

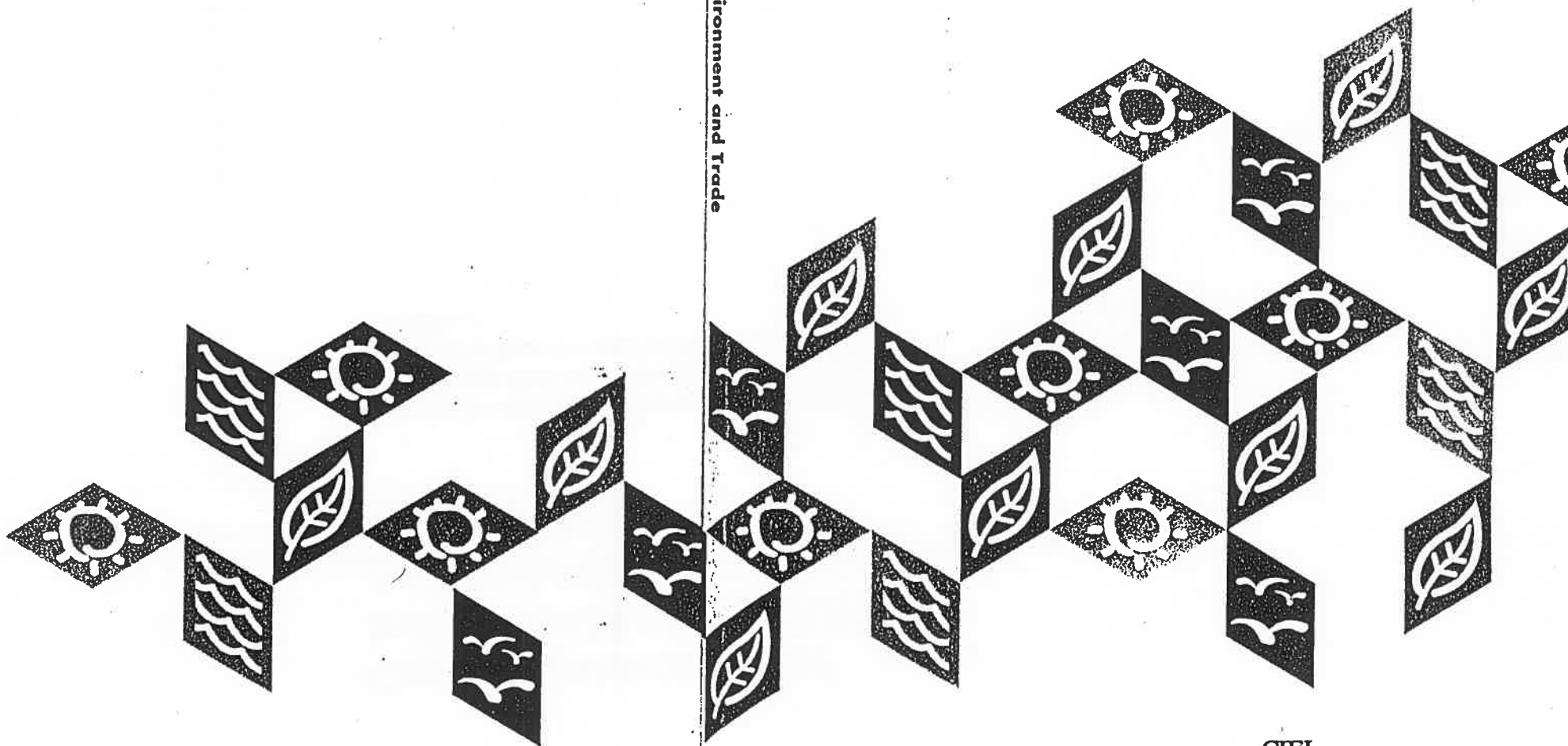
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Concepts and Principles of International Environmental Law An Introduction

By David Hunter, Julia Sommer and Scott Vaughan

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Environment and Trade



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(202) 332-4840 • Fax (202) 332-4865



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Concepts and Principles of International Environmental Law: An Introduction

by David Hunter, Julia Sommer and Scott Vaughan

This paper describes basic concepts and principles of international environmental law to assist policymakers in reconciling the critical goals of environmental protection and trade liberalization.¹

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Foreword

The 1992 "Earth Summit" found common ground upon which human development can be put on an environmentally sustainable footing. In 1993, completion of negotiations for the Uruguay Round set the course for a further liberalisation of international trade. One of the most pressing and complex challenges facing our generation is the search for a workable synthesis of the two, of economic relations and environmental realities.

We must embark upon this course, not because it is easy, but because it is necessary. Our planet's ecological vital-signs continue to warn us of an accelerating rate of degradation -- depletion of the ozone layer that shields us from harmful solar radiation, erosion of productive soils needed to grow food, contamination of freshwater with hazardous wastes, depletion of fish stocks, the massive loss of biodiversity, the threat of climate change and global warming.

An important challenge identified at the Earth Summit is ensuring that trade and environment are "mutually supportive." It is hoped that this series, providing analysis on selected environmental issues of relevance to the environment - trade debate, will contribute to the search for solutions now underway.

Elizabeth Dowdeswell
Executive Director

The Authors

This background paper was prepared by DAVID HUNTER, Center for International Environmental Law (CIEL), JULIA SOMMER, University of Hamburg, University of Geneva and Institut des Hautes Etudes Internationales, Geneva, and SCOTT VAUGHAN, United Nations Environment Programme (UNEP), with additional assistance from PAUL ORBUCH, KATHY TOGNI and DURWOOD ZAELE, CIEL. The authors also thank Louis Sohn, Peter Sand, Charles Di Leva and Ralph Osterwoldt for their helpful comments on this paper. The authors, of course, remain responsible for any errors.

The Center for International Environmental Law

The Center for International Environmental Law (CIEL) was founded in Washington, D.C. in 1989 to strengthen and develop international and comparative environmental law, policy and management throughout the world. CIEL provides legal assistance in both international and comparative environmental law, including independent research, advice and advocacy, and education and training.

CIEL's Trade and Environment Program provides legal counsel and policy support to other nongovernmental organizations, national and sub-national governments, and international organizations as they attempt to understand and address the interplay of trade and the environment.

For further information contact:

CIEL
1621 Connecticut Ave., N.W.,
Suite 300
Washington, D.C. 20009-1076

Phone: 202-332-4840
Fax 202-332-4865
E-Mail: cielus@igc.org.

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IN JUNE OF 1992, OVER 100 GOVERNMENT LEADERS, representatives from 170 countries, and some 30,000 participants met in Rio de Janeiro at the U.N. Conference on Environment and Development (UNCED or the "Earth Summit"). There, they formally recognized the need to integrate economic development and environmental protection into the goal of sustainable development. UNCED also

affirmed the growing importance of international environmental law as a mechanism to help codify and promote sustainable development.

Under traditional views, public international law comes from one of four sources: (i) international conventions, (ii) customary law, (iii) general principles of law recognized by "civilized" nations, and (iv) judicial decisions or the writings of the most qualified publicists.¹ Each of these categories has been critical in the development of international environmental law. For example, more than eight hundred bilateral and multilateral agreements contain provisions dealing with one or more aspects of the environment, ranging from sub-regional and regional to global environmental issues. A number of basic environmental principles and concepts may also be emerging as customary international law.²

As a relatively new and growing field, international environmental law and policy are also developing from other less traditional, and less binding, sources. For example, resolutions and declarations, issued by international organizations like the United Nations Environment Programme, the World Health Organization or the International Atomic Energy Agency, have played a very important role in the development of international environmental principles, even though they are often non-binding. Through repetition and subsequent state practice, including incorporation into domestic legal systems, such principles or standards may emerge as customary law.

This paper identifies and introduces the emerging principles, standards and other forms of soft law that form an increasingly comprehensive set of principles for guiding international society toward sustainable development. Although states may currently differ on the legal status of specific principles discussed in this paper (i.e., whether a principle is on the continuum of emerging international law or generally

recognized as existing international law), these principles nonetheless frame the current debate for international environmental policymaking and are increasingly important for discussions of trade and the environment. Part 2 of this paper describes the development of the sustainable development concept and its implications; Part 3 describes the duty to cooperate in environmental protection; Part 4 describes the duty to avoid environmental harm; and Part 5 describes the duty to compensate for environmental harm. Part 6 describes the status of natural resources within national boundaries and the global commons.

“Just as sustainable development requires integrating environmental costs into the economic system, it also requires integrating citizens into the political process.”



