

Just as in domestic law when we articulate broad policy reasons that guide judges in reaching results in particular cases, so too international law contains "general principles" that function in the same way with regard to the interpretation of customary and treaty norms. Some of the most discussed "general principles" in the field of international environmental law include "Principle 21," the "precautionary principle," the ideas of "common heritage" and "common concern," and a more controversial notion entitled "sustainable development." These, and some evolving principles, are examined in the present Chapter.

A. Principle 21 of the Stockholm Declaration: A Drafting History¹

The conference on the Human Environment, held at Stockholm from June 5 to 16, 1972, was in many respects the most successful international conference held in recent years. In a two-week period it adopted not only a basic Declaration and a detailed resolution on institutional and financial arrangements, but also 109 recommendations comprising an ambitious action plan.² The Declaration contains a set of "common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment."

When Sweden suggested in 1968 the convening of an international conference on the problems of human environment, the main objectives were to "create a basis for comprehensive consideration within the United Nations of the problems of human environment," and to "focus the attention of Governments and public opinion in various countries on the importance of the problem." These objectives were endorsed by the Economic and Social Council and the General Assembly in their resolutions relating to the convening of the conference.

The Preparatory Committee for the Conference had before it a recommendation by the Secretary-General that it draw up a declaration on the human environment dealing with "rights and obligations of citizens and Governments with regard to the preservation and improvement of the human environment." The Committee agreed that the Declaration should be "inspirational and concise"; it should be "readily understandable by the general public so that it could serve as an effective instrument for education and stimulate public awareness and community participation in action for the protection of the environment." While most members of the Committee felt that the Declaration should contain "universally recognized fundamental principles recommended for action by individuals, States and the international community," there was some divergence of views on the question "to what extent the Declaration should also attempt to lay down specific guidelines for action." The view prevailed that the Declaration should merely outline "broad goals and objectives," and that a detailed action program should be embodied in other documents to be adopted by the Conference.

Principle 21

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

Comment. This principle attempts to balance the right of a state to control matters within its territory with its responsibility to ensure that what is done within that territory does not cause damage outside.

The right of a state to control the exploitation of resources within its territory is one of the basic components of state sovereignty. This right was recognized explicitly by several resolutions of the General Assembly. Thus in 1952 the General Assembly adopted a resolution pointing out that "the right of peoples freely to use and exploit their natural wealth and resources is inherent in their sovereignty and is in accordance with the Purposes and Principles of the Charter of the United Nations. In 1954 the General Assembly requested the Commission on Human Rights to include among its recommendations concerning international respect for the right of peoples and nations to self-determination one concerning their "permanent sovereignty over their natural wealth and resources, having due regard to the rights and duties of States under international law and to the importance of encouraging international co-operation in the economic development of under-developed countries. The Commission accordingly included in article 1 of both draft Covenants on Human Rights the following paragraph:

The right of peoples to self-determination shall also include permanent sovereignty over their natural wealth and resources. In no case may a people be deprived of its own means of subsistence on the grounds of any rights that may be claimed by other States.

The General Assembly later rewrote this paragraph, and the final text reads:

All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and

international law. In no case may a people be deprived of its own means of subsistence.

In the meantime, the General Assembly requested in 1958 a survey of the status of the permanent sovereignty of peoples and nations over their natural wealth and resources, with due regard to the rights and duties of States under international law and to the importance of encouraging international co-operation in the economic development of under-developed countries"; and on the basis of that study the General Assembly adopted in 1962 a detailed resolution on the subject, declaring, *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 State concerned.

This resolution was reaffirmed in 1966, at the same time that the Covenants on Human Rights were approved; the General Assembly also confirmed that "the exploitation of natural resources in each country shall always be conducted in accordance with its national laws and regulations."

In the light of this history, the Secretary-General suggested in his 1970 questionnaire that the Declaration on Human Environments include the "principle of national sovereignty over natural resources." This suggestion was endorsed in several replies to the questionnaire. Canada suggested the following six principles:

1. Every State has a sovereignty and inalienable right to its environment including its land, air and water, and to dispose of its natural resources.

2. Every State has a right to environmental integrity corresponding to its right to territorial integrity.

3. Every State has the right to take all necessary and appropriate measures to protect its environmental integrity.

4. Every State has a duty to conduct its activities with due regard to their efforts upon the environment of other States.

5. No State may use or permit the use of its territory in such a manner as to cause damage to the environment of other States or to the environment of areas beyond the limits of national jurisdiction.

6. No State may use areas beyond the limits of national jurisdiction in such a manner as to cause damage to the environment of such areas or to the environment of other States.

The Working Group of the Preparatory Committee included in the preamble to its first draft two parallel statements:

Each State has inalienable sovereignty over its natural resources; Each State has the responsibility to exercise its sovereignty over its natural resources in a manner compatible with the need to ensure the preservation and enhancement of the human environment.

Some members of the Working Group would have preferred to merge these two paragraphs in order to place the concept of sovereignty in its environmental context. Others argued that the exercise of sovereignty cannot be subject to qualification or limitation and urged the deletion of reference to the need to preserve the environment in the second paragraph. It was also suggested that, in order to follow more closely the resolutions of the General Assembly on the subject, a reference should be made to the right of a state to freely exploit its natural resource.

A more radical proposal would have included in the Preamble either a statement that "[e]ach State has inalienable sovereignty over its environment," or, by merging the old and the new text: "Each State has inalienable sovereignty over its environment and over its resources." The same delegation (probably Canada) also proposed the insertion in the draft Declaration of a new principle:

Each State has a sovereign right to its environment and to dispose of its natural resources and a right to take all necessary and appropriate measures to protect its environmental integrity.

In support of this proposal, it was argued that as a first step in the development of international environmental law it is necessary to make clear the principle that "sovereignty includes the right to environmental integrity and the right to maintain that integrity in a wholesome and unimpaired condition." Another delegation supported this proposal, subject to the condition that any such right can be exercised only in accordance with the Charter of the United Nations and the general principles of international law. Several other delegations opposed these proposals, however. They observed that, unlike the concept of sovereignty, the concept of the human environment did not have any clearly established limits; consequently, the proposed new principle could be interpreted as "implying that each State was left free to define the extent of its environment" to the prejudice of the established principles of international law. One must note, however, that the proposed amendment would have effectively disposed of this objection, since it would have subjected the exercise of the right of a state to protect its environmental integrity to the general principles of international law. The idea of referring to international law was used in another context, however, when the Working Group decided to include among the principles the following Principle 6:

Each State has the responsibility, in accordance with the Charter of the United Nations and consistent with the principles of international law, to conduct its activities so as not to cause damage to the environment of other States, or to the environment of areas beyond the limits of national jurisdiction.

When the matter was reconsidered at the second session of the Working Group, Sweden attempted to move the discussion to a different level by suggesting the following broad principle:

In bringing about economic and social development and adequate conditions for all, states whether acting individually in the exercise of their sovereignty over their natural resources or in concert through international organizations, must use their power to preserve and enhance the human environment and to ensure favorable living and working conditions for all.

In an effort to avoid a direct statement of state responsibility, Sweden also proposed that:

It must be ensured by every state that activities within its jurisdiction or control are conducted so as not to cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.

A more precise formulation of the first of these two principles was suggested by the Netherlands:

Each State, when exercising sovereignty over its natural resources for economic and social development, shall take due account of the effect of its activities on the ecological balance of the biosphere.

An Australian attempt to combine the principles relating to national sovereignty over resources and to the duty of a state not to cause damage beyond its boundaries took the following form:

In conformity with the Charter of the United Nations and the principles of international law, each State should, without prejudice to its sovereign right to exploit its own resources, take effective steps to ensure that present or future activities within its jurisdiction or control cause no damage to the environment of other States or areas beyond the limits of national jurisdiction. It should consult and cooperate with other States as relevant.

The sovereign right of each country to exploit its resources was put in the forefront of the joint proposal by Brazil, Egypt, and Yugoslavia, but was accompanied by recognition that this right is limited by the need to avoid harmful effects on the environment beyond its borders. A later version of this proposal made clear that this right shall be exercised "in consistency with the Charter of the United Nations and the principles of international law. The final version of this proposal, co-sponsored by Costa Rica and Zambia, was accepted by the Working Group, except that the reference to "environmental policies, standards and criteria was shortened to "environmental policies." While no changes were made in this paragraph at Stockholm, the United States made a statement of interpretation claiming that:

[N]othing contained in this principle, or elsewhere in the Declaration, diminishes in any way the obligation of States to prevent environmental damage or gives rise to any right on the part of States to take actions in derogation of the rights of other States or of the community of nations. The statement on the responsibility of States for damage caused to the environment of other States or of areas beyond the limits of national jurisdiction is not in any way a limitation on the above obligation, but an affirmation of existing rules concerning liability in the event of default on the obligation.

