribution à l'évolution des principes de «soft law» de droit international de l'environnement.

PROLOGUE

INTERNATIONAL ENVIRONMENTAL LAW IN THE EVOLVING GLOBAL ORDER

The past few years have witnessed dramatic changes in the global order. The once formidable Soviet bloc has fragmented, and with it, much of the Cold War antagonism which divided East and West has dissipated. A new spirit of harmony and co-operation in South Africa and the Middle East may herald the end of tensions in those regions. In many ways, the emerging global order appears to be acquiring a more harmonious, idealistic, earth-wide perspective, as we recognize the commonality of our heritage, and realize that future dilemmas will be best faced collectively.

Juxtaposed on this, and somewhat paradoxically, the past few years have also seen the rise of nationalism and self-interest. States such as the former Czechoslovakia have fragmented along ethnical lines. Nationalism in the formerly colonized states of Latin America, Africa, and southeast Asia displays many of the characteristics which marked the early phases of national sovereignty in Western European states.[1] Even our own country is not immune to nationalist discord, as repeated failures to reconcile the constitutional aspirations of English, French and Indigenous Canadians threaten to dissolve our union. In other regions, such as the former Yugoslavia and Northern Ireland, ethnic and religious conflict has been far more radical, militant and the source of untold misery.

It is upon this stage of conflict, where idealism and self-interest have converged, that international environmental problems must be solved. A growing awareness of the uniqueness, unity and ecological fragility of the biosphere is arising contemporaneously with the political developments which are ushering the new global order.[2] This awareness has been fuelled by recent environmental disasters and scientific discoveries which underscore the gravity of the threat to the ecosystem, and

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[1] See Panjabi, R.K.L., "Idealism and Self-Interest in International Environmental Law: The Rio Dilemma", (1992) 23 *California Western International Law Journal* 177 at 179 - 180. These emerging nations, having seen their interests subsumed for so long to the priorities of imperial overlords, now prize political sovereignty and economic self-determination very dearly.

[2] *Ibid.*

the global nature of environmental problems.[3] The 1984 industrial accident in Bhopal, India,[4] the 1986 explosion of the Chernobyl nuclear reactor in the Soviet Ukraine[5] and the warehouse fire in Basel, Switzerland which caused the Rhine River to be contaminated with noxious chemicals[6] are all evidence that environmental accidents cannot be contained within states' borders.[7] The deleterious environmental effects of acid precipitation are evident throughout Europe and North America.[8] In addition, air pollution has caused significant ozone layer depletion, which threatens the natural protective mantle that shields out the sun's harmful radiation.[9] The atmospheric accumulations of carbon dioxide and other 'greenhouse

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[3] See generally, "Developments in the Law - International Environmental Law" (hereinafter "Developments in the Law"), (1991) 104 *Harvard Law Review* 1484 at 1487 - 1490.

[4] The Bhopal disaster occurred when deadly methyl isocyanate gas leaked from a plant, killing two thousand and injuring two hundred thousand. It has been termed the worst industrial disaster in history. See generally, Nanda, V.P.,and Bailey, B., "Challenges for International Environmental Law - Seveso, Bhopal, Chernobyl, the Rhine and Beyond", (1988) 21 *Law/Technology* (No. 3) 1 at 7 - 10.

[5] At least thirty-one people died as a direct result of the accident. Radioactive material from Chernobyl drifted around the globe. See *ibid.*, at 10 - 13.

[6] The Rhine river was polluted with over thirty tonnes of chemicals during a fire at a Swiss warehouse. These chemicals caused serious environmental damage downstream. See *ibid.*, at 14 - 15.

[7] See Developments in the Law, *supra* note 3 at 1487.

[8] See generally, Bankes, N.D., and Saunders, J.O., "Acid Rain: Multilateral and Bilateral Approaches to Transboundary Pollution Under International Law", (1984) 33 *University of New Brunswick Law Journal* 155 at 157 - 159. See also Brunnée, J., *Acid Rain and Ozone Layer Depletion: International Law and Regulation*, (Dobbs Ferry, New York: Transnational Publishers Inc., 1988).

[9] Ozone layer depletion continues to worsen. See "Antarctic ozone levels reach record low", *The Montreal Gazette*, October 23, 1993, at J8. While the effects of ozone layer depletion are not limited to one region or area, and loss of stratospheric ozone will have a common negative effect on the entire planet, the most drastic depletions tend to occur in polar regions. Two reasons have been posited for this phenomenon. Firstly, almost no ozone creating solar radiation penetrates the Arctic and Antarctic air during their respective winters, creating a natural decrease in ozone levels over these areas, in turn making the effects of unnatural ozone depletion that much more pronounced. The second has to do with the existence of the polar vortex, a column of extremely cold air that collects over each pole during its winter. Stratospheric clouds containing ice crystals form in this vortex upon which ozone depleting compounds such as chlorine and chlorine monoxide collect. See Chipperfield, M., "Stratospheric Ozone Depletion over the Arctic", (1991) 349 *Nature* at 279 - 280.

gases' could cause potentially drastic, irreversible changes to global climate.[10] The threat to the global ecosystem posed by widespread deforestation, particularly of tropical rain forests, eliminates a natural sink for carbon dioxide and thus exacerbates the climate change dilemma. Deforestation will also cause desertification, habitat and ecosystem loss, species extinction and loss of genetic and biological diversity, crucial elements of global ecological health.[11] The pressures placed upon the earth's finite resources by burgeoning global population and the world's poor are also becoming acute.[12] Each of these issues are global in nature and accordingly require a global response.

Law is the channel through which solutions to environmental problems caused by human interference in the natural ecosystem must come.[13] In the past twenty years, in response to growing environmental needs, international environmental law has become increasingly complex and globally oriented.[14] The days in which environmental issues were national or at most regional are gone forever.

It was in the spirit of raising global awareness to global environmental issues that the 1992 United Nations Conference on Environment and Development was

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[10] The amount of carbon dioxide in the air had increased 25% from a pre-industrial volume of 280 ± 5 parts per million to approximately 355 parts per million by the end of 1991. Data collected between 1901 - 1987 indicate a definite warming trend with a general increase in annual global surface air temperature of between 0.3 - 0.6°C. If current rates continue, there will be a doubling of pre-industrial atmospheric levels of carbon dioxide within the next thirty five years, which could cause an increase in globally averaged annual surface temperature of 1.5 - 4.5°C. See generally, the Intergovernmental Panel on Climate Change Working Group I, *Climate Change 1992 - The Supplementary Report to the IPCC Scientific Assessment*, (Cambridge: Cambridge University Press, 1992).

[11] See Eshbach, R., "A Global Approach to the Protection of the Environment: Balancing State Sovereignty and Global Interests", (1990) 4 *Temple International and Comparative Law Journal* 271 at 276 - 278.

[12] See Panjabi, *supra* 1 at 183 - 184.

[13] See Lachs, M., "The Challenge of the Environment", (1990) 39 *International and Comparative Law Quarterly* 663 at 663.

[14] See generally Brown-Weiss, E., "International Environmental Law: Contemporary Issues and the Emergence of a New World Order", (1993) 82 *Georgetown Law Journal* 675.

convened.[15] It is hoped that hindsight will prove this Conference to have been a watershed event in the history of the development of global legal responses to environmental issues and problems.

This thesis examines the development of international environmental law. Chapter One focuses on traditional sources of international law, considering their applicability and efficacy for engendering legal norms in the environmental context. It concludes by introducing a potentially new source of international law 'soft law'.

Chapter Two moves into a more detailed consideration of 'soft law' and its potential for furthering the evolution of international environmental law. In particular, five 'soft law' principles are examined in depth and evaluated as to their normative content and their current and possible future impact.

Because of the importance of UNCED and the volume of legal and 'soft law' material it produced, the impact of the documents signed at the Rio Conference upon the same emerging principles are considered in a separate chapter. Chapter Three considers the impact of the Rio documents upon the aspirational norms of international environmental law isolated earlier. The thesis concludes with a brief look at the possible future of international environmental law.

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[15] The 1992 United Nations conference on Environment and Development (hereinafter "Rio Conference or "UNCED") took place in Rio de Janeiro, Brazil, and was attended by representatives from over 170 countries. See generally, Sand, P.H., "UNCED and the Development of International Environmental Law", (1992) 3 *Yearbook of International Environmental Law* 3.

CHAPTER ONE

TRADITIONAL SOURCES OF INTERNATIONAL ENVIRONMENTAL LAW

I. INTRODUCTION

Although distinct in many of its problems and solutions[1], international environmental law remains, fundamentally, a branch of public international law.[2] In examining the sources which shaped its early development, it is therefore necessary to consider traditional international law sources.[3] However, the unique problems confronting international environmental law require innovation and a re-consideration of established tenets.[4] New legal norms and sources of law must be developed to

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[1] Distinctive characteristics of environmental problems include:

a) the interaction of science and politics - Much of modern international environmental law must be created out of necessity in response to uncertain, often conflicting scientific evidence of the gravity of environmental crises;

b) the use of global 'commons' - Many of the environmental resources currently threatened by anthropogenic interference can be categorized as 'commons', that is resources such as the atmosphere and the oceans which do not belong to any one state or group of states, but rather are the common heritage of humankind; and

c) the interests of future generations - Much of the concern over environmental issues is forward looking, and measures must be taken now in order to preserve the ecosystem for the unborn.

For a more detailed examination of these distinguishing characteristics of environmental problems which necessitate different legal solutions, see "Developments in the Law - International Environmental Law", (1991) 104 *Harvard Law Review* 1484 at 1529 ff (hereinafter "Developments in the Law").

[2] See Birnie, P.W., and Boyle, A.E., *International Law and the Environment*, (Oxford: Clarendon Press, 1992) at 9, where the authors argue that the traditional sources for international environmental law are necessarily the same as those for classical international law as international environmental law is a specialized branch of the general international law.

[3] *Ibid.*

[4] See Ott, D.H., *Public International Law in the Modern World*, (London: Pitman Publishers, 1987) at 290. Ott describes the Chernobyl Nuclear disaster of 1986 and the tendency of the former Soviet government to consider the entire incident an internal affair. He quotes the response of the Italian foreign minister, "issues of national sovereignty do not exist in this area because there are no frontiers which will stop radiation". The same holds true for other environmental dilemmas; no frontiers will arrest ozone layer depletion or climate change. Accordingly, international environmental law challenges one of the traditional tenets upon which modern public international law was founded - the principle of state sovereignty.

construct an international legal regime that can effectively combat the perplexing ecological problems facing the global community.[5]

This chapter examines and evaluates the traditional sources of international environmental law, concluding that, while they have been effective to a certain degree in fostering the genesis and initial evolution of international environmental law, alone they are insufficient to provide the complete legal framework through which the globe can battle the formidable environmental obstacles now facing humankind. It begins with a brief analysis of the jurisprudential bases of modern international law.[6] Following this is a more detailed examination of traditional sources of international law, considering what they have produced from an environmental perspective, and how effective they have been or can be expected to be in furnishing adequate international legal norms to regulate the global environment.[7] This chapter concludes with an initial examination of a potential new source of international environmental law, 'soft' law, which establishes the foundation for further, more detailed analysis in subsequent chapters.[8]

II. JURISPRUDENTIAL UNDERPINNINGS: NATURAL LAW AND POSITIVISM IN MODERN PUBLIC INTERNATIONAL LAW

A valuable preliminary to a constructive examination and evaluation of the sources of international environmental law is an analysis of the origins and theoretical nature of modern public international law. Although forms of transnational legal

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[5] See Birnie et al., *supra* note 2 at 10. In particular, new principles must be flexibly enunciated to allow for rapid change in order to keep international environmental law current with ecological realities as scientific knowledge develops. Legal principles from an environmental perspective must also focus upon the interdependence of states in preserving the global ecosystem, bucking the current trend towards fragmentation and North - South polarization in the international order.

[6] See *infra* notes 9 - 36 and accompanying text.

[7] See *infra* notes 37 - 202 and accompanying text.

[8] See *infra* notes 203 - 215 and accompanying text.

structure existed in both classical[9] and medieval societies,[10] the origins of what is recognized as international law today were definitely European and modern.[11] Modern international law, more commonly known until recently as the 'Law of Nations', developed contemporaneously with the rise of the nation state in Europe following the Thirty Years' War.[12] The notion of state sovereignty which remains a cornerstone concept of international law was given expression in the peace treaties signed at the conclusion of that conflict.[13] Dutch jurist Hugo Grotius, widely regarded as the 'father of international law', posited in his seminal work *De Jure Belli Ac Pacis*,[14] that this distinct *jus gentium* or 'Law of Nations' would be able to fill the void left by the fragmentation of Christendom, which had hitherto been the unifying force in European society. Since the time of Grotius there have developed two rival schools of thought, the 'natural law' school and the positivist school, which offer differing views on the nature of the international legal order and why states should be bound to observe rules of public international law.[15]

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[9] For example, a system of rules existed which governed relations between ancient Greek city-states. See Kindred, H.M., gen. ed., *International Law Chiefly as Interpreted in Canada* (4th ed.), (Toronto: Emond Montgomery Publications Ltd., 1987) at 2.

[10] See Shaw, M.N., *International Law* (Third Edition), (Cambridge: Grotius Publications Ltd., 1991) 17 - 21. Shaw details how the ecclesiastical law of the Roman Catholic Church applied universally throughout Europe during the Middle Ages.

[11] See Brierly, J.L., *The Law of Nations: An Introduction to the International Law of Peace* (Sixth Edition), (Oxford: Clarendon Press, 1963) at 1. 'Modern' in this context refers to the appellation given by historians to post-Renaissance European society, as opposed to 'medieval' or 'ancient'.

[12] See Janis, M.W., *An Introduction to International Law*, (Boston: Little, Brown and Company, 1988) at 1 - 2.

[13] See Kindred, *supra* note 9 at 1.

[14] Grotius lived from 1583 to 1645. For a translation of his work into English, see Whewall, W., ed., *Grotius on the Rights of War and Peace*, (Cambridge: John W. Parker, 1853).

[15] See Shaw, *supra* note 10 at 24.

A. THE 'NATURAL LAW' DOCTRINE

The 'natural law' doctrine has its roots in the Roman legal tradition and the concept of *jus naturale*.[16] It posits that there are certain fundamental legal norms which derive and are inalienable from the intrinsic nature of humankind, and that these norms exist as legal principles applicable to and binding upon all human societies.[17] Applied to public international law, principles of 'natural law' are applicable to each state.[18] It is the function of human rationality to discover and give voice to these elemental and inviolable legal principles, which can be deduced from the essential nature of the state.[19] Philosophers of the European Enlightenment, with their emphasis on the inherent dignity of the human person and the exaltation of reason, adhered to this principle.[20]

It was from the 'natural law' doctrine that the concept of fundamental human rights derived.[21] 'Natural law' philosophy is also an integral element of international environmental law, as the importance of recognizing inalienable environmental legal norms which do not require states' acquiescence to become

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[16] See Ott, *supra* note 4 at 3. *Jus naturale* was based on principles which were thought to arise from the nature of man as a rational and a social being.

[17] See generally Akehurst, M., *A Modern Introduction to International Law* (Sixth Edition), (London: Routledge, 1992) at 13 - 15. Early naturalist jurists include Grotius, Vitoria (1486 - 1546), Suárez (1548 - 1617), Gentili (1552 - 1608) and Zouche (1590 - 1661).

[18] See Brierly, *supra* note 11 at 49. States are the subjects of international law. In the same way, 'natural law' principles applicable in a domestic legal order apply to all subjects (individuals, corporations and other legally recognized entities) of that order.

[19] See Akehurst, *supra* note 17 at 14.

[20] 'Natural law' was attractive to Enlightenment thinkers because its emphasis was upon the centrality of reason in the law. 'Natural' legal principles, those core legal standards which were applicable to all humans, could be ascertained by human reason alone. Immanuel Kant, in his *Philosophy of Law* defines Natural Law as being "those External Laws, the obligatoriness of which can be recognized by Reason *a priori* even without an external Legislation." See Morris, C., ed. *The Great Legal Philosophers: Selected Readings in Jurisprudence*, (Philadelphia: University of Pennsylvania Press, 1959) 240 - 1.

[21] See Ott, *supra* note 4 at 4. For example, the American *Declaration of Independence* with its emphasis on the equality of all men is an expression of natural law philosophy.

binding, and which cannot be derogated from by unilateral acts of a state or group of states, is becoming increasingly imperative in a diversified world in which states are less and less willing to consent to be bound by international environmental legal principles.[22]

B. POSITIVISM

The positivist doctrine of law asserts that the law embodies rules and standards whose authority derives from their provenance in some human source.[23] In public international law, the doctrine of positivism holds that international law consists of the rules by which states have consented to be bound.[24] States are not constrained by any laws which they have not, expressly or implicitly, recognized and agreed to observe.[25] The doctrine of positivism necessarily exalts the concept of state sovereignty in the international forum, and became increasingly popular throughout the nineteenth and early twentieth centuries, commensurate with the rise and development of nationalism.[26]

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[22] See Birnie et al., *supra* note 2 at 26.

[23] See Chen, L., *An Introduction to Contemporary International Law*, (New Haven, Connecticut: Yale University Press, 1989) at 11. Thus law is 'positive' in the sense that it has been 'put in place' by a human institution.

[24] See Shaw, *supra* note 10 at 102.

[25] *Ibid.*

[26] See Lauterpacht, H., *The Function of Law in the International Community*, (Hamden, Connecticut: Archon Books, 1966) at 3 - 4. Positivism has historically served to reinforce the inclination of a state to do whatever suits its particular goals at any given time. According to Lauterpacht, the theory of the sovereignty of states reveals itself in the international community in two ways:

> a) as the right of the State to determine the content of international law by which it will be bound; and
> b) as the right to determine the content of existing international law in a given case.

Lauterpacht asserts that "the first aspect, according to which the state is not bound by any rule unless it has accepted it expressly or tacitly, has found its theoretical expression in the positivist doctrine." *Ibid.*, at 3.

Positivism, with its exaltation of state sovereignty, has played an important role in the theoretical development of major twentieth century political systems.[27] In addition, emerging nations, exhibiting a form of neo-nationalism, are reluctant to be bound to many existing norms in the international legal forum, and assert positivist philosophy in support of their positions.[28] This has particular relevance in the field of international environmental law, where developing nations are extremely reluctant to agree to or recognize environmental laws and standards which they consider to be the industrialized world's priorities and opposed to their own national developmental agenda.[29]

C. MODERN INTERNATIONAL LAW

The conflict between the 'natural law' and positivist doctrines is evident. 'Natural law' theory sets out that there are fundamental legal norms in the international forum which are binding upon all subjects of public international law. By contrast, positivism holds that states are only bound by those rules to which they give their express or implicit consent to be bound. The underlying tension between the 'natural law' and positivist doctrines has not been resolved in this century, although positivism holds a less prominent position in modern legal philosophy than it did a hundred years ago, and recent developments indicate a return to 'natural law'

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[27] See Akehurst, *supra* note 17 at 15 - 19. Akehurst outlines the communist theory of international law, of which "one striking characteristic . . . is the emphasis on sovereignty and the pre-eminence of the state." *Ibid.*, at 17. The communist legal philosophy of the former Soviet Union forbade the imposition of 'Western based' international legal rules unless it expressly agreed to be bound by them. Soviet jurists repudiated 'natural law' because of its original roots in religion and belief in a supernatural authority.

[28] *Ibid.*, at 19 - 22. Among the factors Akehurst lists as tending to make most developing states adopt a distinctive attitude towards international law include that most were under colonial rule during the formative period of international law, most are economically poor, many have lingering resentment about past imperial exploitation, and most feel that European-based international law sacrifices their interests to the interests of the industrialized world.

[29] See Birnie et al., *supra* note 2 at 6. The developing world in general is very protective of their sovereign interests, and extremely suspicious of so-called 'Western' solutions to environmental crises. Having recently thrown off the shackles of imperialism, these nations are strongly opposed to the perpetuation of 'eco-imperialism' in the name of preserving the global ecosystem.

principles to augment the existing body of positive international law.[30]

For the environmentalist, 'natural law' principles in international law are imperative. The consent-based positivist doctrine is too inflexible and unwieldy for the innovation and variability needed in international environmental law. One emerging 'natural law' principle which is of import in international environmental law is the concept of *jus cogens*[31], which recognizes that there exist certain norms and principles which are so fundamental to the international community as to be virtually incontrovertible.[32] The concept is defined in Article 53 of the *Vienna Convention*

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[30] For example, Article 38 of the *Statute of the International Court of Justice*, (1945), reprinted in Brownlie, I. ed., *Basic Documents in International Law* (Third Edition), (Oxford: Clarendon Press, 1983) 387 at 397, expands upon the traditional positive law sources of international law, treaties and custom, by enunciating new, 'natural law' sources such as 'general principles of law', 'judicial decisions', and 'the teachings of the most highly qualified publicists'. For a more detailed discussion of Article 38, see *infra* notes 45 - 50 and accompanying text.

[31] *Jus cogens* is a concept of relatively recent vintage. It has been defined as a body of peremptory norms and overriding principles of international law, inherent in the international legal order and fundamental to the existence of the international community. The least controversial examples of *jus cogens* include:

a) prohibition of the use of force;
b) prohibition of genocide;
c) principle of racial non-discrimination;
d) prohibition of crimes against humanity;
e) prohibition of the slave trade;
f) prohibition of piracy.

See generally Brownlie, I., *Principles of Public International Law* (Fourth Edition), (Oxford: Clarendon Press, 1990) at 512 - 515.

[32] See generally MacDonald, R. St. J., "Fundamental Norms in Contemporary International Law", (1987) 25 *Canadian Yearbook of International Law* 115 at 129 ff. See also Hannikainen, L., *Peremptory Norms (Jus Cogens) in International Law: Historical Development, Criteria, Present Status*, (Helsinki: Finnish Lawyers Publishing Co., 1988) at 4; "the purpose of international peremptory law is to protect overriding interests and values of the international community of States." Hannikainen distinguishes five criteria for the identification of peremptory norms:

> a) they are norms of general international law (i.e. of global, not regional applicability);
> b) they have been accepted and recognized by the international community as a whole;
> c) they permit no derogation;
> d) they can be modified only by new peremptory norms; and
> e) they protect overriding interests of the international community and are thus owed *erga omnes*.

on the Law of Treaties[33] as a peremptory norm "accepted and recognized by the international community of States as a whole as a norm from which no derogation is permitted and which can be modified only by a subsequent norm of general international law having the same character".[34]

Clearly therefore, the 'natural law' legal principles, which recognize the existence of fundamental precepts that do not depend upon state consent for their existence, continue to exert considerable influence in modern international law.[35] This is good news for international environmental legal scholars, in a field in which

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Ibid., at 3, and 207 ff.

[33] *Vienna Convention on the Law of Treaties* (hereinafter "1969 *Vienna Convention*"), U.N. Doc. A/CONF.39/27, reprinted in (1969) 8 *International Legal Materials* 679. The 1969 *Vienna Convention* was adopted May 22, 1969 and opened for signature on May 23, 1969 at the United Nations Conference on the Law of Treaties. It was the product of nearly twenty years of drafting and deliberations. Drafting of the Convention's articles was primarily the responsibility of the International Law Commission. The 1969 *Vienna Convention* entered into force on January 27, 1980, on the thirtieth day following ratification by the thirty-fifth party thereto pursuant to the terms of Article 84 thereof. Canada deposited an instrument of accession to the 1969 *Vienna Convention* on October 14, 1970. For a detailed analysis of the 1969 *Vienna Convention*, see Rosenne, S., *The Law of Treaties: A Guide to the Legislative History of the Vienna Convention*, (Dobbs Ferry, New York: Oceana Publications, 1970).

[34] *Ibid.*, Article 53. Hannikainen, *supra* note 32 at 20, contends that the assertion in Article 53 that principles of *jus cogens* are norms of general international law which are "*accepted and recognized* by the international community as a whole" (emphasis added), places principles of *jus cogens* within the frame of the positive law doctrine. However, the inclusion of the phrase 'accepted and recognized' in the definition of *jus cogens* herein should not be considered indicative of the concept's positivist nature. Positivism negates the applicability to a particular state of any rule which that state did not specifically consent to be bound by. It denies the existence of any norm which would seek to curtail the unfettered sovereign exercise of national will. This phrase in Article 53 merely points to the means by which *jus cogens* concepts are to be identified. Article 53 speaks of general recognition of the international community "as a whole", that certain norms are peremptory. Thus "it is not necessary that every state give its consent to the rule but that the rule is accepted by a vast majority of states . . . it is the essence of the concept that a peremptory norm is applicable against states that have not accepted the rule." See MacDonald, *supra* note 32 at 130 - 131. It is, accordingly, more appropriate to define *jus cogens* outside the positivist context, as "law binding irrespective of the will of the individual parties". See Schwarzenberger, G., *The Dynamics of International Law*, (Abingdon, England: Professional Books Ltd., 1976) at 3. 'Natural law' principles, including concepts of *jus cogens* are universally binding and set out general obligations. They still need to be accepted and recognized as such by jurists.

[35] Indeed, some scholars argue that the origins of consent-based positivist doctrine is in the fundamental principle *pacta sunt servanda* ('agreements are made to be observed'), and accordingly, positivism is based upon 'natural law'. See generally, Ott, *supra* note 4 at 8 - 9.

the development of 'natural law' principles such as *jus cogens* and their application to environmental problems are essential to the continued development of international environmental law.[36]

III. TRADITIONAL SOURCES OF INTERNATIONAL ENVIRONMENTAL LAW

The doctrine of sources of law, which became dominant in the last century and remains a principal intellectual force in international legal theory today, lays down conditions for ascertaining and validating what the law is.[37] When considering the sources of any legal system, it is common to distinguish between 'formal' and 'material' sources.[38] 'Formal' sources establish law-making procedures, while material sources are those documents which provide evidence of the law.[39]

In international law, most scholars agree that this distinction is difficult to maintain.[40] Two reasons may be posited for this. Firstly, the failure to conclusively resolve the jurisprudential dispute between 'natural law' and positivism in international law has resulted in disagreement over the existence and definition of the

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[36] For further discussion on 'natural law' sources of international environmental law and their importance to its future evolution see *infra* notes 177 - 202 and accompanying text.

[37] See Schachter, O., *International Law in Theory and Practice*, (Dordrecht, the Netherlands: Martinus Nijhoff Publishers, 1991) at 35. The above definition of legal sources indicates somewhat of a 'natural law' bias, sources determine what the law is, but do not create law. For a more positivist definition of sources, see Marayan Green, N.A., *International Law* (Third Edition), (London: Pitman Publishing, 1987) at 13 where the author distinguishes between sources of law which *make* law, and evidences of law, which state it.

[38] See De Lupis, I.D., *The Concept of International Law*, (Stockholm: Norstedts Förlag, 1987) at 44.

[39] *Ibid.* Thus in the domestic context, 'formal' sources of the law include constitutional machinery of legislation (documents dealing with the manner in which the national legislative process is to function). Domestic 'material' sources would include legislative instruments and judicial decisions.

[40] See Brownlie, *supra* note 31 at 2, Janis, *supra* note 12 at 3 - 6, Kindred, *supra* note 9 at 113, Ott, *supra* note 4 at 12 and Shaw, *supra* note 10 at 59 - 60.

formal sources of international law.[41] Secondly, the absence of a supreme constitutional authority in the international legal system indicates that there can conceptually be no 'formal' sources of law in any branch of public international law.[42] Accordingly, the study of traditional sources of international environmental law is concerned primarily with material sources of the law.[43]

In the nineteenth century, the generally accepted material sources of international law were treaties and custom.[44] Article 38(1) of the *Statute of the International Court of Justice*, augmented the list and enumerates what is generally regarded as a complete statement of the traditional sources of modern public international law.[45] It reads:

> "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) the general principles of law recognized by civilised nations;
>
> d) subject to the provisions of Article 59, judicial decisions and teachings of the most highly qualified

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[41] This is Ott's hypothesis. See *supra* note 4 at 12.

[42] Kindred makes this point, see *supra* note 9 at 200.

[43] See Ott, *supra* note 4 at 12.

[44] See Birnie et al., *supra* note 2 at 10 - 11.

[45] See Marayan Green, *supra* note 37 at 13. This does not mean that new sources of law cannot develop. Rather, as Marayan Green asserts, "there is no authoritative and exhaustive statement of the sources" of public international law. Article 38(1) of the *Statute of the International Court of Justice* simply indicates what the traditional sources of international law have been, but do not constrain the development of new international legal sources in the future. See also, "Other Sources of Law?" in Kindred, *supra* note 9 at 198 ff.

publicists of the various nations, as subsidiary means for the determination of rules of law."[46]

Article 38(1) does not purport to describe a descending hierarchy of sources, with international conventions at the zenith.[47] The order in which the sources are listed does not reflect their relative authority, with the exception of sources outlined in Paragraph (d) which are explicitly described as being subordinate to the others.[48] The first three paragraphs list sources of equivalent weight, described from the specific (international conventions, or treaties) to the general (general principles of law).[49] For the purpose of analyzing these traditional sources of law in the context of international environmental law, it is useful to categorize them into positive sources of law, those which require consent of states to apply, and 'natural law' sources, which are applicable to all states as members of the international community.[50]

A. POSITIVE LAW SOURCES

The first two sources enumerated in Section 38 of the *Statue of the International Court of Justice*, treaties and custom, have been the main methods of creating international environmental law.[51] These sources can be classified as

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[46] *Statute of the International Court of Justice*, *supra* note 30, Article 38(1). Article 59 provides that "the decision of the Court has no binding force except between the parties and in respect of that particular case." *Ibid.*

[47] See Brownlie, *supra* note 31 at 3 - 4.

[48] See Ott, *supra* note 4 at 13. Kindred sees this distinction as indicating that the sources enumerated in Paragraph (d) are law-determining rather than law-creating processes. See Kindred, *supra* note 9 at 110.

[49] *Ibid.*, at 110. For example, a treaty provision may supersede a prior customary principle. On the other hand, customary principles which develop after the conclusion of a treaty may have the effect of rendering contrary provisions in the treaty inoperative. Both customary rules and the 1969 *Vienna Convention*, *supra* note 33, Article 53 render a treaty void if it conflicts with a peremptory norm ("*jus cogens*").

[50] See Ott, *supra* note 4 at 13.

[51] See Birnie et al., *supra* note 2 at 10.

positive law sources as states cannot be bound, either by treaty or by custom, without a clear expression of their consent.[52] In the case of treaties, consent is always express, and may be made through a state's signature, ratification or accession to the formal treaty document.[53] Customary rules are also consent-based, however, a state need not explicitly declare its approval of a customary principle in order to be bound by it.[54] Consent may be implied by a state's acquiescence to the formation of a rule of custom.[55] However, if a state consistently and explicitly objects and refuses to accept a rule of custom from the beginning of its formation, it can escape being bound by that rule on the basis of its express repudiation.[56] Consent remains the distinguishing characteristic of the positive law sources. The following analyzes each of these traditional positive law sources in turn, and evaluates their effectiveness in the development and future of international environmental law.

1. Treaties[57]

Treaties have been employed in international law to address environmental

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[52] *Ibid.*

[53] See Marayan Green, *supra* note 37 at 167.

[54] Brierly, *supra* note 11 at 61 contends that "all but the strictest positivists admit that it is not necessary to show that every state has recognized a certain practice" for it to be a customary rule. Inaction during the crystallization of a customary rule is tantamount to acceptance. See Birnie et al., *supra* note 2 at 15.

[55] See Shaw, *supra* note 10 at 76 - 78.

[56] For example, in the *Anglo-Norwegian Fisheries Case (United Kingdom v. Norway)* (hereinafter "*Anglo-Norwegian Fisheries Case*"), [1951] *I.C.J.Reports* 116, Norway was a persistent objector to the developing international state practice regarding the method for drawing lines of delimitation of national fisheries zones. When the United Kingdom brought suit against Norway for following its own system of delimitation, Norway argued that it was not bound to the current state practice by virtue of its persistent objection to it. The Court found that the state practice for delimiting fisheries zones had not crystallized into a rule of customary international law, however, even if it had, Norway would not be bound to it as it had been a persistent objector to the practice from the outset.

[57] International environmental agreements have been given a number of names including Act, Arrangement, Agreement, Charter, Convention, Covenant, Declaration, Final Act, General Act, Pact, Protocol, Statute and Treaty. See Marayan Green, *supra* note 37 at 164. For purposes of clarity, the terms 'treaties' or 'international environmental agreements' will be used interchangeably throughout this analysis to denote instruments signed by states and governed by international law.

concerns beginning with the 1900 *London Convention for the Protection of Wild Animals, Birds and Fish in Africa*.[58] Since that time, and particularly after the United Nations Stockholm Conference on the Human Environment, there has been a proliferation of multi-lateral instruments on the environment.[59] Today, the number of international environmental agreements in existence approaches nine hundred.[60] Environmental treaties are becoming increasingly common as the international community focuses more directly upon environmental issues and the process of negotiation and conclusion of environmental treaties becomes more efficient.[61] This section reviews the effectiveness of the treaty as a source of

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[58] *London Convention for the Protection of Wild Animals, Birds and Fish in Africa*, opened for signature May 19, 1900, reprinted in Ruster, B., Simma, B., and Bock, M., eds, *International Protection of the Environment: Treaties and Related Documents* (New York: Oceana Publications, 1975 - 1982) Volume IV at 1605.

[59] See Brown-Weiss, E., "International Environmental Law: Contemporary Issues and the Emergence of a New World Order", (1993) 82 *Georgetown Law Journal* 675 at 679.

[60] See Brown-Weiss, E., Szasz, P.C., and Magraw, D.B., *International Environmental Law - Basic Instruments and References*, (Dobbs Ferry, New York: Transnational Publishers Inc., 1992) at ix. This volume provides an comprehensive review of existing international environmental agreements. Another exhaustive source is Sand, P.H., ed., *The Effectiveness of International Environmental Agreements - A Survey of Existing Legal Instruments*, (Cambridge: Grotius Publications, 1992).

