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International Impact Reports and the Conservation of the Ocean Environment

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INTERNATIONAL IMPACT REPORTS AND THE CONSERVATION OF THE OCEAN ENVIRONMENT

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In his testimony on the minimization of harmful environmental effects of deep-sea mining, and the development of beneficial by-products of such operations, before the Subcommittee on Oceanography of the House of Representatives Committee on the Merchant Marine and Fisheries, Dr. Oswald A. Roels[1] said: "Provided the [deep sea] mining operation is conducted intelligently, then the discharged deep sea mining effluent would not represent an environmental hazard."[2]

One way of assuring that the requisite intelligence which Dr. Roels calls for is used in conducting deep-sea mining operations would be the extension to international deep-sea mining activities of the requirement, already existing in United States domestic legislation, that agencies planning or proposing to permit environmentally hazardous activities should compile, or call for, "impact reports." These could be modelled, so far as this may be feasible, on the "impact reports" or "impact statements" required by Section 102 of the National Environmental Policy Act of 1969 (NEPA).[3]

In order to ensure that the "presently unquantified environmental values and amenities" will be given their "appropriate consideration," Section 102 (2)(C) of the Act enjoins upon the agency or agencies taking major federal action with significant environmental effects to have the "responsible official" prepare a detailed statement (generally known as the "environmental report," the "environmental statement," or the "impact report") containing detailed appraisals of:

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1. Dr. Roels is the Chairman of the Biological Oceanography Department at the Lamont-Doherty Geological Observatory and Professor at the City University Institute of Oceanography.

2. Hearings on H.R. 13076, H.R. 13904, H.R. 14918, NACOA Authorization, H.R. 15280, and Geneva U.N. Seabed Committee Before the Subcommittee on Oceanography of the House Committee on Merchant Marine and Fisheries on Deep Seabed Hard Mineral Resources 92d Cong., 2d Sess., Ser. No. 92-32, at 138 (1972) [hereinafter cited as *"Hearings on Oceanography Miscellaneous"*]. *See also* Dr. Roels's written statement, *id.* at 123-36.

3. National Environmental Policy Act of 1969, 42 U.S.C.A. §§4321-47 (1970 [hereinafter cited as NEPA.]. *See also* Water Quality Improvement Act of 1970, 33 U.S.C.A. §§1151 notes, 1152, 1155, 1158, 1160-75 (1970) Exec. Order No. 11514, 3 C.F.R. 104 (Supp. 1970). Guidelines implementing the National Environmental Policy Act were issued by the Council on Environmental Quality on April 23, 1971. *See, Guidelines for Federal Agencies, under the National Environmental Policy Act*, 36 Fed. Reg. 7724 (1971), 71 BNA Environmental Reporter–Federal Laws 301 (1971) [hereinafter cited as *"Guidelines"*].

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which should be involved in the proposed action should it be implemented.[4]

Section 102 (2)(E) demands that, with respect to activities outside the United States, this country's officials should:

> recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment.[5]

In the light of this obligation, it can be argued that the interests of the United States would be well served, especially from the point of view of possible comparative mining costs, by requiring that the activities of foreign mining enterprises be subject to approximately equivalent environmental costs and controls as those envisaged by the Congress for American enterprises in Section 102 (E). This would lead to a rough equalization of opportunity. The proposal of this paper is, accordingly, that the present bill before Congress entitled the Deep Seabed Hard Minerals Resources Act[6] should include an environmental provision modelled on Sections 101 and 102 of the National Environmental Policy Act. In addition, the United States Draft for a United Nations Convention on the International Seabed would have been a more meaningful document if there had been less emphasis on the elaboration of its institutional castles[7] and if, instead, the draftsmen had included such specific environmental protection devices as the requirement of impact reports as part of the record on which a decision to grant a license should be made.

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4. 42 U.S.C.A. §4332 (2)(C) (1970).

5. 42 U.S.C.A. §4332 (2)(E) (1970).

6. H.R13904, 92d Cong., 2d Sess., S. 2801, 92d Cong., 2d Sess. Now H.R. 9, 93d Cong., 1st Sess. (1973) [hereinafter cited as "H.R. 9"].

7. For a critical review of that draft's concentration of effort on the elaboration of institutional structures rather than on functional proposals *see* Goldie, *The United States Draft for a United Nations Convention on the International Seabed Area—A Polite Conversation*, 65 Proceedings Am. Soc. Int'l L. 123 (1971).

A DOMESTIC LAW ANALOGY-- THE NATIONAL ENVIRONMENTAL POLICY ACT AND "IMPACT REPORTS"

a. Legislative Policy

On January 1, 1970 NEPA became effective as law in the United States. Its enactment reflected both the solicitude of special altruistic interest groups anxious to preserve the beauties of North America and a widespread concern among Congressmen and in the electorate regarding the need to take significant and immediate steps in charging upon the country's miracle of increasing productivity a due accountability for the "spillovers" or side effects of that productivity[8] which are rapidly degrading the environment.

After asserting Congress' recognition of the "profound impact" of modern society on "the interrelations of all components of the natural environment,"[9] Section 101 (b) of the Act[10] sets out the Congress' environmental policy directives[11] to the federal government as follows:

> (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
> (2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
> (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
> (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;

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8. *See, e.g.*, Mishan, *The Spillover Enemy*, 33 Encounter 3 (1969) [hereinafter cited as Mishan]. *See also* Goldie, *Amenities Rights—Parallels to Pollution Taxes*, 11 Natural Resources J. 274 (1971) [hereinafter cited as Goldie, *Amenities Rights*].

9. National Environmental Policy Act of 1969, §101A, 42 U.S.C.A. §4331(a) (1970). *See also* the statement of the purposes of the Act in §2, 42 U.S.C.A. §4321 (1970).

10. 42 U.S.C.A. §4331(b) (1970).

11. The drafting of the Act around duties to carry out affirmative "policy directives" underscores the fine point made in E. Hanks and J. Hanks, *An Environmental Bill of Rights: The Citizen Suit and the Environmental Policy Act of 1969*, 24 Rutgers L. Rev. 230 (1970) [herinafter cited as Hanks & Hanks], that "[i]n form the National Environmental Policy Act is statute; in spirit a constitution." *Id.* at 245.

"Policy directives" are, of course, constitutional devices in the constitutions of the Republic of India and of the Republic of Ireland. Their effectiveness may well come to depend on the independence and vision of the judiciary. This dependence on the judiciary for the effectiveness of policy directives has been well demonstrated in the United States in such cases as Calvert Cliffs' Coordinating Committee v. United States Atomic Energy Commission, 449 F.2d 1109 (D.C. Cir. 1971) and Committee for Nuclear Responsibility v. Seaborg, 3 ERC 1126 (D.C. Cir. 1971).

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
(6) enhance the quality of renewable resources and approach the maximum attainable recyclling of depletable resources.

