Environmental law: concepts and issues

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Law refers to a body of rules accepted as binding on the members of a given society. Sophisticated legal systems have existed since early times, and include the Code of Hammurabi in Babylonia in the eighteenth century B.C. and the laws of Manu in India (200 B.C.). In modern societies law is the primary instrument through which policies are implemented; it can express minimum standards of morality or reflect the aspirations and goals of a society. Law reflects a society’s values and adapts as they change, while at the same time serving as an important instrument that allows such changes to occur in an orderly fashion.

A diversity of legal traditions coexist in the world today. The common law tradition evolved from judge-made law in medieval England, and is now used by most of the former British possessions, including the United States. Another tradition, based on civil law, is characterized by the enactment of “codes” that integrate and organize systematically all legal rules pertaining to a particular subject. This tradition has its roots in Roman law, was revitalized by the enactment in France of the Napoleonic Code in 1804, and is now used in most countries in Western Europe and Latin America, as well as in some Asian countries, such as Japan. Other legal traditions are based on religious beliefs, such as Jewish, Hindu, Muslim, and Canon law.

Sources of law vary among different legal traditions. Usually, however, they include judicial decisions rendered by courts and tribunals. Another important source is the body of statutes or acts that are adopted by the state; or in democracies, by an elected legislature. These statutes and acts are, in turn, implemented by detailed regulations promulgated by the national administration. Additional sources of law include custom, general principles of law, and legal writing by scholars. The science of law is divided into different branches. The basic branches are contract, tort, property, criminal, administrative, and constitutional law. Others include admiralty, corporate, intellectual property, and environmental law.

**Domestic Environmental Law**

Domestic, or national, law refers to the legal system applicable to a defined territory over which a sovereign power has jurisdiction. International law, on the other hand, regulates the conduct of states and other international actors. Over the years domestic and international systems of law have evolved in parallel. In certain fields and re-
regions of the world, international law has shaped and significantly contributed to the development of domestic environmental law. Yet international environmental law also reflects domestic experiences considered successful by the community of nations. The result is a complex relationship in which the two levels of environmental law mutually contribute to and reinforce each other. This section deals with domestic environmental law; the next section addresses international environmental law.

Early Developments

Environmental law is a relatively new field; other branches of law have historically been used to remedy environmental problems. In the common law system, tort law—which provides remedies for harm caused by one individual to another—provided the necessary legal foundation in early cases. Nuisance actions were the most popular, because they allow a successful claimant not only to receive compensation, but also a court order to abate the nuisance, such as a smell or smoke. In the civil law system claimants invoked tort and property law in much the same way. Historically, however, tort law, based as it is on the protection of individual rights and the need to prove specific injury, has not been a significant means of preventing environmental degradation.

The inadequacy of tort and property law convinced governments, including local authorities, to adopt measures to tackle the most pressing environmental problems. There is some debate regarding the true nature of the first local ordinances regulating odors, smoke, and wastewater. Some scholars argue that they are early environmental statutes, while others see them simply as health-based policies having the effect of regulating environmental problems. Most of these early measures were, in fact, enacted after sporadic crises that endangered public health.

Modern Environmental Law

Since the 1970s environmental law has experienced an unprecedented growth in many countries. This was made possible through the enactment of new statutes and regulations that provide for higher standards of environmental protection. The level of government that has enacted these instruments varies from one country to another. In federal states such as Canada, jurisdiction over the environment is shared between the provincial and federal governments.

In the United States the federal government has adopted most of the important environmental statutes, but their implementation is delegated to the states through a complex system of incentives and responsibilities. The European Union (EU) has a developed system of environmental law, the legal basis for which is now to be found in the 1992 Maastricht Treaty on European Union. Although implementation is the responsibility of individual EU member states, European law permits individuals, as well as other member states and the European Commission, to pursue actions for breach of these rules before the European Court of Justice in Luxembourg.

Most countries have created institutions to handle environmental matters and given them varying degrees of independence, power, and jurisdiction. The primary function of such institutions is to coordinate domestic efforts aimed at protecting the environment. This normally involves statute and regulation development, environmental law enforcement, integration of environmental concerns in governmental decisionmaking, and general environmental education. The nature of the institutions also differs greatly from one country to another; there is no ideal arrangement. Many countries have created an independent environment ministry or have established a specialized Agency, such as the U.S. Environmental Protection Agency, which was created by an executive order and reports directly to the President. Some countries, such as the U.K., have both. Another approach, adopted widely in Latin America, is the creation of an environmental commission that groups together representatives of many other ministries and departments.

