THE PROTECTION OF THE ENVIRONMENT AND WORLD PUBLIC ORDER: SOME RECENT DEVELOPMENTS†

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-and-
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Man is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet a stage has been reached when through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale. Both aspects of man's environment, the natural and the manmade, are essential to his well-being and to the enjoyment of basic human rights—even the right to life itself.***

I. INTRODUCTION

A. The Globe as an Ecological Unit

It is widely recognized that our entire earth-space environment is an ecological unity both in a basic scientific sense and in terms of the interdependences of the social processes by which we exploit it. The plants, animals (including homo sapiens), and microorganisms that inhabit the planet are united with each other and with their nonliving surroundings by a network of complex and interdependent natural and cultural components which comprise a planetary "ecosystem." Within this comprehensive ecosystem, man alone has a dual role; he is both a natural symbiotic component and a conscious disrupter.

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It is the more specific ecological unities or interdependences—physical, engineering, and utilization—of this comprehensive ecosystem which make our whole earth-space environment a single sharable, and necessarily shared, resource. What is true about the sharability of the oceans, the atmosphere, the airspace and enfolding outerspace, and landmasses when considered separately, is no less true of the indivisible whole which they comprise. The appropriate perspective has been aptly stated by Barbara Ward and Rene Dubos:

> There is a profound paradox in the fact that four centuries of intense scientific work, focused on the dissection of the seamless web of existence and resulting in evermore precise but highly specialized knowledge, has led to a new and unexpected vision of the total unity, continuity, and interdependence of the entire cosmos.[1]

The same perspective is expressed in other words by Harold and Margaret Sprout:

> [T]he ecological way of seeing and comprehending envisages international politics as a *system of relationships* among *interdependent, earth-related* communities that share with one another an *increasingly crowded planet* that offers *finite* and *exhaustible* quantities of *basic essentials* of human well-being and existence.[2]

The most urgent need confronting us today is that of securing new and more precise scientific knowledge about the different unities and interdependences of our most comprehensive environment. With an increase in such knowledge, we might be able to devise more effective remedial measures to better conserve and develop the environment for future use and to secure the basic values of human dignity for which we maintain our different community processes.

B. Rising Demands for Better Protection of the Environment

Fortunately, demands are rising all about the globe for improved knowledge and more appropriate measures for environmental protection. These rising demands were dramatically illustrated in the environmental benchmark of "Stockholm '72." Three separate conferences on human environment took place in that city in that year.[3] The Dai Dong Independent Conference (its name being derived from an ancient Chinese concept: "For a world in which not only a man's family is his

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[1] B. WARD & R. DUBOS, ONLY ONE EARTH 30 (1972).

[2] H. SPROUT & M. SPROUT, TOWARD A POLITICS OF THE PLANET EARTH 14 (1972). *See also* H. SPROUT & M. SPROUT, MULTIPLE VULNERABILITY: THE CONTEST OF ENVIRONMENTAL REPAIR AND PROTECTION (Woodrow Wilson School of Public and International Studies 1972).

[3] For discussion of all three convocations, see Knelman, *What Happened at Stockholm*, 28 INT'L J. 28 (1972-1973).

family, not only his children are his children, but all the world is his family and all children are his.") was sponsored by the International Fellowship of Reconciliation (IFRC) and met from June 1-6. The official United Nations Conference on the Human Environment, with 1,200 delegates from 113 countries, was the most publicized of the three, and it met for 2 weeks from June 5-17. Finally, the official U. S. Conference was paralleled by an unofficial meeting organized by various citizens' groups and private individuals known as the Environment Forum. Although the substantive developments at both the official and unofficial gatherings disappointed many participants and observers, what happened at Stockholm is most significant in indicating that, at both elite and mass levels, environmental demands on the world decision process are becoming more comprehensive and more fully perceptive.

Unfortunately, however, these demands as yet are neither sufficiently comprehensive nor sufficiently perceptive. Specifically, it is still not widely recognized that there are environmental dimensions, just as there are human rights dimensions, to all the authoritative decisions taken in all our communities from local to global and that the rational making of these decisions requires that a comprehensive intelligence about the environment be brought to bear upon them. Similarly, it is not always recognized that beyond the mere infusing of relevant intelligence about the environment into the traditional flow of decisions, positive and dynamic programs for the better protection and more advantageous use of the whole earth-space environment in all its features (including atmospheres, oceans, airspace, landmasses) are required if common interest in survival and optimum order is to be served.

The full specification of an appropriate program in demand and response would require, much beyond our compass here, performance of a sequence of distinct but interrelated intellectual tasks, including: (1) The detailed specification, in their context of causes and consequences, of the more important problems arising from man's contemporary interaction with and exploitation of his environment; (2) the clarification in detail, from the perspective of an observer identifying with the whole of mankind, of basic general community policies in relation to each of these particular problems; (3) a survey of past experience, of prior trends in decision, at all levels of government, from local to global, in terms of approximation to clarified policies; (4) an investigation of the factors that have affected past decisions on particular problems; (5) the projection of probable future decisions and conditioning factors in relation to particular problems; and (6) the recommendation of new alternatives in constitutive process and public order prescriptions for the better securing of clarified policies.

C. *The Inherited Global Constitutive Process of Authoritative Decision*

The process of authoritative decision maintained by the larger general community for the resolution of environmental controversies and other matters is that of traditional international law, now built about the framework of the United Nations and the specialized agencies and regional organizations. This global decision process has lately begun active response to demands for the better protection of the environment,[4] as the very convocation and outcomes of the United Nations Conference on the Human Environment illustrate. The Conference adopted an Action Plan for the Human Environment which contained more than 200 specific recommendations for future international activities.[5] It also passed a Resolution on Institutional and Financial Arrangements, which formed the basis for creation by the United Nations General Assembly of the United Nations Environment Programme (composed of a Governing Council for Environment Programmes, a small Secretariat with an Executive Director, the Environment Fund, and an Environment Co-ordination Board).[6] Supportive efforts are being undertaken by a whole host of international organizations—governmental and nongovernmental, specialized and nonspecialized, general and regional.

There remain, nevertheless, certain special difficulties characteristic of the past operation of the larger community process. Planning and development activities at the international level, though among the most stressed, have been inadequate in both reach and detail. In consequence, and perhaps also as cause, the promotion or active advocacy of environmental policy alternatives before authoritative decisionmakers

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[4]For previous analysis of this subject by the present authors, see McDougal, *Legal Basis for Securing the Integrity of the Earth-Space Environment*, 184 ANNALS N.Y. ACAD. SCI. 375 (1971); Note, *New Perspectives on International Environmental Law*, 82 YALE L.J. 1659 (1973). *See generally* R. FALK, THIS ENDANGERED PLANET (1971); J. MCHALE, THE ECOLOGICAL CONTEXT (1970); H. SPROUT & M. SPROUT, TOWARD A POLITICS OF THE PLANET EARTH (1972). *See also* S. BRUBAKER, TO LIVE ON EARTH (1972); Bleicher, *An Overview of Environmental Legislation*, 2 ECOLOGY L.Q. 1 (1972); Goldie, *Development of an International Environmental Law—An Appraisal*, in LAW, INSTITUTIONS, & THE GLOBAL ENVIRONMENT 104 (J.L. Hargrove ed. 1972); Johnston, *International Environmental Law: Recent Developments and Canadian Contributions*, in CANADIAN PERSPECTIVES ON INTERNATIONAL LAW & ORGANIZATIONS 555 (R. MacDonald ed. 1974); Olmstead, *Prospects for Regulation of Environmental Law*, in THE PRESENT STATE OF INTERNATIONAL LAW 245 (International Law Association 1973); Teclaff, *The Impact of Environmental Concern on the Development of International Law*, 13 NATURAL RESOURCES J. 357 (1973).

[5]REPORT OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT, U.N. Doc. A/Conf. 48/14, at 8-60 (1972) [hereinafter cited as REPORT].

[6]*Id.* 61. The U.N. General Assembly subsequently established UNEP by resolution 2997 (XXVII) of December 15, 1972, U.N. Doc. A/8370 (1973). *See also* Hardy, *The United Nations Environment Program*, 13 NATURAL RESOURCES J. 235 (1973).

also has been weak. Most importantly, there has been a relative absence of the centralized performance of the prescribing and applying functions in relation to international environmental law. It is small wonder that the overall public order of the environment has suffered.

D. The Continuing Problems

The problems we observe are, in sum, the continuing destructive impacts upon and spoliation of the environment and continuing unplanned exhaustion of resources, with loss of potential gains. The world's population increases at an alarmingly accelerating rate, with cumulative demands upon resources. Technological advances multiply the potentialities of destructive impact. Perceptions of policy alternatives and programs for ameliorative action remain inadequate, and the time is short for meaningful reorientation of the world decision process.

II. Clarification of Basic Community Policies

A. Our Commitment and Environmental Goals

The observational standpoint we recommend is that of the scholarly observer or decisionmaker who identifies, not merely with some single parochial community, but rather with the whole of man's many different—often concentric, and always interpenetrating—communities. The enlightenment we seek is that relevant to clarifying and implementing the common interests of all and to defending and extending the domain of institutions compatible with the fundamental concepts of human dignity.

The most general goal we recommend for environmental and other problems is that of protecting common and rejecting special interests. By "common interests" we refer to shared demands for values whose achievement is affected by conditions of interdependence or interdetermination. By "special interests" we refer to demands which are destructive of common interests in that they cannot be shared even in equivalences and their achievement is violative of the conditions of interdependence, imposing unnecessary harm upon others.

Within common interests, as contraposed to special, a distinction must be taken between inclusive interests and exclusive interests. By "inclusive" we refer to interests in activities that have significant transnational effects, that is, which importantly affect more than one territorial community. By "exclusive" we refer to interests in activities which predominantly affect only one territorial community. A further distinction may be made. Inclusive public order interests are demands for values plus supporting expectations about conditions of achievement, the expectations involving high degrees of collective impact upon the relationships referred to by the goals of the world community. In this

same class are communitywide participation in decision, or a lesser degree of participation by more than one component community of the world arena. Exclusive public order interests are demands for values plus supporting expectations, the expectations involving high degrees of particular impact, compatible with the goal values of the world community, and unaccompanied by high levels of collective impact.

The inclusive interests of peoples in the enjoyment of the environment, like those in any other necessarily shared resource such as the component oceans, atmosphere, airspace, and outerspace, relate to both minimum order and optimum order. By "minimum order" we refer to the conduct of activities by the processes of persuasion and agreement, with a minimum of unauthorized coercion and destruction. By "optimum order" we refer to cooperative activity in the utmost production and distribution of all demanded values in a world society. The inclusive interests of peoples in the protection of the environment extend beyond the mere sum of their interests in all the component sharable resources to the healthy functioning of the earth-space environment as a whole.

The exclusive interests of particular communities in the protection of the environment may similarly be described in terms of both minimum and optimum order. Every state has an interest in protecting its own internal order from external coercion and destruction. Every state has, further, an interest in promoting the healthy functioning of its own internal optimum order or social process. It is clear that both transgressions of ecological interdependencies and implementation of sound environmental policies have selective impacts upon different communities. The preoccupation of less industrialized countries with ensuring that environmental measures are not inaugurated at the expense of their basic economic and social development is a contemporary reflection of exclusive interest.