The International Law of Sustainable Development

SUSTAINABLE DEVELOPMENT IS NOW WIDELY ACCEPTED AS a primary goal of economic and social activity. Despite some past recognition, sustainable development's recent widespread popularity began with the 1987 publication of Our Common Future (also known as the Brundtland Report) issued by the World Commission on Environment and Development. Sustainable development formed the cornerstone underlying

the Earth Summit and dominated the Rio Declaration on Environment and Development.¹ Perhaps most importantly, the Earth Summit adopted Agenda 21, a five-hundred page blueprint detailing the "new global partnership for sustainable development" in the 21st century.² The Earth Summit not only affirmed the goal of sustainable development, but through the Rio Declaration and Agenda 21 it added meaning and substance to the concept.

The Brundtland Report defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."³ Following that report, UNEP's 15th Governing Council clarified that sustainable development implies "progress towards national and international equity, as well as the maintenance, rational use and enhancement of the natural resource base that underpins ecological resilience and economic growth."⁴ The term still requires further elaboration. As discussed next, however, it is increasingly accepted that the shift toward sustainable development clearly has several critical implications for development policy, economic policy and social policy.

An Anthropocentric View of Environmental Protection

Sustainable development suggests that the primary focus of environmental protection efforts on the international level should be to improve the human condition. As stated in Principle 1 of the Rio Declaration, "Human beings are at the centre of concerns for sustainable development."⁵ According to this "anthropocentric" approach, the protection of wildlife or other natural resources is not a goal in itself, but rather a necessity for ensuring a higher, sustained quality of life for humans. Environmental protection and by extension international environmental law must relate to the protection of

human welfare, and wildlife and other natural resources must be available to use for this purpose. The competing "biocentric" approach values nature for its own sake, protecting it irrespective of any utility to humans. The biocentric approach has been adopted in some important declarations,⁶ but it was rejected at the Earth Summit and is not yet firmly rooted in international environmental law.

Integrating Economics and the Environment

Sustainable development implies the integration of environmental and social concerns into all aspects of economic policy. As stated in Principle 4 of the Rio Declaration:

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.⁷

Injecting "sustainability" concepts into development policy has broad implications for both macro and microeconomics. Regarding macroeconomic policies, the move toward sustainable development requires, for example, that traditional national accounting systems be changed to better measure overall quality of life. Such new accounting systems would exclude from calculations of gross national product (GNP) pollution control efforts as well as environmental damages caused by pollution. A related approach emphasizes a separate set of natural resource accounts that reveal in non-monetary units the status of resources in a given country. Mining extractions, for example, would not simply be reflected in increased GNP, but also in the reduction in natural resource "wealth."⁸

In microeconomics, the shift toward sustainable development requires, for example, imposing the costs of environmental damage on the producer causing the damage.⁹ Pricing

of natural resources should reflect environmental costs, and other costs "external" to an unregulated market. Market-based mechanisms such as pollution fees and tradeable permits can be used to "internalize" external costs, leading to market prices that better reflect the true costs of production, including social and environmental costs.

The Importance of Ecological Interdependence

During the past three decades, scientific understanding of the ecological interdependence of the planet has increased dramatically. To some extent recent international agreements, declarations and resolutions have begun to reflect this broader understanding of human reliance and dependence on the environment.¹⁰ For example, the World Charter for Nature acknowledges in its preamble that:

Mankind is part of nature and life depends on the uninterrupted functioning of natural systems which ensure the supply of energy and nutrients."

Although explicit recognition that humankind is dependent on nature is still somewhat new, most international environmental agreements have been responding at least implicitly to a recognition of ecological interdependence. For example, the ecological interrelationship of States sharing a natural resource is one of the major underlying reasons for the development of rules about shared natural resources and transboundary pollution. More generally, acknowledgment of the ecological limits and interconnectedness of the planet underlies the relatively new concept of the common concern of humankind, which provides much conceptual support for international efforts to conserve biodiversity and prevent climate change.¹¹

Intergenerational Equity and Responsibility

Sustainable development, as defined in Our Common Future, is closely associated with the goal of intergenerational equity. Sustainable development recognizes each generation's responsibility to be fair to the next generation, by leaving an inheritance of wealth no less than they themselves had inherited. At a minimum, meeting this goal will require emphasizing the sustainable use of natural resources for subsequent generations and avoiding any irreversible environmental damage.

The concept of intergenerational responsibility has been important since the 1972 Stockholm Conference. The first principle of the Stockholm Declaration, for example, provides that:

Man ... bears a solemn responsibility to protect and improve the environment for present and future generations.

After being repeated in many different contexts,¹² intergenerational responsibility was reaffirmed at UNCED as a central component of the shift to sustainable development. Principle 3 of the Rio Declaration confirms that:

The right to development must be fulfilled so as to equitably meet development and environmental needs of present and future generations,

Sustainable Use of Natural Resources

The early roots of sustainable development can be found in the promotion of the sustainable use or yield of natural resources. For example, as a result of the 1974 Icelandic Fisheries case, States were obligated to cooperate in the conservation and sustainable utilization of the global commons, including the living resources, of the high seas.¹⁴ Other legal regimes dealing with the conservation of marine resources, wildlife, habitat protection, protection of cultural and natural

heritage, protection of the Antarctic, and others intended to protect international/global environmental resources, suggest that the sustainable use of natural resources is widely accepted at the international level.

Definitions of sustainable use vary somewhat, but typically reflect concepts of intergenerational equity. For example, the 1992 Biodiversity Convention defines sustainable use of biological resources as:

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 resources, thereby maintaining its potential to meet the needs and aspirations of present and future generations.¹³

Although sustainability is perhaps most easily understood with respect to renewable resources, it also has critical implications for nonrenewable resources:

The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such are shared by all mankind.¹⁴

Common but Differentiated Responsibilities

Sustainable development poses a common challenge to all countries, but, because of different development paths, industrialized countries may be asked to carry more of the immediate burden. In one of the most controversial provisions of the Rio Declaration, developed countries explicitly acknowledge their central responsibility for existing environmental degradation and its remediation.

The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.¹⁵

This differential responsibility is reflected in many recent international environmental agreements. For example, the Climate Change Convention's guiding principles ask developed countries to take the lead in combating climate change and its effects, while giving full consideration to the needs and special circumstances of disproportionately burdened developing countries.¹⁶ Similarly, the Montreal Protocol on Substances that Deplete the Ozone Layer allows dispensations for developing countries.¹⁷

Financial and Technical Transfers

As one practical consequence of their greater responsibilities and opportunities, developed countries have pledged to assist developing countries in making the shift toward sustainable development. Virtually all major environmental treaties in recent years have included important provisions providing financing, technical assistance, or technology transfers to developing countries.¹⁸ New funding mechanisms, such as the Global Environment Facility¹⁹ and the Montreal Protocol Multilateral Fund,²⁰ have been established to assist developing countries with the transition towards sustainable development.²¹ New approaches to technology transfer have also been explored, although no consensus has yet been reached on the best specific methods for such transfers.²² As a result, technology transfer has emerged as one of the priority areas, requiring additional research and policy elaboration by the new U.N. Commission on Sustainable Development.

Increasing Local Decisionmaking and Public Participation

Just as sustainable development requires integrating environmental costs into the economic system, it also requires integrating citizens into the political process. The Brundtland Report recognizes this and concludes that:

the pursuit of sustainable development requires ... a political system that secures effective citizen participation in decisionmaking."

Citizens are after all directly affected by environmentally damaging development decisions and are thus often the most zealous and effective defenders of the environment.

Principle 10 of the Rio Declaration clarifies what is meant by effective public participation:

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have the appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decisionmaking processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided."

The principle of public participation thus obligates governments to establish a process for citizens and nongovernmental organizations (NGOs) to obtain environmental information, comment on environmental information, develop and submit their own information, have their submissions considered, and have remedial procedures available to them."

National Implementation of Sustainable Development

The goal of sustainable development has major implications for national policymaking. On one level, sustainable development can be seen as a modification, or at least a clarification of, the "right to development."²⁸ As the Rio Declaration affirms:

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."

After Rio, many countries began substantial planning efforts to move toward sustainable development by implementing Agenda 21. Many different approaches are being adopted. For example, several countries beginning with the Philippines and, more recently, the United States, have created high-level national councils on sustainable development. Chile is implementing Agenda 21 in part through a series of consultative meetings held throughout the country. Environmental laws are increasingly integrating sustainable development at the national level; the first and still one of the most innovative is the 1991 New Zealand Resources Management Act. National policy plans for sustainable development are also becoming increasingly common, for example Canada's 1990 Green Plan.

Conclusion

Further elaboration is required to implement sustainable development. Nonetheless, as discussed next, there are a growing number of discrete principles and concepts that are important for achieving sustainable development. Some of these are emerging independently as customary law, while others are best thought of as guiding principles. For the purposes of this paper, they are organized under three broad categories: principles relating to the duties to cooperate, to avoid environmental injury, and to compensate for environmental injury.