Organization of Environmental Statutes

Environmental statutes have traditionally been drafted and organized around important themes such as nature conservation and protection of the principal natural media: air, water, and soil. This allows the elaboration of rules of limited application that are easier to manage and enforce, but may fail to acknowledge the importance of an holistic approach and to deal with important
natural relationships, such as the effects of air pollution on water quality. Other countries have adopted different approaches. New Zealand has a seminal 1991 Resource Management Act, which integrates all sectors and relevant activities, while Canada has consolidated five of its main environmental statutes into one single act of general application. A similar technique is also used in other countries, such as Chile, that have adopted environmental framework laws, under which sectoral laws can be promulgated in an integrated way.

**Legislative Techniques**

Despite the particular organization of a country's environmental laws, a law-making body can resort to a number of legislative techniques to attain its policy objectives.

**Prior authorization.** A general prior authorization requirement prohibits any person from engaging in any activity that could harm the environment without prior permission. This essentially establishes a permit or license system, whereby any activity constituting a potential source of pollution requires the permission of a central authority. This technique can be adapted to serve different policy goals. The scope of the permitting system can be broad, to cover almost any component of the biosphere, or limited, to regulate only certain types of activities.

**Environmental standards.** Environmental standards are mostly “command and control” measures by which a central authority mandates specific requirements to be followed by the regulated community. As such, commentators distinguish them from “economic instruments,” which rely on market-based approaches and will be examined below.

The objective of standards is to prescribe specific quantitative and qualitative limits to be followed by the regulated community. They may take at least five different forms. First, health standards are normally based on risk assessment analysis that identifies safe tolerance levels. These are used to control pesticides and other similar substances, and may be enacted without taking into account the compliance costs for the regulated community. Second, ambient environmental standards are used widely in the control of water and air pollution. These standards prescribe specific limits on the concentration of certain designated pollutants that will be tolerated, for example, in the ambient air or water. They may be used for the control of non-point or diffuse pollution sources, such as the nitrate content of run-off from agricultural land. Compliance with such standards may require major changes of agricultural or commercial practices. Third, emission and discharge standards are also used to combat air and water pollution. Instead of specifying limits applicable to the ecosystem, such standards place limits on the composition of the actual emissions or discharge by a specific source.

Two further forms of standards relate to technology. The most commonly used standard is technology-based. A statute may prescribe the use of the “best available technology.” Through cost-benefit analysis the environmental agency will then specify for each class of industry the specific technology that it considers to be the “best available,” and which is therefore mandated. Such standards can be upgraded relatively easily. More progressive are “technology forcing” standards, which cannot be met by the regulated community under the current state of technology. The intention, however, is that the obligation to meet this type of standard will stimulate and “force” technological innovation. This technique has been used in the United States to regulate motor vehicle emissions.

**Liability.** Liability refers to the condition of being actually or potentially subject to a legal obligation. Under civil liability, individual liability may be due to negligence, that is, if the individual’s conduct fell below the objective standard of a reasonable person. Criminal liability is more serious, and requires proof beyond reasonable doubt of an unlawful act and specific intent. Strict liability is an intermediary concept that is commonly used in environmental laws. It relieves the state of the obligation to prove that the unlawful act resulted from negligence (civil liability) or that the defendant’s conduct was intentional (criminal liability). In other words, the state need only prove that the particular defendant committed an unlawful act; for example, discharging wastewater. Another important liability concept consists of joint and several liability, according to which violators will be held liable together and individually. In this case
governments can sue both violators together or either of them individually to recover, for example, the cost of clean-up. This technique is very useful when it can be proven that each defendant contributed to an unlawful activity, but the exact contribution of each is difficult to demonstrate, and sometimes the injury is simply indivisible.