In more detailed specification and accommodation of inclusive and exclusive interests, certain more specific goals of environmental protection will require clarification. These are inextricably interrelated at multiple junctures with other cherished objectives of individual and group behavior. Even the negative goal of minimizing damage to the environment has a whole range of subgoals. These more particular subgoals include: Prevention (long-term efforts to minimize the occasions for injury), deterrence (precluding injury immediately threatened), restoration (putting an end to injuries already in process), rehabilitation (short-term binding up of wounds), and reconstruction (longer-term redesign of the situation to preclude further injury). Detailed recommendations with respect to each of these subgoals must vary enormously with context.

Beyond the basic goal of minimization of environmental injury, there are the positive motivations of optimum order. These include

preserving the environment and securing its most constructive use for the benefit of present and future generations. For proponents of human dignity, such an approach requires the detailed clarification of programs for optimalization of the shaping and sharing all values (or equivalents): power, respect, enlightenment, wealth, well-being (including health), skill, rectitude, and affection.

B. Recent Community Statements of Goals

Most recent international statements about goals and attempts at clarification have substantially, although not always explicitly, approximated our recommendations. The first Principle of the United Nations Declaration on the Human Environment summarizes the common conviction that:

> Man has the fundamental right to freedom, equality, and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations . . . .[7]

Similarly, the United Nations General Assembly, in its resolution providing for the institutional and financial arrangements of UNEP, declared itself:

> *Convinced* of the need for prompt and effective implementation by Governments and the international community of measures designed to safeguard and enhance the human environment for the benefit of present and future generations of Man.[8]

If we can believe the accompanying oratory and explications, the task of creating in the peoples of the world the perspectives necessary both for their more realistic understanding of their common interests in relation to the environment and for their invention, acceptance, and initiation of some of the measures required for the fulfillment of these common interests is well begun. The real question is to what degree the goals and related hortatory recommendations will actually be made effective in decision outcomes.

III. Trends in Decision and Conditioning Factors

A. Claims in Relation to the Process of Use

The potentialities afforded by world constitutive process and inherited public order for assisting movement toward improved environmen-

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[7] Report 4.
[8] *Id.* 61.

tal protection may be comprehensively and economically indicated in terms of the trends in decision in relation to certain basic perennial problems.

1. Allocation of Resources

It is a function of the global constitutive process to allocate resources between the inclusive and exclusive use and competence of the different territorial communities. The resources traditionally held open for inclusive enjoyment and decisionmaking include the oceans (including both the airspace above the oceans and the ocean floor), the void of space and the celestial bodies, international rivers, the polar regions, and some flow and stock resources within these areas. Left subject to exclusive appropriation are the landmasses of the world and their immediately proximate waters (in particular, internal waters and the territorial sea), their superjacent airspace, and the genetic, aesthetic, and cultural resources within these areas.[9] This basic pattern of allocation, it is readily apparent, has in its determinations of inclusivity and exclusivity greatly emphasized geographic factors.

In the past some claims to exclusive competence over basically sharable resources have been honored for the limited purpose of protecting certain very specific interests of coastal states. Thus, claims to contiguous zones and other special zones (*e.g.*, fisheries zones in the oceans and air-defense zones over the high seas) have been honored. The acceptance of these claims has been built upon the principle of "impact territoriality," which establishes the competence of a state with respect to external events which have impacts upon its territorial base. These zones are unlike territorial seas in that coastal states do not possess over them the whole bundle of competences known as "sovereignty," but rather are accorded a limited competence for the specified functional purposes.[10]

Most recently, an outstanding trend includes vast demands for shifts from inclusive to exclusive competence and from geographic factors to functional criteria in justification. In the area of oceans management, many states are claiming "exclusive economic zones" or "patrimonial seas" in which they assert the right to exercise exclusive competence over natural resource exploitation with varying degrees of control

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[9]For summaries of the regimes governing these resources, see Note, *supra* note 4, at 1661-63 & nn. 10-21. For comprehensive analysis of inclusive resources, see M. MCDOUGAL & W. BURKE, THE PUBLIC ORDER OF THE OCEANS (1962); M. MCDOUGAL, H. LASSWELL & I. VLASIO, LAW AND PUBLIC ORDER IN SPACE (1963).

[10]*See* Convention on the Territorial Sea and the Contiguous Zone, *done* April 29, 1958, [1964] 15 U.S.T. 1606, T.I.A.S. No. 5639, 516 U.N.T.S. 205, art. 24. *See also* M. MCDOUGAL & W. BURKE, THE PUBLIC ORDER OF THE OCEANS 584-606 (1962).

over transportation, communication, military uses, and scientific inquiry.[11] In addition, the United States has proposed that coastal state competence be extended to cover the entire migratory routes of anadromous fish (*e.g.*, salmon) and not just their spawning areas.[12] Either or both of these types of claims will result in broad areas of the oceans coming under some exclusive competence while remaining an inclusively enjoyed resource for other purposes. Finally, with particular reference to environmental considerations, Canada and some other states favor recognition of a residual competence of coastal states to establish environmental standards until and unless the international community reaches agreement on a suitable regime. Canada has already passed legislation, the highly controversial Arctic Waters Pollution Prevention Act,[13] establishing "environmental protection zones" out to 100 nautical miles from its Arctic coastline.

As far as the atmosphere is concerned, similar emerging—but not as yet carefully delineated—problems with respect to weather and climate modification are beginning to demand attention.[14] As an inadvertent byproduct of industrial processes, man is already having profound effects on weather and climate, and the technology is or will soon be available to make purposive alterations.[15] There is no escape, therefore, from questions of whether or not the atmosphere is open for such use by any and all states, and of who has decisionmaking competence—with all its attendant rights and responsibilities—over the activities involved. The fundamental question is whether climate and weather are to be regarded as inclusive resources under inclusive competence or are to be subjected to exclusive appropriation.

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[11]*See* Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor Beyond the Limits of National Jurisdiction, Report, 27 U.N. GAOR, Supp. 21, at 70, 73, 180, U.N. Doc. A/8721 (1972); *Id.* 28 U.N. GAOR, Supp. 21, vol. 2 at 4, vol. 3 at 1, 19, 23, 78, 87, 106, U.N. Doc. A/9021 (1973) [hereinafter cited as SEABEDS REPORT].

[12]Working Paper on Special Considerations Regarding the Management of Anadromous Fishes and Highly Migratory Oceanic Fishes, in 3 SEABEDS REPORT 11 (1973).

[13]CAN. REV. STAT. c. 47 (1970), text in 9 INT'L LEGAL MATERIALS 543 (1970); *see* Pharand, *The Arctic Waters in Relation to Canada*, in CANADIAN PERSPECTIVES ON INTERNATIONAL LAW & ORGANIZATIONS 434 (R. MacDonald ed. 1974); Beesley, *Rights and Responsibilities of Arctic Coastal States: The Canadian View*, 3 J. MARITIME L. & COMMERCE 1 (1971); *cf.* Bilder, *The Canadian Arctic Waters Pollution Prevention Act: New Stresses on the Law of the Sea*, 69 MICH. L. REV. 1 (1970). *But see* Henkin, *Arctic Anti-Pollution: Does Canada Make—Or Break—International Law?*, 65 AM. J. INT'L L. 131 (1971).

[14]*See* Samuels, *International Control of Weather Modification Activities: Peril or Policy?*, 13 NATURAL RESOURCES J. 327 (1973); Samuels, *Prospective International Control of Weather Modification Activities*, 21 U. TORONTO L.J. 222 (1971); Taubenfeld, *Weather Modification and Control: Some International Legal Implications*, 55 CALIF. L. REV. 493 (1967).

[15]*See* STUDY OF MAN'S IMPACT ON CLIMIATE, INADVERTENT CLIMATE MODIFICATION (1971).

2. Regulation of Enjoyment

The general community seeks to minimize the environmental losses, inadvertent or deliberate, that inevitably attend transnational interactions. It seeks also to effect the productive and harmonious use of the earth-space environment by present and future generations. In order to accomplish this dual objective, the most comprehensive constitutive process maintains a regime for regulating the enjoyment of resources.

a. Controlling Injurious Use

Resources Inclusively Enjoyed. With regard to resources inclusively enjoyed, many international agreements have been reached on means for controlling their injurious use and fixing liability and compensation for damage which nevertheless results. In the area of the law of the sea, several conventions seek to prevent pollution. Articles 24 and 25 of the 1958 Geneva Convention on the High Seas provide that "[e]very State shall draw up regulations to prevent pollution of the seas" from discharge of oil and dumping of radioactive waste respectively.[16] The 1954 International Convention for the Prevention of Pollution of the Sea by Oil[17] prohibits the intentional discharge of oil and oily mixtures into the sea, while the 1957 International Convention relating to the Limitation of the Liability of Owners of Seagoing Ships[18] and the 1962 Convention on the Liability of Operators of Nuclear Ships[19] deal with and limit the liability of shipowners for damage caused by their vessels.

The more recent treaties speak in stricter terms. The Intergovernmental Maritime Consultative Organization (IMCO) International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (the "Public Law" Convention)[20] and International Convention on Civil Liability for Oil Pollution Damage ("Private Law" Convention)[21] were both drawn up at Brussels in 1969, but neither is yet in force. The former acknowledged the right of a coastal state to take necessary and proportional measures on the high seas to protect its coastline or related interests from pollution of the sea by oil. The latter

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[16]*Done* April 29, 1958, [1962] 13 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82.

[17]*Opened for signature* May 12, 1954, [1961] 12 U.S.T. 2989, T.I.A.S. No. 4900, 327 U.N.T.S. 3. Amendments *adopted*, April 11, 1962, [1966] 17 U.S.T. 1523, T.I.A.S. No. 6109; October 21, 1969, annexed to I.M.C.O. Doc. A VI/Res. 175 (1970), text in 9 INT'L LEGAL MATERIALS 1 (1970).

[18]U.S. DEP'T OF STATE, BULL. No. 959, at 759-62 (1957). *See also* M. WHITEMAN, DIGEST OF INTERNATIONAL LAW 229-33 (1968).

[19]*Done* May 25, 1962, text in 57 AM. J. INT'L L. 268 (1963).

[20]*Done* November 29, 1969, text in 9 INT'L LEGAL MATERIALS 25 (1970).

[21]*Done* November 29, 1969, text in 9 INT'L LEGAL MATERIALS 45 (1970).

would impose strict liability on the owner of any oil tanker from which oil escaped after an incident at sea and which caused damage in the territory or territorial waters of a contracting state. It was supplemented by the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage,[22] also yet to come into force, which would relieve shipowners from the "additional financial burden" imposed by the 1969 "Private Law" Convention and provide supplementary compensation for oil pollution victims up to a limit of $30 million.