B. "Amenities Rights" and the National Environmental Policy Act

In a brief preliminary statement, this writer has suggested that a combination of common law elaboration and legislative blueprints (which purposely did not include the NEPA in the discussion) might be viewed as foreshadowing the possible crystallization of "amenities rights" in the domestic legal orders of at least some states of the United States.[12] One question is whether the NEPA has added a further consolidation in this process of development, and, if it has done so, whether the Act's contribution has been through the depositing of substantive rights out of procedural directives. Judge Eisele has asserted that NEPA does not vest "substantive rights"[13] in individuals and organizations. On its face it merely prescribes "procedural requirements."[14] Note should be taken, however, of Section 101(c) of the Act.[15] It provided that

> The Congress recognizes each person should enjoy a healthful environment and that each person has a responsiblity to contribute to the preservation and enhancement of the environment.

Thus, the issue of what stake individuals have in the Act is more subtle than Judge Eisele's formulation would allow. For example, this subsection has provided the basis for some federal courts to assert that federal agencies have substantive duties under the Act, and especially under Section 102.[16] An example is to be found in the following unequivocal formulation by the Court of Appeals of the District of Columbia Circuit: "We conclude, then, that Section 102 of NEPA mandates a particular sort of careful and informed decision making process and creates enforceable duties."[17]

The phrase "enforceable duties" is clearly susceptible of an overzealous emphasis; but it does not expressly require the recognition of substantive rights to be vested in individuals. On the other hand, the requirements of its hard core meaning induce the expecta-

12. Goldie, *Amenities Rights, supra* note 8.
13. Environmental Defense Fund v. Corps of Engineers, 325 F. Supp. 749, 755 (E.D. Ark. 1971).
14. *Id.*
15. 42 U.S.C.A. §4331(c) (1970).
16. 42 U.S.C.A. §4332 (1970)
17. *See, e.g.*, Calvert Cliffs' Coordinating Committee v. United States Atomic Energy Commission 449 F.2d 1109, 1115 (D.C. Cir. 1971). *See also id.* at 1114.

tion that courts will recognize individuals' "non-Hohfeldian"[18] interests in requiring agencies to pay due regard to environmental amenities when engaged in the development and application of their policies, plans, and programs.

Be that as it may, the legislative history of the Act is significant on this basic issue of whether Congress intended to create substantive rights in amenities. The record shows that, while many members of Congress expressed their apprehension that the act would create new substantive rights of a dangerously disruptive and far-reaching character,[19] its sponsors hastened to assure the fearful and the suspicious that they had an entirely procedural enactment before them.[20] In the meantime, members of the public who are adversely affected by federal policies have, in Professor Jaffe's terms, "non-Hohfeldian" legally protectable interests. In indicating the reference of this term Professor Jaffe tells us:

> It is not possible to formulate these interests in traditional right-duty terms. But I would emphatically reject the conclusion that because there can be no rights—no "legal injury" in the traditional sense—we are driven to the opposite pole that there is only a "public interest." *Where the legislature has recognized a certain "interest" as one which must be heeded, it is such a "legally protected interest" as warrants standing to complain of its disregard.*[21] (emphasis added)

There are four significant points to note regarding Professor Jaffe's presentation of his "non-Hohfeldian interests":

1. Both his terminology and his thesis have been adopted by the

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18. The qualifier "non-Hohfeldian" may be taken to indicate those interests which are not so attached to an individual's legal *persona* that they must be viewed as uniquely his in the sense of being a part of his total assets or "estate". Rather, they are *res extra commercium* which signal no more than the claimant's capacity to vindicate social costs for which no individual can be named the creditor. On the other hand, the non-Hohfeldian plaintiff must have some especial footing to press his claim. This arises from the nexus which must necessarily exist between the possible negation, or defeat, of expectations which the law has assured to him, and the relevant activities of the person whose conduct has led, or may lead, to that defeat or negation.

19. Typical of such opposition was that of Congressman Harsha when he said: "I am still concerned about the sweeping affect [sic] this legislation could have on the substantive law . . . ." 115 Cong. Rec. H. 40927 (1969). *See also:* Congressman Farbstein, *id.* at 13096; Congressman Dingell, submitting the *Conference Report on S. 1075 National Environmental Policy Act of 1969,* and the *Report* itself, *id.* at H. 40923.

20. *See,* for statements as to the policy directive and procedural qualities of the Act, by its main sponsors, Senator Jackson *id.* at S. 40416, and *id.* at S. 40417; Senator Muskie *id.* at S. 40423 and S. 40923.

21. Jaffe, Judicial Control of Administrative Action 508 (1965); *see also* Jaffe, *The Citizen as Litigant in Public Actions: The Non-Hohfeldian or Idealogical Plaintiff* 116 U. Pa. L. Rev. 1033 (1968).

Supreme Court of the United States as far as the preliminary issue of standing to sue in federal courts is concerned;[22]

2. Professor Jaffe's formulation was offered some three and a half years before the signing of NEPA into law on January 1, 1970, and so he may have felt the need to be more tentative, at least with respect to environmental issues, than he might be now—especially in the light of Judge Wright's thesis in *Calvert Cliffs Coordinating Committee v. Atomic Energy Commission* that the NEPA creates "enforceable duties"[23] which individuals and unincorporated entities can pursue;

3. While "amenities rights" were not crystallized by NEPA, even as interpreted by Judge Wright, the possible outline of their contours may become contingently discernible, should the trend of legislation and court decisions continue to amass legal materials for elucidation and generalization in terms of such rights;

4. While interests begin their formulations in terms of non-Hohfeldian interests, they may ultimately come to be articulated in terms of strict rights and their correlative duties—even when those duties may appear as being owed on an objective basis in terms of social values and policy.

Should Professor Jaffe feel impelled to reject this evolutionary appraisal of the evanescent quality of the "interests" he ordains, then he ought to own up to having mixed an over-rich cocktail of disparate ingredients—having taken the analytical (and even compulsive) verbal exactitude of Hohfeld, he combined it with the "objective" social idealism of Duguit and the idealistic (and Hegelian) historicism of Savigny. Such a mixture indicates, surely, an heroic recipe for a nightmare! A more soberly pragmatic evolutionary stance would appear to provide the easier and more credible explanation. The suggestion is, therefore, that Professor Jaffe's "non-Hohfeldian interests" can crystallize into more conventionally conceived rights and privileges when legislative developments (constituted, possibly, by the accumulation of disparate enactments—all of which can be related to aspects of an emerging common purpose), imaginative judicial decision, and the clarifications by publicists responding to felt social needs in a specific area, all combine to crystallize an emerging

22. *See Association of Data Processing Services Organizations, Inc. v. Camp*, 397 U.S. 150, 153-54 (1970). This was not affected by the more recent opinion of the Supreme Court in *Sierra Club v. Morton* ____ U.S. ____ 92 S. Ct. 1361 (1972), since in Morton the issue was simply whether the Sierra Club could itself assert the non-Hohfeldian claims of its membership. The negative reply to this question has not precluded the recognition of the Club's individual members to assert their own non-Hohfeldian claims, *see Mineral King Suit*, 5 ERC 570 (1972).