Retroactive liability is the hallmark of modern soil statutes and constitutes an exception to general principles of law. Under these principles no one should be held liable for the acts of another or for actions that were lawful when they were taken. Many governments have invoked this exception as a solution to the contamination of land by hazardous wastes. In urban areas land contamination often results from decades of intensive industrialization that has occurred without any meaningful pre-existing environmental standards. Under some soil statutes current and past owners of contaminated land may be held liable for clean-up costs, even if they have not personally contributed to the contamination. Under certain circumstances operators, transporters, and, to a limited extent, lenders can also be held liable. Retroactive liability is still controversial and has raised some problems. It has important economic consequences, as the value of such land may drop precipitously in cases where clean-up costs exceed the property's value. In the long run, retroactive liability can also result in new investments going only to pristine "greenfield" sites, to avoid contaminated areas that are often situated in disadvantaged communities. Despite these difficulties the harshness of the liability provision has, in some countries, coerced industries into better environmental behavior and substantially minimized major health risks.

Environmental impact assessment. Among modern environmental statutes environmental impact assessment (EIA) laws crystallize a preventive approach to environmental protection, because they integrate environmental considerations in decisionmaking processes. Generally, EIA laws require the preparation of an environmental impact assessment for any proposed development activity, to review and assess its environmental impacts. The requirement can be applicable to a broad array of actions, and may include issuance of a permit or prior authorization, the funding of a project, and the adoption of a new statute or policy. The first step under EIA laws (known as screening) is to determine whether or not the proposed activity is likely to cause environmental impacts beyond a certain threshold. If such a determination is positive, the proposor must proceed with the preparation of a formal assessment. Depending on the nature of the probable impacts, the general public may be notified and public consultations held. The environmental assessment may be required to identify appropriate mitigation measures, or alternatives to the proposed action, that minimize environmental impacts. The key issue is whether EIA statutes oblige the proposor to implement the mitigation measures and alternatives previously identified. Without such a mitigation requirement, EIA laws may render decisionmaking more transparent, but they do not provide effective safeguards to protect the environment.

Enforcement of Environmental Law

Enforcing environmental law is critical to ensuring that the regulated community complies with the policies embodied in a statute. The goals of a good enforcement program are that a government: (a) achieve general environmental compliance through deterrence, (b) identify environmental violators efficiently, and (c) prosecute them diligently. Compliance can be achieved through general education and outreach to the regulated community, backed by effective prosecution procedures. In addition government bodies may conduct inspection activities periodically or on the basis of probable cause. In some countries a regulated industry is obliged to make its monitoring data publicly available. This information allows nongovernmental organizations (NGOs) to play an important role in identifying violators.

Governments, through their administrative agencies, are normally responsible for prosecuting violations of environmental law. In some countries individuals or NGOs can also sue violators and recover a share of the awarded penalty as a reward for their initiative, through procedures known as citizen suits or public interest actions. In addition national constitutions or environmental statutes may protect the right of an individual to a clean environment. In In-
dia, for example, such provisions have allowed the courts to take a highly proactive role in environmental protection.

**New Trends in Environmental Law**

Two new trends are currently shaping environmental legislation. The first is integrated pollution control (IPC), which allows for the regulation of an ecosystem as a whole, instead of approaching it on a sector-by-sector basis. This mechanism specifically seeks to avoid the transfer of pollution from one medium (such as water) to another (such as air), and helps in controlling pollution from non-point or diffuse sources. This approach was pioneered in the U.K., and is now being used in the E.U.

The second trend is the use of economic instruments that complement command and control measures. Under this approach, the government sets out targets and allows members of the regulated community to allocate among themselves the burden of compliance. Theoretically, if the price of noncompliance is set at an appropriate level, the desired abatement of pollution will be achieved. The advantage is that sources with lower compliance costs will over-comply and receive economic benefits from those with higher compliance costs. The result is the attainment of pollution abatement at a lower net cost to society, compared to strict command and control measures. Other economic instruments include the use of taxes, environmental auditing, eco-labelling (to reassure consumers that a product meets certain environmental standards), and the reduction of subsidies that allow the regulated community to play a role in shaping new practices.

**International Law**

Modern international law has its roots in the public law of Europe in the 16th and 17th centuries—law that was created to govern the diplomatic, commercial, military, and other relations of the society of Christian States. With the growing penetration of Europe into Asia in the late 18th and early 19th centuries, other subjects were included in the community of states, but it was only with the formation of the League of Nations in 1920, in which any state could be a member, that the international system began to aspire to be truly global.