Very recently, the 1972 Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft[23] established an absolute prohibition against the dumping of certain highly toxic substances and regulated the dumping of all other substances in the region of the North Sea and North Atlantic Ocean, and the subsequent 1972 London Convention on the Dumping of Wastes at Sea[24] made similar black and grey lists applicable to all marine waters other than internal waters of states. The 1973 International Convention for the Prevention of Pollution from Ships[25] extended the 1954 Pollution of the Sea by Oil Convention with the intention of achieving the complete elimination of pollution of the sea by oil and other noxious substances and the minimization of accidental spills. Finally, the Oslo Convention states (joined by three landlocked neighbors) have just expanded their 1972 agreement into a comprehensive regime for that region of the seas by complementing it with a 1974 Convention for the Prevention of Marine Pollution from Land-Based Sources.[26]

The list of relevant conventions is long, and efforts at meaningful agreement are not limited to the oceans. The 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere in Outer Space and Under Water (the "Test Ban" Treaty),[27] while mostly a disarmament measure, also represents a very important environmental protection agreement. The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies[28] (the "Outer Space" Treaty) provides that a state launching an object into space shall be "internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object,"[29] and the new 1972 Convention on International Liability

[22] *Done* December 18, 1971, text in 11 INT'L LEGAL MATERIALS 284 (1972).

[23] *Done* February 15, 1972, text in 11 INT'L LEGAL MATERIALS 262 (1972).

[24] *Adopted* November 13, 1972, text in 11 INT'L LEGAL MATERIALS 1291 (1972).

[25] *Done* November 2, 1973, text in 12 INT'L LEGAL MATERIALS 1319 (1973).

[26] *Adopted* February 21, 1974, text in 13 INT'L LEGAL MATERIALS 352 (1974).

[27] *Done* August 5, 1963, [1963] 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43.

[28] *Entered into force* October 10, 1967, [1967] 18 U.S.T. 2410, T.I.A.S. No. 6347, text in 6 INT'L LEGAL MATERIALS 386 (1967).

[29] 18 U.S.T. 2410, 2415, T.I.A.S. No. 6347, text in 6 INT'L LEGAL MATERIALS 386, 388 (1967).

for Damage Caused by Space Objects provides that a launching state "shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight."[30]

Resources Exclusively Enjoyed. With respect to exclusive enjoyment of resources, the conferees at Stockholm made clear that such rights of states must be limited or balanced by responsibilities to ensure that their exercise does not result in damage to others. Principle 21 of the United Nations Declaration on the Human Environment contains the crucial balance:

> 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.[31]

While the principle of responsibility of one state for damage caused in another is generally recognized, there have been only a few relevant international decisions on the subject. Most cited is the *Trail Smelter*[32] arbitration, in which an international tribunal found Canada liable for fumes emanating from a smelter located in British Columbia and doing damage in the State of Washington. The *Corfu Channel*[33] case, in which the International Court of Justice held Albania responsible under inter-

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[30]*Entered into force* September 1, 1972, text in J. PARROS & D. JOHNSTON, INTERNATIONAL LAW OF POLLUTION 373 (1974).

[31]REPORT 7 [emphasis added].

[32](United States v. Canada), 3 U.N.R.I.A.A. 1905, 1967 (1938, 1941), 35 AM. J. INT'L L. 684 (1941). The arbitral tribunal explained its reasoning in a much-quoted passage:

> [U]nder the principles of international law, as well as the law of the United States, no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.
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> . . . .
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> [T]he Tribunal holds that the Dominion of Canada is responsible in international law for the conduct of the Trail Smelter. . . . [I]t is . . . the duty of the Government of the Dominion of Canada to see to it that this conduct should be in conformity with the obligation of the Dominion under international law as herein determined.
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> [T]he Trail Smelter shall be required to refrain from causing any damage through fumes in the State of Washington . . . .

Id. at 1965-66, 35 AM. J. INT'L L. 716-17 (1941).

[33][1949] I.C.J. 4. The Court had to decide whether Albania was responsible under international law for the explosions and resultant damage and whether the United Kingdom had violated the sovereignty of the People's Republic of Albania by reason of certain acts (including subsequent minesweeping) by the Royal Navy in Albanian waters. The Court rendered judgment in favor of the United Kingdom on both counts.

national law for damage to British ships from mine explosions in Albanian territorial waters, is another example. The third international judgment usually cited for its environmental implications is the *Lac Lannoux*[34] arbitration, where an international tribunal said that France would be strictly liable if, due to its hydroelectric utilization of a French lake, damage resulted to waters draining into Spain.

Similar policies are expressed in the more general practice of states. Traditional international law doctrines of "self-help" (including those of "self-defense," "self-preservation," and "security"),[35] as well as the somewhat less defined principle of "good neighborliness,"[36] allow a state confronted with a major threat to its exclusive resource interests to assert the necessary and proportional force to avert the danger or to abate its effects. In addition, in their various contiguous zones,[37] states exercise limited control over inclusive resources to prevent injury to particular exclusive interests. Coastal states have also certain other rights of abatement beyond their national jurisdictional limits (as, for example, those specified in the IMCO "Public Law" Convention).[38] All these rights build upon the basic principle, already mentioned, of "impact territoriality."

The most significant feature of the Stockholm formulation in light of these precedents is that Principle 21 explicitly extends liability to cover "areas beyond the limits of national jurisdiction."[39] The case law to date has been applied only narrowly for damage inflicted by one country or by its nationals on the rights, property, or territory of another country, its nationals or activities. Customary concepts of "self-defense," "self-preservation," "security," "good neighborliness," and "contiguous zones" have also been defined in terms of a sovereign-state

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[34](France v. Spain), 12 U.N.R.I.A.A. 281 (1957), 53 AM. J. INT'L L. 156 (1959). The arbitral tribunal held for France after finding that there would be full restitution of the diverted waters if the proposed electricity project were carried out. It made clear, however, that strict liability would have governed in the event of a finding for Spain:

> It could have been argued that the works would bring about a definitive pollution of the waters of the Carol or that the returned water would have a chemical composition or a temperature or some other characteristics which could injure Spanish interests. Spain could then have claimed that her rights had been impaired . . . .

Id. at 303, 53 AM. J. INT'L L. at 160-61.

[35]On self-help, see the U.N. Charter art. 51 and the complementary provision prohibiting "the threat or use of force" at art. 2, para. 4.

[36]The doctrine of "good neighborliness" is probably most highly developed in the law of international rivers, where a broad standard of recognition and respect for the multiple and alternative uses of the waters has evolved. *E.g.*, Case of the Territorial Jurisdiction of the International Commission of the River Order, [1929] P.C.I.J., ser. A, No. 23.

[37]*See* text accompanying note 10 *supra.*

[38]International Convention on Intervention on the High Seas in Cases of Oil Pollution Casualties, *done* November 29, 1969, text in 9 INT'L LEGAL MATERIALS 25 (1970).

[39]REPORT 7.

"self." The new statement of international community expectations—by its explicit provision—applies to the *res communes* as well as the exclusive possessions of other states.

b. *Facilitating Productive and Harmonious Use*

Resources Inclusively Enjoyed. Facilitating productive use of inclusive resources has traditionally been expressed jointly in terms of conservation and of apportionment. The early fisheries, pelagic sealing, and whaling conventions are examples of international agreements for these purposes.[40] Providing for the harmonious enjoyment in use of inclusive resources has required clarification of certain principles of jurisdiction and "rules of the road." Vessels, aircraft, and spacecraft are assimilated to the territory of their registry (with certain exceptions where there is concurrent jurisdiction). As to the host of ancillary rules of conduct, maritime law has over the centuries developed a comprehensive regime for regulating navigation, safety, and other operational facets of use.[41] Similar regulatory regimes have more recently been adopted for parallel problems in the areas of international rivers, air transport, and space exploration through the operations of the Helsinki Rules,[42] the International Air Transport Association (IATA), and the Outer Space Treaty[43]

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[40]*See, e.g.*, International Convention for the Northwest Atlantic Fisheries, *done* February 8, 1959, [1950] 1 U.S.T. 477, T.I.A.S. No. 2089, 157 U.N.T.S. 157, with several protocols up to that of November 29, 1965, [1970] 21 U.S.T. 576, T.I.A.S. No. 6841; North-East Atlantic Fisheries Convention, *done* January 24, 1959, 486 U.N.T.S. 157, 1963 U.K.T.S. 68; Convention on Fishing and Conservation of the Living Resources of the High Seas, *done* April 29, 1958, [1966] 17 U.S.T. 138, T.I.A.S. No. 5969, 559 U.N.T.S. 285; International Convention for the High Seas Fisheries of the North Pacific Ocean, May 9, 1952, [1953] 4 U.S.T. 380, T.I.A.S. No. 2786, 205 U.N.T.S. 65; Convention between the United States, Great Britain, Russia and Japan for the Preservation and Protection of Fur Seals, July 7, 1911, 37 Stat. 1542 (1911), T.S. No. 564, 104 B.F.S.P. 175, with sequels of December 8, 1942, 58 Stat. 1379 (1944), E.A.S. No. 415, 26 U.N.T.S. 364, and of February 9, 1957, [1957] 8 U.S.T. 2283, T.I.A.S. No. 3948, 314 U.N.T.S. 105.

For conventions on particular species, see S. LAY, R. CHURCHILL & M. NORDQUIST, 1 NEW DIRECTIONS IN THE LAW OF THE SEA 406-67 (1973). Examples of recent conventions along these lines include: Agreement on the Conservation of Polar Bears, *done* November 15, 1973, text in 13 INT'L LEGAL MATERIALS 13 (1974); Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts, *done* September 13, 1973, text in 12 INT'L LEGAL MATERIALS 1291 (1973).

[41]*See, e.g.*, International Regulations for the Prevention of Collisions at Sea, *approved* May 17-June 17, 1960, [1965] 16 U.S.T. 794, T.I.A.S. No. 5813; International Convention for the Safety of Life at Sea, June 17, 1960, [1965] 16 U.S.T. 185, T.I.A.S. No. 5780, 536 U.N.T.S. 27.

[42]REPORT OF THE FIFTY-SECOND CONFERENCE HELSINKI 143-286, 447-533 (International Law Association 1966).

[43]Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *entered into force* October 10, 1967, [1967] 18 U.S.T. 2410, T.I.A.S. No. 6347, text in 6 INT'L LEGAL MATERIALS 386 (1967).

and related United Nations space resolutions.

In the context of the current Law of the Sea negotiations, this order is being greatly enlarged in scope.[44] First, states are coming to realize the seriousness of the problem of overfishing and its adverse impact on world protein supply and economic livelihood. Conservation of the fish stocks is said to be a major impetus behind the many proposals for new fisheries regimes and "exclusive economic zones." A second concept gaining general support is that of maximum utilization (variously defined). Several of the fisheries proposals make specific provision for other states to share in fishing activities when a coastal state underutilizes the fisheries resources outside its territorial sea. Thirdly, issues of equitable allocation and problems of landlocked and other geographically disadvantaged states are having to be faced openly. Of some 27 different resource proposals presented in the United Nations Committee on the Peaceful Uses of the Seabed and the Ocean Floor Beyond the Limits of National Jurisdiction (the "Seabeds Committee"), six deal essentially with the concerns of these geographically unfortunate states.[45]

Resources Exclusively Enjoyed. With respect to their exclusive resources, many states have gone farther than existing international norms in instituting positive programs of action. The United States Clean Air Act, 1967 Air Quality Act, and Clean Air Amendments of 1970,[46] which together aspire to set up a comprehensive system of air-quality control, afford an impressive example in just one area.[47] Not only are national governments declaring their environmental aspirations, but they are creating the infrastructure essential to achieve these goals. Just a few years ago "conservation" was a relatively minor interest associated primarily with birdwatchers and occasional whale enthusiasts, but now most of the major industrialized nations of the world have set up national departments of the environment. In this country, the Council on Environmental Quality (CEQ) has a highly significant advisory role, and the Environmental Protection Agency (EPA) undertakes major operational functions.