The consensus reached in the Working Group of the Preparatory Committee on this principle was so fragile that the Working Group of the Conference not only refused to clarify the text, as suggested by the United States, but also rejected a number of amendments of the kind that it had no trouble in accepting in connection with other principles. Thus it rejected a Brazilian proposal to delete the restrictive reference to the Charter of the United Nations and the principles of international law, as well as another Brazilian proposal to restore an earlier text allowing each state to follow, without any restriction, not only its environmental policies but also its "standards and criteria." The Working Group also refused to make a concession to the group of nine African countries, which wanted to make clear that the sovereign right to exploit resources was accompanied by the right to control them.

The final text does not merely reiterate the generally accepted principle that a state has the sovereign right to exploit its own resources, but gives the blessing of the Charter and of the principles of international law to the right of a state to exploit these resources pursuant to its own environmental policies. While this provision does not go as far as to assert that a state has unlimited sovereignty over its environment, it comes quite close to such an assertion. An over-broad interpretation of this sovereign right would be inconsistent with the rest of the Declaration which emphasizes the fact that no part of the global environment can be separated from the rest and that it has to be preserved and improved for the benefit of all the people of both the present and future generations. No state can claim an absolute right to ruin its environment in order to obtain some transient benefits. It should think not only of the effect on other peoples but also about the future of its own people. It should not ruin the soil of its country in order to get a few extra crops or to sell more wood or pulp. Destruction and depletion of irreplaceable resources are clearly condemned by the Declaration, even when there is no effect abroad, and a state cannot engage in such activities behind the shield of misconceived sovereignty. It would have been better, therefore, if some clearer guideline had been inserted in the first part of Principle 21. It is unfortunate that the Conference did not consider the proposal by the Holy See that in the exploitation of national resources states should follow "a just environmental policy." There is clearly need here for some standard referring to the common good rather than to states' own policies, however inadequate.

The second part of Principle 21 was considered by many so important that they were willing to pay the price of the imperfections of the first part in order to nail down a crucial rule of general importance. The Canadian delegation, for instance, later commented that this principle reflects existing rules of international law, the first element in it stressing the rights of states, "while the second element made it clear that those rights must be limited or balanced by the responsibility to ensure that the exercise of rights did not result in damage to others." This balancing of rights and

responsibility was essential "to reconcile national interests and those of the international community." While the principle of responsibility of one state for damage caused in another is generally recognized, though there have been only a few relevant international decisions on the subject, Principle 21 makes clear that the rule of responsibility applies not only to damage caused to the environment of other states but also to any injury inflicted on the environment of "area beyond the limits of national jurisdiction," such as the high seas or Antarctica. Within the ambit of the principle are not only damage-causing activities within the area under a state's jurisdiction, including its territorial water, but also activities conducted by persons or ships under its "control," wherever they may act. This extension of the principle applies clearly to citizens of a state, to ships flying its flag, and perhaps even to corporations incorporated in its territory. It is more doubtful whether it applies to residents of a state, to ships owned by its nationals but flying other countries' flags, or to foreign subsidiaries controlled by corporations incorporated in the state. Even if broad application of this principle should result in concurrent responsibility of several states, it may be hoped that states would be willing to interpret this provision in a manner which would best ensure an adequate preservation of the human environment.

B. The Precautionary Principle

1. Overcoming The Barrier of Scientific Uncertainty³

The precautionary principle is now an important instrument for providing guidance to states and the international community in the development of international environmental law and policy in the face of scientific uncertainty, and was unanimously endorsed by the Rio Declaration. The emergence of the principle reflects a shift away from the traditional approach which calls on parties to international environmental treaties, to adopt decisions which are based upon "scientific findings" or methods, or are "in the light of knowledge available at the time." Lack of full scientific certainty previously might have meant no action.

That traditional approach to the burden of proof began to shift as early as 1969. The 1969 Oil Pollution Intervention Convention, which allows measures to be taken to prevent grave and imminent danger to coastlines from threat of pollution, requires account to be taken of, inter alia, "the extent and probability of imminent damage if those measures are not taken." The 1985 ASEAN Convention was the first to introduce into the decision-making process the notion of the "reversibility" of environmental damage, requiring parties to prevent changes or minimize risk of changes in the ecosystem considered "which are not reversible over a reasonable time."

The first treaty to use the term was the 1985 Vienna Convention, which was mindful of the "precautionary measures" which had already been taken at the national and international levels. By 1987 the Montreal Protocol had noted the "precautionary measures" to control emission from certain chloroflourocarbons (CFCs) at the national and international levels and by 1990, the amendments to the Montreal Protocol provided that the parties were "determined to protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it." For the first time in a treaty, precautionary measures were expressly stated to be one of the reasons for adopting international measures.

The precautionary approach has now been used in relation to a range of environmental issues. In 1987, the Ministerial Declaration of the Second North Sea Conference accepted that "in order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary." In March 1990, at the Third North Sea Conference, the Ministers pledged to continue to apply the precautionary principle. The 1990 Bergen Ministerial Declaration on Sustainable Development in the ECE Region was the first international act to state the principle as one of general application which was linked to sustainable development. The Declaration stated that:

In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, attack and prevent the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

Since then at least seven international treaties, two of which are of global application on environmental matters of broad concern, have adopted the precautionary principle or its underlying rationale. The 1992 Biodiversity Convention notes that "where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat," and the 1992 Climate Change Convention states that:

[Parties] should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific uncertainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost effective so as to ensure global benefits at the lowest possible cost.

The precautionary principle has also been adopted in the 1991 Bamako Convention, the 1992 UN/ECE Transboundary Watercourses Convention, the 1992 OSPAR Marine Environment Convention, and the 1992 Baltic Sea Convention.

The precautionary principle, or the principle of precautionary action, has now received widespread support by the international community, particularly in relation to the protection of the marine environment and in the instruments adopted at UNCED, as well as in the several months which followed. What does the principle mean, and what status does it have in international law?

There is no uniform understanding of the meaning of the precautionary principle among States and other members of the international community. At the most general level, it has been understood to mean that States will agree to act carefully and with foresight when making decisions which concern activities that may have an adverse impact on the environment. A more generally accepted view is that the principle requires activities and substances which may be harmful to the environment to be regulated, and possibly prohibited, even if no conclusive or overwhelming evidence is available as to the harm or likely harm they may cause to the environment. As the Bergen Ministerial Declaration put it, "lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation."

A more fundamental change would be adopted by an interpretation of the precautionary principle which would shift the burden of proof away from those who are opposing certain activities on environmental grounds and onto those who are carrying out the activities which are the subject of possible regulation. This interpretation would require polluters, and polluting states, to establish that their activities and the discharge of certain substances would not adversely or significantly affect the environment before they were granted the right to release the potentially polluting substances or carry out the proposed activity. This interpretation may also require international regulatory action, as a matter of law, where the scientific evidence suggests that lack of action may result in irreversible harm to the environment.

There is some evidence to suggest that this interpretation is gaining acceptance, even if it cannot yet be considered to be a rule of general application. The European Community's (EC) 1991 Urban Waste Water Directive provides that certain urban waste water discharges may be subjected to less stringent treatment than that established by the Directive providing that, inter alia, "comprehensive studies indicate that such discharges will not adversely affect the environment." The 1992 OSPAR Convention provides that the contracting Parties (France and the United Kingdom) wishing to retain the option of dumping low and intermediate level radioactive wastes at sea will be required to report to the OSPAR Commission on, inter alia, "the results of scientific studies which show that any potential dumping operations would not result in hazards to human health, harm to living resources or marine ecosystems, damage to amenities or interference with other legitimate uses of the sea."

The status of the precautionary principle as a governing rule of international law has been challenged as questionable. In the context of the 1992 Climate Change Convention, the United States sought to limit, probably without success, the effect of the precautionary principle. At a minimum, however, there is sufficient evidence of state practice to justify the conclusion that the principle, as elaborated in the Rio Declaration, reflects a broadly accepted basis for international action, even if the consequence of its application in a given situation remains open to interpretation.

2. Shifting the Burden of Proof⁴

The precautionary principle suggests that behavior should be subject to regulation both before harm is demonstrated and before that activity occurs. The principle therefore suggests that regulation be accompanied by shifting the burden of proving harmlessness to those states that wish to engage in a challenged activity. In a precautionary regime, the "burden of proof" is "shifted" in the same manner as some tort approaches would require shifting the burden of proof.

Shifting the burden of proof to the potential polluter may appear inappropriate. While there are models for this transferral (for example, under some interpretations of the doctrine of *res ipsa loquitur* and in certain negligence regimes), such a shift usually becomes necessary only when there is lack of access to crucial information, thereby making the shift necessary to ensure fairness in the collection of evidence. Forcing a state to justify its actions before they occur is, however, very practical. As in the case of climate change, serious environmental damage may well precede any evidence of damage or proof of causation.