**Doctrinal Foundations of International Law**

International law rests on the doctrine of sovereignty and equality of states. This doctrine enshrines the principle that national states are sovereign and have equal rights and duties as members of the international community, notwithstanding differences of an economic, social, or political nature. This fundamental feature of international law has created systemic limitations—the absence of an established central legislative authority, comparable to a nation system and of a compulsory, or even widely used, judicial system, often coupled with the absence of effective enforcement machinery for breaches of international law. It is not surprising, then, that even after a few centuries of the existence of international law, many still ask what has been described as "the standard sherry party question:" is international law really law? Despite its systemic limitations, international law does exist. States make it and they follow it, and like most other laws, on occasion, they break it. Certain breaches are spectacular, overshadowing the general, everyday pattern of compliance.

**Sources of International Law**

The international community, in the face of the rudimentary character of international law-making institutions, has developed its own system of creating norms and making international laws. These are basically twofold: treaties and customary international law. Treaties can only be binding on those that consent to them; they are solemn binding agreements between subjects of the international legal order, principally states. They originate in a framework of international negotiation over matters of common interest, and result in an agreement, in the form of a text, that usually reflects mutual advantage. Once the text is agreed upon (and at that stage often signed) the process of ratification commences. This is the process by which the parties ensure, by their various constitutional means, that when the treaty comes into force, the legal, financial, and administrative mechanisms by which the parties will be able to honor their new obligations, are in
place. Only after these national measures have been put in place will the state be in a position to notify the Depository (the state or institution formally holding the list of parties) that it wishes to be bound by the treaty. This is the act of ratification. Once a treaty has received the agreed upon number of ratifications, it will then come into force. This is not an easy process. Pressures of government time, changing priorities, or simple second thoughts, can cause dramatic delays. The larger the enterprise, the more apparently intractable the problems often are. For example, on November 16, 1994, the Law of the Sea Convention signed in Montego Bay, Jamaica, in December 1982 finally came into force. It had taken 12 years and considerable legal ingenuity in the negotiation of an amending Agreement, for this major international legislative act to receive the 60 ratifications it required to enter into force.

International customary law is defined by the Statute of the International Court of Justice as “general practice accepted as law” by States. In simple terms it is something that states do because they regard themselves as legally obliged to do it.

Treaties and custom constitute hard law, law that nation states are obliged to follow under pain of sanction from the international legal system and community. Another category of law, in contrast, is termed soft law, and is comprised of non-binding instruments that lay down guidelines for future action, or through which states commit themselves politically to meeting certain objectives. Soft law is largely based on international diplomacy and customs, dependent on moral suasion or fear of diplomatic retribution. The 1972 Stockholm Declaration and the 1992 Rio Declaration, which embody a series of widely revered environmental principles, constitute good examples of soft law, although a number of those principles may be said to have crystallized into “harder” obligations representing customary law. Subsidiary sources of international law also exist, such as doctrine, judicial decisions, general assembly resolutions, and opinions of international jurists.

Development of International Environmental Law

International environmental law refers to the body of international law relevant to environmental issues. While the status of international environmental law as a discipline, in and of itself, is disputed by a few international scholars who believe that no autonomous “international law” exists apart from the general international law, it appears well established that environmental perspectives and concerns have stimulated and catalyzed international legal development. The growth of international environmental law is premised on the globalization of environmental problems and concerns, attributable to two crucially interrelated factors: ecological and economic interdependence.

Huge conceptual leaps have been made in international environmental law in the latter quarter of the twentieth century. Environmental problems have progressed from being tackled within a bilateral, coexistence framework to a multilateral, cooperation framework. Further, international environmental law has traversed the path from being merely reactive, such as in the negotiation of treaties to address the known threats of marine oil pollution, to being proactive, such as in the case of the U.N. Framework Convention on Climate Change (UNFCCC), which is an anticipatory response to the possibility of future anthropogenic global climate change.

The development of international environmental law can be traced through two main phases: from 1972–1992, which was the period of burgeoning international environmental consciousness surrounding and following the U.N. Conference on the Human Environment in Stockholm in 1972, and from 1992 onwards. This latter period, initiated by the negotiations leading up to the 1992 U.N. Conference on Environment and Development (UNCED) in Rio de Janeiro, is distinguished by concerns for sustainable development and includes the current phase of experimentation with economic, market-based instruments to achieve environmental compliance.