23. 449 F.2d 1109 (D.C. Cir. 1971).

rule of law. While it is under these auspicious circumstances that substantive rights may begin as being "secreted in the interstices of procedure" (to invoke Sir Henry Maine's great insight regarding the emergence of substantive law in progressive legal systems), the necessary political, economic and juridical conditions have not, as yet, combined to mold presently-existing substantive rights to amenities which individuals may vindicate in the decisional process of appropriate administrative agencies or before the regularly established courts of law. Be the standing of substantive amenities rights in domestric jurisprudence as it may, it is clearly premature to argue for the recognition of such rights in public international law or even in transnational legal relations.

C. Amenities and Impact Reports

Through NEPA the Congress directs all federal agencies to "utilize a systematic interdisciplinary approach" to ensure the "integrated use of the natural and social sciences and the environmental design arts" in their decision-making processes,[24] and to develop methods and procedures so as to ensure that "presently unquantified environmental amenities and values" will be given "appropriate consideration" in their recommending, licensing, and other regulatory deliberations.[25] These "presently unquantified environmental values" are thus to take their place alongside "economic and technical considerations" as determinative factors for administrators to consider.[26]

The basic requirements of Section 102(2)(C) of NEPA have already been indicated.[27] These, and the foregoing discussion, pose at least three topics for further discussion and development, especially in the light of their transferability to the global arena as part of the necessary reception of the hitherto domestic institution of impact reports into international law. These topics, which constitute auxiliary legal concepts for the legal implementation of the obligation to furnish impact reports are: (1) the significance of the term "appropriate consideration" in Section 102(2)(B)[28] as a guideline for reviewable decisionmaking; (2) the problem of the outer limits of relevance—both for the making of environmental reports and for decision-making on the basis of such reports; and (3) the standards to be applied in determining the protection of the "amenities."

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24. § 102(2)(A), 42 U.S.C.A. 449 F.2d 1109 (D.C. Cir. 1971). §4332(2)(A) (1970).
25. 102(2)(B), 42 U.S.C.A. §4332(2)(B) (1970.
26. *Id.*
27. *See, supra,* text accompanying note 4.
28. 42 U.S.C.A. §4332(2)(B) (1970).

1. Appropriate Consideration

The first question is whether "appropriate consideration" permits an agency leeway in weighing the relevance of environmental policy issues. In *Calvert Cliffs'*[29] Judge Wright, for the Court of Appeals for the District of Columbia Circuit stated:

> The word "appropriate" in §102(2)(B) cannot be interpreted to blunt the thrust of the whole Act or to give agencies broad discretion to downplay environmental factors in their decision-making processes. The Act requires consideration "appropriate" to the problem of protecting our threatened environment, not consideration "appropriate" to the whims, habits or other particular concerns of federal agencies.[30]

The duties prescribed in Section 102 are not infinitely pliable. They must be complied with to the fullest extent—unless they are confronted by a clearly and directly contradictory statutory authority in other legislation. Thus Section 104 provides that the environmental legislation does not eliminate any duties already imposed by other "specific statutory obligations."[31] Only when such specific obligations collide with national environmental policy requirements do the agencies have any rationale for diluting their obligation to comply with the "letter and spirit" of the statute.[32] This appraisal is supported by the House conferees who reported that Section 105[33] "does not obviate the requirement that the Federal agencies conduct their activities in accordance with the provisions of this bill unless to do so would clearly violate their existing statutory obligations."[34]

Secondly, we may ask when does an agency have to be seized of an environmental issue in its process of decision. Judge Wright in *Calvert Cliffs* tells us that an agency may "not simply sit back, like an umpire,"[35] and resolve adversary contentions regarding environmental issues. "Rather, it must itself take the initiative of considerting environmental values at every distinctive and comprehensive stage of the process . . . ."[36] Thus, in the case under discussion, Judge Wright characterized the Atomic Energy Commission's willingness to consider environmental issues within the hearing process only when they might be raised by one of the parties, and not otherwise, as a

29. 449 F.2d 1109, 1113, n. 8. (D.C. Cir. 1971).
30. *Id.* at 1113, n. 8.
31. 42 U.S.C.A. §4334 (1970).
32. 449 F.2d 1109, 1115, n. 12 (D.C. Cir. 1971).
33. 42 U.S.C.A. §4335 (1970).
34. Conference Report on S. 1075, National Environmental Policy Act of 1969, 91st Cong., 1st Sess., Ser. 115, pt. 29, at 39, 703 (1969).
35. 449 F.2d 1109, 1119 (D.C. Cir. 1971).
36. *Id.*

"crabbed interpretation"[37] of NEPA. Federal agencies have an affirmative duty of developing the environmental aspects of the record before them on their own initiatives, and of rendering their decisions in terms of all the factors (including the environmental ones) contained in such records.

Third, Federal agencies may not resign their affirmative tasks by accepting the standards set by the states or by other Federal agencies. They are required to apply the National Environmental Policy Act in all cases which fall short of the statutory confrontation Section 104 envisages. As to water quality standards in particular, Section 104 does bring into play consideration of the Water Quality Improvement Act of 1970.[38] This does not, however, call for the displacement of NEPA standards since other "specific statutory obligations" are not intended to replace NEPA entirely. That formula ensures, rather, that the Act will not negate the following obligations: (a) that of complying with standards set under the Water Quality Improvement Act and of not nullifying those standards; (b) that of coordinating with or consulting agencies charged with the maintenance and improvement of water quality standards; and (c) that of acting, or refraining from acting, "contingent upon" a certification under the Water Quality Improvement Act. (This Act makes an agency's granting of a license "contingent upon a water quality certification." But "it does not *require*" the agency "to grant a license once a certification has been issued."[39]) The agency should thus act upon an environmental report which assesses adverse environmental effects of any proposed action and discusses possible alternatives to the proposed action.[40]

Fourth, in conclusion, *Calvert Cliffs* tells us that a Federal agency is under an obligation to inform itself through impact reports of environmental problems of any contemplated action and then take independent action, if necessary, to make its decision in the light of such reports as part of the record before it and upon which its decision is based.

2. *"Detailed Statement"—An Obligation of Full Disclosure*

In *Environmental Defense Fund Inc. v. Corps of Engineers*[41] Judge Parker indicated the duty of the Federal Government to work on the

37. *Id.* at 1117.

38. 33 U.S.C.A. §§1151, 1152, 1156, 1158, 1160-75 (1970).

39. Calvert Cliffs' Coordinating Committee v. Atomic Energy Commission, 449 F.2d 1109, 1124 (D.C. Cir. 1971). (J. Wright's emphasis).

40. *See, e.g.,* Committee for Nuclear Responsibility v. Seaborg, 3 ERC 1126, 1128 (D.C. Cir. 1971).