Shifting the burden of proof may also be more efficient. The governing body of a regulatory regime will rarely have the ability and the resources to undertake the scientific testing necessary to investigate practices, or to license all potentially environmentally harmful substances or activities.⁵ A regime which relies on causal certainty before regulation requires the regulatory regime's governing body to subsidize scientific testing in order to prove the damaging effects of an activity which the body has already identified as suspect.

The shift might also prove to be positive reinforcement for the activism which promotes accountability. Watchdog groups that propose and promote standards will more readily see the effectiveness of the standards for which they lobby. This is so because unlike tort standards, under a precautionary regime an illegal activity does not have to occur before the efficacy of the standard is demonstrated.

Also, by characterizing a shift away from traditional mechanisms of proof as a rearrangement of legal principles,

the implication is that an international tort regime preceded the precautionary agreement. However, because of the novelty of international environmental regulation, the preexistence of an articulated standard of care is rare in international environmental law. Because it is not really shifting from anywhere, the burden should more appropriately be considered as initially placed on the potential polluter. Viewing international environmental management as if it were a question of deciding upon whom to first place a burden of proof of harm suggests that there are good reasons to locate the burden of proof on the potential polluter before the act, rather than on the relevant regulatory agency after the act.

Most importantly, forcing a potential polluting state to prove that no harm will ensue from an activity makes it extremely difficult and expensive to engage in that activity. These factors are strong disincentives to engaging in activities which are environmentally harmful.

In the United States, placing the burden of proof on the potential polluter is not a new concept. Environmental impact statements, pioneered by the United States with the passage of the National Environmental Policy Act of 1969, are precautionary devices to the extent that they force the actor to investigate the potential results of the proposed action and to list "any adverse environmental effects which cannot be avoided should the proposal be implemented." Further precedent for shifting the burden of proof exists in certain domestic regulatory regimes, such as pesticide regulation. Under these regulations, the licensing of a new chemical can proceed only after the manufacturer proves that the effects of the pesticide (beyond its effect on the pest, of course) are harmless to the environment.

Drawing analogies between domestic and international regulation may appear implausible because of the many differences between the two. The most conspicuous difference might be the lack of enforcement authority by an international body. Domestic regulation and enforcement mechanisms, where such models of burden shifting are typically found, are based primarily on a theory of state power. The social contract that allows for domestic regulation, and the enforcement that is associated with that ceding of power, does not exist in the international context. However, international law is a creature of constructed obligations. These obligations are essentially contractual norms which states accept as rules for participation in the international community. In other words, they are norms which states follow if the states choose to be part of the international order. If states adopt the precautionary principle, they choose to contract an obligation—a new norm of international law. The value shift which the precautionary principle reflects might herald the willingness of states to sacrifice some autonomy for the sake of environmental protection.

Since the London Declaration, the precautionary principle has stood for the proposition that it is necessary to regulate the emission of potentially harmful substances even before a causal link between the activity and damage has been established by scientific evidence. This formulation, which has been reflected in almost every statement of the precautionary principle after 1987, suggests that environmental regulation should not have to respond to harmful behavior, but should prevent potentially harmful events. By institutionalizing planning, the principle allows standards to be set that promote descriptivity, flexibility, and activism within the context of the management of the natural resource in question.

Historically, environmental harm was regulated through concepts of tort liability.⁶ Tort law bases compensation on the extent of the harm caused, which by definition does not operate until after the damage occurs. The decision to regulate behavior before it is proven to be harmful represents the recognition that waiting for the harm to manifest itself is more costly to society than restricting (or even banning) the behavior. The precautionary principle suggests that because of the irreversible and potentially devastating nature of environmental management failures, tort mechanisms which are merely responses to damage are not appropriate for the protection of some natural resources.

An international tort regime, like a domestic tort regime, would theoretically create economic disincentives and a method of compensation that would regulate and remedy environmentally harmful behavior. Without delving into the enormous question of the viability of an international tort system, the difference between such a system and one based on the precautionary principle must be emphasized.

If living people, as represented by their state governments, are the only subjects of international law, then a convincing argument may be made that tort law is the most effective compensation mechanism for international environmental damage. However, if one accepts that either nature inherently or future generations of humans have a right to a healthful existence, then some precautionary measures are necessary. In practical terms, tort law cannot adequately "compensate" nature or future generations.

Monetary compensation often is ineffective in international environmental management for a number of reasons. First, the difficulty of placing a monetary value on natural resources makes determining a specific, compensable amount difficult. Second, while tort law does in certain instances compensate the irreplaceable, it is not clear that people would be able to empathize with the ultimately tremendous loss that would attach to something as abstract as a vanishing species or a degraded landscape as they would with a wrongful death action, for example. Since no obvious methods exist to value the costs of environmental damage in an easily understandable fashion, the theoretically deterring nature of traditional tort standards may not prove effective in environmental regulation. Even if people could so identify with these costs, they would still have to determine from whom damages would be assessed and to whom

they would be made payable. Hence, a traditional tort scheme may not be able to compensate or adequately value lost natural resources.

Many activities require regulation before the damage becomes apparent. Proof of climatic change, for example, will only be valid after many years of data collection. Given the scope of the potential injury and irreversible consequences, the available information should be given great deference. Similarly, but in a less global context, a recent proposal to dump sewage sludge on the seemingly barren areas of the deep seabed has prompted controversy. Because little is known about the ecology of the region, some scientists are worried that this action would harm the seabed and interconnected ecosystems. While a traditional tort approach would allow dumping until harm is recognized, a precautionary regime would require the dumping state to prove that the dumping was harmless before engaging in that activity.

The establishment of a precautionary regime does not exclude a system of international tort liability. However, the establishment of an international tort scheme would not take the place of a precautionary approach. Due to the extent of the damage that may be involved as well as the inability to describe that damage in a way that deters degradatory behavior, a policy that prevents harm to the environment in the first place is necessary. This does not mean that there is not a role for compensation or amelioration of environmental damage. It only means that tort law may not be able to provide the full range of environmental protection necessitated by modern resource exploitation.

C. Sustainable Development

1. The Link Between Environment and Development⁷

Human progress has always depended on our technical ingenuity and a capacity for cooperative action. These qualities have often been used constructively to achieve development and environmental progress: in air and water pollution control, for example, and in increasing the efficiency of material and energy use. Many countries have increased food production and reduced population growth rates. Some technological advances, particularly in medicine, have been widely shared.

But this is not enough. Failures to manage the environment and to sustain development threaten to overwhelm all countries. Environment and development are not separate challenges; they are inexorably linked. Development cannot subsist upon deteriorating environmental resource base; the environment cannot be protected when growth leaves out of account the costs of environmental destruction. These problems cannot be treated separately by fragmented institutions and policies. They are linked in a complex system of cause and effect.

First, environmental stresses are linked one to another. For example, deforestation, by increasing run-off, accelerates soil erosion and siltation of rivers and lakes. Air pollution and acidification play their part in killing forests and lakes. Such links mean that several different problems must be tackled simultaneously. And success in one area, such as forest protection, can improve chances of success in another area, such as soil conservation.

Second, environmental stresses and patterns of economic development are linked one to another. Thus agricultural policies may lie at the root of the land, water, and forest degradation. Energy policies are associated with the global greenhouse effect, with acidification, and with deforestation for fuelwood in many developing nations. These stresses all threaten economic development. Thus economics and ecology must be completely integrated in decision-making and lawmaking processes not just to protect the environment, but also to protect and promote development. Economy is not just about the production of wealth, and ecology is not just about the protection of nature; they are both equally relevant for improving the lot of humankind.

Third, environmental and economic problems are linked to many social and political factors. For example, the rapid population growth that has so profound an impact on the environment and on development in many regions is driven partly by such factors as the status of women in society and other cultural values. Also, environmental stress and uneven development can increase social tensions. It could be argued that the distribution of power and influence within society lies at the heart of most environment and development challenges. Hence new approaches must involve programmes of social development, particularly to improve the position of women in society, to protect vulnerable groups, and to promote local participation in decision making.

Finally, the systemic features operate not merely within but also between nations. National boundaries have become so porous that traditional distinctions between matters of local, national, and international significance have become blurred. Ecosystems do not respect national boundaries. Water pollution moves through shared rivers, lakes, and seas. The atmosphere carries air pollution over vast distances. Major accidents--particularly those at nuclear reactors or at plants or warehouses containing toxic materials--can have widespread regional effects.