[61] For example, since 1985 the international community has negotiated at least twelve binding global environmental agreements, including:

> a) the *Vienna Convention for the Protection of the Ozone Layer*, opened for signature March 22, 1985, U.N. Doc. UNEP/1G.83/51 Rev.1, reprinted in (1987) 26 *International Legal Materials* 1529, (entered into force September 22, 1988);
> b) the *Convention on Early Notification of a Nuclear Accident*, opened for signature September 26, 1986, reprinted in (1986) 25 *International Legal Materials* 1370, (entered into force October 27, 1986);
> c) the *Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency*, opened for signature September 26, 1986, reprinted in (1986) 25 *International Legal Materials* 1377, (entered into force February 27, 1987);
> d) the *Montréal Protocol on Substances that Deplete the Ozone Layer* (hereinafter "*Montréal Protocol*"), opened for signature September 16, 1987, C.N. 239, reprinted in (1987) 26 *International Legal Materials* 1550, (entered into force January 1, 1989);
> e) the *Basel Convention on the Transboundary Movements of Hazardous Wastes and Their Disposal*, opened for signature March 22, 1989, U.N. Doc. UNEP/WG.190/4, reprinted in (1989) 28 *International Legal Materials* 657;
> f) the *London Adjustments and Amendments to the Montréal Protocol on Substances that Deplete the Ozone Layer* (hereinafter "*London Amendments*"), adopted June 29,

international environmental law.

a) Creation of a Treaty

Treaties can be broadly classified into two categories. Firstly, there are what has been termed 'treaty-contracts' which, similar to commercial contracts in domestic common and civil legal systems, set forth the obligations which party states have agreed to undertake for mutual advantage.[62] Secondly, there are 'law-making treaties' which can be defined as treaties "which a large number of states have concluded for the purpose either of declaring their understanding of what the law is on a particular subject, or of laying down a new general rule for future conduct, or

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1990, U.N. Doc. UNEP/OzL. Pro. 2/3, reprinted in (1991) 30 *International Legal Materials* 537, (entered into force August 10, 1992);
g) the *Convention on Oil Pollution Preparedness, Response and Cooperation*, opened for signature November 30, 1990, reprinted in (1991) 30 *International Legal Materials* 733;
h) the *Protocol on Environmental Protection to the Treaty Regarding the Antarctic*, opened for signature October 4, 1991 reprinted in (1991) 30 *International Legal Materials* 1455;
i) the *Framework Convention on Climate Change*, opened for signature June 5 1992, reprinted in (1992) 31 *International Legal Materials* 849;
j) the *Convention on Biological Diversity*, opened for signature June 5, 1992, reprinted in (1992) 31 *International Legal Materials* 818; and
k) the *Copenhagen Amendments to the Montréal Protocol on Substances that Deplete the Ozone Layer* (hereinafter "*Copenhagen Amendments*"), adopted November 25, 1992, U.N. Doc. UNEP/OzL. 4/15, reprinted in (1993) 32 *International Legal Materials* 874.

In addition there have been a significant number of binding regional and bi-lateral environmental treaties signed during this period of time, as well as significant non-binding declarations reflecting global resolve on environmental issues for the future. See generally Brown-Weiss, *supra* note 59 at 680 - 684.

[62] See Green, L.C., *International Law: A Canadian Perspective* (Second Edition), (Toronto: Carswell Company Ltd., 1988) at 57. A 'treaty contract' which dealt with environmental natters was the *United Kingdom - United States Boundary Waters Treaty*, (hereinafter "*Boundary Waters Treaty*"), opened for signature January 11, 1909, 36 Stat. 2448, T.S. 548, reprinted in Bevans, C.I., gen. ed., *Treaties and Other International Agreements of the United States of America 1776 - 1949*, (Washington: United States Government Printing Office, 1968 - 1976) Volume 12 at 319. The *Boundary Waters Treaty*, which entered into force on May 5, 1910, set forth obligations between the United States and Canada concerning pollution of boundary waters. See especially Article IV thereof, which provides that water "shall not be polluted on either side to the injury of health or property on the other."

of creating some international institution."[63] While 'treaty contracts' may set out specific environmental obligations and standards between signatories, it is the second of these categories, 'law-making treaties', which is the most important in an examination of treaties as a source of international environmental law.[64]

The negotiation and conclusion of treaties between states is governed primarily by the 1969 *Vienna Convention*.[65] For treaties which also involve non-state subjects of international law, the 1986 *Vienna Convention on the Law of Treaties Between States and International Organizations or Between International Organizations*[66] applies. The 1986 *Vienna Convention* is virtually identical in substance to the 1969 *Vienna Convention*.[67] These treaties are to a considerable extent declaratory of existing customary principles governing the law and process of international treaty-making.[68]

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[63] See Brierly, *supra* note 11 at 58.

[64] See Kindred, *supra* note 9 at 114, where it is asserted that "only law-making treaties can be regarded as a law-creating process because they are treaties in which a substantial number of states have declared what the law is or should be on a particular topic". For an opposing, anti-positivist view, see Marayan Green, *supra* note 37 at 15 who argues that there is literally no such thing as a law-making treaty, treaties of this nature are only an enunciation of what the signatory states view the law in a particular area to be and are more properly described as 'law-stating' treaties. An example of a 'law-making' treaty in the environmental context is the 1982 *United Nations Convention on the Law of the Sea* (hereinafter *"Law of the Sea Convention"*), opened for signature December 10, 1982, U.N. Doc. A/CONF.62/122/Corr.8, reprinted in (1982) 21 *International Legal Materials* 1261.

[65] 1969 *Vienna Convention*, *supra* note 33. The 1969 *Vienna Convention* specifically applies only to treaties concluded between states in written form. See *Ibid.*, Articles 2(1)(a) and 3. Oral treaties are recognized under customary international law, however, have limited application in practice due to the difficulties of proving their existence. See Janis, *supra* note 12 at 19.

[66] *Vienna Convention on the Law of Treaties Between States and International Organizations or Between International Organizations* (hereinafter "1986 *Vienna Convention*"), opened for signature March 21, 1986, U.N. Doc. A/CONF.129/15, reprinted in (1986) 25 *International Legal Materials* 543. As with the 1969 *Vienna Convention*, the 1986 *Vienna Convention* applies only to agreements concluded in written form. *Ibid.*, Article 2(1)(a).

[67] See Developments in the Law, *supra* note 1 at 1523.

[68] See Ott, *supra* note 4 at 190. Customary rules incorporated into the 1969 *Vienna Convention* include the principle *pacta sunt servanda* ("treaties are to be observed") expressed in Article 26, the principle of non-retroactivity set out in Article 28 and the principle of *jus cogens*, delineated in Article 53. Therefore, many of its tenets apply even to non-party states. See also, Developments in the Law,

The 1969 *Vienna Convention* and the 1986 *Vienna Convention* facilitated the process of treaty-making in a number of ways. Firstly, the Conventions set out that parties to treaties may formulate reservations which are not incompatible with the treaty's object and purpose unless the treaty itself explicitly prohibits reservations, or allows only specified ones.[69] In the context of international environmental agreements, this has both positive and negative effects.[70] Wider participation in the treaty process is encouraged as parties may make reservations on specific points they do not agree with, and yet still adopt the treaty in large.[71] At the same time, however, extensive reservations, particularly on substantive issues, undermine the effectiveness of the treaty.[72]

The second manner in which the Conventions have liberalized the process of treaty-making is through their provisions regarding treaty interpretation.[73] By setting forward a specific but not rigid hierarchy of rules for interpretation, the

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supra note 1 at 1522.

[69] See 1969 *Vienna Convention*, *supra* note 33 at Article 19, 1986 *Vienna Convention*, *supra* note 66 at Article 19.

[70] See Birnie et al., *supra* note 2 at 14.

[71] *Ibid.* Birnie et al. point to the *Law of the Sea Convention*, *supra* note 64, Articles 309 - 310, which expressly prohibited reservations, and suggest that this is a contributing factor to the continuing inability of that Convention to garner enough instruments of ratification to enter into force, even though it was negotiated and concluded over a decade ago.

[72] See Birnie et al., *supra* note 2 at 14. An example of this negative effect is the *Washington Convention on Trade in Endangered Species of Wild Fauna and Flora*, opened for signature March 3, 1973, reprinted in (1973) 12 *International Legal Materials* 1088. This Convention controls trade in species which the parties agree to list in the appendices (Articles III - V). Parties can enter reservations to the listing of any particular specie. See generally Brown-Weiss et al., *supra* note 60 at 467.

[73] 1969 *Vienna Convention*, *supra* note 33, Articles 31 - 33, 1986 *Vienna Convention*, *supra* note 66, Articles 31 - 33. In both Conventions, Article 31 sets out the general rule of interpretation, the 'ordinary meaning in context' approach, compatible with the objects and purposes of the treaty in general. Article 32 sets out supplementary means of interpretation in the case of ambiguity, including the preparatory work of the negotiating parties, and Article 33 deems that where a treaty is authenticated in more than one language, the text is equally authoritative and the treaty's terms are presumed to have the same meaning in each authenticated language. See also Birnie et al., *supra* note 2 at 14.

Conventions are effective in preventing doctrinal conflict and allow for greater certainty on the part of states contemplating concluding a treaty.[74] This in turn eliminates a further barrier to treaty-making.

Finally, the Conventions have advanced the process of international environmental treaty-making by acknowledging the concept of *jus cogens*.[75] As discussed above, the significance of *jus cogens* in the environmental context is that it is possible for peremptory norms of international environmental law to develop which cannot be derogated from in a treaty.[76]

Under both conventions, international environmental agreements are created in two stages.[77] Representatives from party states first meet to negotiate the specific terms of the treaty, the final authentic text being adopted by the negotiating representatives on behalf of their respective states.[78] Treaty practice in international environmental law has proven that negotiations of ambitious, broad-ranging documents are extremely difficult to conclude, given the diversity of the needs and interests of the global community.[79] A more effective method, which has met

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[74] For a more detailed analysis of the impact of the Conventions upon treaty interpretation, see generally, Sinclair, I., *The Vienna Convention on the Law of Treaties*, (Second Edition), (Manchester: Manchester University Press, 1984) at 114 - 158.

[75] 1969 *Vienna Convention*, *supra* note 33, Articles 53, 64 and 71, 1986 *Vienna Convention*, *supra* note 66, Articles 53, 64 and 71. For a detailed analysis of the development of the concept of *jus cogens* in the 1969 *Vienna Convention*, see Hannikainen, L., *supra* note 32 at 157 - 180. See also Rozakis, C.L., *The Concept of Jus Cogens in the Law of Treaties*, (Amsterdam: North-Holland Publishing Co., 1976) and Sztucki, J., *Jus Cogens and the Vienna Convention of the Law of Treaties: A Critical Appraisal*, (New York: Springer-Verlag, 1974).

[76] Indeed, Article 64 of the 1969 *Vienna Convention*, *supra* note 33, renders void pre-existing treaties which conflict with an emerging peremptory norm of general international law. See also 1986 *Vienna Convention*, *supra* note 66, Article 64.

[77] See generally, Developments in the Law, *supra* note 1 at 1522 - 1529.

[78] 1969 *Vienna Convention*, *supra* note 33, Articles 9 - 10, 1986 *Vienna Convention*, *supra* note 66, Articles 9 - 10.

[79] For example, formal negotiations for the *Law of the Sea Convention*, *supra* note 64 began in 1973, after three years of preparatory work. Nine years after the commencement of formal negotiations on this comprehensive and cumbersome document, a form of agreement was concluded, however, the Convention does not yet have the force of law as an insufficient number of parties have

with practical success, is the framework model. This model creates a negotiatory framework and fosters a co-operative atmosphere among the global community in monitoring and research which is imperative to the effective resolution of environmental dilemmas.[80]

Individual states then ratify the negotiated final product in their domestic legislatures, making reservations if appropriate.[81] The treaty will usually provide that it will come into force when a prescribed number of ratifying documents have been received by the designated depositary.[82] Parties which consent to be bound to a treaty after it enters into force are said to accede to the treaty.[83]

b) The Framework Model of Treaty Making

First employed in the environmental context by the parties which negotiated the *Barcelona Convention for the Protection of the Mediterranean Sea Against*

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formally ratified it. The *Law of the Sea Convention* can be categorized as an 'albatross' agreement, large, unwieldy and overly ambitious, which, like its unfortunate namesake, has failed to get off the ground after nearly twenty five years. It does not present a particularly persuasive model for international environmental treaty making. See Developments in the Law, *supra* note 1 at 1527.

[80] For a more detailed evaluation of the framework model, see *infra* notes 84 - 95 and accompanying text.

[81] The Conventions are silent as to the specific process of ratification, which is provided for in the constitutions of most states. Given the diversity of methods of ratification, it may take several years for enough parties to ratify an agreement for it to enter into force. In the environmental context, the delay pending ratification can render the agreement ineffective if the underlying problem worsens or becomes irreversible in the interim. See Developments in the Law, *supra* note 1 at 1524 - 1525. For a more detailed study of the ratification process in Canada, see "Treaty Implementation in Canada" in Kindred, *supra* note 9 at 130 - 138. Treaties may provide that they will enter into force upon signature by valid representatives of party states, however, in general, important treaties require ratification. *Ibid.*, at 137.

[82] The Secretary-General of the United Nations is often nominated as the depositary of instruments in international environmental agreements. See for example, the *Vienna Convention for the Protection of the Ozone Layer*, *supra* note 61, Articles 17 and 20, the *Framework Convention on Climate Change*, *supra* note 61, Articles 19 and 22 and the *Convention on Biological Diversity*, *supra* note 61, Articles 36 and 41.

[83] See Marayan Green, *supra* note 37 at 52.

Pollution,[84] the framework model has become the favoured method of creating international environmental agreements concerning both global ecological problems such as ozone layer depletion and climate change, and regional concerns including long range transboundary air pollution.[85] The initial goal of the framework model is to garner widespread support in solving a particular environmental dilemma, even in the absence of scientific consensus on the nature and cause of the problem.[86] This is done by concluding a convention in which parties acknowledge the problem and pledge co-operation in scientific research, monitoring, data collection and information exchange without making any firm commitment to specific curtailments of environmentally harmful activity.[87] In the on-going co-operative framework thus established, parties to the convention will negotiate more specific protocols, which implement concrete strategies, such as detailed target restraints on the use of environmentally harmful substances, with a view to solving one aspect of the environmental problem identified in the convention.[88] These specific protocols are

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[84] *Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution*, opened for signature February 16, 1976, reprinted in (1976) 15 *International Legal Materials* 290.

[85] See Developments in the Law, *supra* note 1 at 1542. The popularity of the framework model is due in large part to the success of the ozone layer depletion negotiations, which have produced the *Vienna Convention for the Protection of the Ozone Layer*, the *Montréal Protocol*, the *London Amendments*, and the *Copenhagen Amendments*, which are all cited *supra* at note 61. Regional environmental agreements which have employed the framework model include the *Convention on Long Range Transboundary Air Pollution*, opened for signature November 13, 1979, reprinted in (1979) 18 *International Legal Materials* 1442, between members of the Economic Commission for Europe, and the *La Paz Agreement for Co-operation on Environmental Programs and Transboundary Problems*, opened for signature August 14, 1983, reprinted in (1983) 22 *International Legal Materials* 1025, between Mexico and the United States.

[86] See Brunnée, J., "Toward Effective International Environmental Law - Trends and Developments", paper presented to the Sixth CIRL Conference on Natural Resources Law, Ottawa, May 13 - 14, 1993 at 12.

[87] *Ibid.* In the ozone context, this was the purpose of the *Vienna Convention for the Protection of the Ozone Layer*, *supra* note 61, to represent a statement of resolve by the international community to co-operate in working out a speedy, effective solution to the global environmental crisis of ozone layer depletion.

[88] See Brown-Weiss, *supra* note 59 at 687. The *Montréal Protocol*, *supra* note 61, is an example of the efficacy of the framework model. In response to scientific evidence, it established firm

themselves drafted flexibly to accommodate amendments to measures in order to keep abreast with the most recent scientific knowledge.[89] The flexibility of the framework model has proven particularly advantageous in generating new techniques which enhance the equitability of international environmental treaty-making.[90] By encouraging widespread participation by the global community in the process of solving global environmental dilemmas even where there are concerns regarding scientific uncertainty or the economic implications of specific reduction measures, the framework model has proven to be an effective prototype for the conclusion of international environmental agreements.[91]

In spite of its practical success in the ozone context, however, the framework

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reduction targets on ozone depleting substances only two years after the *Vienna Convention for the Protection of the Ozone Layer* was concluded.

[89] This is evidenced by the speed with which the *Montréal Protocol* has been amended; twice in the six years since its adoption. Both the *London Amendments* in 1990 and the *Copenhagen Amendments* in 1992 significantly enhanced the *Montréal Protocol's* overall effectiveness in two ways:

> a) by strengthening existing reduction schedules in accordance with the latest scientific evidence of the extent of the problem; and
> b) by introducing new techniques which augmented its equitability, making the *Montréal Protocol* more attractive to developing countries such as India and China, whose participation was crucial to working out an effective solution to the ozone crisis.

[90] Under the notion of 'common but differentiated responsibility' (see for example the *Framework Convention on Climate Change*, *supra* note 61, Article 4), two techniques have been developed and incorporated into framework agreements, such as in the amended *Montréal Protocol*, *supra* note 61. One is the adoption of a two-tiered approach to emissions reductions, whereby the industrialized world undertakes to immediately and significantly reduce emissions of targeted substances while developing countries are given considerable leeway both in terms of the degree of reduction and the time by which reductions are to be met. (See for example *ibid.*, Articles 2 and 5). The second innovation is specific commitments by rich nations to give financial assistance and promote technical and technological transfer to developing nations. (See for example, *ibid.*, Amended Articles 10 and 10A). While these techniques were not developed solely within the context of the ozone negotiations, it is clear that the co-operative network created by the framework model augmented and furthered their development at a faster pace than would otherwise have occurred.

[91] See Brunnée, *supra* note 86 at 12 - 13. The attributes of the framework model which make it an attractive prototype for use in international environmental agreements are the ability to mobilize international action quickly and in a co-operative manner, manageability, flexibility and ultimate effectiveness.

model is not without its shortcomings.[92] Although it facilitates negotiation of international environmental problems, the process remains somewhat ponderous, which can detract from its usefulness.[93] The framework model has also not completely solved the threat of hold-outs and reservations which can cripple the effectiveness of the agreement.[94] However, these difficulties are not unique to the framework model, but rather are inherent disadvantages of all treaty-based approaches to global environmental problems.[95] A more detailed analysis of both the advantages and disadvantages of treaties as a source of international environmental law follows.

c) Evaluation of the Effectiveness of International Environmental Agreements

i) Advantages - Treaties have emerged in recent years as the predominant method for addressing international environmental issues.[96] Treaties, particularly the framework model, have been proven to be effective in addressing global environmental crises such as ozone layer depletion, as through treaties the

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[92] See generally Developments in the Law, *supra* note 1 at 1543.

[93] Although only two and one half years separate the *Vienna Convention for the Protection of the Ozone Layer* and the *Montréal Protocol* (both cited *supra* at note 61), the combined negotiation and ratification process took nearly eight years to complete. See Developments in the Law, *supra* note 1 at 1544. By the time it entered into force on January 1, 1989, the specific emissions reductions schedules were already recognized as being insufficient to effectively combat the ozone layer depletion problem. See Doolittle, D., "Underestimating Ozone Depletion: The Meandering Road to the Montreal Protocol", (1989) 16 *Ecology Law Quarterly* 407 at 431.

[94] There is nothing in the *Vienna Convention for the Protection of the Ozone Layer*, *supra* note 61, which requires signatory states to sign subsequent protocols. Therefore, parties may still, in the end, opt out of the crucial document which would commit them to take concrete measures to address the issue. While this has not happened in the ozone layer depletion context, it is a very real problem in the climate change context, where although 153 states have affixed their signature to the *Framework Convention on Climate Change*, *supra* note 61, it will be considerably more difficult to attain an effective level of support on any subsequent protocol which seeks to curtail the use of greenhouse gases. See generally, Developments in the Law, *supra* note 1 at 1544.

[95] See Brunnée, *supra* note 86 at 19.

[96] See Brown-Weiss, *supra* note 59 at 675 - 679.

international community can overcome many of the shortcomings of customary rules.[97] There are a number of reasons for this development. Treaties allow states to deal more quickly and more specifically with a particular environmental issue than customary channels would allow.[98] Treaties are by nature more flexible than custom and can be amended and managed more easily, important attributes in environmental law where scientific evidence changes responses almost continuously.[99] This flexibility has also allowed states to adapt to shifting priorities in the international community and develop innovative strategies such as two-tiered reduction schemes and financial and technological assistance to ensure that the globe, not just the North, is involved in rectifying the global environmental crisis.[100] Treaties allow for a pro-active response to environmental problems, allowing the international community to take steps to prevent environmental damage before it occurs, rather than simply reacting to the negative effects of pollution after they have caused damage and become potentially irreversible.[101] The framework model

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[97] A more detailed analysis of the shortcomings of customary rules as a source of international environmental law follows *infra* at notes 164 - 176.

[98] Generally, even with protracted negotiations, the creation of treaty law is accomplished more quickly than customary rules. See *infra* notes 123 - 145 for a discussion of the elements involved in the crystallization of a customary rule of international environmental law. The generality of customary norms necessarily requires interpretation of a rule and its application to particular environmental issues, while a specific protocol detailing emissions reductions of greenhouse gases for instance, can deal with an environmental issue more directly.

[99] The *Montréal Protocol*, which has been amended twice to overcome limitations in terms of its ability to combat ozone layer depletion. Its equitability is the celebrated example of the advantages of environmental treaty-making in this regard. See *supra* note 89.

[100] These two techniques, referenced *supra* at note 90 have been conceptually categorized under the notion of a 'common but differentiated responsibility'. This notion, the development of which is in large part a by-product of the world-wide negotiations conducted for the United Nations Conference on Environment and Development (hereinafter "UNCED") denotes intra-regional equity in international environmental law. It recognizes a procedural duty on the part of industrialized nations to take the initial burden of reducing emissions of harmful pollutants, assisting developing nations, both financially and technologically, in transferring from deleterious to innocuous technologies.

[101] A pro-active environmental agreement seeks to build a regime to combat the effects of environmental pollution before these are manifest in the ecosystem. By contrast, a reactive approach seeks only to address problems after they have caused significant damage, usually by mandating the

allows for the creation of a co-operative network among states, which can harmonize international relations in general, build consensus and lead to a pooling of resources which allows for the quicker development of effective resolutions.[102] States are more willing to lay down rules and develop principles addressing environmental issues in the narrower context of a treaty, which by nature is specific, rather than further the development of broad customary principles.[103] Hence, the treaty experience has produced an effective means of dealing with specific environmental problems,[104] and generally furthered the development of international

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clean-up. When the effects are as serious as the possible harms of ozone layer depletion and climate change, the global community cannot afford the luxury of simply reacting to environmental damage, going on the basis of 'clear and convincing evidence' (i.e. real and substantial harm). The unique nature of these and other environmental problems dictate that prevention is necessary to ward off their potentially irreversible effects. The treaty making-process has facilitated this in a manner in which customary principles can not. See *infra* notes 164 - 176 and accompanying text.

[102] See Brown-Weiss, *supra* note 59 at 687 -688.

[103] There is a reluctance in the international community to further the development of general norms of international environmental law as these norms will invariably impinge upon the principle of state sovereignty. However, practice has demonstrated that states are willing to make limited concessions on sovereignty within the context of a treaty, such as the *Montréal Protocol*. The environmental treaties concluded at UNCED have also contributed to the development of emerging environmental principles, although in limited circumstances. This theme will be dealt with further *infra*, at Chapter Three.

[104] The effectiveness of the framework convention for the Protection of the Ozone Layer and its protocol as amended can be attested to in that it has resulted in the development of a co-operative regime which as of March 2, 1993, included 105 of the world's sovereign states and the European Community. See *Status of Ratification/Accession/Acceptance/Approval of the Vienna Convention and Related Instruments* (hereinafter "*Status of Ratification Reports*"), (1993) U.N. Doc. UNEP/OzL.Pro./ExCom/9/Inf.6. Through this co-operative regime negotiations have continued, resulting in enhanced protection from ozone depletion. The innovative techniques utilized to attract developing nations are a boon to global environmental law and can foster harmonious international relations. The ratifications of China (June 14, 1991) and India (June 19, 1992) stand as proof of this treaty's success in balancing global environmental concerns with the urgent need for developing countries to mature fiscally, politically and socially. *Ibid.*, at 1, 2. Even on the harshest scale, the Vienna framework fares well: Since the *Montréal Protocol* entered into force on January 1, 1989 there has been a 40% overall decline in world-wide CFC production. See *Ozonaction*, U.N. Doc. UNEP/IE/PAC, Volume 2 at 1 (1992).

environmental law.[105]

ii) Disadvantages - However, the treaty-based approach can only go so far in the development of international environmental law. It is constrained by foundational restraints which limit its effectiveness beyond a certain point.[106] For instance, although states have become more efficient in concluding international environmental agreements in recent years, the negotiation-ratification process of treaty-making remains overly slow for certain environmental problems which necessitate immediate responses.[107] Negotiation among such a large number of states with diverse agenda, and the need to reach consensus has often led to the adoption of the 'lowest common denominator' which represents a minimal effort at best in combatting the particular environmental problem at hand.[108] The ability of states to make reservations can also chip away at the effectiveness of an international environmental agreement.[109] Further, the lack of stringent enforcement techniques can result in an international environmental agreement which outlines a detailed environmental protection scheme, but relies on the enforcement value of international pressure and

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[105] Environmental treaty-making has expanded the breadth of international environmental law in that through treaties states have shown a willingness to go beyond the transboundary pollution issues dealt with in customary law and address issues such as protection of global commons like the ozone layer, and conservation of resources within states' exclusive jurisdiction. For a indication of the breadth of international environmental agreements see Schwietzke, J., "International Agreements on the Environment and their Sources", (1992) 20 *International Journal of Legal Information* 118.

[106] See generally, Developments in the Law, *supra* note 1 at 1543 - 1546.

[107] See Brown-Weiss, *supra* note 59 at 695. Consider in the climate change context that mid-latitude forest dieback could begin as early as 2000. See Organisation for Economic Co-operation and Development, *The State of the Environment, 1991*, (Paris: Organisation for Economic Co-operation and Development, 1991) at 27. Although scientific uncertainty remains, it is possible that climate negotiations will not be able produce a protocol reducing emissions of greenhouse gases in time to ward off all of the deleterious effects of climate change.

[108] See Brunnée, *supra* note 86 at 20.

[109] See Birnie et al., *supra* note 2 at 14. In the environmental context, the ability of parties to make reservations presents the proverbial double-edged sword. On the one hand, the fact that reservations can be made tends to attract more players to the negotiating table, while on the other hand, reservations by a number of parties on key issues can severely undermine the effectiveness of the agreement altogether.

public opinion.[110] In addition, since treaties in general are not binding on third parties,[111] there are formidable difficulties regarding hold-outs which are particularly acute in international environmental law where the failure of one or a group of states to come on board can negate the positive benefits of an emissions reduction treaty.[112] Even within the framework model, the fact that states may opt out of specific protocols allows for 'free-riders' within the Convention network.[113] Finally, the treaty-based system of environmental law-making has not been able to adequately uphold the interests of future generations.[114] Thus environmental treaty-making, while it has been beneficial to the global ecosystem by producing effective international agreements such as the *Montréal Protocol* which have made a

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[110] See Brown-Weiss, *supra* note 59 at 696 - 697. However, the value of public opinion in enforcement of states' environmental obligations should not be dismissed outright. Political realities in the global order dictate that public opinion can sway governmental policies, although alone its enforcement value remains slender.

[111] The 1969 *Vienna Convention*, *supra* note 33, Article 34 states that "a treaty does not create either obligations or rights for a third State without its consent". Unlike the other positivist source of law, custom, in which consent may be implied, a treaty will only bind those states which formally ratify or accede to it. See also 1986 *Vienna Convention*, *supra* note 66, Article 34. While treaty law is not binding on third parties, treaty provisions which either reflect custom or themselves crystallize into customary principles will bind the entire international community. Certain provisions of a treaty may become part of customary international law, but only if they have normative force.

[112] See Developments in the Law, *supra* note 1 at 1534. 'Hold-outs' are states which refuse to co-operate with the international community in an environmental agreement. The United States' refusal to sign the *Convention on Biological Diversity* is an example of a hold-out state.

[113] *Ibid*. 'Free riders' are states which enjoy the benefits of international regulation while refusing to share in its costs. Brunei Darussalam, Chad, Colombia, Equatorial Guinea, and Peru, which have signed the *Vienna Convention for the Protection of the Ozone Layer*, but have not yet ratified the *Montréal Protocol* can be classified as free riders. See *Status Ratification Reports*, *supra* note 104.

[114] See Brown-Weiss, *supra* note 59 at 707. See also Developments and the Law, *supra* note 1 at 1539 - 1542. Environmental policy is designed in part to preserve the environment for future generations. Two inherent problems with the treaty-based approach make this difficult:

> a) it is difficult for members of the current generation to measure the interests of future generations;
>
> b) states must decide who will make these value judgements on behalf of the unborn.

The notion of 'inter-generational equity' will be dealt with at length in Chapters Two and Three *infra*.

real impact on how nations consume environmentally unsound products, is limited by inherent weaknesses and cannot diffuse all of the difficulties which arise when states attempt to solve environmental dilemmas.

2. Custom

The role customary law in the development of international environmental law has been limited by the historical position of state sovereignty in the international legal order.[115] Early customary rules of international environmental law defined environmental problems in the context of state sovereignty, particularly interference by one state with the territorial integrity of another.[116] As with treaty law, customary rules can be defined as a 'positive' source of international environmental law in that their application is consent-based.[117] It is not necessary for new states entering the international community to consent to the application of rules of customary law which have crystallized.[118] Consent to the binding nature of emerging customary rules can be implied by a state's acquiescence to a customary rule during its crystallization. However, where a state consistently and explicitly rejects a rule of customary law from the outset, it is clear that it will not be bound by it.[119]

a) What is Customary International Law?

Article 38(1)(b) of the *Statute of the International Court of Justice* describes custom as "evidence of a general practice accepted as law".[120] Thus, in order to

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[115] See Brunnée, *supra* note 86 at 3.

[116] See Schachter, *supra* note 37 at 363 - 365. See also *infra* notes 148 - 161 and accompanying text.

[117] Birnie et al., *supra* note 2 at 15 contend that "the creation of new customary rules in the end depend on some form of consent, whether express or implied." For further discussion on the positivist nature of customary international law, see *supra* notes 52 - 54 and accompanying text.

[118] See Greig, D.W., *International Law* (Second Edition), (London: Butterworth and Company (Publishers) Ltd., 1976) at 28 - 29.

[119] See *Anglo-Norwegian Fisheries Case*, *supra* note 56.

[120] *Statute of the International Court of Justice*, *supra* note 30, Article 38(1)(b).

qualify as a customary rule, states must follow a constant practice, and there must be a general recognition among states that this practice is obligatory and that failure to comply is a breach of international law.[121] Practice which does not reflect this legal obligation is defined as 'usage'.[122] The following examines both the elements and the evidences of international custom.

i) Elements of custom - In order to determine whether a certain international practice is customary international law, or merely usage or comity,[123] it is necessary to first determine whether the practice establishes that the elements of custom are present and have crystallized into a rule of customary law.[124] There are two rudimentary elements of customary international law, which are echoed in the definition in Article 38(1)(b) of the *Statute of the International Court of Justice*; a practical element, 'state practice' and a psychological one, *opinio juris*.[125] Each will be considered in turn.

The element of state practice has three components.[126] The first component is the *uniformity and consistency* of the practice in question. This element requires that the practice must not vary greatly between states (uniformity) and that there are no grave discrepancies or contradictions in the practice of a particular state

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[121] See Brierly, *supra* note 11 at 61. Brierly notes that legal custom is "something more than mere habit or usage; it is a usage felt by those who follow it to be an obligatory one. There must be present a feeling that, if the usage is departed from, some form of sanction will probably, or at any rate ought to, fall upon the transgressor." States which argue that they are not in violation of certain customary norms tacitly recognize that those norms exist. See also *North Sea Continental Shelf Case (West Germany Denmark and the Netherlands)* (hereinafter "*North Sea Continental Shelf Case*"), [1969] *I.C.J.Reports* 3 at 44.

[122] See Brownlie, *supra* note 31 at 5. An example of an international usage is the practice of saluting vessels under another flag on the high seas.

[123] 'Comity' is international courtesy which states afford to each other and applies primarily in the sphere of diplomatic relations. See generally Marayan Green, *supra* note 37 at 20.

[124] See Ott, *supra* note 4 at 13.

[125] See Greig, *supra* note 118 at 18.

[126] See generally Brownlie, *supra* note 31 at 5 - 6. See also Ott, *supra* note 4 at 15 - 16 and Shaw, *supra* note 10 at 63 - 69.

from one instance to another (consistency).[127] The uniformity and consistency of the practice need not be complete, substantial uniformity is sufficient to satisfy this element of state practice.[128] Thus in the *Asylum Case*[129] the Court denied the Colombian argument that a particular usage was a customary rule of law applicable to Latin American states as there was insufficient evidence of the uniformity and consistency of that usage among the states.[130]

The second component necessary to establish state practice is the *generality* of the practice. The practice must be fairly widespread among a majority of states in the international community.[131] The practice need not be universal to become a customary rule, however a practice common in only one part of the world would not be sufficient to constitute customary law binding upon all states of the earth.[132] Where the generality requirement is met, however, the fact that there is no evidence of the practice in a given state does not mean that the state is not bound by that

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[127] See Ott, *supra* note 4 at 16.

[128] See Brownlie, *supra* note 31 at 5.

[129] *Asylum Case (Colombia v. Peru)* (hereinafter "*Asylum Case*"), [1950] *I.C.J. Reports* 266. Colombian diplomats had given political asylum to a Peruvian rebel leader at their embassy in Lima. Peru argued that the rebel was a criminal and accordingly not entitled to asylum. Colombia countered that the Latin American states had developed a regional custom regarding political asylum that allowed the state granting asylum to determine whether the party was a criminal or not. Determination of the issue therefore revolved around the status of diplomatic asylum as a rule of customary international law. While the Court held that regional custom was possible in the event that all requisite elements of customary international law were present, in this case there was no uniformity or consistency in the state practice of Latin American countries for the usage to have evolved into a customary rule of law.

[130] *Ibid.*, at 276 - 277. "The facts brought to the knowledge of the Court disclose so much uncertainty and contradiction, so much fluctuation and discrepancy in the exercise of diplomatic asylum and in the official views expressed on different conventions on asylum. . . that it is not possible to discern in all this any constant and uniform usage, accepted as law."

[131] See Ott, *supra* note 4 at 16. In the case of regional custom, the generality element refers to general use among the states within the particular region for which the customary rule is claimed. See *Asylum Case*, *supra* note 129 at 276 - 277.

[132] See Ott, *supra* note 4 at 16.

rule.[133] Silence on the part of a particular state will generally be seen to indicate tacit agreement with the custom.[134] Only persistent and consistent objection by a state to a particular customary rule during its formation will be sufficient to indicate that state's refusal to be bound by that rule.[135]

The final component of state practice is the *duration* of the practice. Where there is uniformity, consistency and generality of a practice, the duration component is not particulary difficult to prove.[136] It is not necessary that the practice be of long duration to establish a customary rule, however a long standing practice can provide further evidence going to the uniformity, consistency and generality of the practice.[137] Accordingly in the *North Sea Continental Shelf Case* the Court concluded that "even without the passage of any considerable period of time, a very widespread and representative participation" would be sufficient in the formation of a rule of customary law.[138] Therefore, the lack of a long-standing history of a particular state practice is not fatal to the crystallization of that practice into a rule of customary law, provided that the other components of state practice are clear.[139]

Proof of state practice, of itself, is not sufficient to establish a customary rule

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[133] See Brownlie, *supra* note 31 at 6.