41. 324 F. Supp. 878 (D.D.C. 1971).

basis of a detailed and systematic impact statement in the following terms:

> The [NEPA] recognizes a "continuing responsibility of the Federal Government" to strive to preserve and enhance the environment, and requires a detailed and systematic consideration of the environmental impact of Federal actions.[42]

The Act's call for a detailed statement has been viewed as setting a standard with which agencies must comply and on the basis of which courts will review the degree of detail of any environmental statement. Secondly, the courts do not hold the provision as merely calling for a statement oriented from the project's point of view, but as demanding an environmental investigation conducted in terms of objective and thorough research. Thus in *Environmental Defense Fund v. Hardin*[43] Judge Gasch outlined the policy of the relevant provision. He said:

> This section makes the completion of an adequate research program a prerequisite to agency action. The adequacy of the research should be judged in light of the scope of the proposed program and the extent to which existing knowledge raises the possiblity of potential adverse environmental effects. The Act envisions that program formulation will be directed by research results rather than that research programs will be designed to substantiate programs already decided upon. Thus, this provision of the Act requires a diligent research effort, undertaken in good faith, which utilizes effective methods and reflects the current state of the art of relevent scientific discipline.[44]

And he specifically defined the statutory criterion of "detailed statement" as follows:

> The statement must be sufficiently detailed to allow a responsible executive to arrive at a reasonably accurate decision regarding the environmental benefits and detriments to be expected from program implementation. The statement should contain adequate discussion of alternative proposals to allow for program modifiation during agency review so that the results to be achieved will be in accordance with national environmental goals.[45]

In a similar vein Judge Eisele, in *Environmental Defense Fund Inc. v. Corps of Engineers*,[46] gave the Act the very interesting characteri-

42. *Id.* at 881.
43. 325 F. Supp. 1401 (D.D.C. 1971).
44. *Id.* at 1403.
45. *Id.* at 1403-04.
46. 325 F. Supp. 749 (E.D. Ark. 1971).

zation of an "environmental full disclosure law"[47] and added, speaking of Section 102's requirements:

> The Congress, by enacting it, may not have intended to alter the then existing decision-making responsibilities or to take away any then existing freedom of decision-making, but it certainly intended to make such decision-making more responsive and more responsible.
> The "detailed statement" required by Section 102(2)(C) should, at minimum, contain such information as will alert the President, the Council on Environmental Quality, the public, and, indeed, the Congress to all known *possible* environmental consequences of proposed agency action. Where experts, or concerned public or private organizations, or even ordinary lay citizens, bring to the attention of the responsible agency environmental impacts which they contend will result from the proposed agency action, then the Section 102 statement should set forth these contentions and opinions, even if the responsible agency finds no merit in them whatsoever. Of course, the Section 102 statement can and should also contain the opinion of the responsible agency with respect to all such viewpoints. The record should be complete. Then, if the decisionmakers choose to ignore such factors they will be doing so with their eyes wide open.[48]

3. The Outer Limits of Relevance

We are being taught inexorably and perhaps with brutal inevitability how the environment is a seamless web and how our burgeoning gross national product continuously sets in motion deleterious chain reactions which appear to be without end. On the other hand, the law, to make decisions manageable, must cut the causal chain; otherwise the search for the complete content of an agency's environmental statement could be an unceasing quest. While the Act does not set forth the outer boundaries of a statements's intended scope, limits must be read into it by a reasonable construction of NEPA. Although no formal or abstract limitation can be set to the number of links of causation, nor ought the imposition of such misleading criteria as "direct and indirect" be attempted, relevance, as a test which combines the degree of knowledge with the foreseeability of specific environmental degradation, should not be beyond the ingenuity of legislative draftsmen to formulate or judges to apply.

"Relevance" in this context could be illustrated by distinguishing a Federal Housing Authority considering the granting of loans for

47. *Id.* at 759.
48. *Id.*

houses in a development whose area had been cleared through the chopping down of uniquely valuable trees from that Authority undertaking to review whether it should continue to support financially the current American demand for single-home ownership, since such a method of providing shelter calls for construction methods which create an inevitable demand for vast amounts of lumber. That is, should it support social values which lead to large-scale deforestation when alternative methods of providing comfortable, hygienic, and aesthetically pleasing housing which would use far less lumber could be availed of? Whereas the former would necessarily fall within the scope of an environmental report, the latter would clearly involve issues beyond the assumptions underlying FHA's functions, and beyond the scope of its environmental investigations under the Act.

In the process of agency decision making, other relevant factors in addition to environmental ones, namely scientific, engineering, social need and economic advantage, are all brought to bear. While each set of factors dictates its own requirements in terms of the agency's overall goals, it cannot impose a monolithic guide to decision. Impact or environmental reports follow a similar pattern of appraisal, modification, and partial displacement as do the other factors to be taken into consideration on the record. This acknowledgment, however, does not negate the crucial role such reports play in the flow of administrative decisions which the law now requires to be guided towards the betterment of society and its total environment.

4. The Standards

The *Guidelines*[49] which the Council on Environmental Quality promulgated on April 23, 1971, set the affected agencies the concrete task of individually providing specific standards to govern the conduct which fell within the scope of the authority each enjoyed. My proposal here is merely to indicate some ot the values underpinning those standards.

Capitalist and socialist societies alike assume that human welfare advances by transforming the raw materials of the universe into the means of production and consumer goods. Generally speaking, neither type of society has come to accept the harsh fact of life that this process of converting "nature" into "goods" has its own costs, indeed its own dangers, to human welfare. That this could be the case is the perception of only a small minority in the most advanced societies. Amongst the vast majority of humanity such a position is still greeted with skepticism, or even as the enunciation of a cruel joke. Peoples who do not enjoy the cornucopia of a high gross national product and

49. *See, Guidelines, supra* note 3.

its concomitant of a high level of spillover pollution tend to view the concern of industrialized societies for environmental matters as a hypocritical sophistry for preventing the full economic development of the underdeveloped areas of the world. In the industrial states, this concern is often seen as a confidence trick to undermine our traditional trust in technological virtuosity and managerial competence. Despite the lag in public opinion, however, the development of safeguards against harmful side effects resulting from the transformation of "nature" into "property," and the formulation of the modalities of liability for the harms those transformations bring in their train, are becoming urgent tasks for lawyers. It is thus becoming increasingly imperative to define independent environmental base values for free enterprise and socialist societies which can be built into contemporary exploitative consumer values. One such base value is to ensure that the amenities of the community are not threatened, even though they may be transformed, while consumer goods raise living standards.

IMPACT REPORTS AND GENERAL PRINCIPLES OF LAW RECOGNIZED BY CIVILIZED NATIONS

A. The Doctrinal Underpinnings of Impact Reports

1. *"Legal Doctrines"—A Stipulated Definition*

Legal doctrines (for example, the doctrines of part performance, undue influence and estoppel) are bodies of principles and rules collected together, and arranged in terms of a defining legal concept; and reflect a basic social value—for example, respectively, mutuality, dependence, and the reliance of the weaker or more vulnerable parties on the protections equity can provide. By virtue of their complexity and comprehensiveness, legal doctrines, while distinguished from legal rules, standards, principles and concepts, are shaped out of them. In structuring the relations of their component rules, principles and standards, the concepts which legal doctrines crystallize articulate social claims for justice. The deeply felt social values to which they give expression have a double function: First, that of clarification and an increasingly specific formulation out of the welter of sentiments and ideas (both articulate and inarticulate) at large in the society of the time and place of their emergence; and, Second, the reception of those ideals of justice into the formal legal order. This process of the crystallization of rules and principles around a definitive idea (the concept) identifies the doctrine's provenance as a claim of justice at large in society which comes to be received into

the law as it is rendered capable of expression in specific and technical legal terms. The process of the reception of a general notion of justice into the practical formulations of the law is a function of its clarification and implementation. The reception of emerging ideas of justice into a legal order is a dispository act by designated personnel, for example legislators or judges, and so it is to be distinguished from clarification and emergence. These operate anteriorly and as part of the processes of society at large.