Many environment-economy links also operate globally. For instance, the highly subsidized, incentive-driven agriculture of industrialized market economics generates surpluses that depress prices and erode the viability of the often neglected agriculture of developing countries. Soils and other environmental resources suffer in both systems. Each country may devise national agricultural policies to secure short-term economic and political gains, but no nation alone can devise policies to deal effectively with the financial, economic, and ecological costs of the agricultural and

trade policies of other nations.

In the past, responsibility for environmental matters has been placed in environmental ministries and institutions that often have had little or no control over destruction caused by agricultural, industrial, urban development, forestry, and transportation policies and practices. Society has failed to give the responsibility for preventing environmental damage to the 'sectoral' ministries and agencies whose policies cause it. Thus our environmental management practices have focused largely upon after-the-fact repair of damage: reforestation, reclaiming desert lands, rebuilding urban environments, restoring natural habitats, and rehabilitating wild lands. The ability to anticipate and prevent environmental damage will require that the ecological dimensions of policy be considered at the same time as the economic, trade, energy, agricultural, and other dimensions.

In most countries, environmental policies are directed at the symptoms of harmful growth; these policies have brought progress and rewards and must be continued and strengthened. But that will not be enough. What is required is a new approach in which all nations aim at a type of development that integrates production with resource conservation and enhancement, and that links both to the provision for all of an adequate livelihood base and equitable access to resources. The concept of sustainable development provides a framework for the integration of environment policies and development strategies--the term 'development' being used here in its broadest sense. The word is often taken to refer to the processes of economic and social change in the Third World. But the integration of environment and development is required in all countries, rich and poor. The pursuit of sustainable development requires changes in the domestic and international policies of every nation.

Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. Far from requiring the cessation of economic growth, it recognizes that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits.

Economic growth always brings risk of environmental damage, as it puts increased pressure on environmental resources. But policy makers guided by the concept of sustainable development will necessarily work to assure that growing economies remain firmly attached to their ecological roots and that these roots are protected and nurtured so that they may support growth over the long term. Environmental protection is thus inherent in the concept of sustainable development, as is a focus on the sources of environmental problems rather than the symptoms.

No single blueprint of sustainability will be found, as economic and social systems and ecological conditions differ widely among countries. Each nation will have to work out its own concrete policy implications. Yet irrespective of these differences, sustainable development should be seen as a global objective.

No country can develop in isolation from others. Hence the pursuit of sustainable development requires a new orientation in international relations. Long-term sustainable growth will require far-reaching changes to produce trade, capital, and technology flows that are more equitable and better synchronized to environmental imperatives.

The mechanics of increased international cooperation required to assure sustainable development will vary from sector to sector and in relation to particular institutions. But it is fundamental that the transition to sustainable development be managed jointly by all nations. The unity of human needs requires a functioning multilateral system that respects the democratic principle of consent and accepts that not only the Earth but also the world is one.

a. Towards Sustainable Development

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

! the concept of 'needs,' in particular the essential needs of the world's poor, to which overriding priority should be given; and

! the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

Thus the goals of economic and social development must be defined in terms of sustainability in all countries--developed or developing, market-oriented or centrally planned. Interpretations will vary, but must share certain general features and must flow from a consensus on the basic concept of sustainable development and on a broad strategic framework for achieving it.

Development involves a progressive transformation of economy and society. A development path that is sustainable in a physical sense could theoretically be pursued even in a rigid social and political setting. But physical sustainability cannot be secured unless development policies pay attention to such considerations as changes in access to resources and in the distribution of costs and benefits. Even the narrow notion of physical sustainability implies a concern for social equity between generations, a concern that must logically be extended to equity within each generation.

b. The Concept of Sustainable Development

The satisfaction of human needs and aspirations is the major objective of development. The essential needs of vast numbers of people in developing countries--for food, clothing, shelter, jobs--are not being met, and beyond their

basic needs these people have legitimate aspirations for an improved quality of life. A world in which poverty and inequity are endemic will always be prone to ecological and other crises. Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life.

Living standards that go beyond the basic minimum are sustainable only if consumption standards everywhere have regard for long-term sustainability. Yet many of us live beyond the world's ecological means, for instance in our patterns of energy use. Perceived needs are socially and culturally determined, and sustainable development requires the promotion of values that encourage consumption standards that are within the bounds of the ecological possible and to which all can reasonably aspire.

Meeting essential needs depends in part on achieving full growth potential, and sustainable development clearly requires economic growth in places where such needs are not being met. Elsewhere, it can be consistent with economic growth, provided the content of growth reflects the broad principles of sustainability and nonexploitation of others. But growth by itself is not enough. High levels of productive activity and widespread poverty can coexist, and can endanger the environment. Hence sustainable development requires that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all.

An expansion in numbers can increase the pressure on resources and slow the rise in living standards in areas where deprivation is widespread. Though the issue is not merely one of population size but of the distribution of resources, sustainable development can only be pursued if demographic developments are in harmony with the changing productive potential of the ecosystem.

A society may in many ways compromise its ability to meet the essential needs of its people in the future--by overexploiting resources, for example. The direction of technological developments may solve some immediate problems but lead to even greater ones. Large sections of the population may be marginalized by ill-considered development.

Settled agriculture, the diversion of watercourses, the extraction of minerals, the emission of heat and noxious gases into the atmosphere, commercial forests, and genetic manipulation are all examples of human intervention in natural systems during the course of development. Until recently, such interventions were small in scale and impact, and more threatening to life-support systems both locally and globally. This need not happen. At a minimum, sustainable development must not endanger the natural systems that support life on Earth: the atmosphere, the waters, the soils, and the living beings.

Growth has no set limits in terms of population or resource use beyond which lies ecological disaster. Different limits hold for the use of energy, materials, water, and land. Many of these will manifest themselves in the form of rising costs and diminishing returns, rather than in the form of any sudden loss of a resource base. The accumulation of knowledge and the development of technology can enhance the carrying capacity of the resource base. But ultimate limits there are, and sustainability requires that long before these are reached, the world must ensure equitable access to the constrained resource and reorient technological efforts to relieve the pressure.

Economic growth and development obviously involve changes in the physical ecosystem. Every ecosystem everywhere cannot be preserved intact. A forest may be depleted in one part of a watershed and extended elsewhere, which is not a bad thing if the exploitation has been planned and the effects on soil erosion rates, water regimes, and genetic losses have been taken into account. In general, renewable resources like forests and fish stocks need not be depleted provided the rate of use is within the limits of regeneration and natural growth. But most renewable resources are part of a complex and interlinked ecosystem, and maximum sustainable yield must be defined after taking into account system-wide effects of exploitation.

As for non-renewable resources, like fossil fuels and minerals, their use reduces the stock available for future generations. But this does not mean that such resources should not be used. In general the rate of depletion should take into account the criticality of that resource, the availability of technologies for minimizing depletion, and the likelihood of substitutes being available. Thus land should not be degraded beyond reasonable recovery. With minerals and fossil fuels, the rate of depletion and the emphasis on recycling and economy of use should be calibrated to ensure that the resource does not run out before acceptable substitutes are available. Sustainable development requires that the rate of depletion of non-renewable resources should foreclose as few future options as possible.

Development tends to simplify ecosystems and to reduce their diversity of species. And species, once extinct, are not renewable. The loss of plant and animal species can greatly limit the options of future generations; so sustainable development requires the conservation of plant and animal species.

So-called free goods like air and water are also resources. The raw materials and energy of production processes are only partly converted to useful products. The rest comes out as wastes. Sustainable development requires that the adverse impacts on the quality of air, water, and other natural elements are minimized so as to sustain the ecosystem's overall integrity.

In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance

both current and future potential to meet human needs and aspirations.

2. Contrasted With the Precautionary Principle⁸

Sustainable development might be defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This concept of living off nature's "income," rather than squandering its "capital," is a key tenet of the report of the World Commission on Environmental and Development, and has since been supported by a number of decisions of the United Nations or other international organizations, agencies within the U.S. system, and various conferences of states. It is thus fast becoming the basic criterion against which international or transnational environmental initiatives and, increasingly so, ostensible mere "local" environmental activities are being evaluated politically.

Its potential normative reach is narrower than that of "precautionary action." "Sustainable development" evinces a strictly utilitarian view of environmental protection: It imposes restraints on developmental activities only insofar as these would undermine the environmental basis for further development in the long run. Indeed, "sustainable development" is non-preservationist; it reflects a commitment to promote development, albeit of a special qualitative nature. The perspective, in contrast to the no-growth strands that are part of the complex policy fabric of the precautionary principle, makes "sustainable development" internationally a broadly attractive concept. Not surprisingly, it has thus turned out to be a notion around which legally significant expectations regarding environmental conduct have begun to crystallize. Indeed, before long the concept might turn into a mandatory standard of international legal evaluation, a peremptory norm of international law.