From Stockholm to Rio (1972–1992). The 1972 Stockholm Conference served as a catalyst for several environmental initiatives. It resulted in a Declaration containing a series of normative environmental principles, a 109-point Environmental Action Plan, and a Resolution recommending institutional and financial implementation by the United Nations. The result of these recommendations was the cre-
ation of the United Nations Environment Programme (UNEP), established by U.N. General Assembly Resolution and based in Nairobi. UNEP plays an active role in convening and organizing meetings to negotiate global environmental treaties. The Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, signed in Basel, Switzerland March 22, 1989, is a case in point. The Basel Convention is built around two basic principles: proper waste management and prior informed consent. UNEP was also directly responsible for the development of the important Regional Seas Program, which has resulted in a network of regional framework conventions protecting the marine environment, each with protocols developed to meet the specific requirements of the region.

This era also witnessed the birth of several other international environmental treaties. Of particular significance is the 1985 Vienna Convention for the Protection of the Ozone Layer. The very real and apparently imminent threat of depletion of the ozone layer by commercially produced chemicals, principally chlorofluorocarbons (CFCs), prompted the convening of a conference in 1985 to negotiate the Vienna Convention. The format chosen was a framework convention: general obligations and institutional framework were laid down by the Treaty, to be made more specific in the future by the negotiation of detailed protocols (or subtreaties open to the parties to the main Convention). The discovery of the ozone hole over Antarctica led to intense intergovernmental negotiations and resulted in the Montreal Protocol on substances that deplete the Ozone Layer in 1987. The Protocol called for a freeze on the production and consumption of CFCs and halons at 1986 levels, followed by a 50 percent reduction in CFC use by industrialized countries over a ten-year period. Developing countries were allowed to increase their CFC consumption for a period of ten years. The Protocol was deliberately designed as a flexible and dynamic instrument—countries were allowed to select the most economic mix of reductions, with incentives to reduce the most harmful chemicals.

A follow-up to the Stockholm Conference was held in 1982 in Nairobi, which spurred the U.N. to set up the World Commission on Environment and Development, chaired by Gro Harlem Brundtland, then Prime Minister of Norway. Its 1987 Report "Our Common Future" placed the concept of sustainable development into the realm of international environmental law. At the suggestion of the Commission, preparations began for the Rio Summit, officially the Conference on Environment and Development, thus marking the end of the era of emphasis on the "human environment" and the beginning of the era of emphasis on "environment and development."

Rio and Beyond. The UNCED conference, held 20 years after the Stockholm Conference, was popularly perceived as an attempt at environmental planning on a grand scale. In addition to a tremendous surge in environmental consciousness, the Rio Summit resulted in:

- Agenda 21, an action plan for the next ten years and into the 21st Century
- The Rio Declaration on the Environment and Development
- The 1992 United Nations Framework Convention on Climate Change, which was to provide a framework for the negotiation of detailed protocols on further issues, such as controls on the emissions of greenhouse gases, particularly carbon dioxide and deforestation
- The 1992 Convention on Biological Diversity, aimed at arresting the alarming rate at which species were disappearing through pollution and habitat destruction
- The Non-Legally Binding Authoritative Statement on Forests.

Despite the obvious significance of these environmental initiatives, perhaps the most enduring legacy of the Rio Summit lies in its contribution to the development of a framework of international environmental law principles. If indeed the maturity of international environmental law is to be assessed by the development of "discrete, discipline-specific" principles, then the Rio Declaration heralded the coming of age of international environmental law.

Principles of International Environmental Law

Several principles of international environmental policy, some first enunciated in the Stockholm Declaration, were crystallized through the Rio process. Among them, were the principles of precaution, polluter-pays, sustainable development,
common but differentiated responsibility, and environmental-impact assessment. Some of these concepts, such as the polluter-pays and environmental-impact assessment, have their roots in domestic environmental law. Environmental-impact assessment (EIA), for instance, was first established in the domestic law of the United States under the 1972 National Environment Protection Act. Other principles, such as that of common but differentiated responsibility, are products of international thought and action. International lawyers still dispute whether any or all of these concepts remain policy principles or have hardened into binding principles of customary international law.

Precautionary principle. Enshrined in Principle 15 of the Rio Declaration, the precautionary principle postulates that in cases when serious harm is threatened, positive action to protect the environment should not be delayed until irrefutable scientific proof of harm is available. It represents an important tool for decisionmaking in uncertainty, which a significant body of opinion argues is now a legal principle. In its strongest formulations this principle can be seen to require a reversal of the normal burden of proof, so that a potential actor would need to prove that a proposed activity will not cause harm before it can be sanctioned. It has been endorsed by virtually all recent environmental treaties, including regional treaties such as the 1992 Maastricht Treaty on European Union, the 1992 Paris Convention on the North East Atlantic, the Helsinki Convention on the Baltic, and global environmental treaties such as the UNFCCC, the Convention on Biological Diversity, and the 1995 United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks.