“The Vienna Convention has become an important model for the way international efforts to coordinate scientific research can help lawmakers and policymakers respond to complex and urgent environmental issues in a shorter time.”



The Duty to Cooperate

MUCH OF INTERNATIONAL ENVIRONMENTAL LAW RELATES to a general obligation of States to cooperate in investigating, identifying, and avoiding environmental harms. Within the obligation to cooperate are more specific duties relating, for example, to the exchange of information, the need to notify and consult with potentially affected States, and the requirement to coordinate international scientific research.

Exchange of Information in General

Virtually every international environmental treaty has general provisions requiring cooperation in generating and exchanging relevant information. Examples include the Vienna Convention for the Protection of the Ozone Layer, which facilitates the exchange of scientific, technical, socio-economic and commercial data, as well as legal information;¹ the 1982 U.N. Convention on the Law of the Sea, which describes the exchange of data related to pollution of the marine environment;² and the Biodiversity Convention, which requires information exchange on the conservation and sustainable use of biological diversity.³

In addition to increasing our understanding of environmental issues, the exchange of information through specific, periodic reporting requirements is one of the most important tools for monitoring the domestic implementation of international environmental obligations. Thus, for example, countries are obligated to report on a broad range of activities, including efforts to curb wildlife trade;⁴ reduce greenhouse gas emissions;⁵ reduce levels of ozone destroying substances;⁶ and conserve biological diversity.⁷

The exchange of information will continue to be a critical aspect of environmental protection in the future. Recent conventions have institutionalized the collection and distribution of information by creating separate international bodies with explicit information generating and distribution functions. For example, the Climate Change Convention created a subsidiary body to:

provide the Conference of the Parties information and advice on scientific and technological matters relating to the Convention.⁸

Cooperation in Scientific Research and Systematic Observations

Due to the critical importance of scientific knowledge in driving international law and policy, many environmental treaties include special provisions for guiding and facilitating the research, analysis and dissemination of scientific research. Agreements to cooperate in international scientific research and monitoring are contained in a wide range of conventions, from those addressing marine pollution⁹ and changes in the atmosphere,¹⁰ to the preservation of cultural heritage sites.¹¹ Although many of the provisions on scientific research are very general, some provide specific and detailed direction for research necessary to identify and clarify the nature and extent of environmental problems. In addition to coordinating and focussing scientific research in a way that assists international lawmakers and policymakers, some efforts to promote cooperation in scientific research and systematic monitoring promote the transfer of technical and financial assistance from developed to developing countries.

The Vienna Convention has become an important model for the way international efforts to coordinate scientific research can help lawmakers and policymakers respond to complex and urgent environmental issues in a shorter time. The Vienna Convention calls for international research on a set of complex issues critical to understanding, and forming policy responses to, ozone depletion.¹² An annex elaborates in great detail those areas needing coordinated scientific research, including issues relating to atmospheric physics and chemistry, the potential consequences of increased ultraviolet radiation on human health and the environment, and the concentrations of certain gases. The Vienna Convention's ability to coordinate scientific research is a major reason for the ultimate success of the Parties in phasing out ozone destroying

chemicals in the Montreal Protocol and subsequent revisions.¹³

Prior Notification

The principle of prior notification obliges any State planning a potentially damaging activity to provide to potentially affected States all necessary information in time for the latter to prevent damage to its territory and, if necessary, enter into consultation with the acting State.¹⁴ Principle 19 of the Rio Declaration confirms this principle:

States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect.¹⁵

The importance of prior notification is reflected in its close relationship to the obligation to conduct environmental impact assessments in the transboundary context, as well as to obtain prior informed consent.¹⁶

Consultation

The principle of consultation requires States to allow potentially affected parties an opportunity to review and discuss a planned activity that may potentially cause damage. The acting State is not necessarily obliged to conform to the interests of affected States, but should take them into account. The principle has been reiterated in various declarations and conventions, frequently including a requirement that the consultation be "in good faith and over a reasonable period of time."¹⁷

The obligation to consult is often closely connected to the requirement of prior notification discussed above. Principle 6 of the UNEP Principles for Shared Natural Resources illustrates this relationship:

It is necessary for every State sharing a natural resource with one or more other States:

(a) to notify in advance the other State or States of the pertinent details of plans to initiate, or make a change in, the conservation or utilization of the resources which can reasonably be expected to affect significantly the environment in the territory of the other State or States; and

(b) upon request of the other State or States, to enter into consultations concerning the above mentioned plans.

Increasingly, consultation is being institutionalized at the international level, either through existing international bodies, for example, the Nordic Council, the European Council and the U.N. system, or through new institutions created in the framework of specific environmental conventions.¹⁸

Prior Informed Consent

When one State wants to act in the territory of another State, simple notification and consultation has not been deemed sufficient; most treaties now require the acting State to obtain the other State's prior informed consent. Thus, for example, a party to the Basel Convention that seeks to export hazardous wastes must inform the importing State of the nature of the wastes and receive the written consent of the importing State.¹⁹ Other activities requiring prior informed consent include transporting hazardous wastes through a State,²⁰ lending emergency assistance after a nuclear accident,²¹ exporting domestically banned chemical substances,²² and prospecting for genetic resources.²³

Notification in the Case of an Emergency

One of the most important aspects of international cooperation in the environmental sphere is the obligation to notify affected parties in the case of an emergency that has transboundary effects. Principle 18 of the Rio Declaration codifies this principle in the following way:

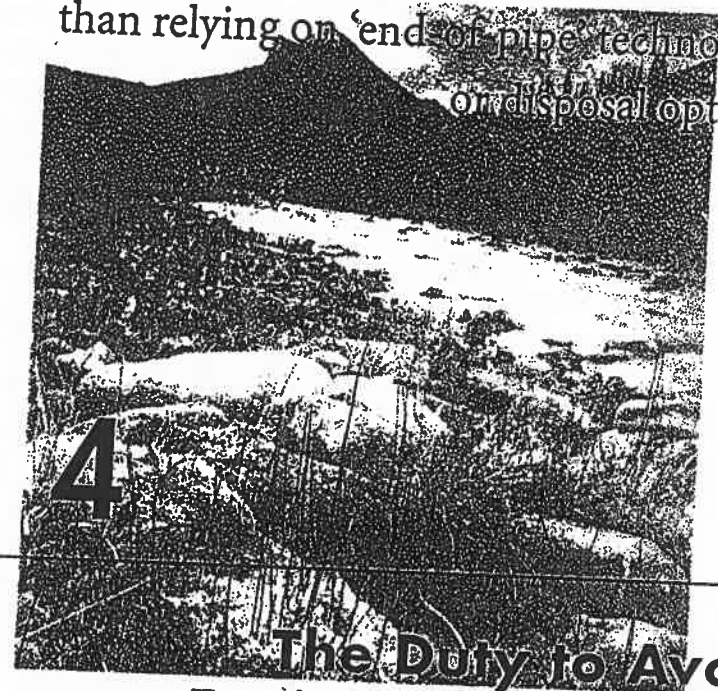
States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States.

Emergency notification is the after-the-fact version of prior notice discussed above. Emergency notification is intended to allow affected parties the greatest possible opportunity to prepare for, and mitigate, potential damage. Emergency notification provisions are critical components of international responses to oil spills,²⁴ industrial accidents,²⁵ and most recently nuclear accidents.²⁶

Principle of Emergency Assistance

Although there is not yet an affirmative obligation to provide emergency assistance (unless perhaps for the State responsible for creating the emergency), the importance of mutual assistance in emergencies has been frequently reiterated in international legal instruments.²⁷ Emergency assistance often implies operations on the territory of the affected State, as well as financial transactions and the management of in-kind assistance. Consequently, some agreements relating to specific emergencies include specific operational parameters. For example, the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency is designed to minimize international response time by opening direct channels for requesting assistance and readying the international community for prompt and effective action.²⁸

“Industry now recognizes that designing a product or process to minimize waste production is often more cost-effective than relying on ‘end-of-pipe’ technologies or disposal options.”



The Duty to Avoid Environmental Harm

The General Duty to Prevent Environmental Harm

It is a widely accepted principle of international environmental law that States are required to ensure that activities within their jurisdiction or control do not damage the environment of other states or the commons. As Principle 21 of the Stockholm Declaration (and more recently Principle 2 of the Rio Declaration) states:

States have, in accordance with the Charter of the United Nations and the principles of international law, ... the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

This principle is often associated with the Trail Smelter Arbitration Between Canada and the United States. In that case, fumes from a Canadian smelter were damaging the property and health of U.S. citizens. After the two countries agreed to arbitration, the U.S.-Canada International Joint Commission (IJC) concluded that under principles of international law "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."¹ Although Trail Smelter involved a closely circumscribed arbitration proceeding, it is cited frequently as the genesis for the rule against causing environmental damage in a foreign State or the global commons.²

The duty to prevent harm is often written to require States to take all "practicable" steps to avoid harm. For example, Article 194 of the U.N. Convention on the Law of the Sea requires that:

States shall take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and they shall endeavor to harmonize their policies in this connection.³

Similarly, in an effort to reduce damage from environmental pollution, the Basel Convention requires the "environmentally sound management of hazardous wastes and other wastes," which it defines as:

taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.⁴

This reliance on a standard of "practicable" steps suggests that the duty to prevent harm may not be absolute, but requires at least that States diligently and in good faith make all reasonable efforts to avoid environmental damage.