States, both individually and collectively, are increasingly making efforts to conserve and preserve exclusive resources. Under the recent 1973 UNESCO Convention for the Protection of the World Cultural and Natural Heritage,[48] states reciprocally have recognized their duty of "ensuring the identification, protection, conservation, presentation and

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[44]*See* Stevenson & Oxman, *The Preparations for the Law of the Sea Conference*, 68 AM. J. INT'L L. 1 (1974).

[45]*Id.* 13 n.42.

[46]The Clean Air Act, 42 U.S.C. §§ 1857 *et. seq.* (1970).

[47]For a discussion of these acts and their efficacy, see CONSERVATION FOUNDATION, A CITIZEN'S GUIDE TO CLEAN AIR (1972).

[48]*Adopted* November 16, 1972, text in 11 INT'L LEGAL MATERIALS 1358 (1972).

transmission to future generations" of the world's heritage, and they have bound themselves to take "effective and active measures" toward these ends. Similarly, the new 1973 Endangered Species Convention,[49] by which states agree to refrain from trade in species of wild flora and fauna in danger of extinction, represents such a collective conservation attempt covering some resources within the exclusive competence of nation-states. Finally, international aid and technical assistance for environmental management projects, if it is forthcoming, would also come in this category.

3. Planning and Development Functions in Relation to Resources

Resources Inclusively Enjoyed. Many of the most important resource use problems are associated with regional development and urbanization. Community planners have long advocated more effective planning of the physical environment and services of communities and subsequent development of resources in accordance with these plans. Many of these local considerations themselves have international implications (*e.g.*, amount of land devoted to food production, land activities which pollute the oceans and atmosphere, weather modification), and certainly the aggregate problem of planning and development of the resources of the shared earth-space environment is a matter of utmost international concern.[50] Until quite recently, nevertheless, these functions have been given little attention by the world community, and only initial projects have been undertaken.

There have in the past been attempts at shared-river-basins planning and development. The 1909 Boundary Waters Treaty between the United States and Canada[51] set up the International Joint Commission (IJC) to make recommendations for the effective use of these waters, and since then the Rhine and Danube Commissions have been set up for analogous purposes.[52] On a broader scale, the comprehensive efforts by many international agencies of the United Nations family to alleviate the drastic conditions caused by the drought in the Sahelian region in Africa and to improve the future prospects for the area are an unprecedented international custodianship enterprise.[53] Yet, as far as overall

[49]Convention on International Trade in Endangered Species of Wild Fauna and Flora, *done* March 3, 1973, text in 12 INT'L LEGAL MATERIALS 1085 (1973).

[50]*See* Tarlock, *Land Use Choice: National Perogative vs. International Policy*, 13 NATURAL RESOURCES J. 343 (1973).

[51]U.S.T. No. 549.

[52]*See* Bilder, *Controlling Great Lakes Pollution: A Study in United States-Canadian Environmental Co-operation*, in LAW, INSTITUTIONS, & THE GLOBAL ENVIRONMENT 294 (J.L. Hargrove ed. 1972); Stein, *The Potential of Regional Organizations in Managing Man's Environment*, in LAW, INSTITUTIONS, & THE GLOBAL ENVIRONMENT 253 (J.L. Hargrove ed. 1972).

[53]Almost all of the U.N. specialized agencies and several other agencies are partici-

inclusive international planning and development of the resources of the shared earth-space environment is concerned, the record is woefully deficient.

Resources Exclusively Enjoyed. With respect to exclusive resources, all nations have plans—some, however, have more formal term-projections and explicitly stated goals than others. The individual governmental ways and means are diverse. A hopeful collective initiative in terms of international cooperation for the planning and development of national or exclusive resources should be noted. In the preparations for the 1975 Vancouver Conference-Exposition on Human Settlements, countries with similar environmental problems in areas such as city planning, urban and rural services, low-cost housing, and accommodation of migrants are pooling their expertise for their joint and separate benefit.[54]

4. Managing the Access of Peoples to Resources

The issue of managing the access of peoples to resources involves reconsideration of criteria for membership in national communities (nationality), of freedom of movement between communities (transnational migration),[55] and of control of numbers of people (population).[56]

a. Nationality

Nationality is the vehicle by which an individual can advance claims to richer participation both in the exclusive resources of his particular national community and in the inclusive resources of wider communities. States historically have been permitted to prescribe and apply highly restrictive policies in the granting or denial of nationality. This has frequently resulted in "stateless persons," who are politically impotent both in the national territory in which they find themselves and in the international arena. Such practices dishonor the principle of indi-

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pating in projects in the Sahel. UNEP is also giving close attention to these projects, in line with decisions by its Governing Council to accord high priority to the areas of land, water and desertification.

[54]By its resolution 3001 (XXVII) of December 15, 1972, the U.N. General Assembly decided to hold a "United Nations Conference-Exposition on Human Settlements" and to accept the offer by the government of Canada to act as host. The Conference-Exposition is scheduled to take place from May 31, 1976, to June 11, 1976.

[55]On nationality and movement of peoples, see McDougal, Lasswell, & Chen, *Nationality and Human Rights: The Protection of the Individual in External Arenas*, 83 YALE L.J. 900 (1974).

[56]On international law and the population problem, see Nanda, *The Role of International Law and Institutions Toward Developing a Global Plan of Action on Population*, 3 DENVER J. INT'L L. & POLICY 1 (1973); THE WORLD POPULATION CRISIS: POLICY IMPLICATIONS AND THE ROLE OF LAW (Proceedings of the Am. Soc. Int'l L. regional meeting and the John Bassett Moore Soc. of Int'l L. symposium 1971).

vidual voluntarism and the maximization of human rights and human dignity.

Fortunately, however, some amelioration of historic attitudes towards nationality can be seen in the contemporary human rights program. The Universal Declaration of Human Rights provides that, at a minimum, "everyone has the right to a nationality" and that "no one shall be arbitrarily deprived of his nationality nor denied the right to change his nationality."[57] Furthermore, the same condition is implicit in the broader proclamation in the United Nations Environment Declaration: "Man has the fundamental right to freedom, equality, and adequate conditions of life . . . ."[58]

b. *Movement of Peoples*

The right to a nationality, if it is to be a meaningful vehicle of individual freedom and self-expression, must be accompanied by certain concomitant international rights: the right to return, the right to leave, and the right to stay in a country. Freedom of movement among national communities is required for their effectuation.

Traditionally, states have imposed severe limitations on international freedom of migration: immigration quotas, travel, and visa restrictions on the one hand and expatriation, deportation, and similar deprivations on the other. Such distressing precedents have been rejected in recent delineations of human rights—*e.g.*, the Universal Declaration on Human Rights,[59] the International Covenant on Civil and Political Rights,[60] the European Convention on Human Rights,[61] and the American Convention on Human Rights.[62] Yet, one has only to think of the plights of Soviet Jews, Ugandan Asians, and American draft resisters to realize that the world community is still far from having achieved its stated objectives. The goal of a high degree of voluntarism in international affiliation, participation, and travel is far from having been reached.

c. *Population*

Thirdly, the matter of numbers and concentrations of people (the "population question") is fundamental to international environmental policymaking. Population factors have to be approached both from the

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[57]G.A. Res. 217A, U.N. Doc. A/777 at 71, art. 15 (1948).

[58]REPORT 4.

[59]G.A. Res. 217A, U.N. Doc. A/777 (1948).

[60]*Opened for signature* Dec. 16, 1966, Annex to G.A. Res. 2200A, 21 U.N. GAOR, Supp. 16, at 49, U.N. Doc. A/6316 (1966), text in 61 AM. J. INT'L L. 861 (1967).

[61]*Adopted* April 3, 1954, Eur. T.S. No. 5, 213 U.N.T.S. 221.

[62]Text in BASIC DOCUMENTS ON INTERNATIONAL PROTECTION OF HUMAN RIGHTS 211 (L. Sohn & T. Buergenthal eds. 1973).

point of view of people as resources (human resources) and from that of people as molders of their own environment (human dignity). This raises urgent and contradictory policy considerations. On the one hand, people are an important base of power in the world community; but, on the other, no environmental measures in any dimension can be effective in the long term if the demographic explosion is not checked. At least to this extent, basic Malthusian doctrine remains as applicable as ever.

Until very recently population issues have been considered virtually exclusively within the decisionmaking competence of sovereign states. In the last decade or so, however, transnational efforts to control population growth and distribution have been inaugurated. They were at first narrowly limited to development assistance in the field of birth-control technology; but with the growing imminence and clearer perceptions of impending global demographic crisis, international cooperation has been increasing steadily in scope and magnitude—culminating in the denomination of 1974 as World Population Year and the preparation for a World Population Conference in 1975.[63]

B. Claims in Relation to the Global Constitutive Process

1. General Conception

The contemporary global community, like its constituent national communities, maintains a comprehensive process of decisionmaking in which elements of both authority and effective control are combined for the protection and expansion of both minimum and optimum order. The "constitutive process" is comprised of all decisions which characterize and identify the different authoritative decisionmakers, specify and clarify basic community policies, establish appropriate structures of authority, allocate bases of power for sanctioning purposes, authorize procedures for making the different kinds of decisions, and secure the continuous performance of all the different types of decision functions necessary to making and administering community policy. The "public order" decisions of the larger community, such as those that protect or fail to protect the environment, emerge in continuous flow from this established process.

This conception of constitutive process is to be sharply distinguished from the oft-asserted, restrictive, two-tiered approach to global decisionmaking, which attempts to draw a sharp division between international law and national legal processes. Concise expression of this latter view was offered most authoritatively by the late Professor Lassa Oppenheim.

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[63] *See* G.A. Res. 2542, 24 U.N. GAOR Supp. 30, at 49, U.N. Doc. A/7630 (1969). *See also* ECOSCC Res. 1672A-D (LII), 52 U.N. ESOSOC, Supp. 1, at 7, U.N. Doc. E/5183 (1972).

> International Law and Municipal Law are in fact two totally and essentially different bodies of law which have nothing in common except that they are both branches—but separate branches—of the tree of law. Of course it is possible for the Municipal Law of an individual state by custom or by statute to adopt rules of International Law as part of the law of the land, and then the respective rules of International Law become *ipso facto* rules of Municipal Law.[64]

Unhappily, this "two-tiered" approach has recently achieved resuscitation in the specific context of international environmental law.

> [T]he global and particular policy processes are not seen running side by side, one scoring here and one there. They are hierarchical rather than complementary. They are fused together to form a single two-tier process in which the understandings, apprehensions, and goals, continuously articulated, assessed and re-evaluated at the global level, are allowed to seep down to the second tier of the subsystems and gently civilize the harsh but unavoidable particular solutions to which individual states, pressed by technological flux, will increasingly resort.[65]

Similarly, the conception of a global constitutive process requires clear distinction from the other scholarly extreme: the so-called "monist theories" of international law. The clearest, brief exposition of these theories is perhaps that of Professor Josef Kunz.