[134] *Ibid.*

[135] See Akehurst, *supra* note 17 at 33.

[136] See Shaw, *supra* note 10 at 64.

[137] See Janis, *supra* note 12 at 39.

[138] *North Sea Continental Shelf Case*, *supra* note 121 at 42. In this case, the Court considered *inter alia*, whether rules established in the 1958 *Geneva Convention on the Continental Shelf* could be considered to have become general rules of customary law. The fact that States have entered into a convention may be *evidence* of state practice proving custom, so the case is relevant to this analysis. For further discussion on international agreements as *evidence* of custom, see *infra* notes 146 - 147 and accompanying text.

[139] See Greig, *supra* note 118 at 20.

of law.[140] State practice alone is merely usage. Accompanying the practical element of customary law must be the conviction among states that the practice is obligatory as a matter of law.[141] This is what is defined as *opinio juris et necessitatis* and is an requisite element of customary international law.[142] The psychological element of customary international law has been often been inferred upon proof of the practical element, leaving the burden to disprove *opinio juris* on the party contending that no rule of custom exists.[143] However, this has not always occurred. In both the *Steamship 'Lotus' Case*[144] and the *North Sea Continental Shelf Case*[145] the Court required positive proof of the *opinio juris* element by the proponent of the alleged customary rule in question.

Thus, whether applied universally or regionally, there must be clear evidence of the existence of both state practice and *opinio juris* before it can be said that a particular usage has crystallized as a customary rule of international law.

ii) Evidence of custom - Generally it is incumbent upon the party alleging the crystallization of a customary rule in any given situation to provide evidence of the existence of the requisite elements of custom in such a manner that it has become binding upon the other party.[146] Evidence of customary international law may be

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[140] See Akehurst, *supra* note 17 at 29.

[141] See Marayan Green, *supra* note 37 at 17.

[142] See Ott, *supra* note 4 at 15. Ott considers the *opinio juris* requirement illogical as it requires new customary rules to be generated by a process which must assume a belief that those rules are already legally binding.

[143] See Brownlie, *supra* note 31 at 7.

[144] In the *Steamship 'Lotus' Case* (hereinafter "*Lotus Case*"), [1927] *P.C.I.J.Reports* Ser. A., No. 10., the Permanent Court of International Justice held that the mere fact that the practical element of custom had been established did not allow the inference that the psychological element existed as well.

[145] *North Sea Continental Shelf Case*, *supra* note 121 at 43 - 45.

[146] See Marayan Green, *supra* note 37 at 17 - 18. In the *Asylum Case*, *supra* note 129 at 276, the Court held that "the party which relies on a custom ...must prove that ...the rule invoked by it is in accordance with a constant and uniform usage practised by the states in question, and that this usage

derived from a number of sources including: diplomatic correspondence, policy statements, press releases, the opinions of a state's legal advisors, official manuals on legal questions, executive decisions and practices, comments by governments on drafts produced by the International Law Commission, state legislation, international and national judicial decisions, recitals in treaties and other international instruments, a pattern of treaties of the same form, the practice of international organizations, and United Nations General Assembly resolutions.[147]

b) Customary International Environmental Law

As indicated, customary international environmental law has been constrained by the pre-eminence of state sovereignty in international relations, and customary principles developed thus far revolved primarily around the issues of state responsibility for transboundary pollution and equitable utilization of shared resources.[148] In the context of state responsibility, the classic statement of customary international environmental law is found in the *Trail Smelter Arbitration (United States v. Canada)*:

> "No State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another, or the properties or persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence."[149]

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is the expression of a right appertaining to the state granting asylum and a duty incumbent on the territorial state."

[147] See Brownlie, *supra* note 31 at 5. The Court in the *Lotus Case*, *supra* note 144 considered various treaties as evidence of state practice, however it concluded that existence of the treaties was evidence that the signatories believed that no customary rules existed on the point in question and a treaty was necessary to fill in the gap.

[148] For a detailed review of customary law concerning transboundary pollution, see Hoffman, K.B., "State Responsibility in International Law and Transboundary Pollution Injuries", (1976) 25 *International and Comparative Law Quarterly* 509.

[149] *Trail Smelter Arbitration (United States v. Canada)* (hereinafter "*Trail Smelter Arbitration*"), (1941) 3 *R.I.A.A.* 1905 at 1980. This case involved pollution from a smelter at Trail, British Columbia causing damage to farmers' fields in Stevens County, Washington. The matter was put before an International Joint Commission convened pursuant to the terms of the *Boundary Waters Treaty*, *supra* note 62 at Article VII, and was composed of six members, three appointed by the United States and

The *Trail Smelter Arbitration* principle has been echoed in other decisions of international courts,[150] in Principle 21 of the *Stockholm Declaration on the Human Environment*,[151] and most recently in the *Rio Declaration on Environment and Development*.[152] Other customary rules have evolved as a corollary to this principle, such as rules imposing a preventative duty upon states to ensure that activities within their borders do not cause environmental damage to others,[153] and a consultative and co-operative duty where action is considered by one state which may have detrimental environmental consequences on another state.[154] While

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three by the United Kingdom on the advice of the Canadian government. Although originally binding only upon the United States and Canada and only on the strict facts therein, the statement of the Tribunal regarding state responsibility for transboundary pollution has gained widespread acceptance and is regarded as a rule of customary law.

[150] For example, in the *Nuclear Tests Case (Australia v. France)*, [1974] *I.C.J.Reports* 253 at 389 the principle of state responsibility enunciated in the *Trail Smelter Arbitration* was cited with approval by the International Court of Justice and may have determined the outcome of the case had France not unilaterally decided to stop its Pacific nuclear testing, thus rendering the issue moot.

[151] *Stockholm Declaration on the Human Environment* (hereinafter "*Stockholm Declaration*"), adopted June 14, 1972, U.N. Doc. A/CONF.48/14/Rev.1, Ch. I, reprinted in (1972) 11 *International Legal Materials* 1416, Principle 21.

[152] *Rio Declaration on Environment and Development* (hereinafter "*Rio Declaration*"), adopted June 14, 1992, U.N. Doc. A/CONF.151/5/Rev.1, reprinted in (1992) 31 *International Legal Materials* 874, Principle 2.

[153] See the *Corfu Channel Case (Albania v. The United Kingdom)* (hereinafter "*Corfu Channel Case*"), [1949] *I.C.J.Reports* 4. This dispute arose when British vessels were damaged as a result of running into mines laid within Albanian waters. The Court held that the Albanian government knew or ought to have known of the mine-laying operation, and accordingly had a duty to inform other states of the danger. Applied in the environmental context, this case has stood for the principle that if a state is aware that activities within its territory may have detrimental ecological effects that extend to other states, it has a duty to prevent that damage from occurring, specifically by informing other states of the possibility of harm.

[154] See the *Lac Lanoux Arbitration (Spain v. France)*, (1957) 12 *R.I.A.A.* 281. This case involved a dispute between Spain and France over a French proposal to divert water flowing across the Franco-Spanish border to fuel a hydro-electric dam to be built nearby. The Arbitral Tribunal convened in this case held, *inter alia*, that France had a procedural duty to consult with Spain prior to the commencement of the project. This case has been applied in the environmental context to impose a duty upon states which are contemplating action which may have detrimental environmental consequences on others to consult and co-operate with those other states before commencing the project. Ott has identified a number of 'subsidiary norms of the co-operative duty including:

some authors have catalogued lengthy lists of customary principles, most of these 'principles' are simply the offshoots of certain key concepts.[155] All of these duties

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a) the duty to conduct environmental impact studies before beginning a project which has potential for ecological harm;

b) the duty to inform and consult other states which may have an interest in the effects of a particular project;

c) the duty to warn other states in the event of an environmental accident;

d) the duty to deal on a basis of non-discrimination and equity with persons who have an interest in some environmental question related to the project.

See Ott, *supra* note 4 at 293.

[155] See for example Koester, V., "From Stockholm to Brundtland", (1990) 20 *Environmental Policy and Law* (No. 1/2) 14 at 18. Koester enumerates twelve customary principles of international environmental law, many of which overlap. These include:

a) an obligation to conserve and protect the environment and natural resources;

b) a human right to a healthy environment;

c) an obligation to prevent domestic activities from harming the environment in other countries to a significant degree;

d) equitable utilization of environmental resources;

e) duties to inform and consult with other states;

f) an obligation to co-operate with other states to solve transboundary environmental problems;

g) the principle of non-discrimination (equal access);

h) an obligation to perform an environmental impact assessment;

i) an obligation to monitor the condition of the environment;

j) an obligation to give compensation for environmental damage;

k) application of the principle urging the peaceful settlement of disputes to the context of environmental issues.

With the exception of the rule recognizing a human right to a clean environment, Koester's principles can all be included in the definitions provided in this section. While a persuasive argument can be made that a right to a healthy environment is among the basic human rights, and declarations such as the *Stockholm Declaration* have linked environmental and human rights issues together, it may be premature at this stage to assert that the human right to a healthy environment has developed into

are linked to the threshold issue of serious transboundary damage.[156] The customary rules which have evolved concerning equitable utilization of shared resources are also linked to transboundary issues.[157] In addition, the development of the customary principles of *jus cogens*,[158] and the existence of obligations *erga omnes*[159] can arguably be applied in the international environmental context.[160] Recognizing environmental rules as *jus cogens* would afford them a position of importance which would preclude states from derogating from them in a treaty, while defining environmental obligations as being owed *erga omnes* would allow customary international environmental law to break free of its transboundary constraints.[161] However, as yet there has been no definite link between any particular environmental rule or obligation and either the concept of *jus cogens* or *erga omnes*.

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a customary rule of international environmental law. For an analysis of the linkage between human rights issues and environmental issues see Shelton, D., "Human Rights, Environmental Rights, and the Right to Environment", (1991) 28 *Stanford Journal of International Law* 103.

[156] See Shaw, *supra* note 10 at 537 - 538.

[157] See Koester, *supra* note 155 at 17 - 18.

[158] The development of the principle of *jus cogens* is discussed at *supra* notes 31 - 34 and accompanying text.

[159] The International Court of Justice in the *Barcelona Traction, Light and Power Company Ltd. (Belgium v. Spain)* (hereinafter the "*Barcelona Traction Case*"), [1970] *I.C.J.Reports* 3 at 32 - 33, held that there existed certain obligations which were owed 'to all'. Generally, *jus cogens* rules will be considered to have application *erga omnes*. See Christenson, G.A., "*Jus Cogens*: Guarding Interests Fundamental to International Society", (1988) 28 *Virginia Journal of International Law* 585 at 608 - 609.

[160] See Brunnée, J. "'Common Interest'- Echoes from an Empty Shell? Some Thoughts on Common Interest and International Environmental Law", (1989) 49 *Zeitschrift Für Ausländisches Öffentliches Recht und Völkerrecht* 791 at 805 -806. The author there identifies two principles of international environmental law, the principle of good neighbourliness echoed in the *Trail Smelter Arbitration* dicta, and the principle of equitable utilization, as being environmental principles which are indispensable for the existence of the international community as a whole. Thus they are peremptory rules of international environmental law.

[161] See Brunnée, *supra* note 86 at 27 - 28.

c) Evaluation of the Effectiveness of Customary Principles of International Environmental Law

i) Benefits - Customary principles of international environmental law have defined, in general terms, the environmental responsibility of states in issues of transboundary pollution and equitable utilization of resources. These customary rules have been the cornerstone upon which the detailed environmental treaty network has been built. There is potential for further development of customary environmental principles utilizing emerging international legal concepts such as *jus cogens* and obligations *erga omnes*.

The customary channels of international environmental law-making have the advantage that they may more easily acquire universal application than treaty law, as silence on the part of a state or group of states is most often taken as acquiescence to formulating customary rules.[162] The introduction of new concepts of international environmental law such as 'common concern of mankind', 'common heritage of mankind', 'inter-generational equity', the 'precautionary principle', and 'sustainable development' may become crystallized as customary concepts of international environmental law in the future.[163]

ii) Constraints - However, custom as a source of international environmental law, while providing an effective cornerstone, is not able, in itself to solve global environmental dilemmas such as climate change and loss of biological diversity. Customary rules are constrained by a number of inherent weaknesses which make them a less than ideal solution to the current global environmental crisis. Customary principles which have crystallized into law remain bound to the issue of transboundary pollution, and give a pre-eminent position to the territorial interests of states rather than protection of environmental resources *per se*.[164] Environmental protection is given voice within the context of, and subordinate to, the

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[162] See Brownlie, *supra* note 31 at 6.

[163] These concepts will be dealt with at length *infra*, Chapters Two and Three.

[164] See Brunnée, *supra* note 86 at 6.

notion of state sovereignty.[165] There is little indication that this will change in the emerging global order where North-South polarization is occurring. Many emerging nations refuse to subject themselves to existing customary rules of international law, and this resistance is particularly acute in the field of international environmental law.[166] Developing nations regard international environmental law with suspicion, and refuse to accept any rules which would impinge upon their sovereignty.[167] Clearly this situation undermines the effectiveness of custom as a source of international environmental law. Furthermore, customary rules delineate no obligations to future generations of humankind in the environmental context, nor do they regulate preservation of crucial environmental resources, such as rain forests, within the exclusive territorial jurisdiction of a state or group of states.[168]

The effectiveness of custom as a source of international environmental law is also limited by the process of crystallization. It remains difficult to determine whether a given rule has crystallized into law, and this determination is often made by the International Court of Justice, during litigation.[169] Moreover, it is increasing difficult in the emerging global order, where diversity and self-determination result in a wide variety of state practice among nearly two hundred sovereign states, to identify any uniform, constant, or general practice.[170] Absent a clear indication of universal practice, the time required in order for a customary rule to crystallize into law is prohibitive in the field of the environment, where a timely response is the

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[165] *Ibid.*

[166] See Developments in the Law, *supra* note 1 at 1505 - 1507.

[167] *Ibid.*

[168] See Brunnée, *supra* note 86 at 7.

[169] See Birnie et al., *supra* note 2 at 15.

[170] *Ibid.*, at 16.

essence of an effective solution to global environmental problems.[171]

In general, rules of customary international law do not specify required behaviour, but rather delineate vague international duties.[172] Environmental dilemmas such as climate change and ozone layer depletion need specific and well-calibrated responses, not vague statements of environmental duties or intentions, in order to be effective.[173] Current customary rules also require a causal connection between the polluting state and the injured state in order for the state responsibility concept be enforced.[174] Even if this causal connection could be established, what is necessary in the environmental context is not a detailed reactive approach which sets out to quantify damage and compensate victims, but a preventative, precautionary approach.[175] Customary rules on state responsibility implicitly foster an adversarial nature in international environmental law when a co-operative effort is crucial.[176]

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[171] See Brierly, *supra* note 11, at 62. The author concludes that the "growth of a new custom is always a slow process, and the character of international society makes it particularly slow in the international sphere." However, he also notes that "it is possible even today for new customs to develop and to win acceptance as law when the need is sufficiently clear and urgent." While environmentalists would argue the clarity and urgency of the need for rapid development of new customary norms of international environmental law, the difficulty will be to impress this compelling need upon the leaders of the world's states.

[172] See Developments in the Law, *supra* note 1 at 1504 - 1505. The authors contend that the indefinite nature of customary rules of international law fail to provide guidance as to acceptable behaviour. See also Brunnée, *supra* note 86 at 5 where the author notes that the generality and vagueness of concepts such as 'serious damage' and 'equitable share' allow states to honour the rules in principle while citing scientific uncertainty and lack of proof to escape their application in specific instances.

[173] See generally, Shaw, *supra* note 10 at 557 - 559.

[174] The impracticality of this in the context of climate change, for example, is evident. All states bear some degree of responsibility for causing the problems of climate change, and it is not possible to establish a causal link between the greenhouse gas emissions of one state and the environmental damage suffered by another state.

[175] See Nanda, V.P., "Global Warming and International Environmental Law - A Preliminary Inquiry", (1989) 30 *Harvard International Law Journal* 375 at 383 - 384. A detailed examination of the precautionary approach and the precautionary principle is undertaken *infra* in Chapter Two.

[176] *Ibid.*, at 384.

B. 'NATURAL LAW' SOURCES

The remaining sources of international law outlined in Article 38(1) of the *Statute of the International Court of Justice* are not dependant upon the consent of states for their existence.[177] The inclusion of these sources has been described as a rejection of the strict positivist doctrine which defined international law as consisting only of those rules to which states had expressly or impliedly given their consent to be bound.[178] The following outlines the efficacy of 'natural law' sources of international law for resolving international environmental dilemmas, both general principles of law and the subsidiary sources outlined in Article 38(1)(d).[179]

1. General Principles of Law

Article 38(1)(c) of the *Statute of the Court of International Justice* includes as a source of law "general principles recognized by all civilized nations".[180] The reference to 'civilized nations' may appear to some to be slightly pejorative, as it implies that some members of international society would be categorized as 'uncivilized'. Modern scholars have interpreted 'civilized nations' as indicating states with a developed legal system.[181]

General principles of law include both principles of international law and legal maxims common to developed legal systems across the globe.[182] International legal principles which would be embraced under this heading include the principles of consent, reciprocity, equality of states, sovereignty of states, good faith, and the

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[177] See Brownlie, *supra* note 31 at 15.

[178] See Brierly, *supra* note 11 at 63. Brierly describes the inclusion of 'natural law' sources of international law as "an authoritative recognition of a dynamic element in international law".

[179] *Statute of the International Court of Justice*, *supra* note 30, Article 38(1)(d).

[180] *Ibid.*, Article 38(1)(c).

[181] See Marayan Green, *supra* note 37 at 21.

[182] See Janis, *supra* note 12 at 47.

freedom of the seas.[183] In order for a domestic principle to be considered as a source of international law it must be present in all developed legal systems, relevant to international relations, and necessary for the resolution of a particular international dispute.[184] Domestic legal principles which have been referred to by the Court as a source of international law under this heading include *res judicata*,[185] *restitutio in integrum*,[186] and the use of circumstantial evidence.[187] Equitable principles applicable to international law are best categorized under this heading.[188]

Using general principles of law as a source of international environmental law could have considerable impact, given the large number of principles which have been enunciated by states in documents such as the *Stockholm Declaration*, and the *Rio Declaration*.[189] Using general principles as a source of international environmental law would also allow greater scope for constructing and expanding the emerging principles of international environmental law as they give courts, not states, the creative role in applying general principles of law to stop up any gaps in existing customary or treaty law.[190] One could argue in favour of a right to a clean environment on the 'natural law' basis of this source in the same way that the 'general principles' source was put forward as a foundation for concepts of human

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[183] See Brownlie, *supra* note 31 at 19.

[184] See Marayan Green, *supra* note 37 at 22.

[185] See *Effect of Awards of the United Nations Administrative Tribunal*, [1954] *I.C.J.Reports* 53.

[186] *Chorzów Factory Case* [1927] *P.C.I.J.Reports* Ser. A., No. 9.

[187] See *Corfu Channel Case*, *supra* note 153, at 18.

[188] In the *Continental Shelf Case (Tunisia v. Libya)*, [1982] *I.C.J.Reports* 16 at 80 the Court held that "(e)quity as a legal concept is a direct emanation of the idea of justice. The court whose task is by definition to administer justice is bound to apply it." For a more detailed discussion of the role of equity in international law, see also Janis, *supra* note 12 at 54 - 66.

[189] See Birnie et al., *supra* note 2 at 21.

[190] *Ibid.*, at 22.

rights in the *South West Africa Case (Second Phase)*.[191]

However, although conceptually this source should be as persuasive as the two positive law sources, in practice it has played a subordinate role to treaties and custom.[192] International tribunals have rarely relied on general principles in rendering decisions, and in the limited instances where they have, principles have not been relied upon as the primary basis of the decision, but rather have been invoked to support a decision arrived at by the Court by reference to other sources.[193] Recognition of general principles as binding presents another problem as principles are usually recognized by international tribunals in the context of litigation which flies in the face of the co-operative aim of international legal principles. These factors ensure that this source can be only marginally useful in the development of international environmental law.[194]

2. Subsidiary Sources of International Environmental Law

Article 38(1)(d) of the *Statute of the International Court of Justice* lists a number of subsidiary sources of public international law.[195] These include judicial decisions and the teachings of the most highly qualified publicists. Both of these sources state what the law is rather than create new law.[196] While there is no formal doctrine of *stare decisis* in international courts,[197] judges do not lightly

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[191] In the *South West Africa Case (Second Phase)* [1966] *I.C.J.Reports* 294 - 9, Judge Tanaka, in dissent, concluded that the 'natural law' elements inherent in the general principles source could be a foundation of concepts of human rights.

[192] See Marayan Green, *supra* note 37 at 21 where the author recounts that the Court has recourse to general principles " in the absence of custom or treaty provisions".

[193] See Birnie et al., *supra* note 2 at 23.

[194] *Ibid.*, at 24.

[195] *Statute of the International Court of Justice*, *supra* note 30, Article 38(1)(d).

[196] See Brownlie, *supra* note 31 at 24.

[197] See Brierly, *supra* note 11 at 63 - 64. For example, Article 59 of the *Statute of the International Court of Justice*, *supra* note 30, states that the decisions of the court are binding only upon the parties involved in respect of the case at bar.

disregard prior judgments of their own courts and will usually take pains to distinguish a case should they wish to depart from an earlier pronouncement on similar issues.[198] Thus in the *Corfu Channel Case* the Court referred prior decisions of the Permanent Court of Justice in support for their decision.[199] Judicial decisions can therefore assist in the progressive development of international law, however the scope of their impact remains in the context of litigious issues rendering this a less than ideal source of international environmental law.[200]

The writings of publicists can have a formative, although secondary, influence on the development of international environmental law.[201] Analogous sources which the International Court of Justice has also looked to in this regard include draft articles by the International Law Commission, Harvard Research Drafts, reports and resolutions of the Institute of International Law and the International Law Association.[202]

IV. NON-TRADITIONAL SOURCES OF INTERNATIONAL ENVIRONMENTAL LAW: 'SOFT LAW'

Increasingly, in a developing and rapidly changing field such as the international law of the environment, recourse to non-traditional sources is necessitated by the limitations of the traditional sources of international law. 'Soft law' has been characterized as an unfortunate term, as the use of 'soft' can denote weakness or insignificance, and the appellation 'law' is misleading as 'soft law' principles do not carry the binding force which is generally seen as the characteristic

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198 See Brownlie, *supra* note 31 at 21.

199 See *Corfu Channel Case*, *supra* note 153 at 24.

200 See generally Birnie et al., *supra* note 2 at 24 - 25.

201 See Brownlie, *supra* note 31 at 24.

202 *Ibid.*, at 25.

which distinguishes law from other social rules.[203] 'Soft law' can be defined as rules or codes of practice which do not have the binding force of law, but do carry with them considerable weight and can influence the actions of members of the international community.[204] Beginning with the *Stockholm Declaration*, which although technically non-binding, enumerated a number of principles which have been extremely significant in guiding the actions of the global community law, 'soft law' making has played an important role in the development of international environmental law.[205]

The contribution of 'soft law' to international environmental law can be classified broadly into two categories; prescriptive codes and 'soft' principles. Prescriptive codes are "half-way stages" in the treaty-making process, they delineate specific guidelines prescribing state conduct, but are not legally binding upon states.[206] Prescriptive codes have appeared in the form of codes of practice, recommendations, guidelines, resolutions, declarations and standards.[207]

'Soft' principles include concepts such as 'common concern of mankind', 'common heritage of mankind', 'inter-generational equity', 'the precautionary principle' and 'sustainable development'. These principles have appeared with increasing frequency in international environmental agreements and have made an impact upon international environmental law although they have yet to crystallize into legally binding 'hard' principles of international custom.[208] These principles can bolster the effectiveness of international environmental law before becoming,

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[203] See Birnie et al., *supra* note 2 at 26 - 27.

[204] For a detailed examination of the development of 'soft law' in international environmental law, see Dupuy, P-M., "Soft law and the International Law of the Environment", (1991) 12 *Michigan Journal of International Law* 420.

[205] *Ibid.*, at 422.

[206] See Birnie et al., *supra* note 2 at 27.

[207] *Ibid.*

[208] For an overview of 'soft' principles see *infra*, Chapters Two and Three.

technically, legal principles, through their use as 'soft' principles.[209]

'Soft law' can transcend a number of the shortcomings of the traditional sources of law, and thus is an important component in the future development of international environmental law.[210] 'Soft law' principles are not fettered by the time consuming processes of ratification or crystallization which characterize treaty and customary law, and can thus develop much more quickly.[211] While customary principles require the establishment of state practice and *opinio juris* before they come into effect, 'soft law' principles do not, and can be employed effectively in the short term before and during the period in which they may be crystallizing into binding custom. 'Soft law' allows for a creative approach to the thorny issue of consensus. While customary rules require 'general' consensus evidenced by widespread uniform and consistent state practice and *opinio juris*, through the vehicle of 'soft law', progressive environmental principles can be introduced at the international level and have immediate impact, while consensus can evolve later as more and more states informally adopt the principle and alter their actions accordingly. States have appeared more willing to go further in defining concepts when the outcome is not legally binding.[212]

The flexible nature of 'soft law' allows states to tackle a problem collectively, even without consensus, without unduly or irrevocably shackling their freedom of action.[213] This is particularly important in environmental matters which demand a precautionary approach in the face of scientific uncertainty. 'Soft law' encourages

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[209] See Brunnée, *supra* note 86 at 25. The author suggests that 'soft' principles do this in one of two ways:

a) they provide a conceptual frame of reference for future agreements; or
b) they form part of the crystallization process producing customary law.

[210] See generally, Birnie et al., *supra* note 2 at 26 - 30.

[211] *Ibid.*, at 26.

[212] See Brunnée, *supra* note 86 at 21.

[213] See Birnie et al., *supra* note 2 at 28.

states to act even without clear and convincing evidence as codes of conduct can be abandoned without legal ramifications in the event that subsequent scientific research indicates that such action is unnecessary.[214]

Accordingly, it can be seen that 'soft law' has the potential to make an important contribution to the future development of international environmental law. The guidelines and principles of 'soft law' express the general will of the international community, and can eventually crystallize into binding customary law.[215] In the short term, their status as 'soft law' allows them to make a *de facto* impact by guiding the actions of the international community in environmental matters.

V. CONCLUSION

International law has played a dynamic role in the development of global environmental protection through traditional sources. Customary law has provided an initial base for the development of international environmental law through early pronouncements on state responsibility for transboundary pollution. Other emerging concepts of international environmental protection may yet crystallize into customary law. International environmental agreements have developed flexible and effective methods for combatting complex global environmental problems such as ozone layer depletion.

However, traditional sources carry with them a number of inherent constraints which have inhibited their effectiveness. Both treaties and custom require the passage of a considerable amount of time before they come into effect. States are reluctant to develop principles in treaties or along customary channels which may impinge upon their sovereignty. Treaties are also limited by the compromising effects often necessary to reach consensus. Customary rules are often vague, and states are often disinclined to work to clarify them.

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214 *Ibid.*

215 *Ibid.*

These and other limitations on traditional sources[216] necessitate innovative approaches in the international environmental legal forum. This innovation is supplied in the form of non-binding 'soft law', both prescriptive codes and principles which guide how states act in regard to environmental protection. The efficacy of 'soft law' in developing a new environmental legal order, and particularly emerging principles such as 'common concern of mankind', 'common heritage of mankind', 'inter-generational equity', 'the precautionary principle' and 'sustainable development' will be the focus of study in subsequent chapters.

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[216] Fuller discussion of these constraints is engaged *supra* notes 106 - 114 and 164 - 176 and accompanying text.

CHAPTER TWO

ORIGINS OF EMERGING 'SOFT LAW' PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW

I. INTRODUCTION

The last chapter examined the role of traditional sources of international law in developing legal responses to environmental crises.[1] In addition, an innovative legal and policy instrument, so-called 'soft law', was introduced and the suggestion was made that use of 'soft law' concepts in addressing environmental concerns may overcome the inherent constraints of the traditional sources.[2]

The use of 'soft law' as a generic term to describe a wide variety of instruments has been termed both "paradoxical",[3] and a "misleading simplification".[4] However, the term effectively encapsulates a phenomenon which has recently manifested itself in the global legal forum. Three reasons can be posited for the development of 'soft law' in the post-war international society.[5] Firstly, the structure of international law-making has changed through the proliferation of international organizations since World War II.[6] The various agencies of the United Nations, the Organisation for Economic Co-operation and Development and other international bodies now fulfil a quasi-legislative function in which representatives from member states pass instruments variously called 'declarations', 'recommendations', 'resolutions', and 'standards'.[7] These instruments are not legally binding, but have had an

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[1] See *supra*, Chapter One, notes 37 - 202 and accompanying text.

[2] See *supra*, Chapter One, notes 205 - 215 and accompanying text.

[3] See Dupuy, P-M., "Soft Law and the International Law of the Environment", (1991) 12 *Michigan Journal of International Law* 420. The term 'soft law' is paradoxical to many jurists because 'law' has traditionally been viewed as that which is enforceable. Non-compulsory, or 'soft' law, therefore, does not exist.

[4] See Chinkin, C.M., "The Challenge of Soft Law: Development and Change in International Law", (1989) 38 *International and Comparative Law Quarterly* 850 at 850.

[5] See generally, Dupuy, *supra* note 3 at 420 - 422.

[6] *Ibid.*, at 421.

[7] See Birnie, P.W., and Boyle, A.E., *International Law and the Environment*, (Oxford: Clarendon Press, 1992) at 27.

increasingly important impact upon international diplomacy, public opinion, and domestic policy.[8] Secondly, the emancipation of former colonial territories in Africa and the Far East has greatly expanded the number of sovereign subjects of public international law.[9] This expansion has also led to diversification of interests, curtailing the efficacy of law-making by consensus through the traditional channels of international agreements and custom.[10] The *General Agreement of Tariffs and Trade*,[11] which opened for signature on October 30, 1947, but has not entered into force, is an illustration of the fact that wide legal principles have difficulty obtaining universal acceptance.[12] New states also have looked to the utilization of 'soft' instruments as a means by which to revise existing norms.[13] Thirdly, and most significantly for international environmental law, there is the advent of global issues and hazards which underscore the interdependence of all regions of the earth.[14]

'Soft law' has had many diverse applications in international law during the past two decades. Its use has been particularly manifest in emerging fields of law such as international economic law, international human rights law, and international

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[8] See Dupuy, *supra* note 3 at 421.

[9] *Ibid.*

[10] See Birnie et al., *supra* note 7 at 26.

[11] *General Agreement on Tariffs and Trade* (hereinafter the "GATT"), opened for signature October 30, 1947, reprinted in (1947) 55 *United Nations Treaty Series* 187. Although the GATT has never technically entered into force, it has been applied "provisionally" since January 1, 1948 through the *Protocol of Provisional Application of the General Agreement on Tariffs and Trade*, opened for signature October 30, 1947, reprinted in (1947) 55 *United Nations Treaty Series* 308. Membership in the GATT as of September 15, 1992 included 105 sovereign states. See "Namibia Becomes 105th Contracting Party", *GATT Focus Newsletter* (No. 93), September, 1992 at 2.

[12] See Gruchalla-Wesierski, T., "A Framework for Understanding "Soft Law", (1984) 30 *McGill Law Journal* 37 at 41.

[13] See Dupuy, *supra* note 3 at 421.

[14] See Handl, G., "Environmental Security and Global Change: The Challenge to International Law", (1990) 1 *Yearbook of International Environmental Law* 3 at 3. Environmental issues which highlight the interdependence of all nations include atmospheric pollution concerns such as ozone layer depletion and climate change.

environmental law in which recourse to traditional sources has proven insufficient or ineffective.[15]

In the context of environmental law, 'soft law' can be either a process of norm creation,[16] or a prescription lacking normative force which nevertheless catalyzes and advances the development of international environmental law and policy.[17] As a process of norm creation, repetition of aspirational norms of international environmental law in 'soft' instruments can be a vehicle through which they obtain sufficient clarity, consistency and widespread usage to crystallize into customary principles.[18] As a prescription of catalyzation, general 'soft' principles which do not

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[15] See Chinkin, *supra* note 4 at 853. Examples of 'soft' instruments in international economic law include the *Declaration on the Establishment of a New International Economic Order*, G.A. Res. 3201 (S-VI), adopted May 1, 1974, U.N. Doc. A/RES/3201 (S-VI), reprinted in (1974) 13 *International Legal Materials* 715 ,and the *Charter of Economic Rights and Duties of States* (hereinafter "*CERDS*"), G.A. Res. 3281 (XXIX), adopted December 12, 1974, U.N. Doc. A/RES/3281 (XXIX), reprinted in (1975) 14 *International Legal Materials* 251. A 'soft law' instrument in the Human Rights context is the *Universal Declaration on Human Rights*, adopted December 10, 1948, U.N. Doc. A/811, reprinted in Brownlie, I., ed., *Basic Documents in International Law* (Third Edition), (Oxford: Clarendon Press, 1983) 250. Recent 'soft' environmental instruments include the *Rio Declaration on the Environment and Development* (hereinafter "*Rio Declaration*"), opened for signature June 14, 1992, U.N. Doc. A/CONF.151/5/Rev.1, reprinted in (1992) 31 *International Legal Materials* 874 and the *Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*, opened for signature June 13, 1992, U.N. Doc. A/CONF.151/6/Rev.1, reprinted in (1992) 31 *International Legal Materials* 881.

[16] See Dupuy, *supra* note 3 at 420.

[17] See Handl, *supra* note 14 at 7.

[18] See Dupuy, *supra* note 3 at 432 where the author asserts that "the cumulative enunciation of the same guideline by numerous non-binding texts helps to express the *opinio juris* of the world community." Dupuy considers that the traditional definition of customary international law as composed of state practice and *opinio juris* has been reversed in the modern heterogeneous legal community so that *opinio juris* takes precedence over state practice. Thus general international law-making is no longer simply a linear process of recognition of emerging principles through concrete state practice which evinces a converging conviction. 'Soft law' can also play a role in crystallization, . See *ibid.*, at 432 - 433.