Briefly, legal doctrines come into being through the following process: A developing and relatively specific articulation of the notion of justice comes to involve claims that create a demand for its legal implementation; new rules and doctrines are then forged, or old ones gathered together around that notion—thereby creating the modalities of the idea's reception into law. Then those rules and doctrines themselves become grouped around the central idea of justice as it becomes clarified in the law's process of claim, counterclaim and accomodation. The idea of justice then emerges both as the defining concept governing those principles and rules forming the doctrine and the determinant of the mode of their interrelated grouping, as it were in a constellation, around it. The central and defining idea or legal concept groups and arranges the rules and principles. This illustrates how reception is also a part of the clarification process of society, just as judges are part of society. It also illustrates the separateness of the dispository function of reception from the creative functions in society of emergence and clarification.

2. *Legal Doctrines and Legislation*

Legal doctrines have, in the main, been developed by courts in a process of applying a given basic value through rules and principles chosen for the task, of testing and reviewing results, and of reformulation of the defining concept. Legislatures have also, if only infrequently, been the sources of legal doctrines—for example, in the area of "no fault" automobile insurance and Workmen's Compensation laws. But there is no reason why a carefully drawn statute should not equally fulfill the legal and societal conditions of constituting a legal doctrine as does one which comes into being through judicial formulation. Indeed, the conservative suspicion lawyers entertain of legislation as a source of law, and their professional resistance to examining the policy aspects of a statute in the same spirit as they do that of case law, may help to explain why, in the present age of widespread legislative reform, so few legal doctrines with a legislative provenance have been recognized as appropriate sources of international law.

Be that as it may, Section 102 of NEPA satisfies the criteria for a legal doctrine. It embodies the reception and legal expression of a deeply held value at large in modern society. Around the central legal concept of full disclosure there is a cluster of rules and standards. Subordinate to the Act, and in order to implement it the Executive has promulgated guidelines for making the requisite full disclosures.

3. Environmental Legislation as Legal Doctrine

The doctrinal roots of the legal principles and rules clustered around impact reports are, therefore: (1) the social demand for environmental protection which is reflected in the building of environmental costs into the process of manufacture, and the use of impact reports to ensure that society will not be called upon to bear an undertaking's environmental costs; (2) the defining of the obligations the statute imposes on an enterprise to make full disclosures of possible environmental degradations attendant on the establishment of a proposed undertaking or installation; and (3) the duties of administrators to take impact reports fully into account when licensing a projected undertaking. These are the defining concepts around which the specific rules set out in the legislation and guidelines are arranged, not in black and white formulation of Section 102, but in its operation in the process of decision. Impact reports may thus be seen as the institutional representation of the basic legal concept of the legal doctrine contained in Section 102 of NEPA, namely the doctrine requiring economic enterprises to minimize their environmental degradations, to carry the costs of their environmental alterations, and to make a full disclosure of their impact on the environment. This doctrine (and its institutional expression—the impact report) is capable of universal application through legislation in domestic systems and internationally through agreements and through the settlement of disputes by arbitration or conciliation.

B. Adaptability of Impact Reports for International Reception: An Appraisal

1. The Concept of "Impact Reports"

While it is true that when an agency acts upon a record it must take into account matters other than environmental factors, the part of the record which deals with environmenal issues must be given full consideration. The environmental factors are not merely to be perfunctorily formulated as part of the record, nor as the result of the assiduity of private groups, nor because contending parties at a hearing have invoked them. The agency itself has a duty to develop them and build them into its record. This is done by the preparation

of the report by the agency which then focuses attention on the environmental factors relevant to the decision-makers' considerations. For example, in *Amchitka*[50] the Circuit Court of Appeals for the District of Columbia tells us that the functions of impact reports include such considerations as the following:

> Moreover, the statement has significance in focusing environmental factors for informed appraisal by the President, who has broad concern even when not directly involved in the decisional process, and in any event by Congress and the public.[51]

As a device which should provide an important input in the appraisal of a proposal, plan or application, an impact report has a number of facets. These include:

1. Its informational and fact-collecting function;
2. Its evidential value of the thoroughness of the agency's good faith environmental investigations;
3. Its role in ensuring that environmental factors, as embodied in an essential part of the record, are duly considered by the agency in reaching its conclusion;
4. Its utility for purposes of review and reconsideration at all levels, including, in appropriate circumstances, review by the President or the Congress;
5. Its significance in giving standing before the federal courts to individuals and private groups who wish to bring agency decisions before the courts for judicial review on the basis of claims that either constitutional (and especially due process) or statutory (for example environmental policy, water quality, or pure air) "interests"[52] have not been adequately considered by the relevant agency (or agencies); and
6. Its evolving importance in crystallizing the notion of "interests" procedurally sufficient to given parties "standing" before the courts, into substantive rights to life in terms of the amenities which make such a right viable, meaningful and practical.

2. *Adapting Impact Reports to an International Regime Governing Deep-Sea Mining Activities*

(a) Environmental Problems of Deep-Sea Mining

The *International Declaration of Human Rights*, Article 3, proclaims a "right to life" for all individual human beings.[53] This right

50. Committee for Nuclear Responsibility v. Seaborg, 3 ERC 1126 (D.C.Cir. 1971).

51. *Id.* at 1128.

52. For the connotation and significance of Professor Jaffe's development of the term "interests" in the context of "standing" *see, supra* notes 18-21 and the accompanying text.

53. 3 U.N.G.A.O.R. 1, 71, U.N. Doc. A/810 (1948). *See also* International Covenant on Civil and Political Rights, art. 6. 1, Annex to G.A. Res. 220 (XXI), text in 61 Am. J. Int'l L. 861, 863 (1967).

may develop ancillary claims for environmental protection and even enhancement. For a right to life is meaningless if it guarantees a meagre existence assuring no more than a brutish survival. Accordingly, claims for the protection, and even the enhancement, of amenities may be viewed as emerging as matters of international concern in specific arenas of international action. Among these, necessarily, is deep-sea mining with its possibilities of pollution damage to the world's oceans. Deep-sea mining can be classified into a number of subdivisions. Those offered here are: (i) the winning of fossil fuels under the seabed; and (ii) the capturing of surficial deposits, especially nodules from the seabed of the deep oceans. The winning of minerals in suspension in seawater will be barely touched on here, since, for the time being at any rate, it will offer little to a discussion of the relevance of impact reports to international mining regimes.