The reasons for such a possible ascendancy are intuitively persuasive. "Sustainable development" is a *conditio sine qua non* for human life on this planet in the long run. It stands to reason, therefore, that other legal arrangements would have to measure up to the principle. "Sustainability" thus would safeguard not simply individual state interests but act as a restraint in "the higher interest of the whole international community" in preserving the ecological basis for human civilization.

To ascribe *jus cogens* character to the objective of "sustainable development," however, tends to highlight the special problems any peremptory norm raises in the co-hierarchical and decentralized decision-making, conflicting claims about the concept's specific normative implications will abound and disputes over application will be exceedingly difficult to resolve. This will be all the more so because "needs" will vary from country to country, and the consistency of state conduct with "sustainable development" will thus depend on context.

3. DEBATE: The Operative Significance of Sustainable Development

a. Integration of Environment and Development⁹

A central element of the concept of "sustainable development" is the commitment to integrate environmental considerations into economic and other social development, and to take into account development needs in crafting, applying, and interpreting environmental obligations. This aspect of "sustainable development" may be the most legalistic: its formal application requires the collection of appropriate environmental information and its dissemination, as well as the conduct of appropriate environmental impact assessments, both matters in which the United States is a world leader. Formally integrating environment and development has important implications. In particular, it may serve as the basis for allowing, or requiring, "green conditionality" in bilateral and multilateral development assistance, as well as the application of differentiated legal standards for states on the basis of, *inter alia*, their historic responsibility in contributing to an environmental problem and their capacity to respond to environmental requirements. On both counts the United States is likely to find that the integration of environment and development leads to international demands for the transfer of technology and provision of financial resources to developing countries, and at the domestic level to the increased application of environmental considerations to policy areas such as energy, transport, and agriculture.

The integration of environment and development is also likely to lead to transformation in the structure of national and international government. For many years the international regulation of environmental issues has taken place in international fora, such as United Nations Environmental Programme (UNEP) and the conferences of the parties to environmental treaties, which are not directly connected to international economic organizations, such as the World Bank and the General Agreement on Tariffs and Trade (GATT). The result has been a divergence in approaches to problem solving. This is a constitutional problem, and one which appears also in the structure of national government. Moreover, the constituent instruments which established the United Nations and its specialized agencies, and in particular the GATT, the World Bank, the multilateral development banks, and regional economic integration organizations such as the European Community, are conspicuous in their failure to address or mention environmental needs or sustainable development. Environmental concerns have historically been addressed on the periphery of international economic concerns.

b. Intergenerational Responsibility¹⁰

Irrespective of the concept's international normative weakness at the moment, it is evident that "sustainable development" is shaping environmental policy debates in a fundamental way. More significantly, it has begun to act as a de facto constraint on environmental decision-makers, both internationally as well as domestically.

The conceptual or philosophical underpinning of this emerging obligation to reorient natural resource use towards sustainability, is the notion of intergenerational equity. The idea that present generations accept restraints on their use of natural resources for the benefit of future generations, has attracted overwhelming international support ever since the Maltese proposal of a "common heritage of mankind" to the United Nations General Assembly in 1967, States have expressly re-endorsed the principle of intergenerational responsibility ever since it was first formally adopted by a conference of states in the 1972 Stockholm Declaration.

Today, few could thus deny that the concept of intergenerational responsibility is a fundamental tenet of international public policy. Rather, if there is a debate about the concept per se, it will be, first, over whether the obligations of restraint emanating from the concept are of an international legal, rather than of a merely moral nature; and second, whether they arise vis-a-vis future generations for which the present generation holds the planet in trust or, whether they are obligations of conduct on behalf of future generations that members of the present generation owe each other directly.

c. Sustainable Development: A Skeptical View¹¹

International lawyers and policy wonks enjoy getting together and talking, so it was inevitable that their international conferences would mushroom into world events. The planet's first such explosion happened in Rio de Janeiro in June, 1992--the "Earth Summit."

No one can expect a single conference actually to solve the environmental crisis, but if we have any hope of solving it, the absolute minimum that is required is intellectual rigor and the courage of our informed convictions. I suggest that the structure of the Earth Summit, and of subsequent world conferences, is designed to achieve the exact opposite of intellectual rigor. World conferences are designed to achieve, and in fact do achieve, a unique brand of intellectual slovenliness.

What the executive board came up with in Rio was an ultimate reduction of all ideas and themes and reports into a magical two-word slogan. If someday the human race is wiped out because there is no oxygen left in the atmosphere, or fried to death due to the depletion of the ozone layer, God might look down and draw a little cartoon about the folly of planet earth. The cartoon should show a now-gray little planet with a tombstone sticking out of it. On the tombstone is emblazoned the two-word slogan of the Rio conference: SUSTAINABLE DEVELOPMENT, R.I.P.

Actually, that slogan had been kicking around before the Earth Summit took place. All the executive board had to do was to have the requisite wisdom and intelligence to adopt the slogan as the official one for the conference. Come to think of it, if the board had no wisdom and no intelligence, it would not have had the talent to invent a different slogan, so SUSTAINABLE DEVELOPMENT would have emerged in that event as well.

Don't get me wrong, it's a terrific slogan. It gives us a standard to live by. We all want development. But we don't want it at the expense of the global environment. So what we really want is sustainable development. But what exactly is sustainable development? Sustainable development, as best I can figure it out, is development with an adjective in front of it.

Most nations want development. The number of nations that regard themselves as "developing" is much greater than the number of nations that regard themselves as "developed." The developing nations were in the majority in Rio. Their problem was to take an environmental conference and turn it into a development conference. Their inspired solution was to make development the noun and sustainable the adjective. And to make sure that the slogan was implemented, they invited economists to the conference.

Economists are people who, by and large, favor development over all other values. Development means factories, products, bookkeeping, business cycles, and most importantly, jobs for economists. In contrast, ecologists are people who share with economists the prefix "eco," and practically nothing else. To an ecologist the global environment is fragile and endangered, whereas to an economist it is robust and resilient. How can we bring economists and ecologists together? With the slogan, "sustainable development." The Clinton campaign slogan, "It's the economy, stupid!" becomes "It's sustainable development, stupid!" But can a mere slogan actually bring ecologists and economists together? Yes, if it's a magic slogan and the conference is held in Disney World.¹² All you need is an unshakeable belief in the power of magic.

Those who tried to work within the slogan at Rio attempted on occasion to charge a given practice as unsustainable. Poor folks, they were actually trying to give some *content* to the slogan, to see if it was falsifiable. Immediately they were hit with a barrage of guilt from the developing countries. For example, when ecologists from the developed nations questioned the clear-cutting of the Brazilian rain forest, the answer they received was that the developed countries where the ecologists came from had already clear-cut their own forests, polluted their streams and

atmosphere, killed off numerous species, and had grown fat, rich, lazy, and conservative, and now wanted to prohibit others from doing what they did. Weren't people in the developing world also entitled to lead the good life? Dazed from this attack, the ecologists weakly replied: "There won't be any good life for anyone if we lose the oxygen-regenerating resources of the rain forest and no one can breathe any more." Not missing a beat, the developing countries at Rio responded: "A starving Third World family is worried about surviving for the next 24 hours; it is hardly going to be moved by your concern that all the oxygen will be gone in 24 years."

The Earth Summit in 1992 addressed the problem of environmental degradation. The Vienna Conference in 1993 addressed the problem of human rights. The Cairo Conference in 1994 addressed the population problem. So long as we understand that these world conferences only *address* problems, we won't be disappointed in them. You'll only be disappointed if you think that a world conference is supposed to *solve* problems. Is there any point in getting a lot of people together, at great expense, just to address a problem without any prospect of solving it? My answer is a qualified Yes. A world conference is a cultural artifact. It has an impact upon the noosphere--upon our collective sense of civilization.

Addressing a problem at a world conference is a way of promoting *awareness* of the problem. And this is a Good Thing. If lots of people by now are not aware that the global environment is a finite resource, then a conference on threats to the environment could be a Good Thing for those people. I do worry a bit whether some people who were already aware of the finiteness of the environment before going to Rio might be assuaged by the soothing language of "sustainable development" that emerged. That and many other cheap slogans tend to dull one's senses, to reduce awareness.

In sum, I believe that the net effect of the Rio and Cairo conferences was to make more people aware of the major problems of our era. I am encouraged when my friends come back from Rio saying that the conference increased their sense of depression about the global environment. When the fate of life on earth is at stake, a dose of depression is a dose of realism.