The International Court of Justice has gone so far as to equate the resolutions of one 'soft law-making' body, the United Nations General Assembly (hereinafter "U.N.G.A."),with binding law. In *Military and Paramilitary Activities in and Against Nicaragua (Nicaragua v. The United States)*, [1986] *I.C.J. Reports* 4 at 100, the Court stated that with regard to U.N.G.A. Resolutions, "the effect of consent to the text of such resolutions . . . may be understood as an acceptance of the validity of the rule or set of rules declared by the resolution by themselves."

have normative force can have a *de facto* impact upon international environmental law-making by influencing policy, and generating narrower, more specific principles which do eventually crystallize into custom.[19] Thus 'soft' principles can act as either an enhancement of or a supplement to 'hard' international environmental law.[20]

Manifestations of 'soft law' in international environmental law usually take one of two forms.[21] Firstly, 'soft law' principles are often included in international agreements which are otherwise recognized as binding upon signatories.[22] The *Vienna Convention for the Protection of the Ozone Layer*,[23] defined as a 'hard' instrument of international law in that its binding nature is beyond dispute, contains a number of imprecise, 'soft' statements such as the obligation to "take appropriate measures . . . to protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer."[24] The use of treaty form does not of itself insure that all obligations contained therein will be by definition 'hard'.[25]

The second manifestation of 'soft law' in international environmental law is in non-binding resolutions formulated under the aegis of international or regional

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[19] See Handl, *supra* note 14 at 8.

[20] *Ibid.*

[21] See generally, Chinkin, *supra* note 4 at 851.

[22] *Ibid.* Chinkin refers to this as "legal soft law".

[23] *Vienna Convention for the Protection of the Ozone Layer* (hereinafter "*Vienna Convention*"), opened for signature March 22, 1985, U.N. Doc. UNEP/1G.83/51 Rev.1, reprinted in (1987) 26 *International Legal Materials* 1529.

[24] *Ibid.*, Article 2(1).

[25] See Chinkin, *supra* note 4 at 851. Chinkin cites the *Vienna Convention on the Law of Treaties*, opened for signature May 23, 1969, U.N. Doc. A/CONF.39/27, reprinted in (1969) 8 *International Legal Materials* 679, which does not require treaties to exclusively create identifiable obligations or rights between signatories. Dupuy advocates dispensing with consideration of the nature of the agreement in which a principle is enunciated in characterizing the principle as 'hard' or 'soft'. Rather, the substance of the principle in question should be the main criterion upon which its characterization is based. See Dupuy, *supra* note 3 at 430.

organizations.[26] The fact that states approach the negotiation and conclusion of these instruments with the same care as is given to the preparation of binding treaties, is indicative of their political significance.[27] Although these instruments are technically non-binding, their practical impact on the development of international environmental law can be far-reaching. The best example in this context is the *Stockholm Declaration on the Human Environment*,[28] concluded in 1972 at the United Nations Conference on the Human Environment.[29] The general nature of the twenty-six principles of the *Stockholm Declaration* has not precluded them from having a tremendous impact upon international environmental law in the subsequent two decades.[30]

This chapter expands upon five emerging notions which have been employed in international environmental law. It looks specifically at the ideas of 'a common concern of mankind' and 'common heritage of mankind',[31] 'inter-generational equity',[32] the 'precautionary principle',[33] and 'sustainable development'.[34] It

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[26] See Chinkin, *supra* note 4 at 851. Chinkin describes this as "non-legal soft law".

[27] See Dupuy, *supra* note 3 at 429.

[28] *Stockholm Declaration on the Human Environment* (hereinafter "*Stockholm Declaration*"), adopted June 16, 1972, U.N. Doc. A/CONF.48/14/Rev.1, Ch.I, reprinted in (1972) 11 *International Legal Materials* 1416.

[29] The United Nations Conference on the Human Environment (hereinafter "Stockholm Conference") was convened in Stockholm, Sweden from June 5 - 16, 1972. The *Stockholm Declaration* was the most significant document to come out of the Stockholm Conference. The Stockholm Conference is generally considered to have been the event which ushered in the modern era of international environmental law. See Koester, V., "From Stockholm to Brundtland", (1990) 20 *Environmental Policy and Law* (No. 1/2) 14 at 14.

[30] See Brown-Weiss, E., "International Environmental Law: Contemporary Issues and the Emergence of a New World Order", (1993) *Georgetown Law Journal* 675 at 678 where the author describes the *Stockholm Declaration* as the genesis of modern international environmental law.

[31] These concepts are examined at *infra* notes 37 - 80 and accompanying text.

[32] Further review of this doctrine is undertaken at *infra* notes 81 - 144 and accompanying text.

[33] The 'precautionary principle' is considered at *infra* notes 145 - 207 and accompanying text.

considers the development of each in turn, looking at their use in international environmental law and policy up to the United Nations Convention on the Environment and Development.[35] It analyzes and characterizes each by considering whether the principle has 'hardened' or has the potential to crystallize into a tenet of customary law, and assesses, respectively, the impact of each upon the development of international environmental law. The chapter concludes with an examination of the linkage between these principles.[36]

II. EMERGING PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW

Since the dawn of the modern era of international law of the environment, there have developed a number of ideas which, although of doubtful legal status, have had considerable impact upon its evolution. Elements of the principles of 'a common concern', 'common heritage of mankind', 'inter-generational equity', the 'precautionary principle' and 'sustainable development' invariably pre-date their application to environmental issues. However, their unique development in the context of international environmental law is the focus of this section.

A. COMMON CONCERN OF MANKIND / COMMON HERITAGE OF MANKIND

The notion that environmental protection is a 'common concern of mankind' derives from and is a subset of the more basic concept of 'common interest' in

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[34] 'Sustainable Development' will be discussed in depth at *infra* notes 208 - 305 and accompanying text.

[35] The 1992 United Nations Conference on the Environment and Development (hereinafter "UNCED" or "Rio Conference") was held at Rio de Janeiro, Brazil, from June 3 - 14, 1992. An Earth Summit was convened during the final two days of the Conference. It was attended by Heads of State from over one hundred seventy countries. See "Rio Conference on Environment and Development", (1992) 22 *Environmental Policy and Law* (No. 4) 204. An analysis of the impact of the Rio Conference upon the development of international environmental law will be undertaken *infra* at Chapter Three.

[36] See *infra* notes 306 - 313 and accompanying text.

international law.[37] The doctrine of the 'common heritage of mankind' is a related idea which historically has been applied to management of environs beyond the territorial jurisdiction of any one state, the so-called 'commons':[38] the sea-bed,[39] Antarctica,[40] and outer space.[41] 'Common heritage' has had a more storied past than 'common concern', and at this stage can be said to be the more specific and stronger of the two terms.[42] 'Common concern' has only recently emerged on the

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[37] See Brunnée, J., "'Common Interest' - Echoes from an Empty Shell? Some Thoughts on Common Interest and International Environmental Law", (1989) 49 *Zeitschrift für Ausländisches Öffentliches Recht und Völkerrecht* 791. The author suggests that the idea of 'common concern' is only one facet of the broader concept of 'common interest', and that 'common heritage' is an overlapping notion. 'Common interest' is the result of the convergence of individual states' interests, which in turn is a consequence of the increasing interdependence of the nations of the earth, particularly concerning environmental protection. Therefore the root of 'common interest' is egocentric. Self-interest still guides states' actions in the international legal forum, however, those interests are, in issues of environmental protection, the same. See generally, *ibid.*, at 792 - 796.

[38] See Kiss, A., "The International Protection of the Environment", in MacDonald, R. St. J., and Johnston, D.M. eds., *The Structure and Process of International Law: Essays in Legal Philosophy Doctrine and Theory*, (Boston: Martinus Nijhoff, 1983) 1069 at 1084.

[39] *United Nations Convention on the Law of the Sea* (hereinafter the "*Law of the Sea Convention*"), opened for signature December 10, 1982, not yet entered into force, U.N. Doc. A/CONF.62/122/Corr. 8, reprinted in (1982) 21 *International Legal Materials* 1261, Article 136, which describes the sea-bed, ocean floor and sub-soil thereof as the 'common heritage of mankind'.

[40] *Convention for the Regulation of Antarctic Mineral Resource Activities* (hereinafter "*Antarctic Mineral Convention*"), opened for signature June 2, 1988, U.N. Doc. AMR/SCM/88/78, reprinted in (1988) 27 *International Legal Materials* 868. The Pre-amble asserts, *inter alia*, that "it is in the interest of all mankind that the Antarctic Treaty Area shall continue forever to be used for peaceful purposes. . . "

[41] In the *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies* (hereinafter the "*Moon Treaty*"), opened for signature December 18, 1979, U.N. Doc. A/4/6, reprinted in (1979) 18 *International Legal Materials* 1434, Article 11, Paragraph 1 states that "the moon and its natural resources shall be the common heritage of mankind." The *Moon Treaty* entered into force on July 11, 1984. Earlier, in the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies* (hereinafter the "*Outer Space Treaty*"), opened for signature January 1, 1967, U.N. Doc. A/RES/2222 (XXI), reprinted in (1967) 6 *International Legal Materials* 386, Article I described the exploration and use of outer space as the "common province of mankind." The *Outer Space Treaty* entered into force on October 10, 1967.

[42] This can be seen in the United Nations General Assembly's rejection of the Maltese delegation's suggestion in *Conservation of Climate as Part of the Common Heritage of Mankind*, September 12, 1988, U.N. Doc. A/43/241, that the global climate be considered part of the 'common heritage of mankind', carrying with it all of the implications which that term has come to signify.

international environmental tableau. Unlike the more specific 'common heritage' principle, it has not been limited to use in matters affecting the commons.[43] Therefore, its potential scope has implications upon traditional international legal precepts such as state sovereignty and reciprocity, and it holds greater promise for the development of international environmental law.[44]

This section traces the origins and development of each of these related principles, looking particularly at their use in international agreements and 'soft law' declarations. It then characterizes each, considering their normative impact and potential for crystallization into customary principles. Finally, an assessment of the 'common' principles is given, considering how successful they have been and can be expected to be in furthering the development of international environmental law.

1. Origins and Development

a) 'Common Concern'

Although academic authors have espoused the concept of 'common concern of mankind' in international environmental matters for at least a decade,[45] the notion was first set forth formally in the *United Nations General Assembly Resolution*

States were particularly wary about referring to climate in such a way as to identify it as a 'commons' resource. Instead the final draft of *United Nations General Assembly Resolution on the Protection of the Global Climate for Present and Future Generations of Mankind*, G.A. Res. 43/53, adopted December 6, 1989, U.N. Doc. A/RES/43/53, reprinted in (1989) 28 *International Legal Materials* 1326, Paragraph 1 recognizes that global climate is a 'common concern of mankind', the 'common concern' phrase being less refined, and for the time being, safer than the 'common heritage' notion. See generally, Birnie et al., *supra* note 7 at 391.

[43] *Ibid.*, at 85.

[44] See Kiss, *supra* note 38 at 1084.

[45] *Ibid.*, at 1083 ff. Kiss' definition of 'common concern' is somewhat broader than is taken in this thesis, encompassing both ecological administration of the 'commons' and adoption of measures within state's jurisdiction. For example, Kiss considers the 'common concern of mankind' notion echoed in many of the principles outlined in the *Stockholm Declaration*, *supra* note 28, particularly Principle 2 thereof, which states: "The natural resources of the earth including the air, water, land, flora and fauna and especially representative samples of natural ecosystems must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate." Subsequent developments have placed 'commons' issues under the 'common heritage of mankind' doctrine, and while the 'common concern' principle remains less stringently defined.

on the Protection of the Global Climate for Present and Future Generations of Mankind of December 6, 1988.[46] Since that time, it has been employed in a number of 'soft law' declarations, mostly relating to protection of the global climate.[47] This is so because climate is a fundamental requirement for all life on earth.[48] The concept has seen application in a broader context, however, in the *Langkawi Declaration on Environment*,[49] which described the current threat to the environment as "a common concern of mankind, (which) stems essentially from past neglect in managing the natural environment and resources."[50] Used in this manner, the 'common concern' notion could have impact on utilization of resources, such as forests, which have traditionally not been the subject of international legal efforts as they are generally considered to be under individual state's exclusive jurisdiction. The

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[46] *United Nations General Assembly Resolution on the Protection of Global Climate for Present and Future Generations of Mankind*, *supra* note 42, Paragraph 1 recognizes that "climate change is a common concern of mankind since climate is an essential condition which sustains life on earth".

[47] See, for example, the United Nations Environment Programme (hereinafter "UNEP"), *Governing Council Decision on Global Climate Change*, adopted May 25, 1989, U.N. Doc. UNEP/GC.15/36, reprinted in (1989) 28 *International Legal Materials* 1330, Pre-amble, recalling the General Assembly's characterization of climate change as "a common concern of mankind"; the *Noordwijk Declaration on Atmospheric Pollution and Climate Change*, adopted November 7, 1989, reprinted in (1990) 5 *American University Journal of International Law and Policy* 592, Paragraph 7 which states "climate change is a common concern of mankind"; the *Malé Declaration on Global Warming and Sea Level Rise*, adopted November 18, 1989, reprinted in (1990) 5 *American University Journal of International Law and Policy* 602, Pre-amble, which asserts that "climate change, global warming and sea level rise . . . have become common concerns of mankind"; the *Ministerial Declaration of the Second World Climate Conference* (hereinafter "*SWCC Declaration*"), adopted November 7, 1990, U.N. Doc. A/45/696/Add.1, reprinted in (1990) 20 *Environmental Policy and Law* (No. 6) 220, Paragraph 4 of the Pre-amble which recognizes "climate change as a common concern of mankind".

[48] See Rest, A., "Ecological Damage in Public International Law", (1992) 22 *Environmental Policy and Law* (No. 1) 31 at 33.

[49] *Langkawi Declaration on Environment* (hereinafter "*Langkawi Declaration*"), adopted October 21, 1989, reprinted in (1990) 5 *American University Journal of International Law and Policy* 589. The *Langkawi Declaration* was issued by the Heads of Government of the Commonwealth Nations.

[50] *Ibid.*, Paragraph 2. A further example is the *Beijing Ministerial Declaration on Environment and Development* (hereinafter "*BeijingDeclaration*"), adopted June 19, 1991, U.N. Doc. A/CONF.151/PC/85, reprinted in (1991) 21 *Environmental Policy and Law* (No. 5/6) 267, Article 2, which reads, in part, that "environmental protection and sustainable development is a matter of common concern to humankind. . . "

potential deleterious effects of unsustainable forest management, not the resource itself, could be described as a 'common concern of mankind', thus prevention of deforestation is the responsibility of all. In this circumstance, it is important to distinguish between the resource, which is not a 'common concern' but rather the sovereign interest of the state in which it is located, and the negative environmental effects of unsustainable use of the resource, which take on global proportions. Clearly, the 'common concern' notion has the potential to fill existing gaps in international environmental law by obliging all states to manage resources over which they exercise exclusive jurisdiction in such a manner as to ensure that there are no negative environmental effects which threaten the common concern of global ecological health. At this stage, however, the scope of the 'common concern' concept remains unrestrained by any specific characterizations beyond a general expression of the coinciding interests of all states in certain forms of ecological protection, allowing for further augmentation of the principle in the future.[51]

b) 'Common Heritage'

Although the term 'common heritage' has often been used loosely to refer to all non-living and living resources in general,[52] its legal significance is currently confined to inorganic resources in areas beyond the limits of national jurisdiction.[53] First mentioned by Joseph Kroll in 1935, it began to be developed in the 1950s by A.A. Cocca and others in the context of common environments such as outer space.[54] In 1967, the Maltese delegate to the United Nations, Arvid Pardo,

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[51] See Birnie et al, *supra* note 7 at 121.

[52] See for example the *Cairo Common Position on the African Environment and Development Agenda*, adopted July 16, 1991, U.N. Doc. ECA/UNCED/Cairo/POS/1.Rev.1, reprinted in (1991) 21 *Environmental Policy and Law* (No. 5/6) 253, Principle 1 which asserts *inter alia*, that "the global environmental situation is evidence of the fact that humanity has a common heritage . . . and . . . we must collectively and individually protect this common heritage."

[53] See Birnie et al., *supra* note 7 at 120.

[54] See Brown-Weiss, E., *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity*, (Dobbs Ferry, New York: Transnational Publishers Inc., 1989) at 48. Brown-Weiss' thesis is that the 'common interest' principles, such as 'common concern' and 'common

introduced the concept in relation to the development of a legal regime governing management of the sea-bed.[55] The United Nations General Assembly adopted the doctrine in 1970 as the basis for the subsequent Law of the Sea Conference,[56] which ultimately produced the *Law of the Sea Convention.*[57] Debates at the Law of the Sea Conference indicate that there is no clear agreement among nations as to the meaning of the doctrine and its implications for the environmental management of the deep sea-bed.[58] The principle has also been employed in the *Moon Treaty*,[59] the implication being that the resources of the moon must be conserved and used for common benefit.[60] However, the interpretation of its exact meaning in the context of the moon's resources and those of other celestial bodies remains the

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heritage' imply shared responsibility temporally as well as spatially. More detailed discussion of the principle of inter-generational equity follows, *infra* at notes 81 - 144 and accompanying text.

[55] See Permanent Mission of Malta to the United Nations Secretary General, *Note Verbale*, August 18, 1967, U.N. Doc. A/6695. 'Common heritage' described by Ambassador Pardo has five elements:

a) non-ownership of the 'heritage';
b) shared management by all peoples of the earth;
c) shared benefits;
d) use exclusively for peaceful purposes;
e) conservation of the heritage.

See generally, Fleischer, C.A., "The International Concern for the Environment: The Concept of Common Heritage" in IUCN, *Trends in Environmental Policy and Law*, (Gland, Switzerland: IUCN and Natural Resources, 1980) 321.

[56] *Declaration of Principles Governing the Sea-Bed and Ocean Floor, and Subsoil Thereof, Beyond the Limits of National Jurisdiction*, G.A. Res. 2749 (XXV), adopted December 17, 1970, U.N. Doc. A/8028.

[57] *Law of the Sea Convention*, *supra* note 39, Article 136, 137. The *Law of the Sea Convention* is a comprehensive document which is intended to govern a number of international legal issues relating to management and use of the high seas. However, the 'common heritage' document is explicitly confined in the above articles to the sea-bed.

[58] See Brown-Weiss, *supra* note 54 at 48 - 49.

[59] *Moon Treaty*, *supra* note 41, Article 11.

[60] See Birnie et al., *supra* note 7 at 120.

subject of some controversy.[61] Use in this controversial manner has led to stigmatization of the 'common heritage' principle to denote 'commons' use only. It was not employed in the ozone context, and when faced with a suggestion that the global climate be identified as the 'common heritage of mankind' the United Nations General Assembly declined.[62] Not wishing to make any categoric statement concerning the 'commons' nature of climate, to which many countries objected, in asserting national sovereignty over superjacent airspace, the Assembly chose the more ambiguous phrase 'common concern'.[63] Accordingly, the doctrine of 'common heritage' appears to have been relegated as a specialized regime applicable to certain inorganic resources, limiting its future usefulness in the development of international environmental law.[64]

2. Characterization

a) 'Common Concern'

Despite the extensive use of the notion in 'soft law' documents issued in preparation for the Rio Conference, the potential of the 'common concern' principle remained largely untapped as representatives of the nations of the earth gathered at UNCED in Rio de Janeiro. At this stage, it could be taken generally to mean that protection of resources considered a 'common concern of mankind' are a single, global unit, and should be placed on the international agenda as all states have a legitimate interest and stake in their preservation.[65] This implies a restriction on

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[61] See Brown-Weiss, *supra* note 54 at 49.

[62] See *supra* note 42 and accompanying text.

[63] See Birnie et al, *supra* note 7 at 391.

[64] *Ibid.*, at 118. The 'common heritage' notion does not have the potential power to affect state sovereignty contained in the 'common concern' principle. For example, in the *Report of the Ad Hoc Working Group on the Work of its Second Session in Preparation for a Legal Instrument on Biological Diversity of the Planet*, issued February 23, 1990, U.N. Doc. UNEP/Bio.Div.2/3, Paragraph 11, the Working Group held that 'common heritage' as applied to biological diversity "does not mean the establishment of collective rights to resources within national jurisdictions nor does it infringe upon permanent sovereignty of States over natural resources."

[65] See generally, Birnie et al, *supra* note 7 at 85.

state autonomy, as it would limit individual states' freedom of action in relation to the area of 'common concern'.[66] It also raises further issues regarding allocation of the burden and division of costs, leading to the development of a subordinate, procedural notion of a 'common, but differentiated responsibility'.[67]

Unlike the related 'common heritage' concept, the 'common concern' principle remains unfettered by 'commons' stigmatization. It can apply to areas identified as global 'commons'. However it is not restricted to that, its first practical use being in the context of climate change, in part an atmospheric problem, over which states claim sovereignty. Yet, before Rio,the precise meaning and implications of the concept remained unclear.[68] It had not been expressed in any legally binding manner, thus evidence of *opinio juris* was scant.[69] Certainly, the notion of 'common concern' had not acquired sufficient uniformity, consistency and generality to be considered to have crystallized into a customary principle.[70]

b) 'Common Heritage'

When first employed in the context of the deep sea-bed, it was difficult to

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[66] See Handl, *supra* note 14 at 31 - 32.

[67] See Rest, *supra* note 48 at 33. The notion of a 'common but differentiated responsibility' has been employed to ensure an efficient, equitable allocation of the burdens and responsibilities of preserving the global environment. The idea behind the concept is that responsibility for rectification of the earth's environmental crisis, while shared by all nations, is differentiated among states according to different situations and needs. Broadly speaking, this means that underdeveloped countries, with their urgent pressing need to eradicate the pollution of poverty and the numerous environmental ills associated with it, will have different responsibilities than industrial nations regarding rectification of global environmental issues. In practice this has meant two-tiered reductions schedules, delayed compliance for underdeveloped nations, and financial and technological transfer. See generally, Ntambirweki, J., "Developing Countries in the Evolution of an International Environmental Law", (1991) 14 *Hastings International and Comparative Law Review* 905 and Handl, G., "Environmental Protection and Development in Third World Countries: Common Destiny - Common Responsibility", (1988) 20 *New York University Journal of International Law and Politics* 603.

[68] See Rest, *supra* note 48 at 33.

[69] See Birnie et al, *supra* note 7 at 424.

[70] See Chapter One *supra*, at notes 123 - 145 for a detailed discussion of the elements of customary rules and the process of crystallization.

precisely describe the 'common heritage' principle.[71] The original proposal regarding the 'common heritage' notion contained no succinct indication as to what the term should imply.[72] Indeed, one jurist has suggested that "common heritage of mankind . . . carries no clear judicial connotation but belongs to the realm of politics, philosophy or morality, and not law".[73] Others have argued that its general meaning is not an innovation, but rather a restatement of the centuries old principle of *res communis*, that the resources defined as 'common heritage' belong to no single State, and therefore fall under the ownership of the entire international community.[74] The concept's status as a rule of custom is doubtful following its rejection by the United States government evidenced in its failure to ratify either the *Law of the Sea Convention* or the *Moon Treaty*.[75] It has not been employed in a legally significant manner for over a decade.[76] While early in its evolution it could be described as indicative of "the common interest which men of all nations share in protecting the environment and preserving the welfare of mankind"[77], subsequent developments have relegated it to the relatively narrow use as a specialized regime to be applied to certain mineral resources.[78]

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[71] See Fleischer, *supra* note 55 at 325.

[72] See Arnold R.P., "The Common Heritage of Mankind as a Legal Concept", (1975) 9 *International Lawyer* 153 at 153 - 154.

[73] See Gorove, S., "The Concept of 'Common Heritage of Mankind': A Political, Moral or Legal Innovation?", (1972) 9 *San Diego Law Review* 390 at 402.

[74] See Fleischer, *supra* note 55 at 325. Fleischer concludes, that in addition to this general concept of 'common heritage' the principle has a specific meaning in relation to the international sea bed. In that framework, it is intended to refer to a system of exploitation of the sea bed by an international authority. *Ibid.*, at 338. In the context of general international law, this specific definition of the 'common heritage' concept is of little value as one cannot advocate a system of exploitation by an international authority of all the world's resources. *Ibid.*, at 335.

[75] See Birnie et al, *supra* note 7 at 121.

[76] *Ibid.*

[77] See Arnold, *supra* note 72 at 158.

[78] See Birnie et al., *supra* note 7 at 118.

3. Assessment

The earth's environment is one congruous unit.[79] Artificial fragmentation of this single ecosystem along political lines has brought the globe to the brink of ecological catastrophe.[80] Traditional international law definitions of state sovereignty and a reciprocal relationship between nations in the international order can provide no solution to the environmental crisis because they inherently perpetuate co-existence and isolationism when co-operation and interdependence are necessary.

It is in this setting that 'common interest' notions have relevance in international environmental law. Sovereignty is restructured and defined in the framework of an over-arching obligation to preserve and protect areas of common interest. Reciprocity is abandoned to the extent that the 'give and take' idea in 'common interest' agreements is replaced with unilateral obligations undertaken for the benefit of all.

Two notions have been specifically voiced in this context; the concepts of a 'common concern of mankind' and the 'common heritage of mankind'. 'Common heritage' has been limited to areas outside of national jurisdiction. 'Common concern' tries to bridge the gap, being, for example, associated with global climate change, even though states maintain claims on exclusive jurisdiction over air space.

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[79] There are three levels of universalism in the international legal forum, encompassing world-wide intergovernmental efforts to:

a) preserve international peace;
b) uphold human rights and fundamental freedoms; and
c) protect the global environment.

See generally, Riphagen, W., "The International Concern for the Environment as Expressed in the Concepts of 'Common Heritage of Mankind' and of 'Shared Natural Resources'" in IUCN, *Trends in Environmental Policy and Law*, (Gland, Switzerland: IUCN and Natural Resources, 1980) 343.

[80] See generally, Anderson, F.R., "Of Herdsmen and Nation States: The Global Environmental Commons", (1990) 5 *American University Journal of International Law and Policy* 217. Anderson speaks of the "science of planetary interdependence" which promotes a global perspective. He cautions that global environmental problems in the emerging era of democratization and peace may present the gravest threat to human survival and well-being.

The importance of these principles is the recognition given to the commonality of global environmental problems such as climate change specifically, and the world's ecological health in general. No nation can claim immunity from the negative effects which threaten the earth's biosphere. There are no outsiders in the global ecosystem. 'Common interest' concepts such as 'common concern' and to a limited extent, 'common heritage' can be used as a paradigm for international cooperative efforts to attack the causes of global environmental degradation. While the normative quality of 'common heritage' appears to have been exhausted, the potential exists that 'common concern' can evolve into an important principle with standard setting consequences in future international environmental legal agreements and policies.

B. INTER-GENERATIONAL EQUITY

Unlike the principles of 'common concern', 'common heritage', and the 'precautionary principle', inter-generational equity is a term which encompasses an emerging legal doctrine. The doctrine of inter-generational equity did not originate in the context of international law of the environment, nor does it currently apply exclusively to environmental matters.[81] The doctrine has been explained with relative clarity as regards its relationship to international environmental law.[82] This is crucial, for, unlike other principles of 'soft law', inter-generational equity "must become part of international law, and of national and subnational legal systems"[83] in order to be effective. The reason for this is that, unlike the phrase 'a common concern', for instance, the doctrine of inter-generational equity represents a system of rights and obligations, not simply a principle.[84]

This section analyzes the origins and development of the doctrine of inter-

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[81] See Brown-Weiss, E., "The Planetary Trust: Conservation and Intergenerational Equity", (1984) 11 *Ecology Law Quarterly* 495 at 544 - 545.

[82] See generally, Brown-Weiss, *supra* note 54.

[83] *Ibid.*, at 2.

[84] *Ibid.*

generational equity in international environmental law. It then explains the doctrine as it relates to the international law of the environment. Following this is a characterization of the doctrine to determine whether it can be said to be a part of the *corpus* of international environmental law. An assessment of the doctrine's usefulness concludes the inquiry.

1. Origins of Inter-generational Equity and its Development in International Environmental Law

The concept that each generation is a steward of the ecological and cultural inheritance has been given voice in the diverse legal traditions of the international community.[85] Many aboriginal traditions view the natural resources of the earth as belonging to all, to be used in common, and to be respected.[86] The Talmudic legal tradition also recognizes the inter-temporal stewardship of the earth and its resources.[87] Traditional Islamic law regards man as having inherited the natural and cultural resources of the earth. The utilization of these resources is seen as both a right and a privilege shared by all, inter-generationally.[88]

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[85] *Ibid.*, at 18 - 21.

[86] See for example Fadden J., *The Great Law of Peace - The Longhouse Peoples*, (New York: Onchiota Inc., 1977), a codification and translation into English of the customary laws of the Iroquois Nations of Canada and the United States. Article 72 of this codification sets out that "the soil of the earth from one end to the other is the property of the people who inhabit it."

[87] See Genesis 17:7-8, in which God establishes a covenant with Abraham, the father of the Judaic people: "I will establish my covenant as an everlasting covenant between me and you and your descendants after you for the generations to come . . . the whole land of Canaan, where you are now an alien, I will give as an everlasting possession to you and your descendants after you . . ." See *New International Version of the Holy Bible*, (Grand Rapids, Michigan, Zondervan Publishers, 1984), Genesis 17:7 - 8.

[88] See IUCN, *Islamic Principles For the Conservation of the Natural Environment*, (1983), at 13, where the authors assert:

> "The utilization and sustainable use of these resources is, in Islam, the right and privilege of all people. Hence, man should take every precaution to ensure the interests and rights of all others since they are equal partners on earth. Similarly, he should not regard such ownership and such use as restricted to one generation above all other generations. It is rather a joint ownership in which each generation uses and makes the best use of nature, according to its need, without disrupting or upsetting the interests of future generations. Therefore, man should not abuse,

An equitable dimension to international law has been recognized since the time of Grotius,[89] and the inter-temporal dimension of international law, particularly in relating the present to the past, has been traditionally held.[90] Inter-generational equity aspires to fuse these two concepts into one doctrine, seeking to anticipate and create the norms necessary to ensure fairness between the present and future generations on a host of international issues, including but not limited to environmental issues. Thus the term 'inter-generational equity' is not itself normative, but rather indicative of a process of norm creation to which adherents to the doctrine subscribe.

In the modern era, specific concern for the equitable rights of future generations began to be expressed in international legal documents after World War II.[91] The *United Nations Charter* is a notable example of early statements of international concern for inter-generational equity, asserting the determination of the United Nations' membership to "save succeeding generations from the scourge of war".[92] The inter-generational component has been an integral part of the

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misuse, or distort the natural resources as each generation is entitled to benefit from them but is not entitled to own them permanently."

[89] Grotius saw the role of equity in international law as covering areas not addressed by international law proper. See Whewall, W., ed., *Grotius on the Rights of War and Peace*, (Cambridge: John W. Parker, 1853) Book III, Chapter XVI, pp. 281 - 287. Aside from filling gaps in the law (*praeter legem*), equity in modern international law also provides a basis in moral principle for making an exception to the normal application of a rule of international law (*contra legem*), allows for the most just interpretation of a particular case (*infra legem*), and gives a justification for deciding a case in a way which may disregard existing customary or treaty law (*ex aequo et bono*). The use of equity in international law provided the basis for developing the doctrine of inter-generational equity. See generally, Brown-Weiss, *supra* note 54 at 35.

[90] *Ibid.*, at "The Temporal Dimension in International Law", pp. 28 - 34. Rawls, J., in *A Theory of Justice*, (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1971) attempted to define theoretically the principles of justice between generations.

[91] See Brown-Weiss, *supra* note 54 at 28.

[92] See *Charter of the United Nations*, opened for signature June 26, 1945, reprinted in [1945] *Canada Treaty Series* No. 7, Preamble.

evolution of human rights law.[93] International declarations have also contained statements encouraging inter-generational equity in the context of defining a new economic order.[94]

In the framework of international environmental law, the doctrine of inter-generational equity was introduced in the *Stockholm Declaration*.[95] Since that time it has been employed in such international environmental instruments as the *World Charter for Nature*,[96] and the *Nairobi Declaration*.[97] It was included in the Draft

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[93] See Brown-Weiss, E., "Our Rights and Obligations to Future Generations for the Environment", (1990) 84 *American Journal of International Law* 198 at 203.

[94] See *Declaration on the Establishment of a New International Economic Order*, *supra* note 15, Article 3, which reads ". . . the political, economic and social well-being of present and future generations depends more than ever on co-operation between all members of the international community on the basis of sovereign equality and the removal of the disequilibrium that exists between them."

[95] *Stockholm Declaration*, *supra* note 28, Preamble, Articles 1 and 2. Proclamation 6 of the Preamble declares in part that "to defend and improve the human environment for present and future generations has become an imperative goal for mankind, a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and of world-wide economic and social development". Article 1 asserts that "man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations". Article 2 proclaims that "the natural resources of the earth . . . must be safeguarded for the benefit of present and future generations of mankind".

[96] *World Charter For Nature* (hereinafter "*WCN*"), G.A. Res. 37/7, adopted October 28, 1982, U.N. Doc. A/RES/37/7, reprinted in (1983) 22 *International Legal Materials* 455. The *WCN* was adopted by the United Nations' General Assembly by a vote of 111 in favour to 1 against with 18 abstentions. The United States' was the sole country which voted against the *WCN*. Although not binding 'hard law', the *WCN* uses normative language which has enhanced its force. The Preamble reaffirms that "man must acquire the knowledge to maintain and enhance his ability to use natural resources in a manner which ensures the preservation of the species and ecosystems for the benefit of present and future generations." The principles set out in the *WCN* are intended to be reflected in the law and practice of each state as well as at the international level.

[97] *Nairobi Declaration on the State of Worldwide Environment* (hereinafter "*Nairobi Declaration*"), adopted May 18, 1982, U.N. Doc. UNEP/GC.10/INF.5, reprinted in (1982) 21 *International Legal Materials* 676. Principle 10 of the *Nairobi Declaration* urges "all Governments and peoples of the world to discharge their historical responsibility, collectively and individually, to ensure that our small planet is passed over to future generations in a condition which guarantees a life in human dignity for all."

Articles of the World Commission on Environment and Development Experts Group.[98] It has also found use in such 'hard law' agreements as the *Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora*,[99] the *Convention For the Protection of the World Cultural and Natural Heritage*,[100] and the *Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution*.[101] The widespread use of the doctrine in these and other international agreements and declarations is indicative of the general acceptance by the international community of inter-generational obligations and duties regarding environmental resources.[102] Debate continues as to whether these obligations and duties can be defined in legal principles, or whether they are simply indicative of moral responsibilities.[103]

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[98] See Experts Group on Environmental Law of the World Commission on Environment and Development, *Legal Principles for Environmental Protection and Sustainable Development* (hereinafter "*WCED Legal Principles*"), adopted August 4, 1987, U.N. Doc. WCED/86/23/Add.1 (1986), A/42/427 Annex I, reprinted in Brown-Weiss, E., Szasz, P.C., and Magraw, D.B., *International Environmental Law: Basic Instruments and References*, (Dobbs Ferry, New York: Transnational Publishers Inc., 1992) 187. Article 2 directs that "states shall ensure that the environment and natural resources are conserved and used for the benefit of present and future generations."

[99] *Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora* (hereinafter "*CITES*"), opened for signature March 3, 1973, reprinted in (1973) 12 *International Legal Materials* 1085. The Preamble of *CITES* asserts that "wild fauna and flora . . . are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come." *CITES* entered into force on July 1, 1975.