Environmental-impact assessment, public participation, and access to information. Related to the precautionary principle is the concept of "environmental-impact assessment," which is based on the premise that rational planning constitutes an essential tool for reconciling development and environment. EIA provides an important modality for the implementation of the precautionary principle. Though first debated at Stockholm, the concept of EIA found a place only in the Rio Declaration. Agenda 21 calls on countries to assess the suitability of infrastructure in human settlements, ensure that relevant decisions are preceded by EIAs, take into account the costs of any ecological consequences and integrate environmental considerations in decisionmaking at all levels and all ministries. The EIA requirement is also embodied in several international instruments, notably the 1991 U.N. Economic Commission for Europe (ECE) Convention on Environmental Impact Assessment in a Transboundary Context, the 1992 Biodiversity Convention, and the 1991 World Bank Operational Directive 4.01.10

The value and legitimacy of the EIA process has, in recent times, been strengthened by the evolution of the right of access to information on the environment and the right of public participation. The Rio Declaration recognizes in Principle 10 that environmental issues are best handled with the participation of all concerned citizens. This notion has recently been validated in the U.N. ECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, signed on June 25, 1998, by 37 countries. The Convention recognizes that "every person has the right to live in an environment adequate to his or her health and well-being, and the duty...to protect and improve the environment" and that "citizens must have access to information, be entitled to participate in decisionmaking and have access to justice in environmental matters." So that people can fulfill these rights and responsibilities, the Convention obligates signatory states to, among other provisions: (a) make environmental information available "as soon as possible," and "without an interest having to be stated" by the requester; (b) take specific measures to ensure complete public participation in decisions of specific activities, plans, programs, policies, and other regulations related to the environment; and (c) ensure that any person who feels that the state has not met specific environmental commitments has access to a review procedure before a court. The value of such participation is enhanced by the right of access to information, a right that has found its way into various international instruments. European Directive 90/313 on Access to Environmental Information assures the public free access to and dissemination of all environmental information held by public authorities throughout the European Union.
Common but differentiated responsibility. Articulated as Principle 7 of the Rio Declaration, this principle requires states to cooperate in a spirit of global partnership to protect the environment. Yet, because states have contributed differently to global environmental problems, the principle recognizes that they should have common, but differentiated, responsibilities. A good example is Article 4 of the 1992 UNFCCC, which places an obligation on developed countries to take the lead in meeting the required reductions in greenhouse gas emissions. Developing country parties, however, are only obliged to implement these commitments to the extent that developed countries have met their commitments to provide financial resources and to transfer technology.

As a general principle, sure to govern further negotiations on the UNFCCC, the principle of common but differentiated responsibility is highly significant. The structure of the 1997 UNFCCC Kyoto Protocol mirrors the philosophy of common but differentiated responsibility. Developed countries are committed to reducing their overall emissions of greenhouse gases by at least 5 percent below 1990 levels between 2008 and 2012. Developing nations have no such commitments. Although every nation state has the responsibility to reduce global greenhouse gas emissions, only Organisation for Economic Co-Operation and Development (OECD) and economies-in-transition countries are required to make specific, quantified emission limitations. The limitations, even among these countries, vary to take into account differing domestic circumstances. Developing countries are provided with an opportunity to participate through the Clean Development Mechanism, which allows countries to cooperate on specific projects to reduce greenhouse gas emissions.

Polluter-Pays. This requires that the costs of pollution be borne by the party responsible. The practical implications of this principle lie in its allocation of economic obligations in environmentally damaging activities. This seemingly intuitive principle has not received the kind of broad support that the precautionary principle has in recent times. Principle 16 of the Rio Declaration, for instance, supports the “internalization of environmental costs” taking into account the polluter-pays principle, but only “with due regard to the public interest and without distorting international trade and investment.” An example of an international instrument that refers expressly to the polluter-pays principle is the 1972 OECD Council recommendation on Guiding Principles Concerning the International Economic Aspects of Environmental Policies, which endorses the polluter-pays principle to allocate costs of pollution prevention and control measures, so as to encourage rational use of environmental resources.