D. Common Heritage

1. Legal Conception for Common Space Ownership¹³

During the last two decades, the notion of the "common heritage of mankind" (CHM) has attracted considerable attention and generated polemical debate in international forums. This has been especially true of the CHM's application to the legal status of resources in "common space areas," in particular those of the ocean floor, outer space, the moon, and Antarctica. Nevertheless, substantial confusion persists over the nature of the concept and its appropriate place in international law.

a. General Considerations

Five principal elements appear to characterize the "common heritage of mankind" notion when applied to common space areas. First, these regions would not be subject to appropriation of any kind, either public or private, national or corporate.¹⁴ Under the CHM doctrine, common space areas would be regarded legally as regions owned by no one, though hypothetically managed by everyone. Sovereignty would be absent, as would all its legal attributes and ramifications.¹⁵ Thus, no jurisdictional privileges, rights or obligations determined by sovereignty considerations would exist; there would be no sovereign authority in the Austinian sense to set policy or to issue commands; and no agent of any authority would exist to enforce such commands in the region. In short, an international area under a CHM regime could not be owned legally in whole or in part by any State or group of States; legally the entire area would be administered by the international community.

Second, it follows that under a CHM regime all people would be expected to share in the management of a common space area. In other words, States or national governments would be precluded from this legal function, save as the representative agents of all mankind. This purports to expunge national interests from the administration process. Instead, universal popular interests would assume priority, and thereby supply the foundation for any administrative decisions made affecting the region.

Third, if natural resources were exploited from a common space area, any economic benefits derived from those efforts would be shared internationally. Under a CHM regime, agencies engaged in commercial profit or private gain would be deemed inappropriate, unless they operated to enhance the common benefit of all mankind. Thus, manganese nodules on the deep sea-bed, exotic elements and metals in the celestial bodies, and possibly hard minerals and hydrocarbons on Antarctica and offshore would all fall under the prohibition of non-exploitability, save under the auspices of a common space regime mandate.

A fourth important element in a CHM regime maintains that use of the area must be limited exclusively to peaceful purposes. No military bases or installations would be permitted, no weapons of any sort could be tested, no maneuvers could be conducted and no weapons systems could be installed anywhere in the region. In effect, a CHM regime would demilitarize the area to ensure use for peaceful purposes.

A final characteristic defining an international area under a CHM status concerns the conduct of scientific

research in the region. Such research would be freely and openly permissible, so long as the environment of the common space area was in no way physically threatened or ecologically impaired. All research results would be made available as soon as possible to anyone who genuinely expressed interest in them. Under a CHM regime, scientific research would be conducted to benefit all peoples, not merely the State or government which sponsored the research. Furthermore, the scientific fruits of such research would be freely and publicly exchanged in the hope of fostering greater scientific co-operation and more extensive knowledge about the region.

b. The NIEO Variety of CHM Regime

A more radical form of CHM would conceivably be applied to common space areas. This more extremist version draws its legal and philosophical bases from the ideology advocating the creation of a New International Economic Order (NIEO).¹⁶ As such it would substantially alter and significantly modify the legal attributes, as well as institutional character, of a CHM regime in at least three ways. First, as an adjunct to the NIEO, the world community would acquire full legal ownership rights—with attendant exclusive resource utilization rights—over the area. Second, if mineral resources were exploited from the region, any profits derived from those activities would accrue to “all mankind,” with preferential treatment in their distribution being given to developing countries. Third, to carry out the obligations and administer the responsibilities associated with a CHM regime grounded in NIEO principles, a special institutional mechanism would have to be created. Such an agency would presumably mirror the International Authority created for deep sea-bed mining in the 1982 UNCLOS III Convention on the Law of the Sea, and would exercise legal jurisdiction over the common space area, while at the same time serving as the self-designated trustee for the international community in the region. In the light of the recent UNCLOS III experience, there is little doubt that great difficulty would be encountered in getting these NIEO-inspired aspects of a CHM regime accepted by most developed States’ governments, particularly those which represent the deep sea miners, the space-faring nations or the consultative parties in the Antarctic Treaty system.

c. Legal Implications for Ownership

Ownership rights can be classified into *res nullius* and *res communis*. *Res nullius* means “property belonging to no one.” The legal inference is that such property becomes susceptible to appropriation or exploitation by anyone who is capable of carrying out those acts. Thus, to assert legal control over such “uninhabited lands,” sovereignty must be clearly demonstrated and performed through discovery (which establishes a claim to legal title) and effective occupation through subsequent permanent settlement or exercise of jurisdiction (which establishes proof to title). Once this process is fulfilled, lands formerly regarded as *res nullius* become transformed legally into territory subject to the exclusive ownership or jurisdiction of a recognized sovereign.

The second legal principle, *res communis*, refers to property which is owned by no one and which therefore is rendered available for use by everyone. Lands or regions deemed to be *res communis* are thus not susceptible to exclusive appropriation by any private agent. Further, they are not eligible for sovereign claims or national jurisdiction.

If applied to an international area, the notion of the “common heritage of mankind” would assign ownership neither to all mankind nor to any sovereign user. Under a CHM regime, “ownership” of the region would be legally absent. The CHM conceptually entails the principle of non-proprietorship; consequently, there would not be any sovereign title available for legal acquisition or transfer. The key consideration would be *access* to the region, rather than ownership of it.

Another significant factor is the international machinery designed to administer the region. Under a CHM regime, specific legal functions of this authority would include distributing users’ rights and economic benefits, promoting peaceful uses of the area and facilitating the settlement of disputes. In assuming these critical roles usually reserved for sovereign States, the CHM regime depreciates the legal relationship between sovereign ownership and jurisdictional control. As a result, a common space area would be without any owner holding legal title in the traditional sense, although the international administrative agency in its place would assume responsibility for overseeing and regulating activities in the region.

Under a CHM regime, a legal right would be created to use that international space without any attendant rights of ownership, possession or sovereign acquisition of title. The notion of CHM specifically implies management of such property, as well as proper oversight of its use.

Were a CHM regime made applicable to a region, all mankind consequently would be designated the beneficiary, not all States or national governments. One may justifiably ask in this context how international law can be applied jurisdictionally to “all mankind.” Are the interests, needs and aspirations of “all mankind” separate and distinct from those of all States or national governments? It is submitted here that, yes, they are. Indeed, the notion of “all mankind” encompasses some political units and peoples who are not incorporated into the political entities called States, for example, those people in non-self-governing territories which lack full independence. Hence, the interests, needs and aspirations associated with “all mankind” would appear greater than the sum of all States’ national interests.¹⁷

Important, too, are the legal implications of “heritage” as presented in a CHM regime. Clearly, the concept of “heritage” conveys the proposition that common areas should be regarded as inheritances transmitted down to heirs, or

as estates which by birthright are passed down from ancestors to present and future generations. A CHM regime would therefore designate that region as an international patrimony, much the same as a piece of property or estate inherited by one generation from its predecessor. Thus, a CHM regime would insist that all activities in or around the international area should respect the interests of future generations, especially in making decisions that affect whether, when and how the region's resources are to be used, exploited, developed and distributed. In legal terms, the concept of "common heritage" would require that serious scrutiny be given to every activity in the area in order to prevent resource waste and to preclude environmental abuse. To fail in the protection, conservation, preservation and prudential management of the region and its resources would breach the trust and legal obligation implicit in responsibly supervising the earth's heritage for mankind in the future.

d. The Legal Status of the CHM

The discussion so far has sought to examine the nature of the "common heritage of mankind" as a contemporary philosophical concept and to suggest the legal implications of applying the CHM to international regions. However, before any conclusions can be drawn, an assessment of the current status of the CHM notion under international law is necessary. Does "common heritage of mankind" constitute a principle sufficiently normative in character that it becomes capable of generating specific legal effects or enhancing particular value expectations? Upon close inspection, this essential quality of a legal norm appears to be wanting.

For the doctrine of the CHM to be regarded in fact as accepted principle of contemporary international law, at least three qualifying preconditions must be fulfilled. First, the legal content of the CHM must be so distinct and well-defined that the concept can be fully integrated into the *corpus* of international law. Second, resultant State practice must comply with the development of the CHM notion and, additionally, evidence of *opinion juris* (i.e., consensus) must be demonstrated and evident.¹⁸ Third, the customary acceptance of the CHM as determined by State conduct and behavior must be manifest, or at least sufficiently broad-based to attest to the CHM's wide-spread acceptance. State practice carries within it certain norm-creating effects which may give rise to the evolution and crystallization of a new principle of law. Have these prerequisites for a legal principle been evidenced in the case of the CHM doctrine in general or its applicability to any common space regime in particular? Clearly the answer must be in the negative. National governments have not expressed through their conduct or behavior any willingness to accept the CHM as a mandatory legal obligation for activities in common space areas. Admittedly, a plethora of rhetorical assertions and ideological pronouncements have been made over the last decade regarding the CHM, as well as its philosophical and legal foundations. Similarly, at least two treaty instruments--the 1982 UNCLOS III Convention and the so-called Moon Treaty--have been promulgated in which the CHM notion has been inserted as a cardinal provision.¹⁹ Even so, both instruments have been ratified by only a few States, and there is little prospect that either will have any great impact upon international law within the foreseeable future. States, in short, have at best been reluctant to affirm through their practice the legal merits of the CHM in the contemporary international community.