[100] *Convention For the Protection of the World Cultural and Natural Heritage* (hereinafter the "*World Heritage Convention*"), adopted November 16, 1972, U.N. Doc. ST/LEG/SER.C/10, reprinted in (1972) 11 *International Legal Materials* 1358. Article 4 of the *World Heritage Convention* states that "each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, preservation and transmission to future generations of the cultural and natural heritage . . . situated on its territory, belongs primarily to that State." The *World Heritage Convention* entered into force on December 17, 1975.

[101] *Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution* (hereinafter "*Barcelona Convention*"), opened for signature February 16, 1976, reprinted in (1976) 15 *International Legal Materials* 290. The Preamble to the *Barcelona Convention* set out the resolve of the parties to preserve the Mediterranean Sea "for the benefit and enjoyment of present and future generations." The *Barcelona Convention* entered into force on February 12, 1978.

[102] See Handl, *supra* note 14 at 27.

[103] *Ibid.*

2. Definition of the Doctrine

The doctrine of inter-generational equity in international environmental law has been defined as a right to inherit and a duty to bequeath the earth's natural and cultural resources in at least as good a condition as enjoyed by previous generations of humankind.[104] This section looks at the foundational precepts, components and principles of the doctrine which have been identified in the environmental context.

a) Ethical and Conceptual Foundations of the Doctrine

The ethical basis of the application of the doctrine of inter-generational equity to the international law of the environment is that humanity has acquired the frightful potential to degrade and destroy the global ecosystem, imperilling the continued existence of all life on earth.[105] It begins with the notion that each generation in entitled to receive a natural and cultural legacy at least as robust as that enjoyed by the first generation.[106] If one generation improves upon this legacy, the concept of inter-generational equity is not violated.[107] If, however, one generation degrades the environment, and bequeaths an impoverished natural or cultural heritage to its successors, equity among generations has not been achieved.[108]

In the environmental context, equity among generations is endangered on three fronts: depletion of resources (encompassing both non-sustainable use of

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[104] See Brown-Weiss, *supra* note 54 at 24.

[105] See Gündling, L., "Our Responsibility to Future Generations", (1990) 84 *American Journal of International Law* 207 at 208 - 209.

[106] See generally, Ackerman, B.A., *Social Justice in the Liberal State*, (New Haven, Connecticut: Yale University Press, 1980) at 201 - 227.

[107] See Brown-Weiss, *supra* note 93 at 200.

[108] In Brown-Weiss, *supra* note 54 at 22 - 23, the author considers various models in the context of fairness between generations. The preservationist model would see the present generation save all resources for future generations. In the opulent model, conversely, the present generation consumes as much as it desires without consideration for future generations. The preferred model is the equality model in which present generations consume at a level which ensures that future generations receive a global environment in no worse a condition than what we received from the past.

renewable resources and exhaustion of non-renewable resources);[109] degradation of the quality of the environment mainly through pollution of air, water and soils;[110] and limiting access to environmental resources through consumption of resources and the perpetuation of existing inequities among the present generation.[111] The doctrine seeks to surmount these inequities by defining rights and obligations which exist between generations.

b) Planetary Rights and Obligations

Human society is an inter-temporal entity, a partnership among all generations.[112] In the environmental context, this inter-temporal entity affords certain planetary rights to its membership - the numerous generations of humankind, past, present and future.[113] Each planetary right has corresponding obligations

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[109] *Ibid.*, at 6 - 9. Three kinds of action may deplete resources and thereby conflict with the interests of future generations:

a) consumption of higher quality resources;
b) consumption of resources not presently considered valuable; and
c) exhaustion of resources.

[110] *Ibid.*, at 9 - 13. The risk here is that the present generation may reap short term benefits from cheap disposal of wastes and pass the costs of clean-up on to future generations. This is clearly inequitable.

[111] *Ibid.*, at 13 - 15. Three equity considerations arise in this context:

a) the needs of future generations prohibit all-out consumption by the present generation;
b) poverty impedes the access of many members of the present generation to the fruits of the environmental and cultural legacy of our forebears; and
c) members of the present generation may prevent other members of their generation from access to natural and cultural resources.

[112] See Brown-Weiss, *supra* note 93 at 199.

[113] See Gündling, *supra* note 105 at 210. The notion of inter-generational planetary rights transcends traditional definitions of rights, which have ordinarily been limited to rights of the individual. Inter-generational planetary rights are 'group rights' in the sense that generations hold the rights in relation to other generations. Therefore they do not depend upon the ascertainment of the specific identity of the individuals who will make up the generation (impossible to determine in the case of future generations) in order to become operative. When a particular generation comes to be, the planetary rights take on characteristics of individual rights attributable to all individuals in existence. See also Brown-Weiss, *supra* note 93 at 202 - 205.

which must be adhered to by each generation.[114] The doctrine asserts that planetary obligations, which are moral in nature, can be transformed into legally enforceable norms of international law.[115] Planetary obligations are fiduciary in nature. Each succeeding generation receives the natural and cultural legacy as an inheritance from the past, and holds this legacy in trust for the benefit of future generations.[116] Linked to this system of inter-generational rights and obligations, and a necessary component of inter-generational equity is a parallel group of intra-generational rights and obligations.[117] In order to secure fairness among generations, it is necessary to achieve fairness within each generation.

c) Environmental Principles of Inter-generational Equity

Inter-generational equity as defined in the context of preservation of the global environment derives from the underlying purpose of humankind's stewardship of the globe - to sustain the well-being of all generations.[118] It places an obligation on each generation to ensure that the natural and cultural resources of the earth are passed on to the next generation in no worse condition than they were received.[119]

Four criteria underlie the identification and application of inter-generational

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[114] *Ibid.*, at 202. The rights of future generations are linked to the obligations of the present generation. Likewise the rights of the present generation are linked to the fiduciary duties discharged by our forbears in regard to preserving the environmental diversity, quality and access. These rights and obligations are also owed intra-generationally, between all members of the present generation.

[115] See Brown-Weiss, *supra* note 54 at 21.

[116] The concept of the planetary trust is expounded upon in Brown-Weiss, *supra* note 81 at 502 ff.

[117] "(I)ntragenerational freedom is married with intergenerational trusteeship". See Ackerman, *supra* note 106 at 207. Inter-generational equity and intra-generational equity through the third principle of the inter-generational equity doctrine, 'conservation of access'. As beneficiaries of the planetary legacy, all members of the present generation have equal rights to access to and use of the legacy.

[118] See Brown-Weiss, *supra* note 54 at 37. Thus inter-generational equity includes notions of intra-generational equity.

[119] *Ibid.*, at 37 - 38.

equity principles of environmental law.[120] Firstly, principles of inter-generational equity should encourage equality among generations.[121] Secondly, they must not require the present generation to predict the values of future generations.[122] Thirdly, they must be reasonably clear in their application to foreseeable situations.[123] Finally, they must be generally accepted by the international community as a whole.[124]

Three basic principles of inter-generational equity have been identified in the environmental context.[125] Each principle embraces both rights and obligations held and owed by each generation.

i) 'conservation of options' - This principle asserts that each generation is entitled to an ecological and cultural diversity comparable to that enjoyed by past generations. In return, each generation has an obligation to preserve the diversity of the earth's natural and cultural resources in order to allow future generations the widest possible options for solving their problems and satisfying their values.[126]

ii) 'conservation of quality' - This principle asserts the generational right to a planetary environmental and cultural quality at least as elevated as that enjoyed previously. Each generation is obligated to maintain the quality of the earth's environment, and ensure that the succeeding generation's ecological inheritance is no worse than that received from preceding generations.[127]

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[120] *Ibid.*, at 38.

[121] *Ibid.* This is the equality model proposed by Brown-Weiss which is in between the wastrel opulent model and the frugal preservationist model.

[122] *Ibid.* Indeed, to assume to do so would be morally repugnant.

[123] *Ibid.*

[124] *Ibid.*

[125] These principles are outlined in detail *ibid.*, at 34 - 46.

[126] See Brown-Weiss, *supra* note 93 at 201 - 202.

[127] *Ibid.*, at 202.

iii) 'conservation of access' - This principle asserts that all generations have equal rights of access to environmental and cultural resources. It requires each generation to ensure that its members have equitable access to the shared natural and cultural inheritance of the past. The tradition of intra-generational access should be passed on to future generations.[128]

These principles, which have been put forward as forming the *corpus* of the inter-generational equity doctrine, are closely linked to the notion of 'sustainable development', which can generally be defined as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs."[129]

3. Characterization of Inter-generational Equity

Legal academic debate continues regarding whether the present generation has or should have an obligation to future generations to preserve the diversity, quality and access to environmental and cultural resources.[130] This debate has crossed from solely academic to international political circles - a potential indicator that the doctrine is approaching the threshold of the law-creating process.[131]

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[128] *Ibid.*

[129] See World Commission on Environment and Development (hereinafter "WCED"), *Our Common Future*, (New York: Oxford University Press, 1987) at 43.

[130] See for example, D'Amato, A., "Do We Owe a Duty to Future Generations to Preserve the Global Environment?", (1990) 84 *American Journal of International Law* 189. D'Amato considers Parfit's Paradox of Future Individuals which postulates that any act undertaken in the present affects the specific identity of future generations. Therefore we cannot make an act of environmental preservation for the purpose of inter-generational equity as the very act of environmental preservation destroys the potential future individuals and replaces them with a different set. How, D'Amato asks, can we owe a duty to future persons if the very act of discharging that duty wipes out the very persons to whom we allegedly owed the duty?

Apart from the practical absurdities inherent in such a hypothesis, D'Amato fails to consider the intra-generational component of the doctrine of inter-generational equity. The third principle of the inter-generational equity doctrine is 'conservation of access', which seeks to ensure that all members of each generation have equal access to environmental and cultural resources. Inter-generational equity is not simply a doctrine that seeks to preserve the rights of the unborn. Rather the inter-temporal doctrine of inter-generational equity endeavours to secure equality in and amongst all generations.

[131] See Gündling, *supra* note 105 at 208.

The doctrine of inter-generational equity, a system of principles incorporating generational rights and obligations and founded upon the notion of inter-temporal partnership in relation to the stewardship of global natural and cultural resources can have a number of ramifications pertaining to environmental protection in general. The enunciation of the doctrine in numerous non-binding environmental declarations as well as in certain binding environmental treaties are indicative of the general consensus, ideologically, of the concept of inter-generational responsibility, and a moral concern for future generations.[132]

Scholars have suggested that the doctrine should be regarded as an obligation *erga omnes*.[133] However, it has not yet been recognized as a legally binding doctrine, and its normative content remains weak.[134] The translation of the theoretical doctrine and the expressed concern for future generations espoused in the documents considered above into normative obligations that relate past, present and future generations remains to be done.[135] The international community needs to work towards global consensus as to what inter-generational rights and obligations entail.[136] The principles of inter-generational equity do not at the present time have the normative force to compel states to utilize environmental and cultural resources in such a manner as to ensure that future generations may enjoy equitable options, quality and access.

4. Assessment

The threat to future generations posed by current consumption and degradation patterns is acute. The task of warding off this grave menace will be

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[132] See Handl, *supra* note 14 at 27.

[133] See Brown-Weiss, *supra* note 81 at 540 - 544.

[134] See Handl, *supra* note 14 at 27 - 28. Handl contends that the legal basis of inter-generational equity should be seen in the fact that environmentally degrading practices which endanger future generations impose value deprivations directly upon the present generation.

[135] See Brown-Weiss, *supra* note 54 at 30.

[136] See Gündling, *supra* note 105 at 211.

complex and difficult, necessitating a detailed, international response. Vague articulations of general moral obligations to future generations are not sufficient. Rather, it is imperative that inter-generational responsibilities in regard to the environment become duties of law.[137]

The doctrine of inter-generational equity places constraints upon the actions of the present generation, but does not dictate management of resources.[138] This is the province of implementing notions such as 'sustainable development'.[139] Inter-generational equity is important as the doctrine which provides a conceptual or philosophical underpinning for such implementing notions.[140]

As an emerging legal doctrine, the potential impact of inter-generational equity on the international law of the environment is immense. Each of the emerging principles considered herein can be seen to be linked to this indispensable doctrine.[141] Environmental dilemmas such as climate change, ozone layer depletion, loss of biological diversity, non-sustainable use of natural resources, and degradation of ecosystems are essentially inter-generational in nature.[142] If inter-temporal notions are not included in law, much of the legal force for protecting these crucial environmental resources will be lost.[143] Inter-generational equity as a

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[137] *Ibid.*, at 212.

[138] See Brown-Weiss, supra note 93 at 202.

[139] The notion of 'sustainable development' is considered in detail at *infra* notes 208 - 303 and accompanying text.

[140] See Handl, *supra* note 14 at 27. See also Brown-Weiss, E., "Environmentally Sustainable Competitiveness: A Comment", (1993) 102 *Yale Law Journal* 2123 at 2124: "The notion that future generations have rights to inherit a robust environment provides a solid normative underpinning for the idea of environmentally sustainable development."

[141] See generally, *infra* notes 304 - 313 and accompanying text.

[142] While these environmental issues do have immediate effects, clearly the bulk of the consequences of environmentally irresponsible conduct will be visited upon generations to come.

[143] If there is no legal obligation to future generations to bequeath the same degree of environmental diversity, quality and access which we have inherited from the past, the issue of international response to climate change, for example, passes from international law to moral ethics.

moral impetus has had some effect in the development of international environmental law.[144] However, its potential effect as a binding legal principle is much greater. Conservation for the purpose of preserving the environment for the future must be a cornerstone concept of future international environmental law, and the inter-generational equity doctrine is the vehicle through which this concept may be established. Thus crystallization of the currently unenforceable principles of inter-generational equity through international legal instruments is imperative. International consensus on this issue needs to be more than a vague recognition of moral responsibilities to future generations. The future of international environmental law, and perhaps the future security of the globe, depends upon it.

C. THE PRECAUTIONARY PRINCIPLE

Scientific uncertainty is innate in many global environmental issues, as complete understanding of the intricate balances and complex relationships of the natural processes of the earth's biosphere remains elusive.[145] The 'precautionary principle' has evolved in order to ensure that this inherent scientific uncertainty does

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The most deleterious effects of greenhouse gas accumulation from anthropogenic carbon dioxide emissions, deforestation, and other sources will not be felt in this generation. If inter-generational equity does not crystallize into binding international law, there will be nothing to legally compel an international agreement curtailing activities thought to contribute to climate change. See Brown-Weiss, *supra* note 140 at 2124, where the author contends that in the absence of the normative underpinning of inter-generational equity "sustainable development might depend entirely on a sense of noblesse oblige of the present generation."

[144] The effect of inter-generational equity in the past, without the force of law, is seen in such international agreements as *CITES*, *supra* note 99, the *World Heritage Convention*, *supra* note 100 and the *Barcelona Convention*, *supra* note 101 all of which, at least in part, seek to preserve particular environmental or cultural resources for the benefit of future generations.

[145] One environmental issue which is rife with scientific uncertainty is the problem of possible rapid global climate change due to escalating accumulations of so-called 'greenhouse gases' (primarily carbon dioxide, chlorofluorocarbons, methane, nitrous oxide, ozone and water vapour) in the atmosphere. While scientific observations have confirmed that there has been an increase in the atmospheric concentration of the greenhouse gases in the post-industrial era, considerable debate continues regarding both future accumulation rates and the ultimate impact of increased atmospheric levels of greenhouse gases upon global climate. See generally, Intergovernmental Panel on Climate Change Working Group I, *Climate Change, 1992 - The Supplementary Report to the IPCC Scientific Assessment*, (Cambridge: Cambridge University Press, 1992) at 31 ff.

not translate into legal inaction.[146] While the principle remains without a categorical definition, in general it can be said to encourage global effort on environmental matters in the face of inconclusive scientific evidence of a causal link between particular activities or pollutants and their potential effects.[147]

This section traces the origins and development of the 'precautionary principle' in modern international environmental law leading up to the Rio Conference. It then follows with a characterization of its status in international law at that time, concluding that it could not yet be said to have crystallized into a binding rule of custom. Finally, an assessment is given of the principle's effectiveness in influencing the manner in which states deal with environmental issues.

1. Origins: Preventative Duty

The roots of the 'precautionary principle' can be traced back to the notion of 'preventative duty' enunciated in the decision of the International Court of Justice in the *Corfu Channel Case*.[148] The impact of the *Corfu Channel Case* was to impose upon states an obligation to diligently control activities which create transboundary risks, and take adequate steps to prevent transboundary environmental damage from occurring where there is a significant risk of damage from activity undertaken within their borders.[149] The exact definition of what type of environmental risk is significant enough to trigger the operation of this preventative duty has never been

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[146] See Cameron, J., and Abouchar, J., "The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment", (1991) 14 *Boston College International and Comparative Law Review* 1 at 3 - 4. While many areas of law lag far behind scientific and technological developments (particularly medico-legal issues such as the definition of death), in the area of international environmental law it is often necessary to conclude legal agreements to attack a particular environmental problem *before* conclusive scientific evidence of the causes and potential effects of that problem is obtained. Thus, in this field, it is a case of the 'hare' of the law bounding ahead of the 'tortoise' of science, which has given rise to the 'precautionary principle'.

[147] *Ibid.*, at 2.

[148] *The Corfu Channel Case (Albania v. The United Kingdom)* (hereinafter the "*Corfu Channel Case*"), [1949] *I.C.J.*4.

[149] For a review of the *Corfu Channel Case* and its impact on customary international environmental law, see *supra* Chapter 1 at note 153 and accompanying text.

conclusively detailed. However, generally the greater the risk of harm the lower the evidentiary burden regarding causation.[150] Clearly, though, the customary principle of prevention outlined in the *Corfu Channel Case* requires some degree of causal connection between the polluting state and the potentially injured state before the preventative duty can be said to arise.[151] The duty does not extend to situations where there is no present and clear danger to environmental resources.

This preventative duty was echoed in other international environmental cases,[152] and foundational international environmental documents such as the *Stockholm Declaration*[153], Principle 21 of which obliges states to "ensure that activities within their jurisdiction and control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction".[154] This and other similar statements advocating prevention of ecological degradation[155] indicated that the international community was prepared

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[150] See Handl, *supra* note 14 at 22.

[151] Birnie et al., *supra* note 7 at 96 contend that subsequent work by the International Law Commission, particularly its *Draft Articles on International Liability*, U.N. Doc. A/CN.4/428, (1990) infers that the preventative duty outlined in the *Corfu Channel Case* arises only once the risk of harm is foreseeable. Of course, such determinations will largely be made by an arbitration tribunal after the damage has occurred, limiting the efficacy of this customary rule as a forward looking tenet of international environmental law.

[152] See, for example the *Lac Lanoux Arbitration (Spain v. France)*, (1957) 12 *R.I.A.A.* 281, reprinted in (1957) 24 *International Law Reports* 101 at 123, and the *Nuclear Tests Case (Australia v. France)*, [1974] *I.C.J.* 253 at 388 - 389.

[153] *Stockholm Declaration*, *supra* note 28.

[154] *Ibid.*, Principle 21. Ensuring that no damage occurs implies *prevention* of damage, not merely a responsibility to rectify damage after the fact.

[155] See, for example, Article 5(f) of the *United Nations General Assembly Resolution on Development and Environment*, G.A. Res. 2849 (XXVI), U.N. Doc. A/RES/2849 (XXVI), reprinted in (1972) 11 *International Legal Materials* 422 (adopted on December 20, 1971 by a vote of eighty-five in favour to two opposed {the United Kingdom and the United States} with 34 abstentions, including Canada); the Preamble to the *United Nations General Assembly Resolution on Institutional and Financial Arrangements for International Environmental Cooperation*, G.A. Res. 2997 (XXVII), U.N. Doc. A/RES/2997 (XXVII), reprinted in (1973) 12 *International Legal Materials* 433 (adopted on December 15, 1972 by a vote of one hundred sixteen in favour, none opposed, with ten abstentions); Article 30 of *CERDS*, *supra* note 15; and Principle 3 of *Principles of Conduct in the Field of the*

to encourage progressive solutions to environmental dilemmas, and ultimately ushered in the principle of precaution in international environmental protection.[156]

2. Development of the 'Precautionary Principle' in International Environmental Law

a) Seeds of the 'Precautionary Principle': 'Precautionary Measures'

The awakening of a global environmental consciousness which followed the Stockholm Conference resulted in the conclusion of a number of forward-looking international agreements which focused on reducing the risks of environmental degradation by taking measures to prevent pollution.[157] While these documents espoused a progressive approach to environmental law, they came short of enunciating the 'precautionary principle'.[158] The *Montréal Protocol on Substances that Deplete the Ozone Layer*, which in its Preamble advocates 'precautionary measures'[159] is a laudable example of this preventative approach. However, it falls

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Environment Concerning Resources Shared by Two or More States, U.N. Doc. UNEP/IG/12/2 (1978).

[156] See Birnie et al., *supra* note 7 at 92.

[157] Clauses advocating a progressive, preventative approach to environmental protection have been used most frequently in conventions concerning marine pollution. Examples include the *Convention on the Protection of the Marine Environment of the Baltic Sea Area*, opened for signature March 22, 1974, entered into force May 3, 1980, reprinted in (1974) 13 *International Legal Materials* 546, Article 3, Paragraph 1, which states "the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures in order to prevent and abate pollution and to protect and enhance the marine environment of the Baltic Sea Area"; the *Paris Convention for the Protection of Marine Pollution from Land - Based Resources*, opened for signature June 1, 1974, entered into force February 1, 1990, reprinted (1974) 13 *International Legal Materials* 352, Article 1, Paragraph 1 where the parties pledge to "take all possible steps to prevent pollution of the sea"; and the *Law of the Sea Convention*, *supra* note 39, Articles 192, 193 and 194.

[158] While the 'precautionary principle' has not been referred to consistently or frequently enough to be considered a term of art, it generally can be said to consist of anticipatory action before conclusive scientific evidence indicates a problem exists.

[159] *Montréal Protocol on Substances that Deplete the Ozone Layer* (hereinafter "*Montréal Protocol*"), opened for signature September 16, 1987, entered into force January 1, 1989, C.N. 239, reprinted in (1987) 26 *International Legal Materials* 1551. The Preamble asserts the parties' determination to "protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it". However, the obligations to control substances contained in the body of the Protocol do not amount to precautionary measures as understood by the various enunciations of the 'precautionary principle', as the substances targeted were known to cause ozone layer depletion. Other substances, such as methyl chloroform, carbon tetrachloride, and hydrochlorofluourocarbons

short of being truly precautionary in that scientific evidence of the destructive potential of chlorofluourocarbons and other ozone depleting substances was compelling before control measures were adopted.[160] It is uncertain what exactly 'precautionary measures' was intended to encompass, but clearly the *Montréal Protocol* is not an example of the 'precautionary principle'.

b) Prevention Eclipsed by Precaution

The phrase 'the precautionary principle' has been used to describe environmental policy initiatives as diverse as a general notion of pollution prevention[161] to requirements that essentially reverse the burden of proof and mandate that operators, before engaging in an activity, must establish that the activity will not cause unacceptable harm to the environment.[162] A clear definition of the

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have subsequently been controlled by the *London Adjustments and Amendments to the Montréal Protocol in Substances that Deplete the Ozone Layer*, done June 29, 1990, entered into force August 10, 1992, U.N. Doc. UNEP/OzL. Pro. 2/3, reprinted in (1991) 30 *International Legal Materials* 537 and the *Copenhagen Adjustments and Amendments to the Montréal Protocol on Substances that Deplete the Ozone Layer*, done November 25, 1992, not yet in force, U.N. Doc. UNEP/OzL. 4/15, reprinted in (1993) 32 *International Legal Materials* 874, but only after conclusive scientific data linking them to the ozone layer depletion problem was posited.

[160] Some authors, including Birnie et al., *supra* note 7 at 98, argue that the international effort to combat ozone layer depletion is perhaps the best example of the application of the 'precautionary principle'. Again, due to the ambiguity of the principle currently, it is difficult to refute this assertion. Certainly, the *Vienna Convention* was progressive in that for the first time in international environmental law, twenty-two states covenanted to begin to work on the potential problem of ozone layer depletion before there existed conclusive evidence that depletion was occurring. However, no concrete measures were agreed to until the *Montréal Protocol* was signed two and one half years later, at which time evidence of significant ozone layer depletion was irrefutable. While the *Montréal Protocol* process has proven very effective in initiating global co-operation to combat ozone layer depletion, and represents an excellent model for similar global environmental problems, it can not be said to exemplify the 'precautionary principle', as control measures were only instituted after conclusive proof of environmental harm had been received. Rather, the *Montréal Protocol* is an excellent example of a preventive environmental regime, as it seeks to ward off certain future harm to the environment by controlling those substances known to deplete the ozone layer. The 'precautionary principle', conversely, operates outside of scientific certainty.

[161] See generally, Cameron et al., *supra* note 146 at 2. The authors cite Section 5 of the Swedish *Environmental Protection Act* which echoes general preventative obligations, while government policy calls for a precautionary approach on matters relating to the environment. *Ibid.*, at 9.

[162] See for example, the *Antarctic Mineral Convention*, *supra* note 40, Article 8. Paragraph 1 thereof sets out the operators "undertaking any Antarctic mineral resource activity shall take necessary and timely response action, including prevention, containment, clean up and removal measures, if the

scope and extent of the principle remains elusive.[163] It is clear, however, that the principle of precaution which is included in many legal and policy initiatives internationally, regionally, and nationally goes beyond the customary formulation of a duty to prevent environmental harm to neighbouring states or common environmental resources where such a risk is foreseeable.[164] A crucial element of the 'precautionary principle' is the taking of remedial action in the absence of clear scientific evidence of future harm, thus upon the basis of a significant risk of harm.[165] The customary rule aims at prevention of damage, the stronger 'precautionary principle' seeks precaution from danger.[166]

c) Development of the 'Precautionary Principle' in International Environmental Agreements

One of the first enunciations of the 'precautionary principle' in international environmental law was in 1987 at the Second International Conference on the Protection of the North Sea, held in London, England.[167] Members of affected European states agreed to:

> "accept the principle of safeguarding the marine ecosystem of the North Sea by reducing at source polluting emissions of substances that are persistent, toxic and liable to bioaccumulate by the use of the best

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activity results in or *threatens to result in* damage to the Antarctic environment ..."(emphasis added). Paragraph 2 then provides strict liability for damage to the Antarctic environment arising from Antarctic mineral resource activities, and other enumerated acts. Paragraph 4 allows an operator to escape liability only by proving that the damage was caused by either a "natural disaster of an exceptional character which could not reasonably have been foreseen", or armed conflict or terrorist acts against which no reasonable precautionary measures could have been effective.

[163] See Handl, *supra* note 14 at 23.

[164] For an overview of various national, regional and international environmental regimes which espouse the 'precautionary principle' see generally, Cameron et al., *supra* note 146 at 4 - 18.

[165] See Handl, *supra* note 14 at 22.

[166] See Cameron et al., *supra* note 146 at 7.

[167] *Ibid.*, at 4 - 5. The Second International Conference on the Protection of the North Sea was held at London on November 24 - 25, 1987 and attended by ministers representing the governments of Belgium, Denmark, France, Germany (Federal Republic), the Netherlands, Norway, Sweden, and the United Kingdom. Representatives from the European Community were also in attendance.

> available technology and other appropriate measures. This applies especially when there is reason to assume that certain damage or harmful effects on the living resources of the sea are likely to be caused by such substances even where there is no scientific evidence to prove a causal link between emissions and effects ("the principle of precautionary action")."[168]

This was the first clear statement of what has become known as the 'precautionary principle', and was re-affirmed by the declarants in March, 1990 at the Third International Conference of the Protection of the North Sea.[169] Since the *London Declaration*, the 'precautionary principle' has been playing an increasingly prominent role in international environmental law.[170] Given the global nature of many environmental problems coupled with the risk of serious, irreversible or cumulative effects of pollution, future international environmental regimes must continue to place increasing emphasis upon the principle of precaution.[171]

A further statement of the 'precautionary principle' was put forward in the final report of the Nordic Council's International Conference on the Pollution of the Seas, which acknowledged:

> "the need for an effective precautionary approach, with that important principle intended to safeguard the marine ecosystem by, amongst other things, eliminating and preventing pollution emissions where there is reason to believe that damage or harmful effects are likely to be caused, even where there is inadequate or inconclusive scientific evidence to prove a causal link between emissions and effects."[172]

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[168] *Second International Conference on the Protection of the North Sea, Ministerial Declaration* (hereinafter "*London Declaration*"), adopted November 25, 1987, IPE(2) II/B/25-11-87, Article XVI(1).

[169] See Cameron et al., *supra* note 146 at 16.

[170] See Bodansky, D., "New Developments in International Environmental Law: Panel Discussion", [1991] *Proceedings: American Society of International Law* 413 at 413.

[171] See Handl, *supra* note 14 at 4.

[172] *Nordic Council, International Conference on the Pollution of the Seas, Final Document*. The document was adopted in October, 1989 by representatives from Belgium, Canada, Czechoslovakia, Denmark (including specific representatives from Aland Island, the Faeroe Islands and Greenland), Finland, Germany (Democratic Republic), Germany (Federal Republic), Iceland, Ireland, the Netherlands, Norway, Poland, Sweden, Switzerland, the Union of Soviet Socialist Republics and the United Kingdom.

As with the statement in the *London Declaration*, this rendition of the 'precautionary principle' calls for preventative action where there is a risk of damage to the marine environment. While the *London Declaration* advocates action even where there is 'no scientific evidence' of a link, the Nordic Council's threshold is slightly more cautious. Precautionary action should be taken even though there is 'inadequate or inconclusive scientific evidence' of a causal link between emissions and effects.

At an international conference in Bergen, Norway, in the spring of 1990, environmental ministers from the governments of thirty four states in the United Nations Economic Commission for Europe (hereinafter "ECE") met as a follow up to the report of the WCED to discuss future co-operative environmental initiatives.[173] The resulting *Ministerial Declaration on Sustainable Development*[174] considered the role of the 'precautionary principle' in relation to 'sustainable development'. The Conference concluded that:

> "In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures 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 a reason for postponing measures to prevent environmental degradation."[175]

The *Bergen Declaration* advanced the 'precautionary principle' in three key ways. Firstly, it linked the principle to 'sustainable development', defining the 'precautionary principle' as a necessary and important component of policies aimed at sustainable development of the earth's resources. Secondly, the *Bergen Declaration* is notable in that it represents a key statement of the 'precautionary principle' outside

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[173] See "Bergen: Weak Declaration Adopted", in (1990) 20 *Environmental Policy and Law* (No. 3) 84. The Bergen Conference was entitled 'Action for a Common Future', and was organized jointly by the Norwegian Government and the ECE.

[174] *Bergen Ministerial Declaration on Sustainable Development in the ECE Region*, (hereinafter "*Bergen Declaration*"), U.N. Doc. A/CONF.151/PC10, Annex I(1990), reprinted in (1990) 1 *Yearbook of International Environmental Law* 429. The *Bergen Declaration* was adopted on May 16, 1990 by thirty four countries of the ECE.

[175] *Ibid.*, Article 7.

of the context of marine conservation issues. It states that the 'precautionary principle' is to be an integral component of all future co-operative environmental policy initiatives, not merely those relating to marine issues. Thirdly, the 'precautionary principle' was more broadly stated in the *Bergen Declaration* than it had been previously, giving it increased flexibility and scope for development. Previous statements of the principle had been in the defensive context of safeguarding the environment from further abuse. In the *Bergen Declaration*, the principle is stated is a more offensive light, defining as precautionary those measures which "anticipate, prevent and *attack* the causes of environmental degradation."[176] Whereas earlier statements had been made in the limited context of "reducing at source polluting emissions of substances that are persistent, toxic and liable to bioaccumulate",[177] the *Bergen Declaration* has no such inherent constraints. The statement in the *Bergen Declaration* is not limited to reduction or elimination of pollutants, and can be used to support any anticipatory environmental policies. As with the declaration of the *Nordic Council*, however, the Bergen conferees clung a cautious and ambiguous threshold, "lack of full scientific certainty"[178] rather than the absolute threshold of "no scientific evidence"[179] enunciated earlier in the *London Declaration*.

A further opportunity for the development of the 'precautionary principle' came at the Second World Climate Conference held at Geneva, Switzerland, later that year.[180] The Ministerial Declaration adopted on November 7, 1990 included

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[176] *Ibid.*, Article 7 (emphasis added).

[177] *London Declaration*, *supra* note 168, Article XVI(1).

[178] *Bergen Declaration*, *supra* note 174 at Article 7.

[179] *London Declaration*, *supra* note 168 at Article XVI(1).

[180] The Second World Climate Conference (hereinafter "SWCC") was divided into two parts. The first, which was convened from October 29 to November 3, 1990 was a non-governmental session where the scientific and technical bases for climate change and its impact were discussed by leading experts in those fields, and attended by over 700 participants. The participants of the scientific and technical sessions produced a Conference Statement calling for the negotiation of a climate change

a statement that:

> "In order to achieve sustainable development in all countries and to meet the needs of present and future generations, precautionary measures to meet the climate challenge must anticipate, prevent, attack, or minimize the causes of, and mitigate the adverse consequences of, environmental degradation that might result from climate change. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent such environmental degradation. The measures adopted should take into account different socio-economic contexts."[181]

The *SWCC Declaration* represented the most widely accepted statement of the 'precautionary principle' yet, although its scope was on the narrow issue of climate change only, and was an important step towards crystallization of the 'precautionary principle' into customary law.[182] However, the statement of the principle articulated therein retains the ambiguities inherent in earlier pronouncements. In particular, the evidentiary threshold of "lack of full scientific certainty"[183] is retained, without any indication as to what, in practical terms, it

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convention for signature at the 1992 Earth Summit. The second part of the SWCC was a ministerial session which extended over November 6 - 7, 1990. The ministerial session drew diplomats from 137 countries, thus making the pronouncement on the 'precautionary principle' adopted thereat the most widely accepted to date. See generally, Hajost, S.A., "Global Climate", (1990) 1 *Yearbook of International Environmental Law* 100 at 101 - 102. See also "No Agreement on CO_2 Reduction Targets", (1990) *Environmental Policy and Law* (No. 6) 196.

[181] *SWCC Declaration*, *supra* note 47, Article 7.

[182] Its importance in the crystallization of the 'precautionary principle' into international law should not be over-emphasized, as the authors appear to do in Cameron, et al., *supra* note 146 at 21. Cameron et al. assert that the precautionary principle should be recognized as 'instant custom', suggesting the *SWCC Declaration* as a proposed definition. While 'instant custom' can crystallize in extraordinary circumstances (see *supra* Chapter One at notes 136 - 138 and accompanying text), those circumstances do not exist in this context. The definitions of the 'precautionary principle' enunciated thus far remain too vague and imprecise to have normative force. In addition, the requisite elements of a customary principle, state practice and *opinio juris*, have not been established with sufficient clarity. Certainly the *SWCC Declaration* would not suffice as a customary statement of law as on the one hand, it is specifically directed towards the climate change issue, and on the other, it is overly broad.