(i) Winning Fossil Fuels Under the Seabed

For a considerable time oil has been taken from shallow seabed areas. But recent improvements in technology have allowed economically feasible oil drilling to take place beyond the 200 meter bathymetric contour line.[54] (The outer limit of the legal continental shelf as defined in terms of an isobath.)[55] This technological trend[56] will become intensified as demand increases.[57] Thus, *Our Nation and the Sea* tells us:

54. *See*, Goldie, *The Exploitability Test—Interpretations and Potentialities*, 8 Natural Resources J. 434-36 (1968), especially note the accompanying text and Appendix I for an outline of this trend off the coasts of the United States.

55. *See*, Convention on the Continental Shelf, *done* Apr. 29, 1958, [1964] 1 U.S.T. 471, T.I.A.S. No. 5578, 499 U.N.T.S. 311 (*effective* June 10, 1964).

56. Experimental drillings have already been conducted through over 11,000 feet of water into sediment beneath. *See, e.g.*, the report of *Glomar Challenger*'s drilling through 11,720 feet of water and a further 472 feet of sediment in the Gulf of Mexico to discover oil in submarine salt domes, New York Times, Sept. 24, 1968, at 44, cols. 2-5. This report indicated that the depth of 17,567 feet was also drilled. *See also id.* Sept. 1, 1968, at 45, cols. 3-7, and Nov. 26, 1968, at 28, cols. 2-7. For a report of discoveries by the U.S. Navy Ship *Kane* of clues to "oil rich salt domes" in the deep ocean off the west coast of Africa *see* New York Times, May 13, 1969, at 29, cols. 1-5. For reports on oil exploration plays on the continental shelf and slopes of the United States and Canadian Atlantic coasts, *see* New York Times, Aug. 30, 1968, at 25, cols. 6-7. This article reported that: (1) permits have been issued for the exploration of 260 million acres ar nearly 410,000 square miles of seabed; (2) the Shell Oil Company will use a semi-submersible rig, the *Sedco H.* which will drill as deep as 25,000 feet while sitting on the seabed under 1,000 feet of water, or afloat through 800 feet of water; (3) most of the areas now being explored are within 200 miles of the largest cities of the United States (other areas are close to major Canadian cities); and that (4) most of this area is extremely turbulent like the North Sea and in their weather and climatic conditions contrasts with the Gulf of Mexico and Southern California coasts. Taken together, these factors greatly increase the dangers of major oil catastrophes near great population centers.

57. *See*, Commission on Marine Science, Engineering and Resources, Our Nation and the Sea 122-30 (1969), [hereinafter cited as Our Nation and the Sea], for a projection in both demand for

> Twenty-two countries now produce or are about to produce oil and gas from offshore sources. Investments of the domestic offshore oil industry, now running more than $1 billion annually, are expected to grow an average of nearly 18 per cent per year over the coming decade. Current free world offshore oil production is about 5 million barrels per day, or about 16 per cent of the free world's total output.[58]

As the ability to develop more offshore oil and gas resources from deeper and deeper regions, the increasing technological virtuosity will inevitably give rise to more acute problems of polluting the seas and the coasts.

The reports in the *New York Times*, between January 31 and April 3, 1969, of the events which constituted the sorry history of the oil drilling catastrophe in the Santa Barbara Channel, should indicate to thoughtful people the pressing need to take immediate measures for the protection of our environment against the time when powerful enterprises will be engaging in massive and widespread deep-ocean submarine oil drilling exploitations. As exploration and exploitation activities extend further into the deep oceans, so must the risk of blow-outs increase—with the consequent difficulty of getting them under control if rigorous conditions and regulations are not imposed.

In addition, the requirement of absolute liability[59] has a necessary place here, just as with regard to the obligations of the operators of giant tankers and the sub-ocean trains and pipelines. With the possibility of blow-out wells in the deep oceans and damaged or deteriorated pipelines discharging their polluting contents into the ocean environment, absolute liability should be imposed for harms done. These possibilities also point to the risk of great harms to the environment, and to those who look to the sea for their survival, livelihood, health, therapy and recreation. Furthermore, as new uses of the sea develop (*e.g.*, undersea hospitals, laboratories, holiday centers and store houses), so will the exposure to harm increase.

More injurious to the environment than dramatic blowouts such as that of Santa Barbara, and more recently that in the Gulf of Mexico, or even massive oil spills from giant tankers (*e.g., Torrey Canyon*), are

and production of offshore oil "twenty years from now." In addition to Our Nation and the Sea the Commission published 3 volumes of Panel Reports: 1. Science and the Environment (1969); 2. Industry and Technology: Keys to Ocean Development (1969); 3. Marine Resources and Legal Political Arrangements for Their Development (1969) [hereinafter cited as Panel Reports and prefixed by the appropriate volume number].

58. Our Nation and the Sea, *id.* at 122.

59. *See* Goldie, *Liability for Damage and the Progressive Development of International Law*, 14 Int'l & Comparative L.Q. 1189, 1215-20, 1241-44, 1246-49 (1965); Goldie, *International Principles of Responsibility for Pollution*, 9 Colum. J. Transnat'l L. 283, 309-12 (1970), for a revival of the term "absolute liability" with a new content and operation.

the day-to-day minor spills and leaks of oil from a multitude of activities. The Commission on Marine Science, Engineering, and Resources has said:

> . . .[T]he most pervasive pollution comes not from headlined oil spills but from the many activities which take place every day underwater. There are about 16,000 oil wells off the continental United States, and the number is increasing by more than one thousand a year. There is rightful concern that oil well blowouts, leaks in pipelines, and storm damage can cause pollution that could ruin large part of commercial fisheries, sportsfishing, and recreational areas.[60]

(ii) Surficial Deposits

Writing some nine years ago, Dr. John Mero could claim:

> . . . [S]ubstantial engineering data and calculations show that it would be profitable to mine from the sea materials such as phosphates, nickel, copper, cobalt and even manganese at today's (1964) costs and prices. And I firmly believe that within the next generation, the sea will be a major source of, not only those metals, but of molybdenum, vanadium, lead, zinc, titanium, aluminum, zirconium and several other metals as well.
>
> . . . But most important, the sea-floor nodules should prove to be less expensive sources of manganese, nickel, cobalt, copper and possibly other metals than our present land resources.[61]

While these minerals may be won increasingly from the sea, they undergo a cycle of constant renewal[62] which, for the foreseeable future, will continue to add a greater quantity of nodules to the store already on the seabed than could be taken for human use. This possible future source of wealth and well-being however, like the winning of oil and gas from the subsoil of the deep oceans, carries risks of polluting the environment. The Commission on Marine Science, Engineering and Resources explains:

> Mining operations conducted completely independent of land (as in the deep sea or remote shallow banks) will result in entirely different processing and transportation problems. Ore will be loaded directly in barges, tankers, or ore transports. Immediate

60. 1 Panel Reports (III) 52-53.