The most that can be postulated about the present status of the CHM concept is that it *may* indicate an *emergent* principle of international law. As yet the CHM is not a principle of international law *erga omnes*. The CHM today is neither the product of "instant custom" nor *jus cogens*. Rather it is merely a philosophical notion with the potential to emerge and crystalize as a legal norm. The prime determinant of how, when or whether that norm-creating process will happen rests in the conduct of States. When sufficient State practice indicates clear, wide-spread acceptance of the CHM, its legitimacy in international law will be fixed. Until then, the CHM must remain only a conceptual ideal, not an international legal reality supported by State practice.

2. Alternative Conception: A "Third-Generation" Human Right²⁰

The right to *benefit from the common heritage of mankind* has also been suggested as a human right of the third generation. In the Declaration of Principles Governing the Sea-Bed of December 17, 1970, the General Assembly proclaimed that the sea-bed beyond the limits of national jurisdiction was part of the common heritage of mankind. The concept has been broadened to other areas such as space, bodies in space, the Antarctic, and even more abstract concepts such as monuments, sites, and cultural traditions and scientific and technical progress.

The application of the notion of the common heritage to the sea-bed is bound up in the complex negotiating over the rapidly evolving law of the sea. As Ambassador Bedjaoui of Algeria has said, "If the idea of 'the common heritage of mankind' had not already existed, it would have been necessary to invent it anyway for the new law of the sea."²¹ While considering that "[t]his concept of the 'common heritage of mankind' is a fruitful and stimulating one. . . [which] may reconcile the human race and put the law of solidarity in place of the law of competition," he has warned that "it carries with it obvious dangers in that it could be applied in one direction only and be 'co-opted' by great powers to their exclusive advantage."

To be meaningful and to avoid the danger that preoccupies Ambassador Bedjaoui, the concept of the common heritage may be conceived of as a human right of the new generation, the beneficiaries of which are the peoples of the Third World, being that segment of mankind which has been excluded in recent history from the benefits of precisely

those domains over which the economic domination of the North has been so successfully exercised. Not only does the Charter of the Economic Rights and Duties of the States recognize, in its Article 13, the right of developing countries to benefit from the advances of science and technology, but other, less official texts have expressed the idea of a right to the common heritage in terms of human rights. Article 9 of the Universal Declaration of the Rights of Peoples affirms that, scientific and technical progress being part of the common heritage of mankind, every people has the right to participate in it. If conceived of exclusively as a right of states, this right, like the others proclaimed by the Charter on the Economic Rights and Duties of States, not only is endangered by the neocolonialism of the great powers, which Bedjaoui has warned of, but also runs the risk of benefiting only the elites in the developing countries and perpetuating the inequalities within nations, while reducing slightly the inequality between nations. In this respect the idea that certain human rights may be rights of peoples may be a valid one, particularly for the human rights of the new generation. The concept of rights of peoples is a highly controversial matter in human rights today. Be that as it may, the right to the common heritage of mankind belongs, as Bedjaoui put it, to the "law of solidarity," which is further reason to place it within the solidarity rights of the new generation of human rights.

In the case of the right to the common heritage of mankind, one would be tempted to consider that it can only have a collective dimension. As Hector Gros-Espiell has analyzed it, this right establishes the "international community" as a subject of international law and as the beneficiary of the right in question. He adds, however, that this right also implies the right of all human beings to share in the benefits of this common heritage of mankind. He distinguishes between the "ownership" over the common heritage, which can only be vested in "mankind," that is, the "international community," and the right to "benefit from" that common heritage, which is vested, through states and peoples, in the individual human being, who is the final subject, the *raison d'être*, the aim and objective of all legal orders.

I would add that the individual dimension of the right to the common heritage of mankind implies the contemporary application of existing international human rights, particularly those expressed in Article 27(1) of the Universal Declaration: "Every one has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits." This right implies not only the cultural and scientific life of the local and national community, but that of the international community as well. The notion of the common heritage, expressed in the context of the new generation of human rights, gives new meaning to the rights of Article 27 of the Universal Declaration.

E. Common Concern²²

In the fall of 1988, the Government of Malta proposed a General Assembly declaration proclaiming the global climate as part of the common heritage of mankind. During negotiations on the Malta proposal, "common heritage" became "common concern." Presumably, this change reflected a desire to avoid the politically charged debate over the full implications of "common heritage" engendered by its use in the deep seabed and outer space contexts. In any event, the General Assembly did adopt a resolution on the protection of the global climate containing the "common concern" language.

The resolution may be "soft law," but it is somewhere beyond the starting point on the continuum from nonlaw to true law. It does not purport to prescribe conduct. Instead, it serves a legitimizing function by recognizing climate change to be a common concern of mankind. Its legal significance does not depend on any quasi-legislative power of the General Assembly; rather, it depends on the strength of the shared governmental conviction it enunciates and on the inferences that may properly be drawn from it. Clearly, if climate change is a matter of "common concern," international regulation of it is legitimate. But that still is not saying much. It is not necessary to identify climate change as a "common concern of mankind" so as to legitimize, today, the international regulation of a phenomenon inherently capable of transcending national boundaries. We may then ask if the concept has some additional significance. It would seem that it does. It implies that "whatever states' obligations may be in the area of climate change" they run *erga omnes*. Consequently, any state should have standing to make representations to any other concerning the latter's climate-affecting policies or activities, without having to allege that it is uniquely affected. The law of standing in the context of climate change thus would complement the law of standing as it is increasingly recognized in relation to the marine environment beyond the limits of national jurisdiction. Moreover, in the context of standing, the "common concern" concept is indistinguishable from the "common heritage" concept applicable on the deep seabed where it is usually regarded as conferring standing on all nations.

Giving all nations standing to object to any activity affecting the global climate is efficient, because the cost to broadly inclusive interests will have escalated, perhaps incalculably, by the time any one or a few states could show unique, nonminimal harm to themselves. Standing to complain without a showing of unique harm would enable not only a single government, but also several like-minded governments acting together, to challenge the climate-affecting activity before the consequences get out of hand.

In the long term, the most efficient mechanism will be an international body functioning on premises maximally

scientific and minimally political, with its own standing to protect climate stability. Malta's initiative contemplates that eventuality, but it has also given states a potentially useful instrument in the interim.

F. Evolving Principles²³

In a lesser amount and certainly at a less advanced stage than for transfrontier pollution, international legal principles for the protection of the environment are in the process of emerging. For the most part, these principles appear piecemeal but regularly in texts and in international practice. However, increasingly general legal formulations should apply, both within the territory of states, whether or not there are transfrontier effects, and in zones outside national jurisdiction.

Some of these principles derive from the Stockholm Declaration. The 1982 World Charter for Nature refines and extends certain Stockholm principles and develops new ones. Also in 1982, UNCLOS announced certain binding norms. Still more recently, in the section dedicated to law, the Brundtland report prepared by the World Commission on Environment and Development proposed a number of global rules intended to apply to states in all their activities, those which concern their own area of jurisdiction as well as those which are capable of producing effects on the environment outside their territory.

The first of the principles to appear is the *obligation of all states to conserve the environment and its natural resources*. The most concise and absolute formula is contained in UNCLOS article 192: "States have the obligation to protect and preserve the marine environment." Of course, this obligation concerns only one sector of the environment. However, its impact remains considerable as it encompasses all maritime zones, those within state jurisdiction and those which constitute the common heritage of mankind.

A more recent provision is found in the 1985 ASEAN agreement. According to article 1, the contracting states agree to take, within the context of their national legislation, individually or in concert as needed, the measures necessary to safeguard essential ecological processes and life-supporting systems, to preserve genetic diversity and to assure the ongoing productivity of exploitable natural resources found under their jurisdiction, in conformity with scientific principles and with the aim of attaining sustainable development.

The last clauses contain important indications of the scope of states' obligations. Because terms such as "essential ecological processes," "genetic diversity" or even "sustainable development" are abstract and new, it may be difficult for a state to comply with its legal obligations without the close collaboration of several scientific disciplines. The legal principles adopted by the World Commission on Environment and Development provide details on some terminology in announcing a general obligation:

States shall:

(a) maintain ecosystems and related ecological processes essential for the functioning of the biosphere in all its diversity, in particular those important for food production, health and other aspects of human survival and sustainable development;

(b) maintain maximum biological diversity by ensuring the survival and promoting the conservation in their natural habitat of all species of fauna and flora, in particular those which are rare, endemic or endangered;

(c) observe, in the exploitation of living natural resources and ecosystems, the principle of optimum sustainable yield.