> [*A*]*ll* the activity of the single States is regulated by the supraordinated Law of Nations. The so-called 'domestic affairs' of the single States are not the affairs which are *not* regulated by international law, but the affairs which a State, *under international law*, has the exclusive competence to regulate as it pleases . . . .[66]

The most complete devotion to this monistic primacy of international law underwrites a rather futilitarian despair. Thus, Professor Richard Falk concludes:

> A world of sovereign states is unable to cope with endangered-planet problems. . . . Such a system exhibits only a modest capacity for international cooperation and coordination. The distribution of power and authority, as well as the organization of human effort, is overwhelmingly guided by the selfish drives of nations.[67]

Avoiding the Scylla of legalistic mysticism and the Charybdis of

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[64]Oppenheim, *Introduction* to C. PICCIOTTO, RELATION OF INTERNATIONAL LAW TO THE LAW OF ENGLAND AND THE UNITED STATES at 10 (1915).

[65]Slouka, *International Environmental Controls in the Scientific Age*, in LAW, INSTITUTIONS, & THE GLOBAL ENVIRONMENT, at 208, 229-30 (J.L. Hargrove ed. 1972).

[66]Kunz, *The "Vienna School" and International Law*, 11 N.Y.U.L.Q. REV. 370, 399 (1934).

[67]R. FALK, THIS ENDANGERED PLANET 37-38 (1971).

academic fatalism, it may be possible to observe that people identify and interrelate, and make authoritative decisions, on multiple levels, from local to global or earth-space. Our presentation will be confined to brief descriptions of the transnational decisionmaking and implementation processes with regard to environmental problems.

2. Particular Functions

We describe the varying phases of the world constitutive process in terms of seven basic functions or culminating outcomes in decision: Intelligence, promotion, prescription, invocation, application, termination, and appraisal.

a. Intelligence

Intelligence is the obtaining, processing, and dissemination of information (including planning). The intelligence function is given great emphasis in the United Nations Environment Programme. The Action Plan adopted at Stockholm provided for a comprehensive global assessment program to be called "Earthwatch."[68] Earthwatch included functions divided into four categories: evaluation and review, research, monitoring, and information exchange. Of the 109 Recommendations adopted by the Conference, Recommendations 23, 25, 27, and 40 have provisions pertinent to these four respective areas.[69] At subsequent sessions of the UNEP Governing Council, a large number of representatives have expressed the view that high priority should be given to the Earthwatch program and that a beginning should be made with the monitoring component of the program by the establishment of a "Global Environ Monitoring System" (GEMS).[70]

Several important transnational environmental groups carry out environmental information gathering and dissemination activities. Some highly prominent examples are the Study of Critical Environmental Problems (SCEP), the Scientific Committee on Problems of the Environment (SCOPE), and the Study of Man's Impact on Climate (SMIC) of the International Council of Scientific Unions (ICSU), the Marine Environmental Protection Committee (MEPC) of the Intergovernmental Maritime Consultative Organization (IMCO), the Committee on the Challenges of Modern Society (CCMS) of the North Atlantic Treaty Organization (NATO), the International Union for the Conservation of Nature, and Natural Resources of the Council of Eu-

[68] REPORT 59.

[69] *Id.*

[70] *See, e.g.*, REPORT OF THE GOVERNING COUNCIL OF THE UNITED NATIONS PROGRAMME, U.N. Doc. UNEP/GC/10, at 8 (1973).

rope.[71] On a bilateral level, the recent United States-Soviet Union treaty on the exchange of environmental information underlines the importance of this function as a prerequisite to other forms of environmental cooperation.[72]

Many subnational groups also perform vital environmental information activities. The requirement of environmental "impact statements" under Section 102(2)(C) of the United States National Environmental Policy Act of 1969 was designed to ensure that such activities are carried out by federal agencies before they undertake major federal actions with significant environmental effects.[73] Finally, countless research and analysis efforts by private individuals and institutions contribute to the overall global fund of environmental intelligence.[74]

Regardless of the recent proliferation of international environmental intelligence programs, the system is still somewhat incomplete. There has been only qualified recognition of the duty of states to warn and consult with other states concerning activities which risk significant adverse environmental effects on the other states. As one writer has expressed it, we lack an international analogue for national "impact statements."[75] This duty to provide proper warning was proposed by the Working Group of the Preparatory Committee for the Stockholm Conference for inclusion in the Environment Declaration. The aborted "Principle 20" would have read:

> Relevant information must be supplied by States on activities or developments within their jurisdiction or under their control whenever they believe, or have reason to believe, that such information is needed to avoid the risk of significant adverse effects on the environment in areas beyond their national jurisdiction.[76]

Unfortunately, due largely to an environmental dispute between Brazil and Argentina, this principle failed to win acceptance at the Conference. It was forwarded instead to the United Nations General Assembly, which incorporated only a modified version in a separate resolution

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[71]*See generally* Feraru, *Transnational Political Interests and the Global Environment*, 28 INT'L ORG. 31 (1974).

[72]Agreement on Cooperation in the Field of Environmental Protection, *done* May 23, 1972, text in 11 INT'L LEGAL MATERIALS 761 (1972). *See also* Union of Soviet Socialist Republics-United States: Memorandum of Implementation of Environmental Agreement, September 21, 1972, text in 11 INT'L LEGAL MATERIALS 1408 (1972).

[73]42 U.S.C. § 4332(C)(ii) (1970).

[74]*See* Feraru, *supra* note 71.

[75]Goldie, *International Impact Reports and the Conservation of the Ocean Environment*, 13 NATURAL RESOURCES J. 256 (1973).

[76]Draft Declaration on the Human Environment, U.N. Doc. A/Conf. 48/4, Annex, para. 20, at 4 (1972).

calling for "cooperation and good neighborliness" in the field of environmental protection.[77]

Our need for new and more precise environmental information in general and in specific situations is enormous. It is matched only by the need for better arrangements for processing and exchanging present knowledge.

b. Promotion

Promotion (or recommendation) is the advocacy of general policy. It involves the formulation and propagation of demands and the mobilization of support for new enactments.

This function has been rather inadequately performed on the transnational level in relation to environmental affairs. The whole United Nations Environment Programme (UNEP)—with its Governing Council, Secretariat, Fund and Co-ordinating Board—however, was set up basically to see that there are improved and better-coordinated international environmental initiatives in the future.[78] In particular, the Environment Secretariat and its Executive Director have been mandated by the General Assembly to act as "a focal point for environmental action and co-ordination within the United Nations system."[79]

Many other organizations are becoming quite actively involved in environmental promotion activities. The numerous nongovernmental organizations represented at the Stockholm Conference got together and promulgated their own "NGO Declaration." In it they made recommendations on policy and action in regard to the Conference agenda and pledged, *inter alia*, separately to "mobilize support for the Stockholm decisions" and together to "mobiliz[e] joint pressure for environmental change."[80]

The Club of Rome, with its now famous study of *The Limits to Growth*,[81] is an example of an international organization which has developed high potential for transnational environmental promotion activities. The International Council of Scientific Unions, largely through the SCEP, SCOPE, and SMIC studies,[82] has had similar effects. The Inter-

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[77]For the history of draft Principle 20, see Sohn, *The Stockholm Declaration on the Human Environment*, 14 HARV. INT'L L.J. 423, 496-504 (1973).

[78]*See* text accompanying note 6 *supra*.

[79]G.A. Res. 2997, 27 U.N. GAOR Supp. 30, at 43-44, U.N. Doc. A/8730 (1970).

[80]Text in *Environment Stockholm* 17 (U.N. CESI 1972). Eleven NGOs also promulgated the "Statement of Youth and Student NGO's." *Id.* 19.

[81]D.H. MEADOWS, D.L. MEADOWS, J. RANDERS, & W. BEHRENS, THE LIMITS TO GROWTH (1972).

[82]*See* text accompanying note 71 *supra*. SCIENTIFIC COMMITTEE ON PROBLEMS OF THE ENVIRONMENT, GLOBAL ENVIRONMENTAL MONITORING (1971); STUDY OF CRITICAL ENVIRONMENTAL PROBLEMS, MAN'S IMPACT ON THE GLOBAL ENVIRONMENT (1970); STUDY OF MAN'S IMPACT ON CLIMATE, INADVERTENT CLIMATE MODIFICATION (1971).

national Institute for Environmental Affairs was specifically established in 1971 to serve as a clearing house and catalyst for action.[83] Finally, certain domestically based public interest groups are performing international environmental promotion functions.[84] The Sierra Club has developed transnational concerns and an international organizational network to sustain them, and the Center for Law and Social Policy is active in foreign policy and international relations advocacy for inclusive environmental interests.

The initial thrust of all these promotion activities is to change the perspectives of effective elites to incorporate broader recognition of ecological imperatives. Their ultimate objective is to formulate and propagate environmental demands and to mobilize support for the enactment and application of new authoritative prescriptions at all levels of community participation.

c. Prescription

Prescription is the formulation and projection of policy as authoritative community expectation. Historically, the making of transnational law has progressed by articulated multilateral agreements and by unarticulated, habitual, cooperative behavior from which expectations about authority and control are derived. Five different types of international arenas house activity toward this end: diplomatic, parliamentary-diplomatic, parliamentary, adjudicative, and executive. In the field of international law, the trend is markedly toward the delegation of law-making functions to the executive arena, since it features specialized agencies with secretariats which can deal continuously with decision functions.

Recent achievements in the prescription of international environmental law are impressive. Within the area of the ocean environment alone, several examples have been mentioned, and there are many others: the 1958 Geneva Conventions on the Law of the Sea,[85] the International Convention for the Prevention of Pollution of the Seas by Oil (1954-1971),[86] the International Convention relating to Intervention on

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[83]*See, e.g.*, INTERNATIONAL INSTITUTE FOR ENVIRONMENTAL AFFAIRS, WORLD ENERGY, THE ENVIRONMENT & POLITICAL ACTION (1973).

[84]*See* note 71 *supra*. *See also* note 80 *supra*.

[85]Convention on Fishing and Conservation of the Living Resources of the High Seas, *done* April 29, 1958, [1966] 17 U.S.T. 138, T.I.A.S. No. 5969, 559 U.N.T.S. 285; Convention on the High Seas, *done* April 29, 1958, [1962] 13 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82; Convention on the Territorial Sea and the Contiguous Zone, *done* April 29, 1958, [1964] 15 U.S.T. 1606, T.I.A.S. No. 5639, 516 U.N.T.S. 205.