[183] *SWCC Declaration*, *supra* note 47, Article 7.

means.[184] The operation of the 'precautionary principle' "where there are threats of *serious or irreversible* damage"[185] is equally obscure. Most significantly, the *SWCC Declaration* further weakens its statement of the 'precautionary principle' by allowing only cost-effective measures to be used in the face of scientific uncertainty.[186]

d) Corollary Principles of Precaution

The precautionary approach and the principle outlined in the above declarations have spawned a number of corollary environmental principles, which have emerged or are emerging as customary international law.[187] These 'corollary principles of precaution' include such concepts as a duty of prior information and

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[184] 'Lack of full scientific certainty', without further clarification, could mean a host of different things, which in practice could have tremendous impact on the effectiveness of the 'precautionary principle'. 'Lack of full scientific certainty' may mean a consensus minus one, or it could mean that a majority or even a plurality of scientists consider certain environmental impacts may derive from proscribed actions. If, for example, there are more scientists than not who consider that CO_2 emissions are not the main cause for the anthropogenically enhanced greenhouse effect, would there still be a 'lack of full scientific certainty' warranting precautionary measures? This remains unclear.

[185] *SWCC Declaration*, *supra* note 47, Article 7 (emphasis added). This statement, contained in the *Bergen Declaration*, *supra* note 174, Article 7, sounds very ominous, but in fact, a specific understanding of what it means remains elusive. On what basis and by whom is the threshold of 'serious' damage determined? Does there need to be loss of life before an environmental hazard is considered 'serious'? How can one begin to determine what environmental damage may be 'irreversible'? There are no experts who would be so foolhardy as to assume complete knowledge of the earth's regenerative capacities to categorically state that a particular process was 'irreversible'. If, for example, climate change leads to desertification of a major portion of the agriculturally productive but arid prairie region of North America, which millennia later becomes productive again, is such damage 'irreversible'? If potential environmental damage is not 'irreversible', is it 'serious'? Can any 'irreversible' environmental damage not be 'serious'? These and other questions plague these statements of the 'precautionary principle', and render them an ineffective basis upon which to construct an argument that the 'precautionary principle' has evolved into a norm of customary international environmental law.

[186] *SWCC Declaration*, *supra* note 47, Article 7. The principle states that "lack of full scientific certainty should not be used as a reason for postponing *cost-effective measures* to prevent such environmental degradation" (emphasis added). This negates the 'precautionary principle' for environmentally sound policies which fail an undefined cost effectiveness test. These measures will not be pursued without unequivocal scientific evidence asserting their necessity.

[187] See Birnie et al., *supra* note 7 at 97.

consultation,[188] environmental impact assessment,[189] use of "best available technology" for environmental risk abatement,[190] "controlling pollution at source",[191] and the setting of reasonable safety margins.[192] The proliferation of these specific corollary principles from the more ambiguous principle of precaution is an example of the efficacy of this principle as a vehicle through which international environmental law can advance.

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[188] See Handl, *supra* note 14 at 21. The duty of prior information and consultation is a procedural consequence of the preventative duty outlined in the *Corfu Channel Case, supra* note 148, and more specifically, the *Lac Lanoux Arbitration*, *supra* note 152.

[189] See Birnie et al., *supra* note 7 at 96 - 97. Handl, *supra* note 14 at 23 argues that environmental impact assessment has not yet become a customary principle of international environmental law. However, the evidence of widespread state practice with *opinio juris* reflected in:

> a) international documents such as the International Law Commission, *Draft Articles on International Liability*, *supra* note 151, at Article 11, United Nations Environment Programme, *Principles of Environmental Impact Assessment*, UNEP/GC.14/25, adopted June 17, 1987, U.N. Doc. UNEP/GC.14/17 Annex III (1987), reprinted in (1987) 17 *Environmental Policy and Law* 36, the *ECE Convention on Environmental Impact Assessment*, adopted February 25, 1991, reprinted in (1991) 30 *International Legal Materials* 800, the *Law of the Sea Convention*, *supra* note 39, Article 206 and the *Antarctic Mineral Convention*, *supra* note 40, Article 4;
>
> b) national legislation such as Canada's proposed *Environmental Assessment Act*, (Bill C-13, 3rd. Sess., 34th Parl., 1991). The proposed legislation was passed by Parliament on March 19, 1992, adopted by the Senate in June and given Royal Assent on June 23, 1992. See Bornoz, N., *The New Federal Environmental Impact Assessment Process in Canada: A Step Towards Sustainable Development?*, (Montréal: Institute of Comparative Law, 1993) at 48. Bill C-13 has yet to come into force; and
>
> c) the practice of non-governmental agencies such as the World Bank, reflected in its *Operational Directive on Environmental Assessment*, (Washington: World Bank, 1989), *Environmental Assessment Sourcebook*, (Washington: World Bank, 1991) and *The World Bank and the Environment* (Washington: World Bank, 1991) pp. 66 - 72;

supports the contention put forward by Birnie et al., *supra* note 7 at 96 that the duty of environmental impact assessment has already become a customary norm of international environmental law. See also Koester, *supra* note 29 at 18.

[190] This notion was set out in the *London Declaration*, *supra* note 168, Article XVI(1).

[191] *Ibid.*

[192] See Handl, *supra* note 14 at 24.

3. Characterization of the 'Precautionary Principle'

The inclusion of the 'precautionary principle' in the above-referenced international agreements does not in itself translate the principle into binding law.[193] At this stage of its development, the statements of the principle had been included in only non-binding ministerial and governmental declarations, 'soft law' documents which imposed no legal obligations upon signatory states. Although some authors have asserted that the principle should be recognized as 'instant custom' and therefore legally binding upon the international community,[194] this argument is not particularly persuasive. In order to become a tenet of customary international law, a principle must have been established in state practice, with accompanying *opinio juris*.[195] Although this may occur instantly, as was the case with the rules governing space sovereignty,[196] it has not done so in this instance. In particular, the 'precautionary principle' fails to exhibit any of the elements of custom examined in detail in Chapter One.[197] Firstly, the 'precautionary principle' remains too vague to be said to have normative force. As indicated above, the various statements of the

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[193] If the international agreement was itself a legally binding agreement, then principles contained therein would be binding upon signatory states *in that context only*. However, the documents which described the precautionary principle are 'soft law' declarations, and at best can be used as evidence of state practice.

[194] This is the hypothesis set forward in Cameron et al., *supra* note 146 at 19 - 27.

[195] See *supra*, Chapter One, notes 123 - 145 and accompanying text for a discussion on the manner in which principles crystallize into customary tenets of international law.

[196] See Cameron et al., *supra* note 146 at 19 - 20. The major distinction between the 'instant' crystallization of space sovereignty rules into customary law, and the development of the 'precautionary principle' is that in the former instance the customary law governing certain uses of outer space was evidenced by the state practice and *opinio juris* of three years of specific, co-operative work by nations regarding outer space. See generally Christol, C.Q., *The International Law of Outer Space*, (Washington: United States Government Printing Office, 1966). The principle of precaution, conversely, has not even been categorically defined, but remains ambiguous, vague and without normative force. For example, the difficulty in getting states to respond effectively in a precautionary manner to the vexing problem of climate change indicates that there is no global consensus on the 'precautionary principle'.

[197] See *supra*, Chapter One, notes 123 - 145 and accompanying text.

principle in international declarations are not consistent with each other.[198] Even if one particular rendition of the principle was deemed definitive,[199] all renditions of the 'precautionary principle' have inherent ambiguities which impair their norm creating ability.[200] Furthermore, with the exception of the *SWCC Declaration*, which was made in the specific context of global climate change, statements of the 'precautionary principle' have been endorsed by states in a regional context.[201] Lacking uniformity, consistency and generality, the short duration of the principle's appearance on the international stage becomes more crucial, and lack of duration is a further indictment against the crystallization of the principle into a tenet of customary international law.[202]

At this stage, therefore, the 'precautionary principle' can be defined only as a general admonition to 'err on the side of caution' in circumstances where environmental risks are great and there is unclear scientific evidence.[203] Nothing in the statements of the principle outlined above indicates that the international community has accepted any particular rendering of the 'precautionary principle' as

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[198] See *supra* notes 167 - 186 and accompanying text. Thus it would be difficult to establish that the first component of state practice, uniformity and consistency, exists in this instance. See *supra*, Chapter One, notes 126 - 130 and accompanying text for a discussion of the uniformity and consistency component of state practice as evidence of customary international law.

[199] Although there is no reason why a particular definition, such as the *Bergen Declaration*, should be considered definitive, as it is by Cameron et al., *supra* note 146 at 21, and any such choice would necessarily be made on an arbitrary basis and be extremely difficult to defend logically.

[200] In particular, the generality of statements such as 'threats of serious or irreversible damage' and 'cost-effective measures' are overly ambiguous and rob the above referenced statements of the principle of any normative character. See *supra* notes 167 - 186 and accompanying text.

[201] Thus the second component of the state practice element of a customary principle of international law, generality, is also absent.

[202] See *supra*, Chapter One, notes 136 - 139 and accompanying text. While the duration element will not be fatal to the creation of 'instant custom' where strong evidence of the other components of state practice is evident, there is no such evidence here, and thus the argument in favour of recognizing the 'precautionary principle' as 'instant custom' lacks any merit. The absence of any of the components of state practice, which is the practical element of customary international law, necessarily precludes the existence of the psychological element, *opinio juris*.

[203] See Bodansky, *supra* note 170 at 414 - 415.

definitive and normative. Accordingly, the 'precautionary principle' can be characterized as a principle of 'soft law'.[204]

4. Assessment

The 'precautionary principle' has not yet attained the clarity of definition and widespread usage needed to be considered a customary rule of international environmental law. Nor, it is contended, is it necessarily imperative that it do so. The impact of the 'precautionary principle' in the international environmental arena is an excellent example of the efficacy of 'soft law' as a source of international environmental law. 'Soft law' is important, not only because it may indicate what notions are emerging as customary hard law concepts, and thus serve as a pre-cursor to 'real' law.[205] 'Soft law' principles, such as the 'precautionary principle', can also have immediate impact on the development of international environmental law because they can foster specific corollary principles which can and do crystallize into custom.[206] The 'precautionary principle' as currently formulated may be too ambiguous to develop into a customary principle of international law, but its impact on the international environmental legal arena can be seen in the development of its corollary principles, outlined above, which are specific and clear enough to become part of the customary international law of the environment.

Thus the effectiveness of the 'soft law' principle of precaution has been in part in the adoption and acceptance of the corollary principles of precaution by the international community. In addition, even outside a legally binding framework, the 'precautionary principle' has influenced and can influence the manner in which states interact with one another and develop policy on environmental issues by urging (without the force of binding law) a shifting of emphasis to precautionary approaches

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[204] Handl, *supra* note 14 at 23 contends that the principle's inherent ambiguity leaves it open to doubt whether the principle can ever evolve into a customary tenet of international environmental law.

[205] This is Dupuy's assessment of the efficacy of 'soft law'. See Dupuy, *supra* note 3 at 430 - 431.

[206] This is Handl's argument. See Handl, *supra* note 14 at 24.

to environmental protection.[207]

D. SUSTAINABLE DEVELOPMENT

Historically, the means of human economic and social development have been a source of environmental degradation. This has escalated in recent decades, so that at the present time, the threat to the global environment caused by human activity has reached critical proportions.[208] The nexus between developmental and environmental issues is clear. On the developmental side, there are more people today than ever before who do not have access to adequate food or clean drinking water, more people who are illiterate, more without shelter, more without fuel to cook food or keep warm.[209] Concurrently, human exploitation of the earth is causing desertification and deforestation on an unprecedented scale,[210] while the by-products of industrial production released into the air contribute to acid precipitation, ozone layer depletion and global warming.[211] Future development in under-developed regions is necessary to eradicate the pollution of poverty. At the same time, all future development must sustain the earth's environmental resources for the benefit of present and future generations.

A concept which seeks to recognize the intractable link between

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[207] Cameron et al, *supra* note 146 at 2 touch on this point by defining the 'precautionary principle' as a *guiding* principle. Although they suggest that it may also oblige decision makers to adopt precautionary measures, indicating a crystallization of the principle into hard law, it is clear that even without the force of law, the 'precautionary principle' can have this impact.

[208] See Handl, *supra* note 67 at 603. The author contends that the dangers posed by uninhibited environmental degradation rank with the threat of nuclear annihilation in terms of their potential for destruction and the urgency with which they must be addressed.

[209] See *Our Common Future*, *supra* note 129 at 2.

[210] *Ibid.* Annually, six million hectares of dry land turn into desert, and eleven million hectares of forest are destroyed, much of which is converted into low-grade farmland.

[211] *Ibid.*

developmental and environmental issues is 'sustainable development'.[212] 'Sustainable development' is more than a legal principle. It is also an implementing strategy through which the global community, nations, corporations and individuals must channel future utilization of renewable resources if the global ecosystem is to survive and thrive.[213] 'Sustainable development' represents an integration of environmental, developmental, social and equitable standards.[214]

This section begins by considering the advancement and growth of the concept of 'sustainable development' in international environmental policy and law. Following this it examines the process of defining the practical meaning and substantive content of the concept, looking at various definitions of the notion which have been put forward and listing crucial components of 'sustainable development'. A characterization of the term, and an assessment of its effectiveness concludes this section.

1. Origins and Development

The notion that developmental and environmental issues can be compatible with one another was first posited at the 1971 Founex Seminar on Environment and Development.[215] The Founex Seminar stressed that environmental concerns should be part of the process of economic development, the goal for all nations was to achieve ecologically sound development.[216] These ideas were later incorporated

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[212] See Bothe, M., "Internationalization of Natural Resource Management - Emerging Intergenerational Equity and Sustainable Development Standards" in (1991) 2 *Yearbook of International Environmental Law* 63 at 63.

[213] See M'Gonigle, R.M., "'Developing Sustainability' and the Emerging Norms of International Environmental Law: The Case of Land-Based Marine Pollution Control", (1990) 28 *Canadian Yearbook of International Law* 169 at 219 - 220.

[214] See Elder, P.S., "Sustainability", (1991) 36 *McGill Law Journal* 831 at 835.

[215] See Ntambirweki, *supra* note 67 at 907. For the text of the report see *Environment and Development: the Founex Report on Development and Environment*, (New York: Carnegie Endowment for International Peace, 1972).

[216] See Ntambirweki, *supra* note 67 at 907.

into the concept of 'sustainable development'.[217]

The *Stockholm Declaration* contained the first exhaustive statement concerning 'sustainable development' of renewable resources.[218] Since that time, there has been widespread endorsement of the concept as a central element in international environmental policy and law.[219] The *WCN* was another early instrument which signalled growing global consensus that development should accord with environmental considerations.[220] The *ASEAN Agreement on the Conservation of Nature and Natural Resources*[221] states as its fundamental principle that "the Contracting Parties, within the framework of their respective national law, undertake to adopt singly, or where necessary and appropriate through concerted action, the measures necessary . . . to ensure the sustainable utilization of harvested natural resources under their jurisdiction in accordance with scientific principles and with a view to attaining the goal of 'sustainable development'.[222]

The penultimate text on 'sustainable development' prior to the Rio

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[217] *Ibid.*

[218] *Stockholm Declaration*, *supra* note 28, Principle 3 states "the capacity of the earth to produce vital renewable resources must be maintained and, wherever possible, restored and improved". Principle 13 sets out that "in order . . . to improve the environment, States should adopt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population."

[219] See Birnie et al., *supra* note 7 at 123.

[220] See *WCN*, *supra* note 96, particularly Article 7, which reads:

> "In the planning and implementation of social and economic development activities, due account shall be taken of the fact that the conservation of nature is an integral part of those activities."

[221] *Association of South East Asian Nations (ASEAN) Agreement on the Conservation of Nature and Natural Resources* (hereinafter "*ASEAN Agreement*"), opened for signature July 9, 1985, reprinted in (1985) 15 *Environmental Policy and Law* 64. The *ASEAN Agreement* has not entered into force.

[222] *Ibid.*, Article 1(1).

Conference was the WCED Report, *Our Common Future*, issued in 1987.[223] *Our Common Future* stressed that the economic and social development of all regions, both developed and developing countries alike, must be defined in terms of environmental sustainability.[224] The definition of 'sustainable development' as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"[225] enunciated therein has become a standard statement on 'sustainable development' and has been adopted in a host of international environmental instruments[226] as well as national legislation and policy statements.[227]

An important part of the WCED effort was the work of an international group of thirteen legal experts, who were charged with the task of proposing legal principles on environmental protection and 'sustainable development' to be implemented by the global community by the year 2000.[228] The resulting *WCED Legal Principles*[229] articulate a number of key ideas concerning 'sustainable development', applicable not only in 'commons' or transboundary areas, but also concerning resources within the

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[223] See *Our Common Future*, *supra* note 129, 43 - 66. The WCED was commissioned in 1984 by the United Nations to formulate a global agenda for change in policy areas affecting the environment and development. *Our Common Future* was the result of the commission's work in this regard.

[224] *Ibid.*, at 43.

[225] *Ibid.* This definition of 'sustainable development' contains two key concepts; that of 'needs', particularly the compelling needs of the world's poorest nations, to which overriding priority should be given; and the idea of limitations on the environment's capacity to meet present and future needs.

[226] See for example, the *Bergen Declaration*, *supra* note 190, Preamble, the Council of Europe, *Draft Charter and Convention on Environmental Protection and Sustainable Development*, adopted September 28, 1990, reprinted in (1990) 1 *Yearbook of International Environmental Law* 484, Article 3(a); and the International Chamber of Commerce, *Business Charter for Sustainable Development*, adopted April 12, 1991, reprinted in (1991) 21 *Environmental Policy and Law* (No.1) 35, Introduction.

[227] Canada has incorporated the WCED definition of 'sustainable development' into its *Department of Forestry Act*, S.C. 1989, c-27. Section 2 states that 'sustainable development' means "development which meets the needs of the present without compromising the ability of future generations to meet their own needs."

[228] See Elder, *supra* note 214 at 839.

[229] See *WCED Legal Principles*, *supra* note 98.

exclusive jurisdiction of particular states.[230] In particular, Article 3 proposes that states should maintain all ecosystems, including those contained exclusively within the territorial boundaries of one state which are fundamental for the functioning of the biosphere, ensure maximum biological diversity, and strive to achieve optimum sustainable yield in the exploitation of living natural resources.[231] Articles 4 through 7 set out duties regarding environmental standard setting and monitoring,[232] environmental impact assessment,[233] access to environmental information,[234] and developmental planning and implementation.[235] Article 8

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[230] See Elder, *supra* note 214 at 840.

[231] *WCED Legal Principles*, *supra* note 98, Article 3:

> "States shall:
> (a) maintain ecosystems and related ecological processes essential for the functioning of the biosphere in all its diversity, in particular those important for food production, health and other aspects of human survival and sustainable development;
> (b) maintain maximum biological diversity by ensuring the survival and promoting the conservation in their natural habitat of all species of fauna and flora, in particular those which are rare, endemic or endangered;
> (c) observe in the exploitation of living natural resources and ecosystems, the principle of optimum sustainable yield."

[232] *Ibid.*, Article 4:

> "States shall:
> (a) establish specific environmental standards . . . aimed at preventing or abating interferences with natural resources of the environment;
> (b) establish systems for the collection and dissemination of data and regular observation of natural resources and the environment in order to permit adequate planning of the use of natural resources and the environment, to permit early detection of interferences with natural resources of the environment and ensure timely intervention, and to facilitate the evaluation of conservation policies and methods."

[233] *Ibid.*, Article 5:

> "States planning to carry out or permit activities which may significantly affect a natural resource or the environment shall make or require an assessment of their effects before carrying out or permitting the planned activities."

[234] *Ibid.*, Article 6:

> "States shall inform all persons in a timely manner of activities which may significantly affect their use of a natural resource or their environment and shall

enunciates a general obligation among all states to co-operate in achieving sustainable development.[236]

Since *Our Common Future*, the notion of 'sustainable development' has come into common parlance,[237] and has been put forward in a number of international environmental instruments.[238] In 1989, the United Nations Environment Programme concluded that 'sustainable development' "requires the maintenance, rational use and enhancement of the natural resource base that underpins ecological resilience and economic growth and implies progress towards intergenerational equity."[239] The concept has been endorsed by a number of international organizations, including the member states of the Group of Seven Industrialized Countries at their Summit at Toronto in 1988,[240] the ECE,[241] the European

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grant the concerned persons access to and due process in administrative and judicial proceedings."

[235] *Ibid.*, Article 7 proposes, *inter alia*, that states be required to "ensure that the conservation of natural resources and the environment is treated as an integral part of the planning and implementation of development activities".

[236] *Ibid.*, Article 8:

> "States shall co-operate in good faith with other States or through competent international organizations in the implementation of the provisions of the preceding articles."

[237] See M'Gonigle, *supra* note 213 at 171 - 172.

[238] International environmental instruments which incorporate the notion of 'sustainable development' include the *Interparliamentary Conference on the Global Environment*, adopted May 2, 1990, reprinted in (1990) 20 *Environmental Policy and Law* (No. 3) 112 at 'Sustainable Development', pp. 114 ff; the *Bangkok Ministerial Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific*, adopted October 16, 1990; the *Beijing Declaration*, *supra* note 50; and the *Tlatelolco Platform on Environment and Development*, adopted March 7, 1991 U.N. Doc. ECLAC/LC/G.1656 (Conf.80/3).

[239] United Nations Environment Programme, *Governing Council Decision*, May, 1989, U.N. Doc. UNEP/GC.15/2 Annex II GAOR 44th Sess., Suppl. No. 25 (A/44/25).

[240] See Elder, *supra* note 214 at 832.

[241] See *Bergen Declaration*, *supra* note 174.

Community,[242] the Organisation for Economic Co-operation and Development,[243] and the Organisation of African Unity.[244] The extent of its usage is indicative that it is fast becoming the fundamental standard against which international, regional and local environmental initiatives are being evaluated.[245]

2. Towards a Definition of 'Sustainable Development'

While all of this activity surrounding 'sustainable development' indicates the general receptivity of the global community to the concept, it does little to solidify and clarify what the term means from a legal perspective. Despite the widespread use of the term in global, regional and national environmental legal instruments, consensus on what in practical terms, 'sustainable development' means has been lacking.[246] Beyond a general impression that efforts to reduce consumption and recycle wastes should be encouraged, the measures and the costs of 'sustainable development' have not been well understood.[247]

a) Differing Definitions

'Sustainable development' tends to vary in its implications according to the

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[242] See Commission of the European Communities, *Towards Sustainability - A European Community Programme of Policy and Action in relation to the Environment and Sustainable Development*, (Brussels: COM(92) 23 final, 1992).

[243] Organisation for Economic Co-operation and Development, *Policy Statement on Sustainable Development*, adopted December 3, 1991, reprinted in (1992) 22 *Environmental Policy and Law* (No. 1) 56.

[244] Organisation of African Unity, *Bamako Commitment on Environment and Development* (hereinafter "*Bamako Commitment*"), adopted January 30, 1991, reprinted in (1991) 21 *Environmental Policy and Law* (No. 2) 99. The *Bamako Commitment*, *inter alia*, affirms that "a long term environmental strategy for a sustainable development presupposes that the basic needs of each and everyone should be satisfied."

[245] See Handl, *supra* note 14 at 24.

[246] See Hahn, R.W., "Towards a New Environmental Paradigm", (1993) 102 *Yale Law Journal* 1719 at 1747 - 1748.

[247] See Saunders, J.O., "The Path to Sustainable Development: A Role for Law" in Saunders J.O., ed., *The Legal Challenge of Sustainable Development*, (Calgary: Canadian Institute of Resources Law, 1990) 1 at 1.

perspective taken.[248] In industrialized countries, 'sustainable development' may mean a more efficient use of economic resources accompanied by 'sustainable' material growth, with vast economic potential as under-developed nations industrialize.[249] For the industrialized nations, "sustainability is about maintaining or enhancing the quality of life for each successive generation while not threatening life as we know it."[250] Developing nations, on the contrary, are sceptical of the North's environmental agenda.[251] They see 'sustainable development' as, first and foremost, a means by which they may address the environmental problems of poverty which originate from a lack of economic development.[252] The primary objective of 'sustainable development' in developing countries is eradication of the pollution of poverty.[253] Thus, the presence of this definitional dichotomy means that the evolution of 'sustainable development' as a legal concept remains in its initial stages.[254]

Legal scholars, too have offered a number of differing definitions of 'sustainable development', further indication that the content of the concept remains ambiguous. Apart from the definition propounded in *Our Common Future*,[255] a

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[248] See Hahn, *supra* note 246 at 1748. Indeed, the definitional malleability of 'sustainable development' is a large part of the reason it has been so well received by the international community.

[249] See Elder, *supra* note 214 at 833.

[250] See Hahn, *supra* note 246 at 1749. Hahn's definition would likely be viewed by developing countries as inadequate as it does not emphasize the importance of 'levelling' the economic playing field between rich and poor countries. Developing countries see the primary goal of 'sustainable development' as being bringing the quality of life of their population to a level which is comparable to that of the North. Once this is achieved, they contend, one can talk of enhancing that quality for successive generations.

[251] For an overview of the developing world's historical mistrust of the environmental agenda of industrialized nations, see generally, Ntambirweki, *supra* note 67 at 905 - 910.

[252] *Ibid.*, at 908.

[253] *Ibid.*, at 907.

[254] See Handl. *supra* note 14 at 26.

[255] See *Our Common Future*, *supra* note 129 at 43.

wide range of proposed interpretations have been posited. Elder defines 'sustainability' as involving the use of resources at a rate "that does not reduce the ecological diversity of natural systems or their regenerative capacity".[256] Another scholar describes the process as "an emerging cluster of policies by which we manage the use of the Earth's environment and natural resources to ensure the optimal level of sustainable benefits for present and succeeding generations.[257]

Some have taken a utilitarian approach to 'sustainable development' and defined sustainable policy as one which maximizes a discounted sum of utilities across generations.[258] The drawback to this approach is that it is difficult, if not impossible to measure the impact of changes in policy upon the quality of utility to future generations.[259] Others have taken an opportunistic approach to 'sustainable development', and define it in terms of maintaining or, ideally, improving upon the range of opportunities available to future generations.[260] As with the utilitarian approach, difficulties arise regarding measurement.[261]

An offshoot of the opportunistic approach views 'sustainable development' as preservation of natural capital.[262] Handl echoes this approach when he defines 'sustainable development' as "living off nature's 'income' rather than squandering its

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[256] See Elder, *supra* note 214 at 835.

[257] See Robinson, N.A., "A Legal Perspective on Sustainable Development", in Saunders J.O., ed., *The Legal Challenge of Sustainable Development*, (Calgary: Canadian Institute of Resources Law, 1990) 15 at 16.

[258] See generally, Hahn, *supra* note 246 at 1748 - 1749.

[259] *Ibid.* For example, it is impossible to measure whether a tax on carbon will be more likely to improve or hurt future generations.

[260] *Ibid.*, at 1749. This approach is similar to the 'conservation of options' principle of inter-generational equity outlined by Brown-Weiss, *supra* note 54 at 40 - 42. For further discussion of this principle, see *supra* note 126 and accompanying text.

[261] See Hahn, *supra* note 246 at 1749.

[262] *Ibid.*

'capital'".[263] However, such a definition, in itself is incomplete, and does not give any indication as to what and how 'sustainable development' should affect international environmental policy and law. While it has been comparatively easy for the global community to determine that 'sustainable development' will be an integral part of future environmental and developmental policy, definitive resolution of what that means and how it may be achieved has proved elusive.

b) Components of 'Sustainable Development'

In considering a comprehensive definition of 'sustainable development', it is necessary to distinguish between the notion's objective, normative and procedural components.[264] The objective component of 'sustainable development' relates to the nature of the ecosystem. The object of 'sustainable development' is to employ means which enrich the lives of the present generation without imperilling the prospects for future generations. Accordingly, 'sustainable development' is not, primarily, a preservationist concept.[265] 'Sustainable **development**' denotes exploitation of the earth's resources and development of human living conditions.[266] It does not seek environmental protection or preservation for preservation's sake, but rather focuses on fundamental inter-societal human rights

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[263] See Handl, *supra* note 14 at 24. See also Connor-Lajambe. H., "Economics and Sustainable Development" in Saunders, J.O., *The Legal Challenge of Sustainable Development* (Calgary: Canadian Institute of Resources Law, 1990) 56 at 68.

[264] See Sanwal, M., "Sustainable Development, the Rio Declaration and Multilateral Cooperation", (1993) 4 *Colorado Journal of International Law and Policy* 45 at 48. Sanwal does not describe the three components of 'sustainable development' in any depth, and the conclusions drawn herein, save as footnoted, are the author's own.

[265] See Handl, *supra* note 14 at 25. Handl contends that this perspective, promoting development rather than the no-growth conservationism of the 'precautionary principle' makes 'sustainable development' a more palatable concept internationally.

[266] See *Our Common Future*, *supra* note 129 at 43 - 44:

> "The satisfaction of human needs and aspirations is the major objective of development. . . (s)ustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life."

and obligations.[267] 'Sustainable development' restrains development only in those instances which would undermine the environmental basis for future development.[268] Thus, 'sustainable development' essentially concludes that economic 'development' which weakens the ecological resource base does not, in the long run, advance the human condition. Definitionally, 'sustainable development' appears to apply only to renewable resources, such as forests, wildlife, soils and water systems.[269] Non-renewable resources, which have no recuperative capacity, or at best an extremely long one, cannot be developed sustainably.[270] Use of a non-renewable resource, in an ecologically sound manner or not, necessarily reduces the earth's store of that resource, which cannot be recovered.[271] One speaks of conservation and development of alternative sources in relation to non-renewable resources, and 'sustainable development' regarding renewable resources.[272]

The normative content of 'sustainable development' remains weak.[273] As currently stated, the normative quality of the 'sustainable development' notion is

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[267] The anthropocentric nature of the 'sustainable development' concept is articulated in Principle 1 of the *Rio Declaration*, *supra* note 15, which states that "human beings are at the centre of concerns for sustainable development". The impact of the *Rio Declaration* on 'sustainable development' will be discussed further *infra* at Chapter Three.

[268] See Handl, *supra* note 14 at 24 - 25.

[269] See Birnie et al., *supra* note 7 at 122 and Brown-Weiss, *supra* note 54 at 50 - 51. Although the authors of *Our Common Future*, *supra* note 129 at 45 -46 speak of 'sustainable development' of non-renewable resources, it is contended that, definitionally, the term does not fit in this circumstance. There is only one way to 'sustain' levels of a non-renewable resource and that is to abstain from using it. Conservation of, and research into alternatives for non-renewable resources are valid environmental policy objectives, but they do not, it is contended, come within the realm of 'sustainable development'.

[270] Resources such as the ozone layer and fossil fuels are generally considered to be 'non-renewable'. Although these resources, if exhausted, may ultimately recuperate themselves, the process will take millions of years, making their recuperative capacity, for the purpose of human civilization, tantamount to 'non-renewable'.

[271] Or at least not in any practically foreseeable time in the future.

[272] See Brown-Weiss, *supra* note 54 at 50 - 51.

[273] See Handl, *supra* note 14 at 25 - 26. See also Birnie et al., *supra* note 7 at 122 - 124.

clouded by internal definitional inconsistencies.[274] For instance, although 'sustainable development' necessarily implies international co-operation and accountability in the management and use of renewable resources, international instruments which describe the notion of 'sustainable development' often also re-affirm the sovereign right of each state to exploit its own resources.[275] In addition, policies which meet the needs of the present generation without prejudicing the ability of future generations to meet their own needs will differ from country to country as each country's 'needs' are distinct.[276] The absence of an authoritative body which can define specifically what 'sustainable development' means allows individual states to retain substantial discretion in giving it effect.[277]

The procedural element of 'sustainable development' refers to the manner in which it is implemented, and this has naturally depended upon the resource in question, and the developmental 'needs' of the country or countries implementing the policy.[278] In Canada, for instance, the federal government has adopted a 'Partners for Sustainable Development' program which sets out the procedural objectives for

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[274] See Handl, *supra* note 14 at 25 - 26.

[275] See Bothe, *supra* note 212 at 64. See for instance, the United Nations Environment Programme, *Governing Council Statement on Sustainable Development*, U.N. Doc. UNEP/GC.15/L.37 Annex II, which states that "sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own needs *and does not imply in any way encroachment on national sovereignty*"(emphasis added); Principle 6 of the *Beijing Declaration*, *supra* note 50 which, in the context of 'sustainable development, states that "the developing countries have the sovereign right to use their own natural resources in keeping with their developmental and environmental objectives and priorities"; and Principle 2 of the *Rio Declaration*, *supra* note 15, which asserts state sovereignty over natural resources in the midst of principles concerning 'sustainable development'.

[276] See Elder, P.S., and Ross, W.A., "How to Ensure that Developments are Environmentally Sustainable", in Saunders, J.O., ed., *The Legal Challenge of Sustainable Development* (Calgary: Canadian Institute of Resources Law, 1990) 124 at 125.

[277] See Birnie et al., *supra* note 7 at 123. However, the recently formed United Nations Commission on Sustainable Development may be able to provide the clarity necessary to solidify state practise and crystallize 'sustainable development' as a norm of international environmental law. See *infra* note 303 and accompanying text.

[278] See Elder et al., *supra* note 276 at 125.

sustainably developing the nation's natural resources.[279]

The above is inadequate to define 'sustainable development'.[280] Documents pertaining to 'sustainable development' have not solved the problem of identifying its particular application or content in a particular context.[281] Its widespread use does indicate that it is emerging as a norm of international law, perhaps even a peremptory norm, but at present it remains insufficiently articulated to be said to have normative force.[282]

3. Characterization of 'Sustainable Development'

Clearly 'sustainable development is a normative rather than a technical concept.[283] As an environmental 'catch phrase' its appeal in the international community is unparalleled. Few would argue with the proposition that development of renewable resources be done in a sustainable manner.[284] Legally significant expectations have begun to crystallize around the term, and the combination of its widespread acceptance and fundamental implications on the environmental and developmental future of the globe portend that it may become a peremptory norm

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[279] See Forestry Canada, *The State of Forestry in Canada - 1990 Report to Parliament*, (Ottawa: Forestry Canada, 1991) at 44. Canada's 'sustainable development' program contains four objectives:

> a) to establish large-scale exemplary models of 'best forest management practices' within Canada's productive forest lands;
>
> b) to expand forestry research;
>
> c) to enhance environmental databases and forest-health monitoring networks; and
>
> d) to develop data management and decision-support systems for holistic decision-making that takes into account all forest values.

[280] See Hahn, *supra* note 246 at 1750.