Non-Discrimination Between States

One narrower variation of the general obligation to prevent environmental harm is the obligation not to take actions to shift pollution from one State's territory to that of another State. This principle of "non-discrimination" ensures that:

polluters causing transfrontier pollution should be subject to legal or statutory provisions no less severe than those which would apply for any equivalent pollution occurring within their country...⁵

More particularly, this means that domestic environmental regulations and rules for example, those setting acceptable pollution levels, providing for environmental liability, access to courts, or similar substantive and procedural rules, should apply equally regardless of whether the pollution affects domestic resources or resources in another State.⁶

Pollution Prevention and Waste Minimization

The pollution prevention principle can perhaps best be thought of as a specific articulation of the general duty to avoid environmental damage. The current focus on pollution prevention, both by industry and policymakers, reflects a growing knowledge that avoiding or reducing pollution is almost always less expensive than attempting to restore a contaminated area.

Pollution prevention has been adopted, in general terms, by numerous conventions and resolutions restricting the introduction of pollutants into the environment.⁷ Principle 6 of the Stockholm Declaration sets out the principle in sweeping terms:

The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems.

Some agreements also prescribe concrete quantitative standards for pollution abatement, including in some cases specific timetables for reducing or eliminating certain emissions.⁸

In some contexts, pollution prevention refers exclusively to minimizing waste through design changes, input substitutions and other clean production methods.⁹ Industry now recognizes that designing a product or process to minimize waste production is often more cost effective than relying on "end-of-pipe" technologies or disposal options. Beginning with the initial design of a product and of its production process and continuing all the way through the life-cycle of a product to disposal, the most modern companies now seek clean production methodologies and processes to reduce material inputs and waste discharges. For example, German automobile manufacturers are designing their automobiles to reduce the amount of waste when the car is scrapped. Each component of the automobile is being designed to separate easily from the whole, and the components are being coded to facilitate recycling and re-use.

The Precautionary Principle

The precautionary principle is one of the most important general environmental principles for avoiding environmental damage and achieving sustainable development. As set forth in the Rio Declaration, the precautionary principle states that:

Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.¹⁰

This precautionary approach underlies a number of international legal instruments.¹¹ It also applies in a variety of contexts from protecting endangered species to preventing pollution. The precautionary principle evolved from the growing recognition that scientific certainty often comes too late to design effective legal and policy responses to potential environmental threats. In essence, it switches the burden of proof necessary for triggering policy responses.

The precautionary principle can have far-reaching implications. For example, implementing the precautionary principle in the context of pollution prevention led the UNEP Governing Council to urge countries to adopt:

alternative Clean Production methods including raw material selection, product substitution, and clean production technologies and processes as a means of implementing a precautionary principle in order to promote production systems which minimize or eliminate the generation of hazardous wastes....¹²

This preference for clean production methods has begun to appear in international environmental treaties as well. For example, the Bamako Convention on hazardous wastes requires that:

Each Party shall strive to adopt and implement the preventive, precautionary approach to pollution problems which entails, inter alia, preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm. The Parties shall co-operate with each other in taking the appropriate measures to implement the precautionary principle to pollution prevention through application of Clean Production methods, rather than the pursuit of a permissible emissions approach based on assimilative capacity assumptions.¹³

Environmental Impact Assessment

Many international instruments,¹⁴ international institutions,¹⁵ and over sixty countries¹⁶ now require some form of environmental impact assessment (EIA). EIA is a process for examining, analyzing and assessing proposed activities in order to maximize the potential for environmentally sound and sustainable development. The EIA process is designed to ensure that (i) the appropriate government authorities have fully identified and considered the environmental effects of proposed activities, as well as alternatives that avoid or mitigate the environmental effects; and (ii) affected citizens have an opportunity to understand the proposed project or policy and to express their views to decisionmakers in advance. Many of these procedures are becoming recognized in international conventions. For example, the Biodiversity Convention states that the signatories shall:

introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures.¹⁷

To achieve the objectives of greater citizen participation and better development decisions, EIAs begin early in the planning stage. Relevant impacts, mitigation measures, and alternatives that avoid or minimize impacts are analyzed fully. A draft EIA detailing the proposed project, the resulting environmental impacts, alternatives to the project, and potential mitigation options is often made available to the public for study and comment. The final EIA then considers relevant comments and recommends appropriate actions to minimize environmental damage.

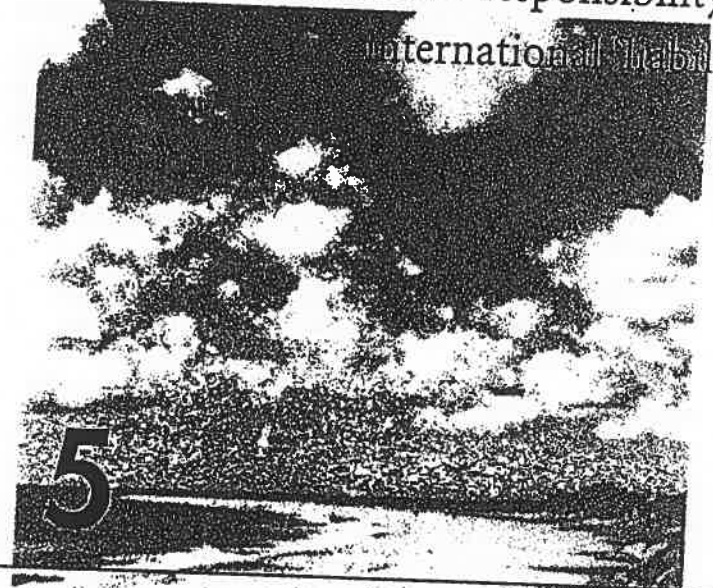
EIAs have also become increasingly important in the transboundary context. The UNEP Governing Council, for example, recommends that all States undertake:

environmental assessment before engaging in any activity with respect to a shared natural resource which may create a risk of significantly affecting the environment of another State or States sharing that resources.¹⁸

The 1991 Convention on EIA in a Transboundary Context specifies a State's obligations related to transboundary environmental impact assessment for the members of the U.N. Economic Commission for Europe.¹⁹ EIA is also extensively used for investigating and communicating potential transboundary and global impacts in many contexts. For example, the U.N. Convention on the Law of the Sea states this obligation as follows:

When states have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant harmful changes to the marine environment, they shall, as far as practicable, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments.²⁰

“A distinction continues to emerge in international environmental law between international ‘responsibility’ and international ‘liability’...”



The Duty to Compensate for Harm

State Responsibility

The basic rule of State responsibility in the context of environmental protection can be summarized in the following way: States are responsible for injuries caused to the environment of another State or the global commons resulting from violations of a generally accepted international rule or standard. State responsibility is confirmed in Principle 21 of the Stockholm Declaration:

States have ... the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.¹

The following is a brief discussion of the primary elements for demonstrating a state responsibility claim:

(i) The environmental damage must result from a violation of international law. This presents a problem in a relatively new field like environmental law. Customary international environmental law is only emerging, and most environmental treaties depend heavily on general obligations of cooperation. Those with more specific prohibitions often present difficult questions of proof.

(ii) A state is responsible both for its own activities and for activities of private corporations or individuals under its jurisdiction or control. Thus, even if a State is not directly polluting, the State can still be responsible for failure to stop or control the polluting activities of others. Under this rule, States may be responsible for not enacting or enforcing necessary environmental laws, for not terminating dangerous activities, or for letting violations go unpunished.

(iii) There must be no justifying circumstances, such as consent by the affected State or an intervening cause, such as an act of God.

(iv) The damage must be "significant," which can present serious problems of proof and quantification.

In practice, there are relatively few judicial claims based on State responsibility, and most pollution cases are settled not at the international level but through private international rules of civil liability (i.e. directly between the private individuals involved). International claims commissions that distribute funds "donated" by the acting State directly to the foreign plaintiffs are also important. Such a procedure allows States to

settle the claims without acknowledging legal responsibility.