[86]International Convention for the Prevention of Pollution of the Sea by Oil, 1954, *opened for signature* May 12, 1954, [1961] 12 U.S.T. 2989, T.I.A.S. No. 4900, 327 U.N.T.S. 3. Amendments *adopted*, April 11, 1962, [1966] 17 U.S.T. 1523, T.I.A.S. No. 6109; October 21, 1969, annexed to I.M.C.O. Doc. A VI/Res. 175 (1970), text in 9 INT'L LEGAL MATERIALS 1 (1970).

the High Seas in cases of Oil Pollution Casualties (1969),[87] the International Convention on Civil Liability for Oil Pollution Damage (1969),[88] the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (1971),[89] the Bonn Agreement for Cooperation in Dealing with Pollution of the North Sea by Oil (1969),[90] the General Principles on Marine Pollution[91] and the Statement of Objectives on the same subject (1972),[92] the Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (1972),[93] the International Convention on the Prevention of Pollution from Ships (1973),[94] and the Convention for the Prevention of Marine Pollution from Land-Based Sources (1974).[95]

All these conventions show an increasing awareness of the problems of the marine environment. They (especially the last-mentioned) also show growing recognition of the complexity of the ecological interdependences which are the most important conditioning factors of the policymaking process. Finally, there is a subsidiary trend toward increasing acknowledgement that, in the context of marine pollution, coastal states "have a particular interest in the management of area resources."[96]

Recent outcomes in prescription are, of course, not restricted to pollution and not restricted to the resources of the oceans. The "Test Ban" Treaty (1963),[97] the "Outer Space" Treaty (1967),[98] and the draft Convention on Liability for Damage Caused by Space Objects (1971)[99] all embody prescriptions with relevance to the environmental protection and use of the atmospehre and biosphere. The new "World Heritage"[100]

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[87]*Done* November 29, 1969, text in 9 INT'L LEGAL MATERIALS 25 (1970).

[88]*Done* November 29, 1969, text in 9 INT'L LEGAL MATERIALS 45 (1970).

[89]*Done* December 18, 1971, text in 11 INT'L LEGAL MATERIALS 284 (1972).

[90]*Entered into force* August 9, 1969, text in 9 INT'L LEGAL MATERIALS 359 (1970).

[91]REPORT, Annex 3.

[92]*Id.* at 48; *see* REPORT OF THE SECOND SESSION OF THE INTERGOVERNMENTAL WORKING GROUP ON MARINE POLLUTION, U.N. Doc. A/Conf. 48/IWGMP II/5, at 7-8 (1971) [hereinafter cited as IWGMP REPORT].

[93]*Done* February 15, 1972, text in 11 INT'L LEGAL MATERIALS 262 (1972). *See also* text accompanying notes 23 through 26 *supra*.

[94]*Done* November 2, 1973, text in 12 INT'L LEGAL MATERIALS 1319 (1973).

[95]*Adopted* February 21, 1974, text in 13 INT'L LEGAL MATERIALS 352 (1974).

[96]Statement of Objectives, correct text in IWGMP REPORT 7.

[97]1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere in Outer Space and Under Water, *done* August 5, 1963, [1963] 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43.

[98]1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *entered into force* October 10, 1967, [1967] 18 U.S.T. 2410, T.I.A.S. No. 6347, text in 6 INT'L LEGAL MATERIALS 386 (1967).

[99]*Entered into force* September 1, 1972, text in J. PARROS & D. JOHNSON, INTERNATIONAL LAW OF POLLUTION 373 (1974).

[100]Convention for the Protection of the World Cultural and Natural Heritage, *adopted* November 16, 1972, text in 11 INT'L LEGAL MATERIALS 1358 (1972).

and "Endangered Species"[101] Conventions (1973), Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts (1973),[102] Agreement on the Conservation of Polar Bears (1973),[103] and a variety of other multilateral and bilateral agreements are addressed to the positive goal of the wise use and preservation of environmental resources for future generations.

The central point is that these articulations of conceptions of prevailing law show both awareness of international environmental problems and a degree of willingness to do something about them. Clearly, if the inherited prescriptions about the protection of the environment are inadequate, the prescribing process itself offers few impediments to their being rendered more appropriate.

d. Invocation

Invocation is the provisional characterization of concrete circumstances in reference to prescriptions. In order to stimulate the application of community prescriptions, participants either must have the appropriate arenas open to them or find a surrogate or champion who does have access. The International Court of Justice (ICJ), for example, is at present closed to individuals and nonstate entities,[104] but states often bring cases there in a representative capacity for such participants. Community members who would complain about the violation of prescriptions for environmental protection, nevertheless, are likely to confront formidable barriers to obtaining a hearing.

The overwhelming trend of decision has been to permit the state of nationality, and only the state of nationality, to protect individuals and corporate entities. Furthermore, states are still regarded as having an option as to whether or not they will protect their nationals, for international law imposes no duty on a state to do so. This law has been developed in such famous cases as *Nottebohm*[105] (narrowly restricting state protection of individuals), *Flegenheimer*[106] (limiting state discretion as to who is its national for invocation purposes) and *Barcelona Traction*[107] (severely restricting competence to assert shareholders' interests in corporate affairs). The net effect of these decisions is denial

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[101]Convention on International Trade in Endangered Species of Wild Fauna and Flora, *done* March 3, 1973, text in 12 INT'L LEGAL MATERIALS 1085 (1973).

[102]*Done* September 13, 1973, text in 12 INT'L LEGAL MATERIALS 1291 (1973).

[103]*Done* November 15, 1973, text in 13 INT'L LEGAL MATERIALS 13 (1974).

[104]The STATUTE OF THE I.C.J., art. 34, provides that "[o]nly states may be parties in cases before the Court."

[105]Nottebohm Case, [1955] I.C.J. 4.

[106]Flegenheimer Claim, 25 I.L.R. 91 (Italian-United States Conciliation Commission 1958).

[107]Case Concerning the Barcelona Traction, Light & Power Co., Second Phase, [1970] I.C.J. 4.

of protection in international arenas of the minimum right to a hearing on the merits to the individual and group interests concerned. Similarly, in the national arenas of many countries, public interest groups are incapacitated because of restrictive provisions on standing to sue.

Recent trends are not encouraging. Not only do the old limitations remain extant, but recommendations in the context of the upcoming Law of the Sea Conference for a new specialized court (variously referred to as the Law of the Sea Court or International Maritime Court) and for a special fisheries commission again provide that only states would be parties to controversies to be resolved therein.[108]

Even should these deficiencies be cured and all participants be provided with a right to have their own claims heard, however, there would still remain the problem of how to secure protection of wider inclusive interests. This is the question of "who can speak for the commons?" In the *Nuclear Tests Cases,*[109] Australia and New Zealand are currently claiming that states should be allowed to sue not only on the basis of specification of injury to their own exclusive interests, but also as representatives of inclusive international environmental interests. This vital matter is, therefore, now directly before the International Court of Justice.

e. Application

Application is the final characterization of concrete circumstances in accordance with community prescription. Historically, the great bulk of the applications designed to put general community prescriptions into controlling effect in particular circumstances have been made in interactions between foreign offices. The fact that some participants have had to be alternatively both claimants and appliers has not been so much a source of bias as a guarantee of aggregate decision in terms of common interest.

In recognition of this traditional mode of application of international law and of the fact that the international system has developed very few mechanisms for supranational application, the relevant conventions rely on national policing systems. In the past, through the 1969 and 1971 IMCO Conventions,[110] such reliance has been placed solely on enforcement by flag states in maritime law and by the state of registry in space law. The 1972 London "Ocean Dumping" Convention, however,

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[108]*See* 5 SEABEDS REPORT § 21, at 1-9.

[109]Australia and New Zealand have each brought suit against France in the World Court in respect of a dispute concerning the holding of atmospheric tests of nuclear weapons by the French government in the Pacific Ocean. The I.C.J. issued an Order Concerning Interim Measures of Protection in each case on June 22, 1973, text in 12 INT'L LEGAL MATERIALS 749 (1973). On July 21, 1973, however, France conducted a nuclear test in the atmosphere over Mururoa in the Pacific Tests area; protests followed. *Id.*

[110]See notes 20 through 22 *supra.*

departed from past practice in recognizing complementary roles of flag and coastal states: the convention is enforceable by a contracting state not only against its flag and registry vessels, but also against vessels and fixed or floating platforms "under its jurisdiction and believed to be engaged in dumping."[111]

Full and prompt application of environmental prescriptions may, nevertheless, require more radical solutions—at least until adequate international cooperation is possible. The highly controversial Canadian Arctic "anti-pollution zone"[112] is described as an example of such unilateral action in furtherance of multilateral objectives. Within that zone, Canada has forbidden the deposit of wastes and other forms of pollution, imposed absolute civil liability and penalties for violations, and authorized "pollution prevention officers" to carry out extensive inspections and other regulatory measures. Canada asserts that such action is based, first, on the uniqueness and fragility of Arctic ecology, and secondly, on an emerging international law concept of pollution prevention and control authority of coastal states beyond their territorial waters.[113] The underlying rationale invoked, in other words, is again the principle of impact territoriality; until and unless the international community takes appropriate action to support its prescriptions for environmental protection and preservation, coastal states assert the right to protect their own interests.

Unilateral assertions can, of course, be directly contrary to the policies of transnational community expectation. When meant to insulate arbitrary and narrowly self-interested national actions from inclusive review (instead of simply providing an alternative arena for policy interpretation and other application), the consequences can be destructive both of inclusive substantive interests themselves and of confidence in the world constitutive process as a whole. The resistance to jurisdiction of the International Court of Justice asserted by Iceland and France in the environmentally related cases of *Fisheries Jurisdiction*[114] (concerning the legality of Iceland's declaration of a 50-nautical-mile exclusive

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[111]London Convention on the Dumping of Wastes at Sea, *adopted* November 13, 1972, text in 11 INT'L LEGAL MATERIALS 1291, art. 7 (1972).

[112]CAN. REV. STAT. c. 47 (1970), text in 9 INT'L LEGAL MATERIALS 543 (1970).

[113]*See Canadian Prime Minister's Remarks on the Proposed Legislation*, 9 INT'L LEGAL MATERIALS 601 (1970). *See also* Beesley, *The Arctic Pollution Prevention Act: Canada's Perspective*, 1 SYRACUSE J. INT'L L. & COMMERCE 226, 235 (1973).

[114]In the *Fisheries Jurisdiction Cases*, the United Kingdom and the Federal Republic of Germany have challenged a claim by Iceland to extend its exclusive fisheries jurisdiction to a zone of 50 nautical miles around the island. The international agreements upon which these suits are based are found in 397 U.N.T.S. 275 (1961) and 409 U.N.T.S. 47 (1961) respectively; the Icelandic Resolution of the Althing on Fisheries Jurisdiction appears in 11 INT'L LEGAL MATERIALS 643 (1972). The International Court of Justice has issued a preliminary injunction and has decided it has jurisdiction in both cases. *See*

fishing zone) and *Nuclear Tests*[115] (concerning the legality under customary international law of nuclear tests in the atmosphere) is of this type. It is possible that either or both countries may have sound cases on the merits, but they should be prepared to defend them in an international forum against conflicting environmental claims.

This is not to say that there are easy answers to the polemics of unilateralism, bilateralism, regionalism, and multilateralism as approaches to the application of international environmental law. It is merely to realize that the traditional international legal order is essentially a laissez-faire system, unexperienced in collective enforcement actions to deal with nonsecurity matters. Given the urgency of present ecological imperatives, flexible approaches to application on the part of those most directly concerned are required until the world constitutive process develops its own adequate means of application.

f. Termination

Termination is the ending of a prescription and the disposition of legitimate expectations created while the prescription was in effect. The prescribing function does not itself operate to terminate a great many old prescriptions. Comparable procedures, therefore, must be applied for putting an end to old crystallizations of community expectations.