[281] See Birnie et al., *supra* note 7 at 124.

[282] *Ibid.*

[283] See Elder et al., *supra* note 276 at 125.

[284] See Birnie et al., *supra* note 7 at 123.

of the international law of the environment.[285] As in the case of the 'precautionary principle' this does not appear likely at the present stage, given the aversion in the international community to state broad principles in a legally binding manner. Part of the appeal of 'sustainable development' is in the ambiguity of its application. The practical meaning and substantive content of the concept lacks adequate articulation.[286] It cannot yet be said to be a norm of international environmental law. 'Sustainable development', at its present stage of evolution, is overly vague in both meaning and application.[287] This must not continue if the concept is to have normative impact on the development of international environmental law.

4. Assessment

Irrespective of its present normative weakness, 'sustainable development' has been fundamentally shaping both national and international environmental policy.[288] By bringing together the needs of social and economic development with environmental sustainability, 'sustainable development' has effectively set a new agenda for international environmental law[289] - an agenda that was considered in depth at UNCED. The concerns raised by the concept will be of continuing importance over the next few decades.[290]

'Sustainable development' is the logical consequence of the doctrine of inter-

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[285] See Handl, *supra* note 14 at 25. Handl views 'sustainable development' as essential for continued life on planet earth.

[286] See M'Gonigle, *supra* note 213 at 220.

[287] See Hahn, *supra* note 246 at 1748.

[288] See Handl, *supra* note 14 at 26.

[289] See M'Gonigle, *supra* note 213 at 171 -172.

[290] See Saunders, *supra* note 247 at 1.

generational equity.[291] Indeed, in its most common rendering, 'sustainable development' acknowledges its foundational reliance on inter-generational notions.[292] In order for 'sustainable development' to acquire normative force, the doctrine of inter-generational equity must first become custom.

'Sustainable development' also acknowledges the commonality of environmental concerns, and has been linked to 'common concern' notions.[293] The earth's ecosystem is one indivisible unit, and all members of the global community, present and future share the risks and responsibilities involved in caring for it.

The notion of precautionary action has also been linked with 'sustainable development'.[294] Although its possible scope is narrower than that of the broad 'precautionary principle', the widespread endorsement of 'sustainable development' in environmental legal instruments and national policy initiatives indicate that it is considered to be of paramount importance, potentially even becoming a peremptory norm of international law.[295] The utilitarian view of environmental protection it fosters and the simple fact that non-sustainable development will lead to ecological exhaustion of the earth's resources and the end of life on earth, have made 'sustainable development' particularly popular amongst political leaders and policy

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[291] See Brown-Weiss, *supra* note 140 at 2124. Brown-Weiss asserts that the principles of the doctrine of inter-generational equity provide the normative underpinnings for 'sustainable development'. This is not to say that 'sustainable development' is devoid of normative content outside the inter-generational context. Rather, the equitable principles which seek to ensure conservation of options, quality and access for all generations, now and in the future, necessitate sustainable use of renewable resources. Without inter-generational notions, ideas of conservation and sustainable maintenance of the ecosystem would be reduced to a courtesy granted by the present generation rather than an obligation owed to the future.

[292] Many international declarations and national legislative instruments echo the definition of 'sustainable development' given by the WCED in *Our Common Future*, *supra* note 129 at 43. See generally, *supra* notes 223 - 227 and accompanying text.

[293] See *Beijing Declaration*, *supra* note 50, Article 2 which states, in part that "sustainable development is a matter of common concern to humankind."

[294] See the *Bergen Declaration*, *supra* note 174. The *Bergen Declaration*, at Paragraph 7, included the 'precautionary principle' as a specific implementing strategy of 'sustainable development'.

[295] See Handl, *supra* note 14 at 25.

makers across the globe.[296]

The goal of economic and social development in all states now must be defined in terms of environmental sustainability.[297] Adherence to 'sustainable development' does not necessarily mean internationalization of national developmental policies.[298] Combining the principle of environmental interdependence with 'sustainable development' gives it an international dimension.[299]

'Sustainable development' also represents a "process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations".[300] This perspective both demands and compels a major progressive development of international environmental law and institutions.[301] As a process of change, the initial challenge for 'sustainable development' will be to reach clear understanding and consensus on pathways and guideposts which lead to 'sustainable development'.[302]

A clear consensus on processes leading to 'sustainable development' has not been achieved. Recent developments arising from the Rio Conference may assist in this matter, however. The recently established United Nations Commission on Sustainable Development, while technically lacking legal authority, may wield the political and moral force necessary to streamline national policies and practice to

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296 *Ibid.*

297 See Birnie et al., *supra* note 7 at 4.

298 See Bothe, *supra* note 212 at 63.

299 *Ibid.*, at 64.

300 See *Our Common Future*, *supra* note 129 at 46.

301 See M'Gonigle, *supra* note 213 at 220.

302 See Handl, *supra* note 14 at 26.

enable an intelligible articulation of the term by international jurists.[303] Clearly, however, implementation of the principle and process of 'sustainable development' will not be possible without a significant derogation from traditional notions of state sovereignty.

E. LINKAGE BETWEEN THE EMERGING PRINCIPLES

Examination of the emerging international environmental law principles of 'common concern of mankind', 'common heritage of mankind', 'inter-generational equity', the 'precautionary principle' and 'sustainable development' reveals that there is a correlation between them all. This section highlights their specific affinities.

'Common heritage of mankind' includes the notion that the fruits of 'commons' areas are not solely for the benefit of the present generation, but should be preserved for the enjoyment of future generations of humankind.[304] Indeed, 'common interest', which has given rise to the 'common concern of mankind' and the common heritage of mankind' principles is at the root of the inter-generational equity doctrine.[305] Inter-generational equity can be defined as an expression of 'common interest' inter-temporally. There is a 'common interest' element in 'sustainable

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[303] The Commission on Sustainable Development was established by the United Nations Economic and Social Committee on February 12, 1993 upon the recommendation by the General Assembly, and is charged with the responsibility of monitoring the progress of nations in implementing *Agenda 21: A Programme of Action for Sustainable Development*, adopted June 14, 1992, U.N. Doc. A/CONF.151/4. It held its first substantive session in New York from June 14 - 25, 1993. See generally, "Eagerly Awaited Commission Established", (1993) 23 *Environmental Policy and Law* (No. 2) at 58, and "Commission on Sustainable Development - First Substantive Session", (1993) 23 *Environmental Policy and Law* (No. 5) 190. Although not a legally authoritative body, the Commission may induce uniformity, consistency and generality of state practice on sustainable development, allowing the concept to crystallize into a norm of international environmental law.

[304] See Fleischer, *supra* note 55 at 311.

[305] See Brown-Weiss, *supra* note 93 at 198 - 199. The author, in giving a succinct recapitulation of her early work on inter-generational equity, describes the heart of the doctrine as being that "we, the human species, hold the natural environmental of our planet in common with all members of our species: past generations, the present generation, and future generations."

development' also, which has been noted in international environmental instruments.[306]

The 'precautionary principle' has been linked to 'sustainable development'. The *Bergen Declaration* defined the 'precautionary principle' as a necessary and important component of policies aimed at 'sustainable development' of the earth's resources.[307] An obvious nexus also exists between the forward-looking 'precautionary principle' and the doctrine of inter-generational equity, which places particular emphasis on the relationship of "the present to the future".[308] One can argue that the reason underlying any precautionary measure is to prevent disastrous or potentially disastrous environmental effects, such as climate change, from being visited upon future generations.[309] Hence, inter-generational equity provides the doctrinal basis for the principles of precaution.

The strongest bond exists between the doctrine of inter-generational equity and the process/principle of 'sustainable development'. The two concepts appear to enjoy a symbiotic relationship with one another, each feeds off the other, while retaining independent normative force. As it does for the 'precautionary principle', inter-generational equity provides 'sustainable development its conceptual and philosophical underpinning.[310] At the same time, exploitation of renewable resources on a sustainable basis is a cornerstone of the inter-generational equity

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[306] See *Beijing Declaration*, *supra* note 50, Article 2, which states, in part that "sustainable development is a matter of common concern to humankind."

[307] *Bergen Declaration*, *supra* note 174, Article 7.

[308] See Brown-Weiss, *supra* note 54 at 2.

[309] See Gündling, *supra* note 105 at 211:

> "We cannot simply rely on the assumption that our way of dealing with nature and the environment will turn out to be harmless. Nor can we expect that future generations will develop the technology necessary to cope with all the problems they inherit from us. Therefore, today we must take true preventive action, or more precisely, precautionary action, which will ensure that natural resources are used sparingly and that degradation of the environment is reduced to a minimum."

[310] See Handl, *supra* note 14 at 27.

doctrine.[311] While "sustainable development is in many respects itself an expression of the same concern for the interests of the future",[312] it would be incorrect to assert that inter-temporal rights were the sole focus of 'sustainable development'. The process of 'sustainable development' is primarily concerned with the achieving the developmental goals of the present, and may not in some cases lead to inter-generational equity. So too, while 'sustainable development' is crucial to the implementation of the inter-generational equity doctrine, it is not its only component.[313]

The overall relationship between the emerging principles considered herein can be described as follows. 'Common interest' is the root. It is a precipitating factor in international environmental law which appears to be gaining increasing acceptance in the global community. The earth's environment is a single indivisible unit. Any anthropogenic activity which degrades the environment has a direct impact upon all. Thus, we have a common interest in ensuring environmental integrity.

The root has fostered specific principles, 'common concern of mankind' and 'common heritage of mankind', both of which may become norms of international environmental law. It is also a fundamental pillar of the doctrine of inter-generational equity, which is an expression of the commonality of all members of the human species, past, present and future. Inter-generational equity, in turn is an underlying doctrine of the process/ principle of 'sustainable development'. The 'precautionary principle' is a related, overlapping concept, which like 'sustainable development' has inter-generational equity as part of its foundational doctrine. Each principle has norm creating power in its own right, and their inter-connectedness is indicative of the sharpened focus of international environmental law.

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311 See Brown-Weiss, *supra* note 54 at 226.

312 See Birnie et al., *supra* note 7 at 211.

313 As Birnie et al., point out, the 'common heritage of mankind' is another component of the inter-generational equity doctrine, as is the 'precautionary principle'. See *ibid.*

III. CONCLUSION

Law should not inhibit change by perpetuating old legal norms. Especially in the area of international environmental law it must assume a pro-active, dynamic role in shaping the direction of future policy.[314] Ecological realities have dictated a shift in international environmental law over the past two decades. Increasingly, the range of common interests is being recognized among the global community. The health of the biosphere concerns all, and international law must ensure that the environment is protected and maintained. International environmental law is no longer simply a set of rules governing transboundary relations between neighbouring states.

The impact of the emerging principles of 'common concern of mankind', 'common heritage of mankind', 'inter-generational equity', the 'precautionary principle' and 'sustainable development' upon international environmental law has been varied. Each has been responsible for some development in the field, but none can be said to have evolved past the normative threshold and become binding tenets of customary law.

In general, it may be said that the recognition of a common interest in environmental matters which spawned the emerging 'common heritage' and 'common concern' principles is also responsible for the development of inter-generational equity, which is essentially an expression of commonality extended across generations. 'Inter-generational equity', in turn, provides the conceptual and philosophical underpinning for 'sustainable development'. One mechanism which can be utilized in realizing 'sustainable development' is the 'precautionary principle'. While related, each concept has potential norm-creating power in and of itself, and can impact upon the future development of the international law of the environment.

In an endeavour to find solutions to the complex problems of securing 'sustainable development' in a wide spectrum of environmental issues, UNCED was

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[314] See Robinson, *supra* note 257 at 17.

convened.[315] The following Chapter analyzes the fruits of UNCED in the context of their contribution to the crystallization into customary norms of the emerging principles studied herein.

[315] See Birnie et al., *supra* note 7 at 5.

CHAPTER THREE

THE ROLE OF THE RIO CONFERENCE IN THE EVOLUTION OF EMERGING 'SOFT LAW' PRINCIPLES

I. INTRODUCTION

The United Nations Conference on Environment and Development,[1] convened in Rio de Janeiro on the twentieth anniversary of the United Nations Conference on the Human Environment,[2] was called, in part, to harmonize the divergent legal and policy paths to environmental protection and development which states had been following during the past two decades.[3] For example, the definition of 'sustainable development' has historically varied according to the perspective taken.[4] By assembling a global conference to work on, among other things, an earth-wide agenda for 'sustainable development', the co-ordinators of UNCED hoped to harmonize and crystallize the notion of 'sustainable development' and other nebulous principles of international environmental law.[5]

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[1] The 1992 United Nations Conference on the Environment and Development (hereinafter "UNCED" or "Rio Conference") was held at Rio de Janeiro, Brazil, from June 3 - 14, 1992. An Earth Summit was convened during the final two days of the Conference. It was attended by Heads of State from over one hundred seventy countries. See "Rio Conference on Environment and Development", (1992) 22 *Environmental Policy and Law* (No. 4) 204.

[2] The 1972 Stockholm Conference on the Human Environment (hereinafter "Stockholm Conference") was the first ever global conference on the environment, and marks the inception of the modern era of international environmental law. It was convened at Stockholm, Sweden, from June 5 - 16, 1972 and attended by representatives from 114 governments. The most significant document to come out of the Stockholm Conference was the *Stockholm Declaration on the Human Environment* (hereinafter "*Stockholm Declaration*"), adopted June 16, 1972, U.N. Doc. A/CONF.48/14/Rev.1, Ch.I reprinted in (1972) 11 *International Legal Materials* 1416, which set out 26 principles concerning the environment and development. Other products of the Stockholm Conference were an *Action Plan for the Human Environment*, adopted June 16, 1972, U.N. Doc. A/CONF.48/14/Rev.1, Ch.II, reprinted in (1972) 11 *International Legal Materials* 1421 and a *Resolution on Institutional and Financial Arrangements*, adopted June 16, 1972, U.N. Doc. A/CONF.48/14/Rev.1, Ch.III, reprinted in (1972) 11 *International Legal Materials* 1466. See generally, Haas, P.M., Levy, M.A., and Parson, E.A., "The 1972 Stockholm Conference", (1992) 34 *Environment* (No. 8) 9.

[3] See Haas, P.M., Levy, M.A., and Parson, E.A., "Appraising the Earth Summit: How Should We Judge UNCED's Success?", (1992) 34 *Environment* (No. 8) 6 at 8.

[4] The definitional elasticity of the concept of 'sustainable development' is part of the reason for its widespread acceptance by nations with divergent environmental and developmental policies. See generally, *supra*, Chapter Two, notes 246 - 263, 286 - 287 and accompanying text.

[5] See Getches, D.H., "Foreword: The Challenge of Rio", (1993) 4 *Colorado Journal of International Environmental Law and Policy* 1 at 2.

An exhaustive review of the documents signed by heads of state at the Earth Summit is beyond the scope of this thesis. Rather, the following focuses on the impact of the Rio documents on the emerging principles examined at length in the last chapter. It begins with an overview of the process leading up to the Rio Conference.[6] It then considers the non-binding, or 'soft law' instruments of the Rio Conference in light of the emerging principles to determine whether any progress was made with regard to clarification of their meaning or their crystallization into custom.[7] A similar review is undertaken of the two international legal treaties negotiated distinctly from UNCED and signed by heads of state at the Earth Summit.[8] The conclusion considers the overall impact of the Rio documents on the emerging principles of international environmental law.[9]

II. APPROACHES AND BACKGROUND TO THE RIO CONFERENCE

Generally speaking, UNCED found its roots in the internationalization of environmental law that began at the Stockholm Conference.[10] While the Stockholm Conference dealt primarily with environmental matters, the interrelation of development and environment were also considered.[11] In particular, Principle 8 of the *Stockholm Declaration* recognized that "economic and social development is

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[6] See *infra* notes 10 - 31 and accompanying text.

[7] See *infra* notes 32 - 87 and accompanying text.

[8] See *infra* notes 88 - 133 and accompanying text.

[9] See *infra* notes 134 - 137 and accompanying text.

[10] See Strong, M.F., "Beyond Rio: Prospects and Portents", (1993) 4 *Colorado Journal of International Environmental Law and Policy* 21 at 22.

[11] The main emphasis of the Stockholm Conference was on environmental issues, however developmental issues were also considered in light of their considerable impact upon the global environment. For an overview of the place of the Stockholm Conference on the road to Rio see generally, Hassan, P., "Towards an International Covenant on the Environment and Development", Paper presented at the Eighty-Seventh Annual Meeting of the American Society of International Law, April 2, 1993, at 2 - 5.

essential for ensuring a favourable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life."[12] Although the years following the Stockholm Conference have seen an increased polarization between North and South regarding environmental and developmental policy issues, there has been a growing realization among the members of the international community at large that developmental and environmental issues are inter-related.[13]

The main impetus for UNCED came with the report of the World Commission on Environment and Development,[14] which concluded, *inter alia*, that it is "futile to attempt to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality".[15] The WCED recommended that an international conference be held on the inter-related issues of environmental protection and sustainable development.[16] After protracted and often acrimonious negotiations which foreshadowed developments to come, this recommendation was followed by the United Nations General Assembly. On December 22, 1989, the General Assembly passed an unanimous resolution calling for the convening of UNCED.[17] UNCED's

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[12] *Stockholm Declaration*, *supra* note 2 at Principle 8. See also Paragraphs 2 and 4 of the Preamble to the *Stockholm Declaration*, *ibid.*

[13] See Haas et al., *supra* note 3 at 8.

[14] See World Commission on Environment and Development (hereinafter "WCED"), *Our Common Future*, (New York: Oxford University Press, 1987).

[15] *Ibid.*, at 3.

[16] *Ibid.*, at 333.

[17] *United Nations General Assembly Resolution Convening the United Nations Conference on Environment and Development* (hereinafter "*UNCED Resolution*"), G.A. Res. 44/228, adopted December 22, 1989, U.N. Doc. A/RES/44/228, reprinted in (1990) 20 *Environmental Policy and Law* (No. 1/2) 39. For a review of the debate in plenary session which resulted in the Resolution, see "High-Level Decisions on the Environment", (1990) 20 *Environmental Policy and Law* (No. 1/2) 2 at 4 ff. Lucien Bouchard, then Minister of the Environment for Canada, supported the Rio Conference as a means by which to develop the international law of the environment, asserting that, in an era characterized by environmental problems that recognized no boundaries, the concept of sovereignty

broadly stated purpose was to "elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable development and environmentally sound development in all countries".[18] Tommy Koh of Singapore was appointed chairman of the Conference, and Maurice Strong was named secretary-general.[19]

Negotiations for the Rio Conference were conducted through the Preparatory Committee (PrepCom) established under the *UNCED Resolution*.[20] The *UNCED Resolution* mandated that PrepCom meet on five occasions prior to Rio: an organizational meeting and the final substantive session in New York, the first substantive session in Nairobi and two others in Geneva.[21] These meetings were held between March, 1990 and April, 1992.[22] The bulk of the negotiating took place in the fourth substantive session, where consensus was reached on the proposed

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must continue to evolve and adapt.

[18] *UNCED Resolution*, *supra* note 17, Part I, Paragraph 3.

[19] See Haas et al., *supra* note 3 at 8.

[20] See *UNCED Resolution*, *supra* note 17 at Part II, Paragraph 1. The Preparatory Committee was open to all States Members of the United Nations or its specialized agencies. It is important to distinguish the PrepCom negotiating process from the negotiations conducted by independent negotiating committees concerning agreements on climate change and biological diversity.

[21] *Ibid.*, Part II, Paragraph 2.

[22] See Haas et al., *supra* note 3 at 8. For a reporting of the events of each PrepCom meeting, see the following articles:

a) Organizational Meeting: New York, March 5 - 16, 1990 - "Conference on Environment and Development '92 - Preparatory Process", (1990) 20 *Environmental Policy and Law* (No. 3) 72;
b) First Substantive Session: Nairobi, August 6 - 31, 1990 - "Preparatory Committee of the UN Conference on Environment and Development", (1990) 20 *Environmental Policy and Law* (No. 4/5) 127;
c) Second Substantive Session: Geneva, March 18 - April 5, 1991 - "Second Session of the Preparatory Committee", (1991) 21 *Environmental Policy and Law* (No. 2) 42;
d) Third Substantive Session: Geneva, August 12 - September 4, 1991 - "PrepCom: Third Meeting", (1991) 21 *Environmental Policy and Law* (No. 5/6) 186;
e) Fourth Substantive Session: New York, March 9 - April 3, 1992 - "Prepared for Rio?", (1992) 22 *Environmental Policy and Law* (No. 2) 129.

Rio Declaration and the bulk of the proposed *Agenda 21*.[23]

In 1990 the Food and Agricultural Organization of the United Nations recommended that a global forests convention be negotiated for signing at UNCED.[24] When attempts to negotiate such a treaty failed, PrepCom added the negotiation of a non-binding declaration of principles on forests to its UNCED agenda.[25] Forest issues were hotly contested both in PrepCom and at UNCED and are illustrative of the dichotomy that exists between North and South.[26] In the end, seventeen ambiguous principles were agreed to, applicable to all types of forests.[27]

Negotiations for a Climate Change Convention began in earnest following the Inter-governmental Panel on Climate Change's report tabled at the Second World Climate Conference.[28] The *Ministerial Declaration of the Second World Climate Conference* called for negotiations on a framework convention on climate change to begin without delay.[29] The United Nations General Assembly responded by forming an Intergovernmental Negotiating Committee for a Framework Convention on Climate Change with the mandate of negotiating a climate change convention, containing "appropriate commitments", for signing at UNCED.[30] Over the

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[23] See Haas et al., *supra* note 3 at 8.

[24] See Parson, E.A., Haas, P.M. and Levy, M.A., "A Summary of the Major Documents Signed at the Earth Summit and the Global Forum", (1992) *Environment* (No. 8) 13 at 14.

[25] *Ibid.*

[26] See "Rio Conference on Environment and Development", *supra* note 1 at 222.

[27] *Ibid.*

[28] See "SWCC - No Agreement on CO_2 Reduction Targets", (1990) 20 *Environmental Policy and Law* (No. 6) 196 at 197.

[29] *Ministerial Declaration of the Second World Climate Conference* (hereinafter "*SWCC Declaration*"), U.N. Doc. A/45/696/Add.1, reprinted in (1990) 20 *Environmental Policy and Law* (No. 6) 220, Article 28.

[30] *United Nations General Assembly Resolution on the Protection of the Global Climate for Present and Future Generations of Mankind*, G.A. Res. 45/212, adopted December 21, 1990, U.N. Doc. A/RES/45/212, reprinted in (1991) 21 *Environmental Policy and Law* (No. 2) 76.

intervening seventeen months, the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change underwent five distinct negotiating sessions, adopting on May 9, 1992, the document which was tabled at UNCED.[31]

Negotiations for a legal instrument on biological diversity were undertaken concurrently with the work being done on UNCED and the climate change agreement. On May 25, 1989, the Governing Council of the United Nations Environment Programme established an Ad Hoc Working Group of Legal Experts to negotiate an international agreement on biological diversity.[32] This body was later renamed the "Intergovernmental Negotiating Committee for a Convention on Biological Diversity".[33] Negotiations towards a global convention on biological diversity were undertaken at an accelerated pace in five sessions between June 1991 and May, 1992.[34] The negotiations were contentious, and the final document tabled at Rio was not signed by the United States.[35]

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[31] The dates and locations of the negotiating sessions were as follows:

a) February 4 - 14, 1991 at Chantilly, Virginia;
b) June 19 - 28, 1992 at Geneva;
c) September 9 - 20, 1991 at Nairobi;
d) December 9 - 20, 1991 at Geneva; and
e) February 18 - 28, 1992 and April 30 - May 8, 1992 at New York.

See generally, Barratt-Brown, E.P., Hajost, S.A., and Sterne Jr., J.H., "A Forum for Action on Global Warming: The UN Framework Convention on Climate Change", (1993) 4 *Colorado Journal of International Environmental Law and Policy* 103 at 106 - 109.

[32] United Nations Environment Programme (hereinafter "UNEP"), *Governing Council Decision on Preparation of an International Legal Instrument on the Biological Diversity of the Planet*, adopted May 25, 1989, U.N. Doc. UNEP/GC.15/34.

[33] UNEP, *Governing Council Decision on Preparation of an International Legal Instrument on Biological Diversity*, U.N. Doc. UNEP/GC.16/42, adopted May 31, 1991, reprinted in (1991) 21 *International Environmental Policy and Law* (No. 3/4) 171.

[34] The five sessions of the negotiating committee were held in June, September and December, 1991, and February and May, 1992. See "Biological Diversity Negotiations: Slow Progress", (1991) 21 *Environmental Policy and Law* (No. 5/6) 192, and "Biological Diversity Convention - Fifth session"' (1992) *Environmental Policy and Law* (No. 2) 81.

[35] See "Rio Conference on Environment and Development", *supra* note 1 at 206. The United States has since signed the Convention.

III. 'SOFT LAW' INSTRUMENTS AT THE RIO CONFERENCE

PrepCom negotiations produced three 'soft law' instruments for signature at the Earth Summit. *Agenda 21: A Programme of Action for Sustainable Development*[36] is a comprehensive environmental policy document which attempts to embrace the entire environmental and developmental agenda.[37] The *Rio Declaration on the Environment and Development*[38] is a succinct statement of twenty-seven high sounding but non-binding principles which are intended to guide international action on the environment and development.[39] The *Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*[40] contains seventeen non-binding principles for forest management and represents a hesitant first step towards a binding global forests convention.[41] Although technically non-binding, the contentiousness which often characterized the negotiation of each of these instruments underscores their importance to signatories.[42] This section considers their impact upon the development of the emerging principles of international environmental law.

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[36] *Agenda 21: A Programme of Action for Sustainable Development* (hereinafter "*Agenda 21*"), adopted June 14, 1992, U.N. Doc. A/CONF.151/4.

[37] See Parson et al., *supra* note 24 at 14.

[38] *Rio Declaration on the Environment and Development* (hereinafter "*Rio Declaration*"), opened for signature June 14, 1992, U.N. Doc. A/CONF.151/5/Rev.1, reprinted in (1992) 31 *International Legal Materials* 874.

[39] See Palmer, G., "The Earth Summit: What Went Wrong at Rio?", (1992) 70 *Washington University Law Quarterly* 1005 at 1016.

[40] *Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests* (hereinafter "*Forest Principles*"), opened for signature June 14, 1992, U.N. Doc. A/CONF.151/6/Rev.1, reprinted in (1992) 31 *International Legal Materials* 881.

[41] See Meakin, S., "The Rio Earth Summit: Summary of the United Nations Conference on the Environment and Development", Ottawa: Research Branch, Library of Parliament Background Paper BP-317E, (1992) at 16.

[42] See Parson et al., *supra* note 24 at 14.

A. *AGENDA 21*

Agenda 21 is an environmental action plan for the next century.[43] It has been described as "the operational arm of the Rio Conference"[44] and was by far the largest document to emerge from UNCED. Its forty chapters set out specific goals, priorities, programmes and costs on a host of environmental initiatives[45] from the role of indigenous communities in environmental protection[46] to science for 'sustainable development'.[47] *Agenda 21* represents a commitment to the future, the policy guidelines and strategies contained within it are to take international environmental practice to the twenty-first century and beyond.[48]

The primary goal of *Agenda 21* is to ensure that development proceeds in an environmentally sustainable manner.[49] Its implementation by the international community is seen as crucial to the achievement of 'sustainable development' on a global scale.[50] To monitor the implementation of this detailed work plan on

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[43] See Meakin, *supra* note 41 at 11.

[44] See Ricupero, R., "Chronicle of a Negotiation: The Financial Chapter of Agenda 21 at the Earth Summit", (1993) 4 *Colorado Journal of International Environmental Law and Policy* 81 at 81.

[45] The forty chapters of *Agenda 21* are divided into five parts:

a) Preamble (Chapter 1);
b) Social and Economic Dimensions (Chapters 2 - 8);
c) Conservation and Management of Resources for Development (Chapters 9 - 22);
d) Strengthening the Role of Major Groups (Chapters 23 - 32);
e) Means of Implementation (Chapters 33 - 40).

See generally, "Rio Conference on Environment and Development", *supra* note 1 at 208 - 222.

[46] *Agenda 21*, *supra* note 36, Chapter 26 - Recognizing and Strengthening the Role of Indigenous People and their Communities.

[47] *Ibid.*, Chapter 35 - Science for Sustainable Development.

[48] See Ricupero, *supra* note 44 at 81.

[49] See Meakin, *supra* note 41 at 12.

[50] See Ricupero, *supra* note 44 at 81.

environment and development, a Commission on Sustainable Development was called for in the International Institutional Chapter of *Agenda 21*.[51] The United Nations Economic and Social Committee established this Commission on February 12, 1993 upon the recommendation of the General Assembly.[52] The Commission does not exercise any authoritative jurisdiction over states, although how it operates in mandating the implementation of *Agenda 21* could have tremendous practical impact upon the development of 'sustainable development' as an international legal term, and also upon the evolution of international environmental law in general.

Because of the breadth of its scope, even a cursory examination of the specific text of *Agenda 21* is too colossal an task to be undertaken in this part. Nor is it necessary for the purpose of analyzing the document's contribution to the evolution of the emerging principles of international environmental law. *Agenda 21* represents more of a process of agreed action by the international community than a legal text enunciating binding or aspirational legal norms. While the initiatives contained therein may "ripen into norms of customary international law",[53] this process will depend upon how states in practice execute them. The commonality expressed therein[54] may result in the global environment as a whole, and specific resources such as forests in particular, being recognized as a 'common concern of mankind'. The forward-looking nature of the entire document may fortify the inter-generational

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[51] *Agenda 21*, *supra* note 36 at Chapter 38, Paragraphs 10 - 11.

[52] See generally, "Eagerly Awaited Commission Established", (1993) 23 *Environmental Policy and Law* (No. 2) at 58. The Commission on Sustainable Development held its first substantive session in New York from June 14 - 25, 1993. See "Commission on Sustainable Development - First Substantive Session", (1993) *Environmental Policy and Law* (No. 5) 190.

[53] See Palmer, *supra* note 39 at 1019.

[54] See for example, *Agenda 21*, *supra* note 36, Chapter 1, Paragraph 1.5, which reads:

> "The programme areas that constitute Agenda 21 are described in terms of the basis for action, objectives, activities and means of implementation. Agenda 21 is a dynamic programme . . . (i)t could evolve over time in the light of changing needs and circumstances. This process marks the beginning of a new global partnership for sustainable development."

equity doctrine. Anticipatory measures taken by states in fulfilment of the detailed guidelines on conservation and management of specific resources may assist in clarifying the currently ambiguous 'precautionary principle'. The manner in which the specific paths to 'sustainable development' enumerated therein are implemented by nations in future environmental policy may refine the normative development of the concept in international law. *Agenda 21* has not had an immediate impact upon the emerging principles of international environmental law. The ultimate impact of *Agenda 21* on the process of crystallization of these aspirational norms remains to be determined by the manner in which states implement its objectives.

B. THE *RIO DECLARATION*

The *Rio Declaration* has been described as "either the greatest success or the greatest failure of Rio".[55] The text of the *Rio Declaration* remained unamended from that negotiated at the final PrepCom meeting.[56] On the positive side, the *Rio Declaration* succeeded in garnering the universal support of the participants at the Rio Conference.[57] However, the original aspiration for Rio was to conclude an 'Earth Charter' setting forth normative environmental principles for national behaviour.[58] This goal was not realized at Rio. The *Rio Declaration* "falls short of a commitment to enduring norms that will guide the discourse of future international environmental law".[59] This section explores what impact, if any, the *Rio Declaration*

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[55] See Getches, *supra* note 5 at 14.

[56] See Kovar, J.D., "A Short Guide to the Rio Declaration", (1993) 4 *Colorado Journal of International Environmental Law and Policy* 119 at 122.

[57] See Getches, *supra* note 5 at 14.

[58] See Kovar, *supra* note 56 at 119. Although negotiation of an Earth Charter was not accomplished in time for the Rio Conference, the Secretary-General of UNCED, Maurice Strong, Canadian Prime Minister Brian Mulroney and the Secretary-General of the United Nations, Boutros Boutros-Ghali each made independent pleas to the international community during the conference to conclude negotiations for an Earth Charter by 1995.

[59] See Getches, *supra* note 5 at 14.

had on the development of the emerging principles of international environmental law.

1. 'Common Concern of Mankind' / 'Common Heritage of Mankind'

The *Rio Declaration* speaks loudest about these two 'common interest' notions of international environmental law in what it does not say. Neither notion is given specific articulation in the text of the Declaration. However, the *Rio Declaration* does touch upon some elements of the 'common concern' notion in Principle 7. Principle 7 envisages a 'global partnership, in which there is a 'common but differentiated responsibility' of nations in rectifying environmental degradation.[60] The reference to a 'global partnership' can surely be interpreted as an articulation of all nations' common interest in environmental matters, but its meaning is nebulous. Further, it is contended in Chapter Two that the notion of a 'common but differentiated responsibility' is a procedural complement to the 'common concern' concept.[61] It seeks to recognize both commonality amongst the nations of the earth in redressing environmental harms and equitability in allocating the burden of rectification. The difficulty experienced in negotiating the text of Principle 7 indicates that the 'common but differentiated responsibility' idea remains a very contentious issue between North and South.[62] Apart from this, the potential of the 'common concern' notion for redefining state sovereignty expressed in documents such as the *Beijing Ministerial Declaration on Environment and Development*[63] was not realized by the *Rio*

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[60] *Rio Declaration*, *supra* note 38, Principle 7:

> "States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. . ."

[61] See *supra*, Chapter Two at note 67 and accompanying text.

[62] See Kovar, *supra* note 56 at 128 - 130. Principle 7 was the last of the *Rio Declaration* principles to be negotiated.

[63] The *Beijing Ministerial Declaration on Environment and Development*, adopted June 19, 1991, U.N. Doc. A/CONF.151/PC/85, reprinted in (1991) 21 *Environmental Policy and Law* (No. 5/6) 267, Article 2 reads, in part, that "environmental protection and sustainable development is a matter of

3. The 'Precautionary Principle'

Principle 15 represents the only mention of precautionary action in the *Rio Declaration*.[68] The Principle advocates a broadly stated 'precautionary approach' to protecting the environment. Negotiators from developing countries rejected the suggestion made by European nations to specifically enshrine a 'precautionary principle' in the *Rio Declaration*.[69] This is evidence that, outside of the industrialized North, there is no support for a clearly defined 'precautionary principle', only a vague endorsement of 'precautionary action'.[70]

Much of the language of Principle 15 comes directly from the *SWCC Declaration*, thereby retaining the ambiguities of earlier pronouncements of the 'precautionary principle'.[71] In addition, Principle 15 of the *Rio Declaration* may further obfuscate the meaning of the principle in two ways. Firstly, the introductory phrase "(i)n order to protect the environment"[72] can be taken to imply that the precautionary 'approach' can only be utilized for environmental protection, clearly a

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[68] See *Rio Declaration*, *supra* note 38 at Principle 15:

> "In order to protect the environment, the precautionary *approach* shall be widely applied by States *according to their capabilities*. Where there are *threats of serious of irreversible damage*, *lack of full scientific certainty* shall not be used as a reason for postponing *cost-effective measures* to prevent environmental degradation." (emphasis added to indicate ambiguities and problematic areas).