61. Mero, Mineral Resources of the Sea 275, 280 (1965). *See also* Mero, *Review of Mineral Values on and under the Ocean Floor*, Exploiting the Ocean 61 (Transactions of the Second Annual Marine Technology Society Conference and Exhibit, Washington, June 27-29, 1966) [hereinafter cited as Mero, *Mineral Values*]; *1 Panel Reports (I) 32; 3 Panel Reports (VII) 106-07; Troebst, Conquest of the Sea 180-93 (1962).*

62. *See, e.g.*, Mero, *Mineral Values*, at 76.

> initial beneficiation or processing may be necessary at sea to reduce weight or bulk although this may require large processing equipment on the dredging ship. If all operations are conducted from a single vessel, this will further reduce the amount of ore collected on each trip. If multiple vessel operations are anticipated, one collecting and processing vessel could operate continuously while transport vessels shuttle to port.[63]

What this does not tell us is that the waste products, including acids and other processing chemicals, will be dumped into the sea by the mobile processing ship.[64] A number of such ships could turn sea areas (perhaps of no great extent initially) into maritime equivalents of slag heaps, causing considerable ecological change and deleteriously affecting the food web. Should spillover and waste disposal problems emerge from the winning of minerals in suspension in seawater, they would probably resemble greatly those connected with the beneficiation or processing at sea of hard minerals dredged from the seabed. On the other hand, it must be emphasized this is not a necessary consequence of deep-sea mining. But it may be a possible consequence of an unintelligent[65] approach to the utilization of the hard mineral resources of the deep ocean. If the methods and techniques that were used took into account the need for ecological concern, then deepsea mining could be a means of positively enhancing the environment by means of stimulating biological productivity.[66]

(b) Some Specific Problems of Adaptation—Unique Issues for a Deep-Sea Mining Regime

Apart from a few facts about possible geological structures (including those containing oil) and the existence of nodules, we know next to nothing of the deep-ocean bed and the continental slopes and margins. The creation of an international law duty to prepare the type of environmental report which NEPA calls for within the domestic United States would give a strong impulsion to the improvement of that knowledge. Secondly, if a state or an international agency were called upon to take such a report into considera-

63. *See* 2 Panel Reports (VI) 186; *see also id.* at (V) 184-85.

64. *But see* 2 Panel Reports (VI) 188 where the following recommendation was made:
> Research on the problem of waste disposal . . .. [U]nwise dumping of the tailings, if not carefully planned, could quickly foul a mining operation. Furthermore, the compatability of a marine mining operation with exploitation of the other resources of the sea, particularly the food resources, will depend principally on the effectiveness of the tailings-disposal system.

65. *See* the quotation from Dr. Roels's testimony on May 12, 1972 *Before the Subcommittee on Oceanography of the House Committee on Merchant Marine and Fisheries, supra* note 2 and the accompanying text.

66. *See* testimony of Dr. Roels, *Hearings on Oceanography Miscellaneous, supra* note 2, at 138.

tion when deciding whether or not to grant an exploration or exploitation mining lease or license, there would be an available record testifying to the weight the responsible decision-maker accorded to essential environmental factors. Should these be neglected or undervalued, such a failure would be apparent on review or in the event of subsequent claims being made by injured persons. Thirdly, in the event of a decision to grant the application, a comprehensively drafted impact statement could guide the state or agency as to the conditions it should impose in consideration for granting a license, and point to the safe prospecting and mining methods and procedures which should be imposed in order to diminish the possiblity of either the slow development of slag heaps in the ocean or dramatic catastrophes. Fourthly, an impact report should be able to provide all interested parties (the international administering agency, states, consortia, international public enterprises, private and public enterprises and individuals) useful guidance in pinpointing responsibility in the event, *post hoc*, of pollution occurring, or becoming detected. Fifthly, even at the international level, an impact report could operate to inform the interested and effective constituencies within each state as to the responsibility, or irresponsibility, of its government, and the enterprises its government licenses or espouses, towards the global environment. These reports would thus not only provide instruments whereby the regime could forestall or control polluting activities beyond the limits of state jurisdiction, but also quickly provide guidance for the fixing of accountability for damage from pollution.

(c) The Universality of Impact Reports

Impact reports are not specifically and idiosyncratically relevant only to federal legal order in the United States. They are the institutionalization of legal doctrines capable of universal adaptation. Within each nation state, legislatures could introduce those reports into their own administrative practices. Internationally, they could be included in arrangements for the supranational or even the international control of pollution. The rules, institutions and concepts which are included within the doctrine (which requires enterprises to shoulder the costs of the changes which they make to the environment and to make a full disclosure of the possible consequences of their plans—insofar as the state of the art permits) have an important function applicable in all economies which are guided by policies of attaining (or of increasing) high levels of productivity. The single-minded pursuit of such goals brings about the undesirable spillover

effects attendant upon a disregard of the environment and the passing onto it of the social costs of technological virtuosity. Confronted by the dialectic of values calling for high productivity at minimal cost and those insisting on environmental integrity, decision-makers cannot avoid hard choices and adjustments. These choices and adjustments can be better informed and buttressed when environmental statements or reports become an institutionalized part of economic planning. This could be especially true of proposed international regimes to govern deep-sea mining activities.

NEPA provides an example of a statute which, although enacted to meet a specific need local to the environment of the United States and drafted in terms of the technicalities of federal legislation, reflects also an increasingly universal solicitude for our global habitat. In this sense the Act provides other states with an example of how concern to develop legal machinery capable of effective environmental protection can be translated into legislation. It also offers useful and adaptable legal doctrines and institutions to the framers of universal and regional conventions on the intelligent management of activities which could be environmentally deleterious.

The Act's legislative history includes a unique document, namely the Joint Senate House Colloquium on the Environment entitled *Congressional White Paper and A National Policy on the Environment.*[67] This points clearly to the perplexity of feeling compelled to choose between productivity and environmental preservation. It also sought the legal means of passing safely between the horns of this dilemma. It set out, in the following terms, what were later to be the basic policies of the Act:

> If America is to create a carefully designed, healthful, and balanced environment, we must (1) find equitable ways of charging for environment abuses within the traditional free-market economy; (2) obtain adequate ecological guidance on the character and impact of environmental change; (3) where corporate resource development does not preserve environmental values, then consider the extension of governmental controls in the larger public interest; (4) coordinate the Government agency activities, which share with industry the dominant influence in shaping our environment; and (5) establish judicial procedures so that the individual rights to a productive and high-quality environment can be assured.[68]

67. Senate Committee on Interior and Insular Affairs and House Committee on Science and Astronautics, 90th Cong., 2d Sess., Congressional White Paper on a National Policy For The Environment (1968).

68. *Id.* at 2.