In the environmental context, due to the extensive and fundamental interdependences with other areas of policymaking, it will often be necessary to ameliorate the costs of change and of selective impacts. The Helsinki Rules on the Uses of the Waters of International Rivers[116] allow for this by providing for compensation of prior interests where international rivers are adapted to new uses. Similarly, special time delays and other compensatory measures may be called for in the inauguration of new fishing regimes and arrangements for mining of the oceans for manganese nodules and other substances. Stabilization bodies for the purpose of easing economic and trade dislocations based on old patterns of exploitation have, therefore, been proposed as part of the Seabeds regime to be created under the new Law of the Sea Treaty.[117]

In sum, where *rebus sic stantibus*[118] has been invoked without delib-

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Order of August 17, 1972, Concerning the Request for Indication of Interim Measures of Protection, *id.* 1069; Judgments on the Question of the Jurisdiction of the I.C.J. in the Fisheries Jurisdiction Cases, text in 12 INT'L LEGAL MATERIALS 290 (1973); Order Concerning the Continuance of Interim Measures of Protection, text in *id.* 743.

[115] *See* note 109 *supra*.

[116] REPORT OF THE FIFTY-SECOND CONFERENCE HELSINKI 447-533 (International Law Association 1966).

[117] On the international authority to be created to deal with the seabeds beyond national jurisdiction, see Stevenson & Oxman, *The Preparations for the Law of the Sea Conference*, 68 AM. J. INT'L L. 1, 4-8 (1974).

[118] "At this point of affairs" or "in these circumstances"—international law doctrine of changed conditions.

erate, inclusive performance of the termination function, serious economic and other disruptions in the world public order have been known to occur. The international crisis precipitated by the unilateral modification of concessions and the oil embargo of this year is just one outstanding recent example.

g. Appraisal

Appraisal is the evaluation of the manner and measure in which the public policies have been put into effect and of responsibility therefor. Basically it represents the intelligence function applied to the decision process itself.

The most comprehensive recent examples of this function are the "Jackson Report,"[119] which reviewed the United Nations Development Programme, and the report by the Pearson Commission,[120] which appraised the International Bank for Reconstruction and Development. The motivations behind the creation of the United Nations Institute for Training and Research (UNITAR), and the Joint Inspection Unit of the United Nations Secretariat involved performance of this function, and the same can be said of the United Nations Committee on Resources in a more directly environmental context.[121] Finally, the mandate for the United Nations Environment Programme explicitly charges the United Nations Governing Council with the responsibility "to receive and review the periodic reports of the Executive Director . . . on the implementation of environmental programmes within the United Nations system."[122]

An ever-present difficulty with appraisal is its sensitive character. Evaluations of success or failure are no trivial matter from the viewpoint of a responsible official or agency. From the point of view of the global constitutive process as a whole, self-appraisal of environmental performance is essential in order to be able to entertain realistic expectations about the consequences of change.

IV. APPRAISAL AND RECOMMENDATIONS

In overview, two major characteristics of past trends may be observed. First, the underlying thrust in the formulation of past claims about resources has been primarily in terms of state-centeredness rather than commitment to inclusive community interests. There have been

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[119]A STUDY OF THE CAPACITY OF THE UNITED NATIONS DEVELOPMENT SYSTEM, U.N. Doc. DP/5 (2 vols. 1969).

[120]COMMISSION ON INTERNATIONAL DEVELOPMENT, PARTNERS IN DEVELOPMENT (1969).

[121]UNITAR is a separate agency, a part of the United Nations system. The other two bodies are appraisal units within the U.N. Secretariat itself.

[122]G.A. Res. 2997, 27 U.N. GAOR Supp. 30, at 43, U.N. Doc. A/8730 (1973).

increasing claims of special state competence over resources and few efforts to regulate, plan, and develop their use and benefit for the shaping and sharing of values among all people. It is far from evident that these claims can be justified even as provisional measures by reference to the limitations inherent in the contemporary international decision-making system.

Second, such limitations as have been formulated from perspectives other than the specifically environmental or ecosystemic. The Stockholm Conference was in some measure successful in developing the missing environmental perspective, but the new international awareness is still fragile and tentative. The "energy crisis," for example, has provided disturbing indications of the perspectives of governments, multinational enterprises, the press, the public, and all sorts of groups and institutions. As one eminent analyst has put it: "There are signs of an increasingly widespread tendency to consider last year as the 'year of the environment' and this year as the 'year of the energy crisis.' "[123]

The many deficiencies in past decisions described above can be expected to continue in the absence of the formulation, evaluation, and implementation of more appropriate policy alternatives. Some of the policy alternatives requiring consideration may be indicated by summary reference both to the main features of the process of use of resources and to the different types of decision in world constitutive process.

A. Use of the Environment

1. Controlling the Seas and the Climate

In future decisions about competence over resources as high a degree of inclusive enjoyment as possible should be maintained for the oceans and seabed. This perspective should guide policymakers in the new legal order they intend to create at the upcoming Law of the Sea Conference. The expansion of exclusive coastal state competence over the oceans should be confined to the minimum, and, whatever the precise constitution of the new Seabeds Authority to deal with resources beyond the limits of national jurisdiction, it is essential that it both facilitate the widest shaping and sharing of the available values and protect the valid interests of all parties concerned once properly established. Although in some ways this task represents an unprecedented challenge to the inclusive decisionmaking system, certain analogies can be found in the work of existing international organizations, such as the International Civil Aviation Organization (ICAO).

Similarly, air, weather, and climate must be recognized as resources within the inclusive domain. Recommendation 70 of the Stock-

[123]Unpublished manuscript by Canadian Ambassador J. Alan Beesley in the possession of Professor McDougal and Ms. Schneider.

holm Action Plan recommended interstate consultations for activities which carry a risk of effects on climate.[124] The Bangkok Conference on World Peace Through Law went further and proposed "establishment at the earliest possible date of a Convention on Weather Control."[125] We fully support this recommendation and urge that the United States call now for a comprehensive international treaty concerning control of weather and climate modifications, both inadvertant and deliberate, which have effects or potential effects across national boundaries. We also recommend that some international agency, perhaps the World Meterological Organization (WMO), be explicitly charged with undertaking inquiry and recommendation in this area.

2. Regulation of Enjoyment

a. Controlling Injurious Use

Resources Inclusively Enjoyed. Governments and all effective elites must cooperate to withstand the assertion of claims to uses of sharable resources when such enjoyment can have injurious effects on either the rights and interests of other or common interests. In keeping with this aim, the new Law of the Sea Treaty must keep pace with the advances of technology to design an effective environmental code for the oceans, taking full account of the implications of such modern innovations as nuclear ships, supertankers, icebreakers, deepwater ports, and seabed mining facilities. Multilateral solutions must be sought to problems of inclusive resources, and states, individually as well as collectively, must accept responsibility for the effective implementation of such solutions.

As far as the atmosphere is concerned, the 1963 Test Ban Treaty[126] forbids atmospheric testing of nuclear devices. Since then, such tests have repeatedly been condemned by the international community. Considering the dire environmental consequences, governments at the Stockholm Conference again resolved "[t]o condemn nuclear weapons tests, especially those carried out in the atmosphere."[127] France and China, nevertheless, have refused to accept such decisions, and Australia and New Zealand are now protesting recent French explosions in the *Nuclear Tests Cases*.[128] It should be recognized that the ban first stated by the 1963 Treaty has now crystallized in general community expectations to such an extent as to become part of customary interna-

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[124]REPORT 40.

[125]BANGKOK CONFERENCE ON WORLD PEACE THROUGH LAW: RECOMMENDATIONS OF THE CONFERENCE (1969).

[126]Treaty Banning Nuclear Weapon Tests in the Atmosphere in Outer Space and Under Water, *done* August 5, 1963, [1963] 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43.

[127]*Resolution on Nuclear Weapons Tests*, in REPORT 66.

[128]*See* note 109 *supra*.

tional law, and both France and China should be prepared to live up to any such pronouncement by the World Court.

Resources Exclusively Enjoyed. Principle 21 of the Stockholm Declaration provides the equitable basis for a regime of regulation of enjoyment of resources exclusively enjoyed so as not to injure others or the common interests.[129] It should be understood to encompass responsibility in such areas as land-based sources of atmospheric and marine pollution, liability for weather modification activities within the jurisdiction, and control of one state which could damage the environment of other states or the common environment, any similar effects of supersonic aircraft, disposal of radioactive wastes or nerve gas, and the whole range of new activities rendered possible by technological developments. The recent regional Convention for the Prevention of Marine Pollution from Land-Based Sources[130] should be extended to cover the oceans as a whole, and similar provisions should be made for enclosed and semi-enclosed seas. The time is also ripe for bilateral and multilateral weather modification agreements; and, as Canada has proposed to NATO's Committee on the Challenges of Modern Society, governments should undertake the study of the effects of supersonic flight in the atmosphere.[131]

b. *Facilitating Productive and Harmonious Enjoyment*

Resources Inclusively Enjoyed. Of first priority in this area is the viable organization of a regime for the high seas fisheries and of the resources of the seabed to encourage their utmost exploitation for the benefit of the whole of humanity, including both present and future generations. Any extensions of exclusive competence, in the form of special functional "zones" or otherwise, should be with a minimum of damage to the remaining inclusive uses of the oceans—in particular, uses of transportation, communication, and scientific research.

Resources Exclusively Enjoyed. In light of the history of draft principle 20,[132] the most immediate need is for adequate supply of information and full recognition of the duty to consult with other states concerning activities likely to affect them. Beyond this, technical data and other relevant information should also be supplied to some centralized international body—perhaps UNEP—in regard to proposed means of enjoy-

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[129]*See* text accompanying note 31 *supra.*

[130]*Adopted* February 21, 1974, text in 13 INT'L LEGAL MATERIALS 352 (1974).

[131]*See* Beesley, *The Canadian Approach—Environmental Law on the International Plane*, in PRIVATE INVESTORS ABROAD—PROBLEMS AND SOLUTIONS IN INTERNATIONAL BUSINESS IN 1973, at 239, 273 (V. Cameron ed. 1973).

[132]*See* Sohn, *The Stockholm Declaration on the Human Environment*, 14 HARV. INT'L L.J. 423, 496-504 (1973).

ment of exclusive resources which affect the regime for the common enjoyment of inclusive resources.

3. Planning and Development

Resources Inclusively Enjoyed. The most urgent need is for overall organizational arrangements to integrate intelligence, planning, and promotional activities with respect to all the varying components and features of the earth-space environment. The Governing Council of UNEP is to some extent charged with these functions, but it has not been endowed with the capabilities for their continuous performance. Aided by such broadly inclusive planning, actual development might go forward most successfully on a regional basis. Such regionalism should, however, take account of the larger ecological unities and be organized in accordance with natural ecological subsystems rather than synthetic political agglomerations.

Resources Exclusively Enjoyed. Comprehensive planning and development is needed in all countries at all levels: local, metropolitan, drainage basins, national, and transnational levels. Many countries already have environmental agencies or ministries for overseeing and managing the resources they enjoy exclusively, and the status and performance of these bodies should be improved. Whatever the institutional architecture, the function of planning and development needs to be provided by governments with respect to all environmental variables. Cooperative planning for exclusive resources (as illustrated by the Conference-Exposition on Human Settlements)[133] is useful, but it is also essential that responsibility be delegated to and assumed by continuing organizations which can implement the policies by actually carrying out the planned development.