State and Civil Liability

A distinction continues to emerge in international environmental law between international "responsibility" and international "liability": the former arises from unlawful acts, the latter focuses primarily on lawful acts (although it is still used at times with reference to unlawful acts).² Imposing liability for acts not prohibited by international law irrespective of fault or the lawfulness of the activity emphasizes the harm, rather than the conduct. Traditional principles of State responsibility can merge with the concept of State liability, particularly in instances such as ultra-hazardous activities where States must meet such a strict standard of care that for all practical purposes they will be "responsible" for any activity leading to harm.

There is as yet no international consensus regarding the details for when and how compensation must be paid.³ Nonetheless liability for pollution-related injuries is addressed, albeit generally, in many treaties. For example, the 1989 Basel Convention contains an obligation for the Parties to:

co-operate with the view to adopting, as soon as practicable, a protocol setting out appropriate rules and procedures in the field of liability and compensation for damage resulting from the transboundary movement and disposal of hazardous wastes and other wastes.⁴

Negotiations on such a protocol are currently under way and a draft under discussion contains a three-tier liability system. Primary liability shall be through civil liability of the private operators. This will be supplemented by a subsidiary compensation fund, and as a last resort the State shall be held liable.

A number of international environmental conventions have also been adopted to assist injured private parties use civil liability systems to gain compensation.⁵

The Polluter Pays Principle

The polluter pays principle implies that the polluter should bear the expenses of carrying out pollution prevention measures or paying for damage caused by pollution. Instituting the polluter pays principle ensures that the prices of goods reflect the costs of producing that good, including costs associated with pollution, resource degradation, and environmental harm. Environmental costs are reflected (or "internalized") in the price of every good. The result is that goods that pollute less will cost less, and consumers may switch to less polluting substitutes. This will result in a more efficient use of resources and less pollution.

Originally recommended by the OECD Council in May 1972, the polluter pays principle has been increasingly accepted as an international environmental principle. It has been explicitly adopted in several bilateral and multilateral resolutions and declarations,⁶ including Principle 16 of the Rio Declaration which provides:

National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Equal Access to Administrative and Judicial Proceedings

Central to the issues of compensation for environmental harm is the emerging trend toward equal access to administrative and judicial proceedings. Under the equal access principle,

affected parties in one State should be provided the same access to remedies and redress as would be provided to affected parties in the State where the polluting activities are located. The principle extends both to planning processes, such as the environmental impact assessment provisions,⁷ and to issues of liability and compensation.⁸

“The emergence of the concept of a ‘common concern’ of humankind may help resolve the challenge to permanent sovereignty over natural resources.”



Legal Status of Natural Resources and Common Areas

MANY OF THE PRINCIPLES, DUTIES AND OBLIGATIONS DISCUSSED above often focus on environmental pollution control. Just as important for achieving sustainable development are issues relating to the sustainable use of natural resources. Traditionally, natural resources located wholly within national boundaries have been considered to be within the province of national law and development priorities. For resources that

are shared by different nations (e.g., rivers or migratory wildlife), however, there is a need for international regulation. Similarly, global common areas beyond national jurisdiction (e.g., the high seas, Antarctica, and outer space) require international cooperation, and have led to the advent of a new concept - the common heritage of humankind.

Even more recently, the increasing urgency of international environmental issues and the increasing recognition that all states are ecologically interrelated have led to a new challenge to State sovereignty over natural resources. This challenge draws from the intellectual roots of the common heritage of humankind, to suggest that humankind has a common concern in some resources (e.g., biodiversity) or activities (e.g., emissions of greenhouse gases) which might otherwise be considered wholly within the province of State sovereignty. These concepts and their implications for international environmental law and sustainable development are discussed below.

Permanent Sovereignty Over Natural Resources

Sovereignty in the relations between States signifies independence; that is, the right to exercise, within a portion of the globe and to the exclusion of other States, the functions of a State, such as the exercise of jurisdiction and enforcement of laws over persons therein. The concept of permanent sovereignty over natural resources, though subsumed under the broader principle of territorial sovereignty, is of a relatively recent origin. The United Nations General Assembly declared, *inter alia*, that the right of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development and of the well-being of the people of the States concerned.¹ The resolution further declared that the exploration, development and

disposition of such resources, as well as the import of foreign capital required for these purposes, should conform with rules and conditions that the people and nations freely consider to be necessary or desirable with regard to the authorization, restriction or prohibition of such activities.

National sovereignty over natural resource development issues has been reaffirmed in many international agreements, declarations and resolutions. For example, the UNESCO Convention for the Protection of the World Cultural and Natural Heritage, while obliging contracting States to cooperate in protecting certain cultural and natural heritage sites, emphasizes full respect for the sovereignty of States on whose territory the sites are located.² More recently, the 1992 Biodiversity Convention affirms that States have sovereign rights over their natural resources and the authority to regulate access to genetic resources through national legislation.³

The concept of permanent sovereignty is not absolute and is subject to a general duty not to harm the interests of other States. As stated in the 1972 Stockholm Declaration and reaffirmed in the 1992 Rio Declaration:

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 and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.⁴

Moreover, as discussed above, permanent sovereignty may be slowly conditioned to reflect the goal of sustainable development.⁵ The emergence of the concept of a "common concern" of humankind may help resolve the challenge to permanent sovereignty over natural resources. As knowledge of the

ecological interrelatedness of the planet increases, more activities or resources that qualify as "common concerns" will increase, thus providing the conceptual justification for appropriate international regulation.

Shared Resources

This concept refers to resources that do not fall wholly within the territorial jurisdiction of one State, but straddle common political borders or migrate from one territory to another. Examples include river basins, enclosed and semi-enclosed seas, mountain systems, watershed areas, and migratory wildlife. The primary concept governing shared resources is the general obligation for equitable or harmonious utilization of such resources.⁶

Although the principle of equitable utilization entails a broad range of responsibilities, most of them relate to cooperation, notification and consultation. As the 1974 Charter of Economic Rights and Duties of States notes:

In the exploitation of natural resources shared by two or more countries, each State must co-operate on the basis of a system of information and prior consultation in order to achieve optimum use of such resources without causing damage to the legitimate interest of others.⁷

Indeed, virtually all the principles and discussions relating to international cooperation and the duty to avoid harm apply to State activities with respect to shared natural resources.⁸

Common Heritage of Humankind

The global commons refers to those areas beyond the limits of national jurisdiction such as the high seas, the sea-bed, Antarctica, outer space, or the ozone layer. For resources in these areas, the concept of permanent sovereignty is generally

not applicable. Moreover, although the rules of cooperation and equitable use that apply to shared resources also apply to global commons resources, participants in the Law of the Sea Conference perceived a need to generate a new conceptual framework for addressing these resources. Although the first derivation of the common heritage of humankind may have related to the protection of certain cultural or natural landmarks⁹ and outer space,¹⁰ it became a central principle in the 1982 U.N. Law of the Sea Convention. Seeking to institute a common management regime for the deep sea-bed, the convention states:

The Area and its resources are the common heritage of mankind. No state shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources.... All rights in the resources of the Area are vested in mankind as a whole ... the Authority shall provide for the equitable sharing of financial and other economic benefits derived from activities in the Area....¹¹

Although the global commons are open for legitimate, peaceful and reasonable use by all States, they cannot be appropriated by any one State. States must cooperate in the conservation and sustainable utilization of the natural resources of the commons and, in its purest form, must share in the economic wealth of those areas.

Most recently, the concept of common heritage of humankind has been applied in the protection of Antarctica and the decision to make that continent essentially the equivalent of a global park, with very limited rights for exploitation, at least over the next fifty years.¹²

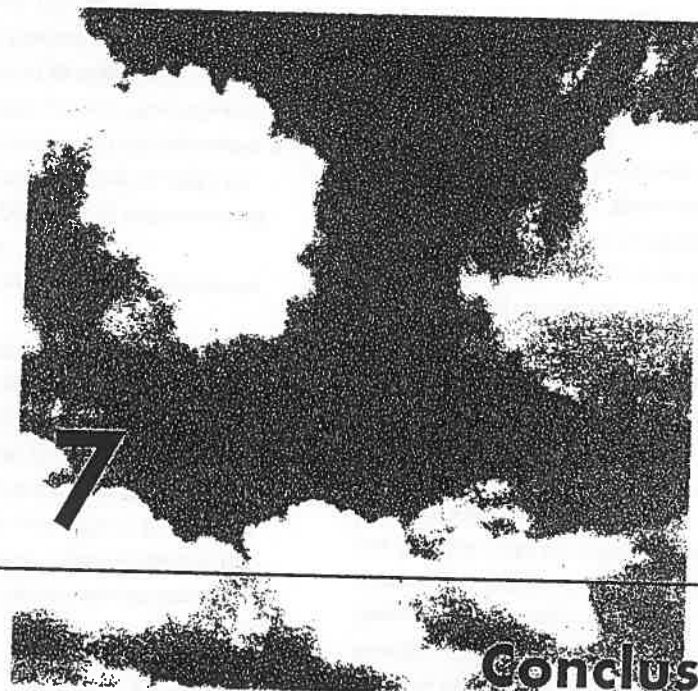
Common Concern of Humankind

Although the common heritage of humankind has proven to be a useful concept for developing an international regulatory

regime for resources in global commons, the concept has not been widely accepted in relation to other resources or activities of interest to the international community. The common heritage concept is viewed as being in direct opposition to concepts of permanent sovereignty over natural resources. It thus provides a less compelling conceptual justification for regulating such internal issues as the conservation of biodiversity or the emission of greenhouse gases.