One of the fundamental concepts is "optimal sustainable yield," signifying the continued exploitation of a renewable natural resource, for example, forests, wild animals, and fish in a framework of perpetual renewal. The amount of exploitation should never exceed the limits which guarantee the renewal and sustainability of the stock.

The duty to assess the environmental impact of any activity which could have measurable impact on the environment is a principle which also concerns transfrontier relations, for it is the prerequisite to implementing the duty to inform states which could suffer environmental harm. However, its scope is increasingly considered as extending to all activities, even those which do not create an impact outside the limits of national jurisdiction. This principle brings to international relations a legal technique particularly characteristic of environmental protection, which consists of assessing potential environmental impacts prior to undertaking any major activity. The 1969 United States Environmental Protection Act was the first legislation to require environmental impact assessments. The procedure has since been introduced into the domestic law of Canada, France, Germany, and Ireland, among others.

Monitoring the state of the environment is another corollary of the duty of conservation. Logically, measures of conservation cannot be taken without knowledge nor can the impact of certain activities be evaluated. Perhaps because it underlies all action in this field, the obligation of environmental monitoring is rarely explicitly announced in treaties.

International cooperation is necessary to conserve the environment in its totality, as much for states within their territorial jurisdiction as for spaces outside all territorial limits. Cooperation between states for environmental protection appears most often in the work of international organizations, whether already existing, or created for a particular problem or precise sector of the environment. In addition to the general obligation of states members of the United Nations to cooperate in good faith with the organization and among themselves, the particular need to cooperate

to conserve the environment is expressed in several texts.

Public information and participation, although generally seen as a matter of internal law, play a particularly important role in regard to the obligations of states to protect the global environment. This role consists of pressing for legal norms and for significant monitoring of the implementation of existing rules. Thus, following developments in several of its largest member countries, OECD adopted tests recommending that its member states encourage public participation when preparing decisions having significant consequences on the environment, notably by furnishing, in appropriate cases, information on risks, the costs and the advantages accompanying these decisions.

Taken as a whole, the common law of the environment is rapidly developing to include a general obligation to protect and conserve the global environment. Clearly established are duties to avoid causing harm to the environment of other states, to notify of emergency situations, to cooperate, to inform, to permit equal access, and to not discriminate. In light of these norms, the particular regulations applicable to the various sectors of the environment can be reviewed followed by a discussion of transsectoral problems.

FOOTNOTES CHAPTER 3

¹ Louis Sohn, *The Stockholm Declaration on the Human Environment*, 14 HARV. INT'L L.J. 423, 485-505 (1973). Copyright 1973. Reprinted by permission.

² The official text of these documents is contained in the *Report of the U.N. Conference on the Human Environment*, U.N. Doc. A/CONF.48/14, at 2-65, and Corr.1 (1972).

³ Philippe Sands, *The "Greening" of International Law: Emerging Principles and Rules*, 1 IND. J. GLOBAL LEGAL STUD. 293, 297-02 (1994). Copyright 1994. Reprinted by permission.

⁴ Bernard A. Weintraub, *Science, International Environmental Regulation, and the Precautionary Principle: Setting Standards and Defining Terms*, 1 N.Y.U. ENVTL L.J. 173, 204-09 (1992). Copyright 1992. Reprinted by permission.

⁵ Groups advocating the reduction of such practices must bear the burden of demonstrating the harm of the practices at great expense. Shifting the burden of proof would relieve the governing body and advocacy groups of this liability. For example, in the United States, the Clean Air Act, 42 U.S.C. § 7401 (1988), a regulatory scheme that relies heavily on national ambient air quality standards that are set by the federal Environmental Protection Agency. However, the process of setting such standards is so costly and time consuming that since the Act was first enacted in 1970, standards for only six pollutants have been promulgated. 40 C.F.R. §§ 50.4-50.12 (1991). If proving harmlessness were a threshold to a potential polluter's engaging in an activity, the potential polluters would then pay for the expenses of setting the threshold and thus bear the burden of the costs associated with setting standards.

⁶ Environmental law is historically rooted in common law tort doctrines associated with property invasion, especially nuisance and trespass. See, e.g., JOHN E. BONINE & THOMAS O. MCGARITY, *THE LAW OF ENVIRONMENTAL PROTECTION* 235-52 (1984).

⁷ WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, *OUR COMMON FUTURE* 37-46 (1987). Copyright 1987. Reprinted by permission.

⁸ Gunther Handl, *Environmental Security and Global Change: The Challenge to International Law*, 1 Y.B. INT'L ENVTL. L. 3, 24-25 (1990). Copyright 1990. Reprinted by permission.

⁹ Philippe Sands, *The "Greening" of International Law: Emerging Principles and Rules*, 1 IND. J. GLOBAL LEGAL STUD. 293, 302-03 (1994). Copyright 1994. Reprinted by permission.

¹⁰ Gunther Handl, *Environmental Security and Global Change: The Challenge to International Law*, 1 Y.B. INT'L ENVTL. L. 3, 27 (1990). Copyright 1990. Reprinted by permission.

¹¹ Anthony D'Amato, *World Conferences and the Cheapening of International Norms*, 1 ST. LOUIS-WARSAW TRANSATLANTIC L.J. (1995). Copyright 1995. Reprinted by permission.

¹² Looking down at beautiful Rio from the top of Mount Corcovado, it really looked to me like a Magic Kingdom.

¹³ Christopher C. Joyner, *Legal Implications of the Concept of the Common Heritage of Mankind*, 35 INT'L & COMP. L.Q. 190, 190-99 (1986). Copyright 1986. Reprinted by permission.

¹⁴ These elements are extrapolated from the description of the "common heritage of mankind" as prepared by Ambassador Arvid Pardo of Malta in his historic statement, "Declaration and Treaty Concerning the Reservation Exclusively for Peaceful Purposes of the Seabed and of the Ocean Floor, Underlying the Seas Beyond the Limits of Present National Jurisdiction, and the Use of Their Resources in the Interests of Mankind," UN Doc. A/AC.105/C.2/SR.75 (17 Aug. 1967). For an overview of Ambassador Pardo's contributions to the CHM notion, see A. Pardo, *The Common Heritage: Selected Papers on Oceans and World Order 1967-1974* (1975).

¹⁵ As expressed in Art. 2 of the 1967 Outer Space Treaty: "Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other

means" (Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, done 27 Jan. 1967, 18 UST 2410; T.I.A.S. No. 6347; 610 U.N.T.S. 205.

¹⁶ See generally K. Sauvart and H. Hasenpflug (eds.), *THE NEW INTERNATIONAL ECONOMIC ORDER: CONFRONTATION OR COOPERATION BETWEEN NORTH AND SOUTH* (1977); J. Singh, *A NEW INTERNATIONAL ECONOMIC ORDER: TOWARD A FAIR REDISTRIBUTION OF THE WORLD'S RESOURCES* (1977); K. Hossain (ed.), *LEGAL ASPECTS OF THE NEW INTERNATIONAL ECONOMIC ORDER* (1980); and Juda, *UNCLOS III and the New International Economic Order* 7 OCEAN DEV. INT. L. 221 (1979).

¹⁷ In this respect, some legal commentators have concluded that "mankind" *per se* has consequently become a subject under international law, rendering the common heritage notion "a third generation human right." See Alston, *A Third Generation of Solidarity Rights: Progressive Development or Obfuscation of International Human Rights* [1982] NETH. INT. L. REV. 307, and Verway, *The International Economic Order and the Realization of the Right to Development and Warfare--A Legal Survey* [1981] INDIAN J.L. 1.

¹⁸ A. D'AMATO, *THE CONCEPT OF CUSTOM IN INTERNATIONAL LAW* (1971), p. 77.

¹⁹ On the deep sea-bed, the 1982 Law of the Sea Convention plainly asserts in Art. 136: "The Area and its resources are the common Frontier: A Regime to Govern the Development of Celestial Body Resources" 71 GEO. L.J. 1427, 1436-42 (1983).

²⁰ Stephen P. Marks, *Emerging Human Rights: A New Generation for the 1980's?*, 33 RUTGERS L. REV. 435, 447-48 (1981). Copyright 1981. Reprinted by permission.

²¹ M. Bedjaoui, *TOWARD A NEW INTERNATIONAL ECONOMIC ORDER* 223 (1979).

²² Frederic L. Kirgis, Jr., *Standing to Challenge Human Endeavors That Could Change the Climate*, 84 AM. J. INTL L. 525, 525-30 (1990). Copyright 1990. Reprinted by permission.

²³ ALEXANDRE KISS & DINAH SHELTON, *INTERNATIONAL ENVIRONMENTAL LAW* 144-54 (1991). Copyright 1991. Reprinted by permission.