[69] See Kovar, *supra* note 56 at 134.

[70] *Ibid*. The *SWCC Declaration*, *supra* note 29, Principle 7, is the only other truly *global* environmental instrument dealing the concept of precaution. It also fails to specifically articulate a 'precautionary principle', instead using more general language. Instruments which specifically speak of a 'principle of precaution' are invariably regional documents reflecting the view of industrialized countries. See generally, *supra*, Chapter Two, notes 167 - 179 and accompanying text.

[71] An examination of the ambiguities inherent in the rendition of the 'precautionary principle' contained in the *SWCC Declaration* is undertaken *supra*, Chapter Two, at notes 180 - 186 and accompanying text.

[72] *Rio Declaration*, *supra* note 38, Principle 15.

step backwards from earlier pronouncements.[73] Secondly, the requirement that the undefined precautionary 'approach' be taken by States "according to their capabilities"[74] allows an easy retreat from precautionary measures. States can ignore precautionary action and plead developmental, social, political or economic 'incapacity' as justification for their actions. At this stage, it is uncertain how States will apply Principle 15 in national environmental policy, and subsequent developments may obviate the above concerns. However, Principle 15 is so ambiguous that it may riddle the 'precautionary principle' with so many holes as to render it inoperative.

Thus in terms of the development of the 'precautionary principle', the *Rio Declaration* represents at best a tentative step sideways, a maintenance of the status quo. It doesn't recognize the existence of a 'precautionary principle' *per se* and only re-iterates a general exhortation to apply the precautionary approach enunciated previously. At worst, it may be a very grave step backwards, rendering the 'principle' all but ineffective in the future development of international environmental law.

4. 'Sustainable Development'

The notion of 'sustainable development' was a key element of UNCED. The *Rio Declaration* re-affirms the central role that 'sustainable development' is acquiring in international environmental law by explicitly referring to it in Principles 1, 4, 5, 7, 8, 9, 12, 20, 21, 22, 24 and 27.[75] However, little is offered in the *Rio Declaration* which may expand on previous statements and provide a unified picture of what 'sustainable development' means from a legal and policy perspective.

The *Rio Declaration* does give 'sustainable development' a markedly more 'developmental' slant, indicating the negotiating power of developing countries.

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[73] Both the *SWCC Declaration*, *supra* note 29 and the *Bergen Ministerial Declaration on Sustainable Development in the ECE Region* (hereinafter "*Bergen Declaration*"), adopted May 16, 1990, U.N. Doc. A/CONF.151/PC10 Annex I, reprinted in (1990) 1 *Yearbook of International Environmental Law* 429 spoke of precaution in an offensive light, allowing precautionary measures to be taken to anticipate, prevent and attack the causes of environmental degradation. Principle 15 of the *Rio Declaration*, *supra* note 38, by contrast, reduces the scope of precautionary action to protectionist measures.

[74] *Ibid.*

[75] *Ibid.*

Principle 1 echoes the human-centred orientation of 'sustainable development', a view supported by the G-77 countries and China.[76] In what represents the closest the *Rio Declaration* comes to offering a definition of 'sustainable development', Principle 4 prohibits environmental protection from being considered in isolation from the 'developmental process', without defining what the 'developmental process' entails.[77] Principle 5 makes the eradication of poverty an indispensable component of 'sustainable development'.[78] Principle 8 affirms that 'sustainable development' requires both the elimination of unsustainable patterns of production and consumption (the North's contribution to pollution) and promotion of appropriate demographic policies (population is one of the South's main contributions to pollution).[79] Principle 25 suggests that peace is a necessary component of

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[76] *Ibid.*, Principle 1:

> "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."

See generally, Kovar, *supra* note 56 at 124.

[77] *Rio Declaration*, *supra* note 38, Principle 4:

> "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."

Kovar considers that the language of this Principle is an indication that the time constraints prevented final polishing of the Declaration's principles. The Principle begins as a maxim, but ends as an admonition. See Kovar, *supra* note 56 at 127.

[78] *Rio Declaration*, *supra* note 38, Principle 5:

> "All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world."

[79] *Ibid.*, Principle 8:

> "To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies."

'sustainable development'.[80] These and other articulations of the various facets of 'sustainable development' contained in the *Rio Declaration* are vaguely worded and contribute little to the normative development of the concept.

While ostensibly, 'sustainable development' pervades much of the *Rio Declaration*, and all of this activity surrounding 'sustainable development' indicates the general receptivity of the global community to the concept, it does little to solidify and clarify what the term means from a legal perspective. The numerous references to 'sustainable development' in different contexts in the *Rio Declaration* indicate that 'sustainable development' is more of an 'umbrella concept' than a single principle. However, it did not achieve a clear consensus on processes leading to 'sustainable development'.

5. Assessment

Taken as a whole, therefore, the *Rio Declaration* did little to advance any of the emerging principles of international environmental law. Its twenty seven principles represent a compromise statement on both environment and development.[81] Apart from tangential references, 'common interest' notions and the inter-generational equity doctrine are all but ignored. The statement of the 'precautionary principle' is even more ambiguous than previous statements, and could render the principle completely ineffective. 'Sustainable development' is referred to liberally throughout the instrument, however, there is little which substantively advances the meaning of the concept. Hence, the principles of the *Rio Declaration* do not provide any significant clarification of the aspirational norms of international environmental law, nor assist in their crystallization into binding custom.

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[80] *Ibid.*, Principle 25:

> "Peace, development and environmental protection are interdependent and indivisible."

[81] See Hassan, *supra* note 11 at 8.

C. THE *FOREST PRINCIPLES*

The *Forest Principles* represent a last minute compromise on the forests issue after negotiations for a legally binding treaty had failed.[82] In order to secure consensus among the international community, negotiators intentionally used ambiguous wording.[83] For example, a statement committing signatories to negotiate a global forests convention in the future was replaced with a general commitment to keep the principles under assessment for their adequacy with regard to future international cooperation on forest issues.[84]

In light of this, little can be expected of the *Forest Principles* in terms of clarifying the meaning of emerging principles of international environmental law. Forest resources are not recognized as a 'common concern of mankind', nor are they considered to be part of the 'common heritage of mankind'.[85] Similarly, no mention is made of precautionary measures, or the 'precautionary principle' in the non-binding statement of forests. Inter-generational equity is acknowledged in Principle 2(b) which suggests that "(f)orest resources and forest lands should be

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[82] See "Rio Conference on Environment and Development", *supra* note 1 at 222.

[83] *Ibid.*

[84] Forest Principles, *supra* note 40, Preamble, Paragraph D.

[85] This is not particularly surprising, as states are reluctant to relinquish sovereignty over forest resources by recognizing them as a 'common concern'. See Meakin, *supra* note 41 at 16. The dual nature of forests, a resource within the limits of states' jurisdiction but with global environmental repercussions, makes it impossible to apply the 'common heritage' notion to their use and development. Deforestation poses a unique dilemma in international environmental law because, although any given forest is physically rooted within the territory of one particular state, thus under the sovereign jurisdiction of that state according to traditional international law, the ecological impact of deforestation goes beyond national borders. See generally, Hurrell, A., "Brazil and the International Politics of Amazonian Deforestation", in Hurrell, A., and Kingsbury, B., eds., *The International Politics of the Environment* (Oxford: Oxford University Press, 1992), 398 at 401. However, although it is a resource located within states' jurisdiction, forest use, and particularly forest destruction is of global concern because of its environmental effects on the entire planet. See Eshbach, R., "A Global Approach to the Protection of the Environment: Balancing State Sovereignty and Global Interests", (1990) 4 *Temple International and Comparative Law Journal* 271 at 272. Therefore, the 'common concern' notion has application in the forestry context in that the effects of deforestation, while not the resource itself, are of common concern to all. This application of the 'common concern' concept was not made in the *Forest Principles*.

sustainably managed to meet the social, economic, ecological, cultural and spiritual human needs of present and future generations."[86] Beyond this, no further elucidation of the doctrine is given.

As in the *Rio Declaration*, the concept of 'sustainable development' is mentioned often throughout the *Forest Principles*. As with the *Rio Declaration*, however, reference to 'sustainable development' is made in a cursory manner only, and does nothing to clarify the meaning of the concept. In short, the *Forestry Principles* are an ambiguous, non-binding statement of general intent on the forestry issues, and do not represent a resolution, or even a strategy for resolution of the issues surrounding the environmental management of global forests.[87] Their contribution to the development of the emerging principles of international environmental law is negligible.

IV. 'HARD LAW' AT THE RIO CONFERENCE

Two binding international agreements were signed at UNCED, the *Convention on Biological Diversity*[88] and the *Framework Convention on Climate Change*.[89] This section considers each in turn only in regard to their contribution to the evolution of the aspirational norms of international environmental law considered above.

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[86] *Forest Principles*, *supra* note 40, Principle 2(b). This principle appears to allude to the definition of 'sustainable development' given in *Our Common Future*, *supra* note 14 at 43.

[87] See Palmer, *supra* note 39 at 1021.

[88] *Convention on Biological Diversity* (hereinafter "*Biodiversity Convention*"), opened for signature June 5, 1992, reprinted in (1992) 31 *International Legal Materials* 818. The *Biodiversity Convention* was signed by 153 states and the European Community at the Earth Summit. Canada was the first signatory to the Convention. The Convention will enter into force on the ninetieth day after the date of deposit of the thirtieth instrument of ratification pursuant to the terms of Article 36 thereof.

[89] *Framework Convention on Climate Change* (hereinafter "*Climate Change Convention*"), opened for signature June 4, 1992, reprinted in (1992) 31 *International Legal Materials* 849. The *Climate Change Convention* was signed by 153 states and the European Community at the Earth Summit. It will enter into force on the ninetieth day after the date of deposit of the fiftieth instrument of ratification pursuant to the terms of Article 23 thereof.

A. THE *BIODIVERSITY CONVENTION*

The *Biodiversity Convention* articulates a global strategy to regulate and preserve an environmental resource of vital importance to human health, the biological diversity of the earth's species.[90] Negotiations for the convention were acrimonious at times, and the final text was not agreed upon until May 22, 1992, a scant fourteen days before the commencement of the Rio Conference.[91] One issue which dominated discussion throughout the negotiations concerned the utility and desirability of including fundamental principles in the body of the text.[92] Initial drafts of the Convention contained lengthy statements of 'fundamental principles', however, these were pared down in the final negotiating session to one 'principle' which was simply a restatement of Principle 21 of the *Stockholm Declaration*.[93] This solitary principle made its way into the final text as Article 3.[94] Thus, unlike the *Climate Change Convention*, there is no lengthy statement of fundamental principles in the *Biodiversity Convention* which articulates emerging norms of international environmental law.[95] This section reviews the remainder of the

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[90] See Meakin. *supra* note 41 at 9. Loss of biological diversity due to species extinction is particularly endangered by deforestation of tropical rain forests, which hold 60% of the world's plant species and most of its animal species. See Eshbach, *supra* note 85 at 273. Genetic material from plant and animal species is crucial for agricultural, bio-medical and pharmacological research.

[91] See Parson et al., *supra* note 24 at 14.

[92] See Chandler, M., "The Biodiversity Convention: Selected Issues of Interest to the International Lawyer", (1993) 4 *Colorado Journal of International Environmental Law and Policy* 141 at 143.

[93] *Stockholm Declaration*, *supra* note 2, Principle 21.

[94] *Biodiversity Convention*, *supra* note 88, Article 3:

> "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction and control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."

[95] For a review of the fundamental principles enumerated in the *Climate Change Convention*, see *infra* notes 114 - 115 and accompanying text.

Convention and considers what contributions it makes to the development of the emerging principles of international environmental law.

1. 'Common Concern of Mankind' / 'Common Heritage of Mankind'

Signatories to the *Biodiversity Convention* affirm in the Preamble that "the conservation of biological diversity is a common concern of humankind".[96] This is a significant development in the normative evolution of this principle, a beginning in the attainment of its potential impact on the progression of international environmental law. Hitherto, the 'common concern' notion had only been acknowledged on the global stage in the context of 'soft law' instruments concerning climate change.[97] Its use in the *Biodiversity Convention* marks the first time it has been recognized in a legally binding global instrument outside the climate context. This enhances the breadth and depth of the term's use internationally, furthering its ripening into a binding customary norm.

But its significance goes beyond breadth and depth of usage. By affirming that the conservation of biological diversity is a 'common concern of humankind', states are acknowledging that the environmental effects of the use of resources located within national boundaries are matter of common concern.[98] This clearly could

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[96] *Biodiversity Convention*, *supra* note 88, third Preambular statement.

[97] See *supra*, Chapter Two, notes 45 - 51. The two documents which suggested that the 'common concern' notion could be applied outside the climate context were regional or organizational in nature.

[98] In Chapter Two, *supra* note 68 and accompanying text the argument is made that 'common concern' can have a fundamental impact upon the development of international environmental law by asserting that the environmental effects of the exploitation of natural resources are a matter of common concern. This will allow international regulation of resources that have traditionally been considered the sovereign domain of individual states without radically altering traditional international law conceptions of state sovereignty. While states may assert sovereignty over the resource itself, the entire globe shares a common concern over the effects of its use, thus requiring environmentally sound utilization of the resource in question. Inclusion of the 'common concern' notion in the *Biodiversity Convention* indicates that this argument is being accepted by the international community. Conservation of biological diversity is a common concern, even though the Convention explicitly applies to areas within the limits of individual states' national jurisdiction. Article 4 of the *Biodiversity Convention*, *supra* note 88 sets out that "(s)ubject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:

(a) in the case of components of biological diversity, in areas within the limits of its national

have implications for other settings, such as with forest resources. However, while states did enunciate a broader vision of the 'common concern' notion within the specific confines of this legal treaty, it is significant that they did not include a similar statement in the more general *Rio Declaration*. It is also interesting that the articulation of the 'common concern' concept is followed immediately by a re-affirmation of state sovereignty over natural resources.[99] This re-statement of state sovereignty over natural resources may not greatly impact upon the scope of the 'common concern' principle, as it is the environmental effects of ecologically unsound use of biological resources, not the resources themselves, that are a matter of 'common concern'.

No mention is made in the *Biodiversity Convention* of the 'common heritage of mankind' principle. This further supports the conclusion that its normative quality has been exhausted and it has been relegated to use in issues dealing with 'commons' areas only.

2. 'Inter-generational Equity'

The Preamble to the *Biodiversity Convention* also incorporates the doctrine of inter-generational equity. It sets out the parties' determination to "conserve and sustainably use biological diversity for the benefit of present and future generations".[100] This statement is important for two reasons. Firstly, it gives weight to the argument that the doctrine of inter-generational equity provides the conceptual and philosophical underpinning for 'sustainable development'.[101] Secondly, the acknowledgement of the doctrine in another global legally binding

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jurisdiction; and

(b) in the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction."

[99] *Ibid.*, fourth Preambular statement:

"Reaffirming that States have sovereign rights over their own biological resources."

[100] *Ibid.*, twenty-third Preambular statement.

[101] See *supra*, Chapter Two, notes 310 - 313 and accompanying text.

international environmental agreement is important additional evidence of the uniformity, generality and consistency of its use by states, furthering its crystallization as a customary norm.

3. The 'Precautionary Principle'

Two statements in the Preamble to the *Biodiversity Convention* have an impact upon the development of the 'precautionary principle'. The eighth Preambular statement notes "that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source".[102] The following paragraph states that "where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat".[103] The phraseology is reminiscent of the assertions of the principles set forth in the *Bergen Declaration*[104] and the *SWCC Declaration*.[105] Accordingly, it perpetuates many of the ambiguities

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[102] *Biodiversity Convention*, *supra* note 88, eighth Preambular statement.

[103] *Ibid.*, ninth Preambular statement.

[104] *Bergen Declaration*, *supra* note 73, Article 7:

> "In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures 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 a reason for postponing measures to prevent environmental degradation."

For a analysis of this rendition of the 'precautionary principle', see *supra*, Chapter Two, notes 173 - 179 and accompanying text.

[105] *SWCC Declaration*, *supra* note 29, Article 7, which reads, in part:

> "In order to achieve sustainable development in all countries . . . precautionary measures . . . must anticipate, prevent, attack, or minimize the causes of, and mitigate the adverse consequences of environmental degradation that might result from climate change. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent such environmental degradation . . ."

The statement of the precautionary principle in the *Biodiversity Convention* deletes the reference to 'cost-effective measures' contained herein. An analysis of this Article is undertaken *supra*, Chapter Two, at notes 181 - 186 and accompanying text.

contained in those earlier pronouncements. It does not, however, compound to this the additional constraints found in the statement of precautionary action in the *Rio Declaration*.[106] Hence, while providing further evidence of *opinio juris* and state practice, this statement does nothing to further clarify the 'precautionary principle' as a normative idea, but at the same time does not support the further detractions from the principle implicit in the *Rio Declaration*. The equivocal status quo is maintained.

4. 'Sustainable Development'

As in the *Rio Declaration* and the *Forest Principles*, notions of sustainability are sprinkled liberally throughout the *Biodiversity Convention*.[107] Unlike the two 'soft law' instruments, however, 'sustainable use' is categorized as a term of art and given a explicit meaning in the definitional section of the *Biodiversity Convention*.[108] For the purposes of the Convention, 'sustainable use' means "the use of components of biological diversity in a way, and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations."[109] This definition of 'sustainable use' acknowledges that inter-generational equity is a cornerstone doctrine of 'sustainable development'. Its specific applicability is limited to the four corners of the biodiversity treaty. However, international efforts to define specific pathways to sustainability for different resources in legally binding conventions can assist in clarifying and tightening the meaning of 'sustainable development' in particular instances, thereby augmenting its normative weight.

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[106] *Rio Declaration*, *supra* note 38, Article 15. See *supra* notes 72 - 74 and accompanying text.

[107] For example, Article 1 states that one of the objectives of the Convention is the preservation of the sustainable use of the components of biological diversity. See *Biodiversity Convention*, *supra* note 88, Article 1.

[108] *Ibid.*, Article 2.

[109] *Ibid.*

B. THE *CLIMATE CHANGE CONVENTION*

Negotiations for a climate convention were no less contentious than those for the *Biodiversity Convention*.[110] Due mainly to the insistence of United States' negotiators, there were no specific targets set in the *Climate Change Convention* for the reduction of greenhouse gas consumption by industrialized countries.[111] Rather, participants are urged to proceed with "cost-effective" measures,[112] including emissions reductions, as soon as possible.[113]

Article 3 of the *Climate Change Convention* articulates five specific principles which are intended to guide the parties in implementation.[114] This concrete rendering of hitherto vague principles in a legally binding instrument could play an integral role in the normative development of emerging principles of international environmental law. This is a major distinguishing characteristic between the *Climate Change Convention* and the *Biodiversity Convention*. The latter balked at including binding renderings of general legal principles, adopting instead a timorous rendition of Principle 21 of the *Stockholm Declaration* as its only principle.[115]

The *Climate Change Convention* speaks directly on each of the four emerging principles of international environmental law studied above, furthering their crystallization into binding custom. This part examines the impact of the *Climate Change Convention* upon each in turn.

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[110] See generally, Barratt-Brown et al., *supra* note 31 at 106 - 109.

[111] See Palmer, *supra* note 39 at 1021 - 1022.

[112] *Climate Change Convention*, *supra* note 89, Article 3(3).

[113] *Ibid.*, Article 4(2)(a) commits developed country Parties to adopt national policies to mitigate climate change by, *inter alia*, limiting anthropogenic emissions of greenhouse gases, but offers no timetable its for completion.

[114] *Climate Change Convention*, *supra* note 89, Article 3.

[115] See *supra* notes 93 - 95 and accompanying text.

1. 'Common Concern of Mankind' / 'Common Heritage of Mankind'

It is not surprising that the Parties to the *Climate Change Convention* acknowledge in the first Preambular statement that "change in the Earth's climate and its adverse effects are a common concern of humankind".[116] The concept has its roots in the climate context.[117] That the adverse effects of climate change are to be considered a 'common concern' represents nothing new. Climate is a nebulous resource, and asserting that the adverse effects of rapid climate change is a 'common concern of humankind' is a far less radical idea than labelling the effects of a more tangible, territorial-centred resources such as biological diversity as a 'common concern'.

A second important statement made in the Preamble is an acknowledgement of the common but differentiated responsibility that exists for rectifying the common concern of climate change. The Preamble asserts that although the nature of the climate change dilemma requires the widest possible co-operation among states, the common responsibility is to be distributed among states according to their respective capabilities and their socio-economic conditions.[118] Thus, the Parties acknowledge that the responsibility for rectifying climate change is to be apportioned equitably but not necessarily equally among the global community.[119] This provides further

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[116] *Ibid.*, first Preambular statement.

[117] See *supra*, Chapter Two, notes 46 - 51 and accompanying text.

[118] *Climate Change Convention*, *supra* note 89, sixth Preambular statement:

> "Acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions."

[119] *Ibid.*, eighteenth Preambular statement. The Parties recognize in the Preamble that this common but differentiated responsibility places a burden on the developed countries to "take immediate action *in a flexible manner*" (emphasis added) on national and regional response strategies. While very ambiguous, this assertion is at least useful in that it gives official recognition to current pro-active measures taken by some industrialized states to lessen atmospheric accumulations of greenhouse gases. The Preamble makes specific mention of the concerns of low-lying states, (*ibid.*, nineteenth Preambular statement) and the special developmental difficulties of underdeveloped nations (*ibid.*, twentieth Preambular statement). While environmental protection is a necessity, of

evidence that the notion of 'common but differentiated responsibility' is becoming the means by which the 'common concern' concept is executed procedurally by states. The 'common but differentiated responsibility' element is also voiced in the context of inter-generational equity.[120]

Again, no mention is made in the *Climate Change Convention* of the 'common heritage of mankind' principle, consistent with the earlier assertion that its normative quality has been exhausted and it has been relegated to use in issues dealing with 'commons' areas only.[121]

2. 'Inter-generational Equity'

The doctrine of inter-generational equity is outlined briefly in the Preamble.[122] Dealing as it does with an environmental problem the most dire effects of which will not be experienced until well into the next century, this acknowledgement is a foundational concept of the *Convention*. Although there may have already been some climatic variations due to anthropogenic enhancement of the greenhouse effect,[123] clearly the main concern is to ensure that the process does not occur at an apocalyptic rate, and thus ensure a fair transfer of the ecosystem to subsequent generations. The inclusion of the doctrine in the *Climate Change Convention* indicative of its continued use by nations in binding international environmental agreements, represents an advancement in the doctrinal approach taken by the international community to international environmental problems.

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equal necessity is that underdeveloped nations retain, or in some cases acquire, access to the tools of sustainable development, and this too is acknowledged by the Parties in the Preamble (twenty-third Preambular statement).

[120] *Ibid.*, Article 3(1). See *infra* notes 124 - 125 and accompanying text.

[121] See *supra*, Chapter Two, note 64 and accompanying text.

[122] *Ibid.*, twenty-fourth Preambular statement:

"Determined to protect the climate system for present and future generations."

[123] See generally, the Intergovernmental Panel on Climate Change Working Group I, *Climate Change, 1992 - The Supplementary Report to the IPCC Scientific Assessment*, (Cambridge: Cambridge University Press, 1992).

The first principle in Article 3 of the *Climate Change Convention* re-iterates the inter-generational doctrine as a guiding principle for the parties to the Convention.[124] The linkage between 'common concern' and inter-generational equity is evidenced in the fact that 'common but differentiated responsibility of states is acknowledged in the inter-temporal context.[125]

3. The 'Precautionary Principle'

The third guiding principle of the *Climate Change Convention* is a statement of the 'precautionary principle'.[126] The content of this principle is similar to the *SWCC Declaration*.[127] It retreats somewhat from the offensive-oriented rendition of the principle in earlier documents by failing to advocate precautionary measures to "attack" the causes of climate change.[128] At the same time it re-iterates the

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[124] *Ibid.*, Article 3(1):

> "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combatting climate change and the adverse effects thereof."

[125] In Chapter Two, the argument is posited that common interest ideas, such as 'common concern' and its procedural derivative 'common but differentiated responsibility' are at the root of the inter-generational doctrine. See *supra* Chapter Two, note 305 and accompanying text. The inclusion here of a common interest notion in an inter-generational context supports this contention.

[126] *Climate Change Convention*, *supra* note 89, Article 3(3):

> "The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried on co-operatively by interested Parties."

[127] *SWCC Declaration*, *supra* note 29, Article 7.

[128] *Climate Change Convention*, *supra* note 89, Article 7 states that "(t)he Parties should take precautionary measures to anticipate, prevent or minimise the causes of climate change . . .". The corresponding phrase in the *SWCC Declaration*, *supra* note 29, Article 7, reads, "precautionary

cost-effectiveness test included in the *SWCC Declaration* and the *Rio Declaration* but absent from the *Biodiversity Convention*. Furthermore, the statement that precautionary measures should take different socio-economic contexts into account will allow the United States, for example, to continue its argument that, although greenhouse gas reductions may be well and good for the rest of the world, the United States' "energy use profile" is unique, and it should be given special consideration.[129]

While generally, this rendition of the 'precautionary principle' in a 'hard law' instrument can be seen as further evidence that some elements of the principle are crystallizing, it is important to emphasize that although precautionary action was advocated as a 'guiding principle', the Convention itself contained no precautionary measures to limit greenhouse gas accumulation by controlling or reducing emissions.[130] Indeed, the negotiations indicate that, despite the presence of a principle of precautionary action in Article 3(3), many states are unwilling to take concrete steps to reduce emissions, citing 'uncertain scientific evidence' as their reason for inaction.[131] Thus, while states appear to be willing to sign documents indicating acceptance of a principle that advocates action in the face of lack of full scientific certainty, they remain obdurate in practice. Hence, the 'precautionary principle' remains clouded, as states appear to be content to say one thing while

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measures to meet the climate challenge must anticipate, prevent, attack, or minimize the causes of . . . environmental degradation . . . from climate change . . . ". By contrast, the *Biodiversity Convention*, *supra* note 88, eighth Preambular statement, reads; "it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source."

[129] The United States' argument in this context is that, unlike in the smaller, denser, industrialized countries of Europe, the American socio-economic phenomenon of sprawling urban centres and greater distances dictates that its citizens make greater use of automobiles and other pollution causing technology. Therefore, a straight reduction schedule for industrialized countries would be more onerous on United States' citizens than on their European counterparts, and accordingly, a more lenient approach towards reduction of United States' greenhouse gas emissions would be equitable.

[130] See Meakin, *supra* note 41 at 6.

[131] See Palmer, *supra* note 39 at 1021 - 1022.

following the opposite policy.

4. 'Sustainable Development'

The fourth principle of the *Climate Change Convention* maintains that the promotion of 'sustainable development' is both a right and an obligation of all parties.[132] This formulation places even more emphasis on the developmental dimension of 'sustainable development'. Article 3(4) does not assert that 'sustainable development' is a right itself, only that 'promotion of sustainable development' is. What this means is unclear, and, beyond vague indications that 'sustainable development' measures to protect the climate system should be "appropriate for the specific conditions of each Party and should be integrated into national development programmes",[133] there is little elucidation of the notion in the text.

C. ASSESSMENT

The 'hard law' documents signed at the Rio Conference had the potential to influence the development of aspirational norms to a significant degree. The most substantial advance appears to have been in the expansion of the 'common concern' notion indicated by its application in the *Biodiversity Convention* to the environmental effects of resources within national boundaries. This bodes well for its future impact on international environmental law, particularly in areas such as forest management. Forests, like biological resources, are located within state boundaries, however, the environmental consequences of their unsustainable use will be suffered globally. Thus, while the effects of ecologically unsound use of these resources are a matter of 'common concern' and this concept may be used to argue for global responsibility

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[132] *Climate Change Convention*, *supra* note 89, Article 3(4):

> "The Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change."

[133] *Ibid.*

in individual states' utilization of natural resources.

For the remaining principles, at the very least, the 'hard law' documents at Rio have advanced their development in that they are further evidence of state practice and *opinio juris*. Beyond this rudimentary development, however, little more occurred.

V. CONCLUSION

Since the close of the Earth Summit, a number of commentators have offered assessments of the effectiveness of the entire event.[134] Some have focused on the sheer size of the event, and have judged UNCED a success in galvanizing popular and political support for global environmental issues.[135] Others have looked beyond the rhetoric and lamented the lack of concrete measures in the negotiated agreements, viewing UNCED as a failed opportunity for the globe to take concrete steps on particular issues such as greenhouse gas emissions constraints.[136] The present analysis has focused upon one specific aspect of the Rio Conference, the manner in which the fruits of Rio have influenced the evolution of emerging principles of international environmental law. Thus the evaluation provided herein applies only to this one dimension of the Conference, not UNCED as a whole.

Regarding the aspirational norms of international law, it can be seen that the

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[134] For a review and criticism of the various ways in which the Rio Conference has been evaluated, see Parson, E.A., "Assessing UNCED, and the State of Sustainable Development", Presentation to the Panel, "Lessons of UNCED", American Society of International Law, April 2, 1993. See also Palmer, *supra* note 39, and Sand, P.H., "UNCED and the Development of International Law", (1992) 3 *Yearbook of International Environmental Law* 3.

[135] See Parson, *supra* note 134 at 1. Parson concludes that, while the scale and pageantry of the event are not entirely frivolous, using these as the sole measuring sticks by which to gauge UNCED's success demands too little of the event. *Ibid.*, at 2.

[136] See Palmer, *supra* note 39 at 1007:

> "More should have been achieved for the future of the environment. The big failure of Rio was a failure of political leadership, commitment and vision. Many opportunities were lost."

Rio documents primarily maintained the status quo. The notion of 'common concern' is a laudable exception. By referring to the conservation of biological diversity as a 'common concern of humankind', the negotiators of the *Biodiversity Convention* expanded the scope of the notion tremendously.[137] It is now possible to argue, on the strength of the *Biodiversity Convention*, that the effects of ecologically unsound use of resources under the exclusive jurisdiction of a state or states (such as biological resources, forest resources and watershed systems) are a common concern of all and thus use of those resources must conform to that underlying common interest.

The appearance of each of the other principles in the *Rio Declaration* and the 'hard law' documents have provided further evidence of the acceptability of the principles by the international community. The oblique references to 'inter-generational equity', if nothing else, established the global community's acceptance of inter-generational equity as a moral doctrine. However, the disparate statements of the 'precautionary principle' contained in the *Rio Declaration*, the *Biodiversity Convention* and the *Climate Change Convention* make it difficult to argue that a uniform, consistent definition of the principle has emerged, let alone clear state practice. Although 'sustainable development' was in many respects the theme of the Conference, we are left with no clearer an understanding of what it is to mean. Hope exists, however, that the *Commission on Sustainable Development* formed by the United Nations pursuant to *Agenda 21* will assist in clarifying, regularizing and rendering normative this ambiguous but potentially fundamental principle. In this respect it remains still to early to assess the Rio documents ultimate impact on the future of international environmental law.

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[137] *Biodiversity Convention*, *supra* note 88, third Preambular statement. See *supra* notes 96 - 99 and accompanying text.

EPILOGUE

BEYOND RIO: THE FUTURE OF INTERNATIONAL ENVIRONMENTAL LAW

The rapid rise of modern international environmental law has been a remarkable exercise in international law-making.[1] A sophisticated environmental legal system based upon customary rules and treaty law has provided an effective base for the future. However, the effectiveness of traditional sources of international environmental law is constrained by inherent weaknesses.[2] For continued development to occur, recourse to new sources of law will be necessary. The status quo will not be sufficient.

After evaluating traditional sources of international environmental law, this thesis has appraised the development of emerging 'soft law' principles, both their early progress, and their function at the recent United Nations Conference on the Environment and Development. Certain aspirational norms, particularly the 'common concern of mankind' notion, appear to be expanding and acquiring normative force at a relatively rapid rate. The process of crystallization for others continues to be slow, as states remain somewhat reluctant to define broad principles, such as the 'precautionary principle' in a concise and binding manner. Larger notions such as 'inter-generational equity', and 'sustainable development', while being acknowledged in international environmental instruments, remain somewhat ambiguous. While the development of 'soft law' principles of international environmental law thus far represents an important first step towards a new legal focus for the environment, continued effort is needed by the global community to solidify these concepts in the context of solving environmental problems.

International environmental law must continue to evolve in order to be able to meet the new challenges of the emerging global era, where there is a growing awareness of our common interest in preserving the earth's fragile health. This common interest, however, is juxtaposed against a backdrop of political conflict, shifting priorities and re-alignment along a North-South dividing line. Global

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[1] See Birnie, P.W., and Boyle, A.E, *International Law and the Environment*, (Oxford: Clarendon Press, 1992) at 549.

[2] *Ibid.*

environmental dilemmas need global solutions, and law can provide the base. Law must continue to branch out, incorporating new sources into the international law-making process, developing and implementing principles as 'soft law', and through consistent and clear usage propel those 'soft' principles towards acquiring normative force. This will allow a maximization of the 'soft' principles' effectiveness during the process of crystallization.

There is considerable reason to be optimistic that such normative development will continue in the future. Perhaps the greatest success of international environmental law to date is that it has provided the framework for political, scientific and technical co-operation among the disparate regions of the earth. This has resulted in global environmental conferences and emissions reductions treaties. Further, this co-operative atmosphere will assist the normative development of aspirational norms through continued use in international environmental instruments, 'soft law' or otherwise.

The co-operative global environmental framework continues to progress and enhance the international law of the environment. In September, 1994, nations of the earth will convene in Cairo, Egypt to consider means of addressing the environmental problem of escalating population growth.[3] The Commission on Sustainable Development, which recently held its first substantive session, has the potential to play a pivotal role in the evolution of international environmental law, particularly in the context of the emerging global order.[4] By encouraging uniformity in regional programs of 'sustainable development' it can help to regularize and crystallize the emerging norms.

This co-operation shall and must continue. From a legal perspective, one particular goal of the co-operative network should be the formalization of a binding Earth Charter. This was a goal for 1992 which was not realized. A strong

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[3] See "Experts try to rein in population growth", *Montreal Gazette*, October 25, 1992 at B6.

[4] See "Commission on Sustainable Development - First Substantive Session", (1993) 23 *Environmental Policy and Law* (No. 5) 190.

commitment by nations could see this achieved by 1995. As a statement of fundamental, binding principles which must guide all states in pursuing 'sustainable development' and environmental protection, an Earth Charter would complete the crystallization process of the aspirational norms, and lay down the foundations of a new system of global environmental order.

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