At the same time, there is a growing consensus about the ecological interdependence of human activities around the planet and a growing understanding that all of humanity may have an interest (based on environmental concerns) in certain activities or resources wholly within State boundaries. The compromise reached with respect to the Biodiversity Convention and the Climate Change Convention is that there are common "concerns" of humankind. This principle may never be defined in any precise way, but it nonetheless provides the conceptual framework for international regulation and lawmaking with respect to what would otherwise be activities or resources within the sovereign control of individual States.

As international concern over environmental issues broadens, the concept of a common concern of humankind can be expected to expand to other areas. Indeed, if there is to be an international law of sustainable development that actually constrains domestic development decisions, conceptually it will come from the same increased understanding of ecological interdependence that has led to the development of the concept of common concern.



Conclusion

THE GROWING UNDERSTANDING OF THE PLANET'S ECOLOGICAL constraints on human activity has led to the rapid development of international environmental law. Indeed, the international law of sustainable development and environmental protection has emerged as a major area of international law and policymaking. It has matured now to where it must be treated equally with the longer standing principles and laws underly-

ing international trade. Recognizing and understanding the international environmental principles in this paper is a first step in effectively reconciling the goals, policies and principles of environmental protection with the goals, policies and principles of international trade.

Endnotes

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1. Similarly, policymakers can benefit from understanding key concepts and principles of international trade, such as "most favored nation", "national treatment", and "like product".

1. Introduction

1. Statute of the International Court of Justice, Article 38(1) (1945). The statute of the court describes judicial decisions and the writings of publicists "as subsidiary means for the determination of rules of law," and many analysts view them primarily as evidence of law. See, e.g., Brownlie, *Principles of Public International Law*, 20-26 (1979).

2. See, e.g., United Nations Convention on the Law of the Sea, Part V, Dec. 10, 1982, U.N. Doc. A/CONF.62/122, reprinted in 21 I.L.M. 1261 (1982) (enters into force Nov. 16, 1994) [hereinafter "U.N. Convention on the Law of the Sea"] (granting coastal states the right to manage and conserve marine resources within their exclusive economic zone).

2. The International Law of Sustainable Development

1. See Rio Declaration on Environment and Development, Principle 4, June 14, 1992, U.N. Doc. A/CONF.151/5/Rev.1 (1992), reprinted in 31 I.L.M. 876 (1992) [hereinafter "Rio Declaration"].

2. See Report of the United Nations Conference on Environment and Development, Annex II, June 14, 1992, U.N. Doc.

A/CONF.151/26 (1992) [hereinafter "Agenda 21"].

3. World Commission on Environment and Development, *Our Common Future* 8 (1987) [hereinafter "Our Common Future"].

4. UNEP Report of the Governing Council, U.N. GAOR 44th Sess., Supp. No. 25, at 115, U.N. Doc. A/44/25 (1989).

5. See also, e.g., Rio Declaration, *supra* note 5, at Principle 5 (eradicating poverty is essential task); Declaration of the United Nations Conference on the Human Environment, Principles 1, 8, June 16, 1972, U.N. Doc. A/CONF.48/14/Rev.1 (1973), reprinted in 11 I.L.M. 1416 (1972) [hereinafter "Stockholm Declaration"].

6. See, e.g., World Charter for Nature, Preamble, G.A. Res. 37/7 (Oct. 28, 1982) [hereinafter "World Charter for Nature"]; Convention on Biological Diversity, Preamble, June 5, 1992, 31 I.L.M. 818 (1992) [hereinafter "Biodiversity Convention"].

7. See also Stockholm Declaration, *supra* note 9, at Principle 13.

8. See generally Statistical Office of the United Nations, *SNA Draft Handbook on Integrated Environmental and Economic Accounting* (Mar., 1992) (provisional version); Repetto, et al., *Wasting Assets: Natural Resource Accounting in the National Income Accounts* (World Resources Institute, 1989); Ahmad, et al., *Environmental Accounting for Sustainable Development* (UNEP-World Bank Symposium, 1989).

9. See, e.g., *infra* Part V(3) (discussing the Polluter Pays Principle).

10. See, e.g., Rio Declaration, *supra* note 5,

Preamble; U.N. General Assembly Resolution on Protection of Global Climate for Present and Future Generations of Mankind, G.A. Res. 43/53 (Dec. 6, 1988), reprinted in 28 I.L.M. 1326 (1989); Biodiversity Convention, supra note 10, Preamble; Association of South East Asian Nations (ASEAN) Agreement on the Conservation of Nature and Natural Resources, Preamble, July 9, 1985, reprinted in 15 *Envl. Pol'y & L.* 64 (1985) (not yet in force) [hereinafter "ASEAN Conservation Agreement"].

11. See also, e.g., Rio Declaration, supra note 5, Preamble ("Recognizing the integral and interdependent nature of the Earth, our home").

12. See infra Part VI(4) (discussing the common concern of humankind).

13. See, e.g., United Nations General Assembly Resolution on the Historical Responsibility of States for the Protection of Nature for the Benefit of Present and Future Generations, G.A. Res. 35/8 (Oct. 30, 1980); Declaration of the Hague, Mar. 11, 1989, 28 I.L.M. 1308 (1989); United Nations Framework Convention on Climate Change, May 9, 1992, 31 I.L.M. 849 (1992) (not yet in force) [hereinafter "Climate Change Convention"].

14. Fisheries Jurisdiction (U.K. v. Iceland), 1974 I.C.J. 34-35 (Judgment of July 25).

15. Biodiversity Convention, supra note 10, at Article 2.

16. Stockholm Declaration, supra note 9, at Principle 5.

17. Rio Declaration, supra note 5, at Principle

18. See Climate Change Convention, supra note 17, at Article 3.

19. Montreal Protocol on Substances that Deplete the Ozone Layer, Article 5, Sept. 16, 1987, U.K.T.S. 19 (1990), reprinted in 26 I.L.M. 1550 (1987) [hereinafter "Montreal Protocol"].

20. See, e.g., id. at Article 5(3); Biodiversity Convention, supra note 10, at Articles 20(2), 21(1); see also Stockholm Declaration, supra note 9, at Principle 9.

21. The Global Environment Facility (GEF) was created in 1990 to provide incremental funding to developing countries in four project categories: (1) reducing the risk of global climate change; (2) preserving biodiversity; (3) preventing further depletion of the ozone layer; and (4) protecting international waters. Legal arrangements establishing the GEF took place in 1991. See 30 I.L.M. 1735 (1991). The GEF is operated under a tripartite agreement among the World Bank, UNEP and UNDP. As of June 30, 1993, the GEF had approved projects for a total of over \$700 million in 63 countries.

22. Report of the Fourth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, Decision IV/18, Nov. 25, 1992, UNEP/OzL.Pro.4/15.

23. See London Adjustments and Amendments to the Montreal Protocol on Substances That Deplete the Ozone Layer; and Non-Compliance Procedure, Article 10, June 29, 1990, UNEP/OzL.Pro.2/3 (1990) (amendments not yet in force) [hereinafter "London Revisions to the Montreal Protocol"]; Climate Change Convention, supra note 17, at Article 11; Biodiversity Convention, supra note 10, at Article 20; see also Agenda 21, supra note 6, at Paragraph 33.13

(requiring substantial new and additional funding).

24. See Agenda 21, supra note 6, at Chapter 34 (addressing the transfer of environmentally sound technology).

25. Our Common Future, supra note 8, at 65.

26. Rio Declaration, supra note 5, at Principle 10; see also Biodiversity Convention, supra note 10, Preamble; ASEAN Conservation Agreement, supra note 14, at Article 16; OECD Council Recommendation Concerning the Provision of Information to the Public and Public Participation in Decision-Making Processes Related to the Prevention of, and Responses to, Accidents Involving Hazardous Substances, July 8, 1982, C(88)85 (Final) (1988); World Charter for Nature, supra note 10, at Articles 23-24.

27. Under the principle of equal access, these procedures are increasingly extended to citizens of neighboring states affected by activities within the State. See infra Part V(4).

28. See Charter of Economic Rights and Duties of States, G.A. Res. 3281 (XXIX) (Dec. 12, 1974) [hereinafter "Charter of Economic Rights and Duties"].