4. People in Relation to Resources

Increased voluntarism in personal choice should be the goal of the international community as far as *nationality* and *migration* of peoples is concerned. In the final analysis, however, neither this goal nor any other goal of environmental protection, preservation, and enhancement can be made realistic in the absence of effective checks on *numbers* of people.

Voluntary restriction would also, of course, be the most desirable policy with respect to population growth—but its time may be past. It is essential, internationally and nationally, to make available the education and technology necessary for voluntary birth control. Yet there remain to be removed certain legal impediments to voluntarism—not

[133]*See* note 54 *supra*.

only anti-abortion laws, but all anachronistic regulations which still prevent free access to and distribution of family planning information and contraceptive material.[134] Positive educational and promotional efforts on the part of Zero Population Growth (ZPG) and other programs should further be welcomed. Beyond this encouragement of voluntarism, the case for planned, compulsory regulation of reproduction, as compatible as possible with basic freedom of choice, might be given a fuller hearing.[135] It might be found preferable and possible for global decisionmakers (rather than leaving the determination to the apocalyptic horsemen) to agree on policies that, among other things, take account of human rights to a liveable environment and a decent quality of life as well as of the right to individual propagation, of differential rates of resource consumption as well as of differential reproduction rates, of the rights of women to self-expression and effectuation as well as of the claims of nations to people as bases of power.

This is World Population Year, the declaration of which implies acute awareness of these problems. The 1975 World Population Conference will face an extraordinarily difficult challenge to cooperative policymaking and implementation.

B. World Constitutive Process

1. Intelligence

If fully implemented, "Earthwatch"[136] could provide the international community with a comprehensive environmental intelligence function. High priority is therefore accorded to its rapid inauguration. Despite its promise, the system could bear improvement.

First, in addition to biogeochemical information, the assessment program should seek to incorporate intelligence regarding the social factors that are also fundamental to the "environmental" perspective. Social scientists have only just begun to develop "social indicators" that would enable standard recording of these variables,[137] but some sort of monitoring of social or sociological costs and benefits is essential to enable any meaningful assessment of policymaking for the human environment. Second, the program should be expanded to identify and keep track of developments affecting the environment both in the international and in national legal systems. The second session of the UNEP

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[134]*See* Pilpel, *Legal Impediments to Voluntarism*, in THE WORLD POPULATION CRISIS: POLICY IMPLICATIONS AND THE ROLE OF LAW, *supra* note 56, at 83.

[135]*See* Montgomery, *The Case for Compulsory Regulations of Reproduction*, in THE WORLD POPULATION CRISIS: POLICY IMPLICATIONS AND THE ROLE OF LAW, *supra* note 56, at 67.

[136]REPORT 59.

[137]*See, e.g.*, B. RUSSETT, H. ALKER, K. DOUTSCH, & H. LASSWELL, WORLD HANDBOOK OF POLITICAL AND SOCIAL INDICATORS (1964).

Governing Council gave a mandate to the Executive Director to convene further informal working groups of legal experts to advise him on how best to contribute to the future development of international environmental law,[138] but this is only a very minor aspect of the overall function. Lawyers in general must accept the role of committed activists, rather than hoping that the small secretariat will provide the momentous impetus needed. Third, as a basic foundation to all of this intelligence activity, further studies should be undertaken to clarify the confusions and difficulties of *The Limits to Growth*[139] and to evaluate its basic recommendation of "zero-growth" economic strategies in light of both natural and social conditioning factors.[140] At the present time, there is no global, little regional, and inadequate national political-economic planning for the long-term future. Fourth and finally, freedom of scientific and social scientific research is fundamental to the successful implementation of Earthwatch. At the Law of the Sea Conference[141] and elsewhere, the decision should be that all presently inclusive resources are kept open to scientific inquiry, and sincere efforts should be made to extend freedom of information even to resources exclusively enjoyed insofar as necessary for comprehensive international policymaking.

2. Promotion

Lawyers, scientists, scholars, citizens, and others might become concerned advocates and mobilize support among effective elites, for appropriate environmental policies. One has only to think of the widespread demand for a moratorium on whaling, including its promulgation in Recommendation 33 of the Stockholm Action Plan, to recognize how little international public opinion alone did for the whales.[142] It is essential to supplement hortatory solicitations by mobilizing support within relevant arenas.

International public opinion, although insufficient in and of itself, is not inconsequential. Environmental advocates should be putting more energy and channelling more resources into the supportive activities of education, training, and public information. Because of the scope and expense characteristic of such campaigns, in our age of mass participation and mass thrust of communications technology, specially organ-

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[138]REPORT OF THE GOVERNING COUNCIL OF THE UNITED NATIONS ENVIRONMENT PROGRAMMEE, U.N. Doc. UNEP/GC 126, at 19.

[139]D.H. MEADOWS, D.L. MEADOWS, J. RANDERS, & W. BEHRENS, THE LIMITS TO GROWTH (1972).

[140]*See, e.g.*, *The No-Growth Society*, 102 DAEDALUS (Fall 1973).

[141]*See* Stevenson & Oxman, *The Preparations for the Law of the Sea Conference*, 68 AM. J. INT'L L. 1, 28-30 (1974).

[142]REPORT 23. The moratorium was subsequently rejected 1 month later at the next session of the International Whaling Commission.

ized public interest groups backed by charitable foundations can and do make a unique contribution.

3. Prescription

The Stockholm Conference clarified a lot of customary expectations, and the United Nations General Assembly has since reinforced many of these expectations. Environmental policy has also been crystallized in a number of international agreements. The prescriptive order is, nevertheless, incomplete. We recommend, therefore, that the International Law Commission or some other equivalent legal body (perhaps under the auspices of UNEP) be commissioned to make studies (as the ILC once did on the law of the sea)[143] of potential international environmental norms to be able to recommend standards of behavior and action. Greater use might be made of the United Nations General Assembly, of delegations of competence to specialized bodies, and of procedures comparable to those of the ILC, for securing the authoritative promulgation of such standards. Along with this initiative, support should be given to the movement for uniform national laws about the environment—at least insofar as they have transnational reach (environmental, trade, development assistance, or otherwise).

Concerning particular substantive areas, marine environmental protection will be a major concern of the Law of the Sea Conference, and many agreements can be expected to evolve out of that umbrella exercise. International decisionmaking at the World Population Conference will deal with the most pressing international environmental issue today. It is past time for negotiation of conventions on land-based sources of all marine pollution and on weather and climate modification. The environmental effects of supersonic aircraft are also worthy of imminent consideration.

4. Invocation

The principal requirement for improvement of the invocation function is for nonofficial actors to be accorded greater access to relevant arenas. On the international plane, short of change in the Statute of the International Court of Justice, this can be better achieved both by increased willingness of national governments to represent environmental causes and public interest groups and by provision of alternative international arenas open directly to nongovernmental actors. Through development of uniform national laws and on the individual national level, what is needed is relaxation of standing requirements before courts and

[143] *See particularly* INT'L L. COMM'N REPORT, 11 U.N. GAOR Supp. 9, U.N. Doc. A/3159 (1956), text in 51 AM. J. INT'L L. 154 (1957).

administrative tribunals to accord greater recognition to groups advocating common environmental interests.

A further idea deserving discussion is provision of an international ombudsman charged with invoking processes or intervening therein as representative of inclusive concerns when the common environment is threatened.[144] Whether this be the Executive Director of UNEP or some other individual or organization, the ombudsman would have to be directly connected with the Earthwatch intelligence facilities and supplied with a competent legal staff.

5. Application

As far as the application function is concerned, the authority of particular states to make applications of international standards appropriately clarified should be recognized and extended. This is especially so where the applying state has an exclusive interest compatible with and in furtherance of inclusive community interests—such as in the cases of Canada in seeking to protect the unique environment of the neighboring Arctic, and Australia and New Zealand in seeking to prevent threats of radioactive contamination of the atmosphere in South Pacific areas.

The environmental role of nonstate appliers should also be enhanced. A special World Environment Court does not seem to be called for at this time. The International Court of Justice can, however, be streamlined (through use of, among other things, chambers and assessors),[145] and other dispute settlement procedures (negotiation, good offices, mediation, conciliation, arbitration, judicial settlement in other courts, and administrative tribunals) should be tailored more readily to give greater weight to environmental factors in reaching their decisions.

6. Termination

The biggest problems in termination occur with respect to developing countries. At Stockholm it was repeatedly emphasized that in the developing countries most of the environmental problems are caused by underdevelopment.[146] The efforts of advanced industrial states to combat the ills caused by modern technological development, therefore, should not be allowed to preclude the economic and social progress of the poorer nations. In the short term, special provisions to accommodate

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[144]*See* Gardner, *The Role of the U.N. in Environmental Problems*, 26 INT'L ORG. 237, 254 (1972).

[145]See the suggestions of International Court of Justice Judge Philip Jessup in *Do New Problems Need New Courts?*, 65 PROCEEDINGS: AM. SOC. INT'L L. 261 (1971).

[146]*See, e.g.*, DEVELOPMENT AND ENVIRONMENT 6 *passim* (United Nations Conference on Human Environment 1971).

the legitimate expectations of developing countries may result in the creation of "pollution havens" and other undesirable side effects. In the longer term, however, all nations individually and collectively must accede to new prescriptions more fully reflecting environmental imperatives.

7. Appraisal

It is perhaps too early to expect major transformations as a result of the contemporary upsurge of environmental concern in the world community. UNEP, however, has already begun appraisal of the functioning of the United Nations system for the environmental perspective, and this evaluation will continue and hopefully will become more comprehensive. As far as the carrying out of public policies by nonofficial actors is concerned, universities, foundations, private scholars, and concerned citizens must shoulder responsibility for the appraisal function. In this respect, conferences have a major significance in stimulating the more comprehensive and perceptive development of international environmental policymaking.

V. Conclusion

The task of highest priority for all who genuinely are committed to a more appropriately conserving enjoyment of our most comprehensive environment, including all its great sharable resources, is that of creating in the peoples of the world the perspectives necessary both for their understanding of the conditions that affect the achievement of their common interests and for their invention and initiation of the detailed changes in global constitutive process that can secure such common interests. It is the confused, disoriented, and conflicting perspectives of the state-centered effective elites of the world which maintain both the suicidal patterns in spoliation and destruction of necessarily shared resources and the woefully inadequate responding decisions by the contemporary global constitutive process; it will require an enormous collective program in fundamental education and more general worldwide communication to change these perspectives. We do not share the views of observers who ground contemporary concern for the environment only upon imminent crises with respect to particular resources; the crisis is permanent and the resources affected comprise the whole earth-space ecosystem. The most appropriate perspective is that embodied in the fable of the lily pond: the lily plant doubles in size each day; if allowed to grow unchecked, it will cover the pond in 30 days, choking off all other forms of life in the water. So what happens?

> For a long time the lily plant seems small, and so you decide not to worry about cutting it back until it covers half the pond. On what day will that be? On the twenty-ninth day, of course. You have one day to save your pond.[147]

[147]D.H. MEADOWS, D.L. MEADOWS, J. RANDERS, & M. BEHRENS, THE LIMITS TO GROWTH 29 (1972).