C. *"General Principles of Law"*

Although the legislation of a single state cannot validly be viewed as a "source,"[69] under Article 38.1 of the Statute of the International Court of Justice, one may argue that domestic law developments can provide important analogies for evolving international law. But this is a position which stems from the traditional positivistic dichotomy between *lex ferenda* and *lex lata.* Indeed, municipal legislation suffers in comparison with the writings of publicists and the decisions of domestic tribunals—since these latter are specifically named as sources (albeit "subsidiary" sources) of international law in *aleana d.* It is, furthermore, unusual to see specific acts of legislation (as distinct from the general provisions of codes which may be viewed as merely the legislative restatements of "common law" in its widest sense) providing the domestic analogies contemplated in Article 38.1.c., *i.e.,* "the general principles of law recognized by civilized nations." This phenomenon is to be contrasted with the hospitable reception by international lawyers of "common law" doctrines developed by domestic courts and publicists.[70] While the famous *Lex Aquilia*[71] may appear to have been accorded a similar reception by international lawyers—for example the reception of its offshoot doctrine of *lucrum cessans* in the *Case Concerning the Factory at Chorzow*[72]—its attraction lay, not so much in the original plebiscitum[73] of the Roman people, as in the general principles, interpretations, analogies, and extensions which had come to cover it in layer after layer of ideas accumulated for over two thousand years of doctrinal exposition.[74]

The rationale of international lawyers' restraint in drawing upon legislative enactments (other than codifications of "common law") stems from statutes' specificity and limited scope. By contrast with legislation, those municipal law rules which are most apt to provide the materials of general principles of law are, when stripped of their national peculiarities and technical elaborations, capable of a general, if not a universal, synthesis. In this way legal principles which are common to, underpin and explain, specific domestic law doctrines,

69. On the meaning of the term "source of law" *see, e.g.,* 1 Oppenheim, International Law 24-25 (8th ed. Lauterpacht 1955).

70. *See, e.g.,* the use of equity by Judge Hudson, Diversion of the Waters from the River Meuse, [1937] P.C.I.J. ser. A/B No. 70, at 76-79, and the relevance of equitable reliance in connection with the "Ihlen Declaration" in the Status of Eastern Greenland Case, [1933] P.C.I.J. ser. A/B No. 53, at 69-73.

71. Institutes 4.3; Lawson, Negligence In Civil Law 80-137 (1950); Lafontaine, Pasicrisie Internationale 364; Lauterpacht, The Function Of Law In the International Community 117-18 (1933).

72. [1927] P.C.I.J. ser. A, No. 9, at 21.

73. *See* Jolowicz, Historical Introduction To Roman Law 289 (1932).

74. On the reception of the *Lex Aquilia* in international law *see, generally,* 3 Whiteman, Damages In International Law 1838-391 (1943).

provide international lawyers with the greater part of the materials of decision and of legal development under *aleana* c. of Article 38.1

As domestic legislative activity increases in both significance and volume as a means of both law reform and the expression of fundamental social values within states, so the traditional objections to the reception of statute law as a source of general principles of law should become obsolete. The fact that they have not done so testifies to the almost intransigent conservatism of the legal profession in matters of method. Outstanding among the legislative expressions of social policy which should overcome that conservatism of lawyers are the environmental concerns NEPA has enacted into law. These, standing out as the legislative formulation of legal doctrines,[75] are available for their universalization by treaties and by international diplomacy.

THE UNITED STATES' MEANS OF IMPLEMENTATION

An initial step in implementing the proposal made in the foregoing could be to incorporate a provision in H.R. 9[76] calling for impact reports to be made as a condition precedent to the granting of a license. Such impact reports should assure compliance with the kind of standards which Dr. Roels has foreshadowed in his written testimony before the House Subcommittee on Oceanography.[77] These provisions would add no increased burdens to those already available in Section 102(2)(E) of the NEPA for the regulation of American industry. On the other hand, their incorporation into H.R. 9, together with the requirement that the bill's reciprocity provisions should extend to the impact report requirements would tend to equalize the otherwise disadvantageous position of American industry, as well as to operate positively to protect the environment. As, potentially, a major importer of the seabed's hard minerals won by foreign enterprises, or of goods made therefrom, the United States could effectively exercise a significant leverage on other nations such as the Federal Republic of Germany and Japan (who are also developing their deepsea mining capabilities) and so ensure that their enterprises, too, act "intelligently", in Dr. Roels's sense,[78] with respect to their responsibilities towards the environmental protection of the ocean. Such a provision would stress to the World Community that the United States is using H.R. 9 as the first vehicle for a pragmatic and working rule of environmental protection.

75. *See, supra.*
76. *Supra* note 6.
77. *See, Hearings on Oceanography Miscellaneous, supra* note 2, at 124-28.
78. *See* quotation, *supra,* accompanying footnote 2.

In addition, provisions implementing the administrative use of impact reports should be incorporated in all United States drafts for regimes governing seabed resources as one of a battery of means for environmental protection. It is to be equally regretted that the various proposals submitted to the Seabeds Committee of the United Nations General Assembly[79] and those contained in the Report of the President's Commission on Marine Science, Engineering and Resources[80] have not, generally, offered concrete proposals for combatting the pollution effects of deepsea mining let alone made any such specific proposal as that contained in these pages.

CONCLUSION

Although this paper has focussed upon the one issue of advocating the inclusion of impact reports in H.R. 9 and other United States proposals for a regime governing the resources of the deep ocean floor, it is acknowledged that these are but one important means, in a whole array, of environmental protection. On the other hand, such environment impact reports can provide important legal and political controls over activities and, as such, should be recognized as important and powerful devices when used in a coordinated manner with other means of accountability. The stress on impact reports in this paper has arisen from a felt need to stress one issue strongly, rather than lose needed emphasis by writing discursively in terms of all the possible instruments for creating an effective global environmental policy with which impact reports can be combined.

Other possible cognate means of achieving a degree, at least, of management of the effects on the environment of deepsea mining activities include the installation of monitoring systems, the development of procedures for scientifically measuring marine pollution, the establishment of regulatory regimes, and the carefully discriminating recognition of emerging claims for protecting amenities. Information supplied in impact reports could promote the effectiveness of amenities rights by contributing to their concrete formulation, especially in cases where that information is available in terms of the environmental scientific measuring and environmental monitoring systems which could well go hand in hand with the transnational and international institutionalization of impact reports. Taken together, all these devices could contribute to giving more precise definitions to

79. For a collection of the draft treaties and proposals submitted to the Committee on the Peaceful Uses of the Seabed and Ocean Floor Beyond the Limits of National Jurisdiction of the United Nations General Assembly *see* United Nations Secretariat, Comparative Table of Draft Treaties, Working Papers and Draft Articles, U.N. Doc. A/AC.138/L.10 (mimeo) (Jan. 28, 1972).

80. *See*, Our Nation and The Sea at 147-51.

the criteria of environmental protection an agency or an enterprise should be held to.

In proposing the reception of impact reports into international seabed regimes, this article participates in the continuing search for institutions and concepts which can build into contemporary consumer-oriented business activities (shared alike by socialist and private enterprise economies) the means of vindicating environmental values. It has, further, sought to indicate both the institutional means for giving effect to those environmental values in concrete form, and the vehicles (for example H.R. 9) of the proposed institutional means. Finally, the foregoing argument has sought to develop a process of international equivalence in the contributions which the deepsea mining industries of nations participating in reciprocal or treaty regimes may make towards the social costs their activities incur, but would not otherwise meet.