29. Rio Declaration, supra note 5, at Principle 3.

3. The Duty to Cooperate

1. Vienna Convention for the Protection of the Ozone Layer, Article 4, Mar. 22, 1985, U.K.T.S. 1 (1990), T.I.A.S. No. 11097, reprinted in 26 I.L.M. 1529 (1987) [hereinafter "Vienna Convention"].

2. U.N. Convention on the Law of the Sea, supra note 4, at Article 200.

3. Biodiversity Convention, supra note 10, at Article 17. The obligation to provide information is generally not absolute. For example, Article 17 of the Biodiversity Convention requires Parties to facilitate information exchange from all "publicly available" sources, and Article 4 of the Vienna Convention explicitly recognizes that the exchange of information is subject to national laws and practices (e.g., those related to patents, trade secrets, and confidential and proprietary information). See also U.N. Economic Commission for Europe, Convention on Protection and Use of Transboundary Watercourses and International Lakes, Article 8, Mar. 17, 1992, 31 I.L.M. 1312 (1992) (not yet in force) [hereinafter "Convention on Transboundary Watercourses and Lakes"].

4. See Convention on International Trade in Endangered Species of Wild Fauna and Flora, Article VIII(7), Mar. 3, 1973, 993 U.N.T.S. 243 (1973), U.K.T.S. 101 (1976), reprinted in 12 I.L.M. 1088 (1973).

5. Climate Change Convention, supra note 17, at Article 12.

6. See Montreal Protocol, supra note 23, at Article 7.

7. Biodiversity Convention, supra note 10, at Article 26.

8. Climate Change Convention, supra note 17, at Article 9.

9. See U.N. Convention on the Law of the Sea, supra note 4, at Articles 200, 202, 204.

10. Vienna Convention, supra note 34, at Article 3; Climate Change Convention, supra note 17, at Article 5.

11. UNESCO Convention for the Protection of the World Cultural and Natural Heritage, Nov. 16, 1972, U.K.T.S. 2 (1985), 27 U.S.T. 37 (1972), reprinted in 11 I.L.M. 1358 (1972) [hereinafter "UNESCO World Heritage Convention"]. See generally Stockholm Declaration, supra note 9, at Principle 20; UNEP Governing Council Decision: Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared By Two or More States, UNEP GC/DEC/6/14 (May 19, 1978), reprinted in 17 I.L.M. 1097 (1978) [hereinafter "UNEP Principles for Shared Natural Resources"].

12. Vienna Convention, supra note 34, at Article 3, Annex I.

13. Subsequent revisions to the Montreal Protocol have resulted in increasingly strict timetables for reducing and eliminating a growing number of ozone destroying substances. See, e.g., London Revisions to the Montreal Protocol, supra note 27.

14. As in the general obligation to provide information, special provisions may protect the disclosure of confidential data as part of the prior notification requirement. See, e.g., OECD Council Recommendation on Principles Concerning Transfrontier Pollution, Nov. 14, 1974, C(74)224, Annex (1974), reprinted in 14 I.L.M. 242 (1975) [hereinafter "OECD Principles on Transfrontier Pollution"]; UNEP London Guidelines for the Exchange of Information on Chemicals in International Trade, Article 11, UNEP GC/DEC/15/30 (May 25, 1989) [hereinafter "London Guidelines for Exchange of Chemical

Information"].

15. Rio Declaration, supra note 5, at Principle 19; see also, e.g., Montreal Rules of International Law Applicable to Transfrontier Pollution, Sept. 4, 1982, Report of the Sixtieth Conference of the International Law Commission 1-3 (1982) [hereinafter "Montreal Rules for Transfrontier Pollution"]; UNEP Principles for Shared Natural Resources, supra note 44, at Principle 6; U.N. Convention on the Law of the Sea, supra note 4, at Article 206.

16. See, e.g., infra Part IV(5) (discussing environmental impact assessments); infra Part III(5) (discussing prior informed consent).

17. Montreal Rules for Transfrontier Pollution, supra note 48, at Article 8; see also, e.g., UNEP Principles for Shared Natural Resources, supra note 44, at Principles 6-7; OECD Principles on Transfrontier Pollution, supra note 47, at Annex, Principle 7; Convention on the Protection of the Environment Between Denmark, Finland, Norway and Sweden, Feb. 19, 1974, 1092 U.N.T.S. 279 (1974), reprinted in 13 I.L.M. 591 (1974) [hereinafter "Nordic Convention for Protecting the Environment"].

18. See, e.g., Climate Change Convention, supra note 17, at Articles 7-10 (outlining the consulting and decisionmaking authority of the Conference of the Parties and establishing various subsidiary bodies with advisory functions).

19. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Article 6, March 22, 1989, 28 I.L.M. 657 (1989) [hereinafter "Basel Convention"]; see also Bamako Convention on the

Ban of Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa, Article 6, Jan. 30, 1991, 30 I.L.M. 775 (1991) [hereinafter "Bamako Convention"].

20. Basel Convention, supra note 52, at Article 6(4).

21. International Atomic Energy Agency Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, Article 2, September 26, 1986, U.N.T.S. Reg. No. 24643, reprinted in 25 I.L.M. 1377 (1986) [hereinafter "IAEA Convention on Assistance in the Case of Nuclear Accident"].

22. London Guidelines for Exchange of Chemical Information, supra note 47, at Article 7; see also FAO International Code of Conduct on the Distribution and Use of Pesticides, Article 9, Nov. 28, 1985 (as amended in 1989).

23. Biodiversity Convention, supra note 10, at Article 15(5).

24. London International Convention for the Prevention of Pollution From Ships, November 2, 1973, U.K.T.S. 27 (1983), 12 I.L.M. 1319 (1973), as modified by the Protocol of 1978 relating thereto, Feb. 17, 1978, 34 U.S.T. 3407 (1978), reprinted in 17 I.L.M. 546 (1978), [hereinafter "Marpol Convention"]; U.N. Economic Commission for Europe, Convention on the Transboundary Effects of Industrial Accidents, Article 10, Mar. 17, 1992, 31 I.L.M. 1330 (1992) [hereinafter "U.N. ECE Convention on Industrial Accidents"].

25. See, e.g., European Community Directive on the Major Accident Hazards of Certain Industrial Activities, Council Directive 82/501, Article 5, 1982 O.J. (L230) 1.

26. International Atomic Energy Agency Convention on Early Notification of a Nuclear Accident, September 26, 1986, 25 I.L.M. 1370 (1986). See generally UNEP Principles for Shared Natural Resources, supra note 44, at Principle 9(1).

27. See, e.g., Rio Declaration, supra note 5, at Principle 18 (stating that "Every effort shall be made by the international community to help States so afflicted"); U.N. Convention on the Law of the Sea, supra note 4, at Article 199; UNEP Principles for Shared Natural Resources, supra note 44, at Principle 9(3).

28. See generally IAEA Convention on Assistance in Case of Nuclear Accident, supra note 54.

4. *The Duty to Avoid Environmental Harm*
1. (U.S. v. Canada), III R.I.A.A. 1911, 1965 (Apr. 16, 1938).

2. See, e.g., Corfu Channel Case, (U.K. v. Albania) 1949 I.C.J. Reports 4; Lac Lanoux Arbitration, (Spain v. Fr.) XII R.I.A.A. 281 (1957); see also UNEP Principles for Shared Natural Resources, supra note 44, at Principle 3; U.N. Convention on the Law of the Sea, supra note 4, at Part XII.

3. See also Convention on Environmental Impact Assessment in a Transboundary Context, Article 2(1), Feb. 25, 1991, 30 I.L.M. 800 (1991) (not yet in force) [hereinafter "Convention on EIA in a Transboundary Context"] (providing that "[t]he Parties shall, either individually or jointly, take all appropriate and effective measure to prevent, reduce and control significant adverse transboundary environmental impact from

proposed activities").

4. Basel Convention, *supra* note 52, at Article 2(8); see also, e.g., International Maritime Organization Convention on the Prevention of Marine Pollution By Dumping of Wastes and Other Matter, Dec. 29, 1972, 1046 U.N.T.S. 120 (1972), reprinted in 11 I.L.M. 1294 (1972); MARPOL Convention, *supra* note 57.

5. OECD Principles on Transfrontier Pollution, *supra* note 47, at Annex, Title C.4.

6. See, e.g., *id.*; Nordic Convention for Protecting the Environment, *supra* note 50, at Article 2 (any activity causing a nuisance in one Contracting State "shall be equated with a nuisance in the State where the activities are carried out"); UNEP Principles for Shared Natural Resources, *supra* note 44, at Principle 13.