Sustainable development. Defined by the 1987 Brundtland Committee Report as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs,” this principle is at the heart of many environmental initiatives. It recognizes the need for intergenerational equity, sustainable and equitable use of resources held in common by the current generation, and the integration of environmental considerations into economic and other development initiatives. This principle is also reflected in the Framework Convention on Climate Change in Article 3(4), among others. Although specifically recognized as a legal principle in the separate opinion of Judge Weeramantry in the 1997 Gabcikovo-Nagymaros Case of the International Court of Justice (ICJ), the very breadth of the concept means that considerable controversy still surrounds this argument.

Compliance with International Environmental Law and Its Enforcement

The term “enforcement” in the context of international environmental law refers to the measures taken to ensure the fulfillment of international legal obligations, or to obtain a ruling by an appropriate international body that obligations are not being fulfilled. Initially, only the general principles of state responsibility and dispute settlement guided efforts at enforcement of international environmental law. As the principal subjects of international law, states assume the obligation to enforce international environmental law. Enforcement by states arises primarily in situations of trans-boundary environmental harm and involves a determination by an international body, such as the ICJ in The Hague. The ICJ, the principal judicial organ of the United Nations, rules on questions of international law,
including—potentially—issues of international environmental law. In fact, however, its contribution to the development of international environmental law principles has been very slight.

A range of techniques and a panoply of international actors are today involved in the enforcement of international law. Enforcement includes a wide array of forms including diffusion of information, monitoring, verification, and inspection. For example, it is increasingly common for international law agreements to mandate their Conferences of Parties, the permanent plenary body of environmental agreements, to conduct implementation reviews. This review mechanism monitors national compliance with the obligations undertaken under the environmental agreement. Such a review is based primarily on national self-reporting, although some conventions provide for independent means of gathering information.

Other conventions may use incentives or disincentives; that is, adopt the "carrot and stick" approach, to obtain participation and ensure compliance. For example, under the Montreal Protocol trade restrictions can be imposed on imports to and exports from non-parties to the Protocol, and a fund has been created to assist countries in complying with their obligations under the Protocol, thereby encouraging participation. Recently negotiated conventions utilize creative, dynamic, and flexible means to obtain environmental compliance. The UNFCCC Kyoto Protocol provides a number of "flexibility mechanisms" (including cooperative implementation, emissions trading, and technology transfer) to assist parties to meet their commitments.

Among the concerned actors are also international organizations and NGOs. International organizations have a small, but useful, role to play in the enforcement of international environmental obligations. States have traditionally been reluctant to endow international organizations with enforcement powers, but some recent instruments do provide certain bodies with limited enforcement authorities. For instance the 1982 United Nations Convention on the Law of the Sea provides the International Sea Bed Authority with the power to supervise implementation of parts of the Convention, call attention of the Assembly to cases of noncompliance, and institute proceedings for noncompliance. NGOs often play the role of self-appointed "watchdogs" over national governments, and can thus help in the enforcement of international law through political means or public-interest litigation, to ensure that governments maintain their international environmental commitments. The individual as an actor in the international arena also deserves mention. With the increasing emphasis on public participation and provision of access to environmental information in international discourse, the individual's role in ensuring international environmental compliance is becoming increasingly relevant.

Notes

[These notes have been left in legal format. See editor's note, p. 174—ED.]


2. If the parties wish, it is possible for treaties to come into force immediately upon signature. Similarly, states that have not participated in the negotiation process or have not signed the treaty may accede.


6. Even while recognizing the sovereign right of all nations to exploit their resources pursuant to their own developmental needs, it provides that states have a responsibility to ensure that the activities under their jurisdiction and control do not cause damage to the environment of other states or of areas beyond their national jurisdiction. Principle 21, Stockholm Declaration.


8. In addition a number of other instruments were negotiated as indirect outcomes of Rio, including the 1994 U.N. Convention to Combat Desertification, the 1995 Washington Declaration on Protection of the Marine Environment from Land-based Activities, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and the 1995 U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks.
10. As part of an internal conversion process, this was reissued, in substantially the same form, as World Bank Operation Policy 4.01, in September 1998.
11. See also Article 20(2) of the Convention on Biological Diversity, under which developed countries are required to provide the funds for developing countries to meet the obligations of the Convention.