7. See, e.g., Paris Convention for the Prevention of Marine Pollution from Land-Based Sources, June 4, 1974, 13 I.L.M. 352 (1974); Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, Feb. 16, 1976, U.N.T.S. Reg. #16908, reprinted in 15 I.L.M. 290 (1976); Convention on Transboundary Watercourses and Lakes, *supra* note 36.

8. See, e.g., Montreal Protocol, *supra* note 23 (reducing emissions of certain chlorofluorocarbons); London Revisions to the Montreal Protocol, *supra* note 27 (phasing out certain chlorofluorocarbons and calling for the reduction in other ozone destroying substances); Helsinki Protocol to the 1979 Convention on Long-range Transboundary Air Pollution on the Reduction of Sulphur Emissions or Their Transboundary Fluxes By at Least 30 Per Cent, July

8, 1985, 27 I.L.M. 707 (1988) (calling for a reduction in sulfur dioxide emissions).

9. See also *infra* Part IV(4) (describing the link between clean production methods and the precautionary principle).

10. Rio Declaration, *supra* note 5, at Principle 15.

11. World Charter for Nature, *supra* note 10, at Principle 11; Biodiversity Convention, *supra* note 10, Preamble; Climate Change Convention, *supra* note 17, at Article 3.3; Ministerial Declaration for the Second International Conference on the Protection of the North Sea, Nov. 25, 1987, reprinted in *International Protection of the Environment*, 2d ser.II/B/25-11-87 (Bock et al. eds., 1987); London Revisions to the Montreal Protocol, *supra* note 27, at Annex II, Article I.A.1 (amendment to 6th preambular paragraph); Convention on Transboundary Watercourses and Lakes, *supra* note 36, at Article 2(5)(a); Treaty Establishing the European Economic Community, Mar. 25, 1957, 294 U.N.T.S. 17, U.K.T.S. 15 (1979) [hereinafter EEC Treaty] as amended by Treaty on European Union, Title XVI, Article 130r, Feb. 7, 1992.

12. UNEP Governing Council Decision, UNEP/GC/SS.II/4B (Aug., 1990).

13. Bamako Convention, *supra* note 52, at Article 4(3)(f).

14. See, e.g., Rio Declaration, *supra* note 5, at Principle 17; Wellington Convention on the Regulation of Antarctic Mineral Resources Activities, Articles 37(7)(d)-(e), 39(2)(c), 54(3)(b), June 2, 1990, 27 I.L.M. 868 (1988) (not yet in force); World Charter for Nature, *supra* note 10, at

Principle 11(c); UNEP Governing Council Decision: Goals and Principles of Environmental Impact Assessment, UNEP GC/DEC/14/17, Annex III (June 17, 1987); EEC Directive on the Assessment of the Effects of Certain Public and Private Projects on the Environment, Council Directive 85/337, Article 2, 1985 O.J. (L175) 40-41; Biodiversity Convention, *supra* note 10, at Article 14; African, Caribbean and Pacific States European Economic Community Fourth Lome Convention, Article 37, Dec. 15, 1988, 29 I.L.M. 783 (1990) (not yet in force).

15. All of the multilateral development banks now have environmental impact assessment policies and procedures. See, e.g., World Bank, Operational Directive 4.01 (1991); World Bank, Environmental Sourcebook, Vols. I-III, World Bank Technical Papers 139, 140, 154 (1991).

16. The U.S. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4331-4344, was the first national EIA law. It, along with the European Community's EIA Directive, has shaped the development of many other national laws. There are now EIA laws in countries from the Netherlands to New Zealand, and from Bulgaria to Brazil.

17. Biodiversity Convention, *supra* note 10, at Article 14.

18. UNEP Principles for Shared Natural Resources, *supra* note 44, at Principle 4.

19. Convention on EIA in a Transboundary Context, *supra* note 64.

20. U.N. Convention on the Law of the Sea, *supra* note 4, at Article 206.

5. The Duty to Compensate for Harm

1. See also, e.g., Rio Declaration, *supra* note 5, at Principle 2; UNEP Principles for Shared Natural Resources, *supra* note 44, at Principle 3; U.N. Convention on the Law of the Sea, *supra* note 4, at Article 194(2).

2. See, e.g., U.N. Convention on the Law of the Sea, *supra* note 4, at Article 139 ("... damage caused by failure of a State Party or international organization to carry out its responsibilities under this Part shall entail liability..."); Convention on International Liability for Damage Caused by Space Objects, Articles II-III, Mar. 29, 1972, 96 U.N.T.S. 187 (1972) (providing for absolute liability without a wrongful act for damage caused on the surface of the earth and for fault-based responsibility for other kinds of damage).

3. See, e.g., Stockholm Declaration, *supra* note 5, at Principle 22; Rio Declaration, *supra* note 5, at Principle 13.

4. Basel Convention, *supra* note 52, at Article 12; see also UNEP Principles for Shared Natural Resources, *supra* note 44, at Principle 12.

5. See, e.g., 1989 Convention on Civil Liability for Damage Caused During Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels, Oct. 10, 1989 (not yet in force); Vienna Convention on Civil Liability for Nuclear Damage, May 21, 1963, 1063 U.N.T.S. 265, reprinted in 2 I.L.M. 727 (1963); International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, as amended by the 1976 Protocol, 9 I.L.M. 667 (1970); see also *infra* Part V(4) (discussing the principle of equal access).

6. See, e.g., OECD Council Recommendation

on Guiding Principles Concerning International Economic Aspects of Environmental Policies, May 26, 1972, C(72)128 (1972); OECD Council Recommendation on the Implementation of the Polluter-Pays Principle, Nov. 14, 1974, C(74)223 (1974); European Charter on the Environment and Health, Principles for Public Policy, Article 11, Dec. 8, 1989, WHO Doc. ICP/RUD 113/Conf.Doc./1, reprinted in 20 *Envtl. Pol. & Law* 57 (1990); Agenda 21, supra note 6, at Paragraph 30.3

(governments should use "free market mechanisms in which the prices of goods and services should increasingly reflect the environmental costs"), Paragraph 2.14 (commodity prices should reflect environmental costs); Convention on Transboundary Lakes and Watercourses, supra note 36, at Article 2(5)(b); see also EEC Treaty, supra note 72, as amended by, Single European Act, Title VII, Article 130r, Paragraph 2, Feb. 17, 1982.

7. See, e.g., OECD Principles on Transfrontier Pollution, supra note 47, at Annex, Title D.5(a).

8. See, e.g., Nordic Convention for Protecting the Environment, supra note 50, at Article 3 providing equal access for parties affected by an environmental nuisance); OECD Principles on Transfrontier Pollution, supra note 47, at Annex, Title D.5(b); UNEP Principles for Shared Natural Resources, supra note 44, at Principle 14; U.N. ECE Convention on Industrial Accidents, supra note 57, at Article 9.

Legal Status of Natural Resources and Common Areas

1. G. A. Res. 1803 (XVII) (Dec. 14, 1962); see also Declaration of the Right to Development, G.A.

Res. 41/128 (Dec. 4, 1986).

2. UNESCO World Heritage Convention, supra note 44, at Article 6.

3. Biodiversity Convention, supra note 10, at Article 15; see also Stockholm Declaration, supra note 9, at Principle 21; Rio Declaration, supra note 5, at Principle 2.

4. Rio Declaration, supra note 5, at Principle 2; Stockholm Declaration, supra note 9, at Principle 21.

5. Rio Declaration, supra note 5, at Principle 3 (modifying the right to development to include intergenerational equity).

6. See Helsinki Rules on the Uses of the Waters of International Rivers, Aug. 26, 1966, in Report of the Fifty-Second Conference of the International Law Association 484 (1967); UNEP Principles for Shared Natural Resources, supra note 44, at Principle 1.

7. Charter of Economic Rights and Duties, supra note 32, at Chapter II, Article 3.

8. See UNEP Principles for Shared Natural Resources, supra note 44, at Principle 3 (duty to avoid harm), Principle 4 (environmental impact assessment), Principle 5 (information exchange and consultation), Principle 6 (consultation and notification), Principle 8 (joint scientific research), Principle 9 (emergency notification).

9. As the preamble of the UNESCO World Heritage Convention, supra note 44, states: Deterioration or disappearance of any ... cultural and natural heritage constitutes a harmful impoverishment of the heritage of all nations of the world, ... parts of the cultural and natural heritage ... need to be preserved as part of the world

heritage to mankind.

10. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205 (1967), reprinted in 6 *I.L.M.* 386 (1967). This treaty, also known as the Outer Space Treaty, provides that the exploration and exploitation of the relevant areas shall be carried out for the benefit and in the interests of all countries and that these areas shall be the province of all humankind.

11. See U.N. Convention on the Law of the Sea, supra note 4, at Articles, 136, 137, 140.

12. See Protocol on Environmental Protection to the Antarctic Treaty, June 21, 1991, 30 *I.L.M.* 1461 (1991) (not yet in force).