Proposals submitted to the Seabeds Committee of the United Nations General Assembly \(^1\) and by the Report of the President’s Commission on Marine Science, Engineering and Resources \(^2\) contain blueprints for the establishment of international agencies with respect to seabed exploitation, the duration and extent of licenses of seabed areas, the quantum of the interest granted, the conditions of forfeiture and the destination of revenues. They do not, however, offer concrete proposals for combating the pollution effects of deep sea mining and merely, at best, make some pious reference to the need for taking environmental issues and interests into account. In the following pages one concrete proposal will be made and supported on the basis of both the utility and relevance of the concept of “Impact Reports”.

II. “GENERAL PRINCIPLES OF LAW”

Although the legislation of a single state cannot validly be viewed as a “source”, \(^3\) 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 developing international law. But this is a position which stems from the traditional positivistic dichotomy between \textit{lex ferenda} and \textit{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

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\(^3\) On the meaning of the term “source of law” \textit{see}, \textit{e.g.}, 1 \textit{Oppenheim, International Law} 24-25 (8th ed. Lauterpacht 1955) [hereinafter cited as “Oppenheim”].
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 restatement of "common law" in its widest sense) providing the domestic law 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. While the famous *Lex Aquilia* 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 Chorzów*—its attraction lay, not so much in the original plebiscitum of the Roman people, as in the general principles, interpretations, analogies and extensions which had come to cover it in layer after layer of sedimentation of ideas over more than two thousand years of doctrinal exposition, exegetics and glosses.

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, 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.


5. *Institutes 4.3; Lawson, Negligence in the Civil Law* 80-137 (1950); *LaFontantaine, Pasicrisie Internationale* 364; *Lauterpacht, The Function of Law in the International Community* 117-18 (1933).


7. See *Jolowicz, Historical Introduction to Roman Law* 289 (1932).

8. On the reception of the *Lex Aquilia* in international law see, generally, 1 *Whiteman, Damages in International Law.*
The National Environmental Policy Act of 1969 provides an example of legislation 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 management of pollution.

The background of the Act includes a unique document, namely the Joint Senate-House Colloquium on the Environment entitled the Congressional White Paper and A National Policy on the Environment. This pointed clearly to the dilemma of feeling compelled to choose between productivity and environmental preservation and to the legal means of passing 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 environmental 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.


10. SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS & HOUSE COMMITTEE ON SCIENCE AND ASTRONAUTICS, 90th CONG., 2d Sess., CONGRESSIONAL WHITE PAPER ON A NATIONAL POLICY FOR THE ENVIRONMENT (1968) [hereinafter cited as “CONGRESSIONAL WHITE PAPER”].

11. Id. at 2.
III. LEGISLATIVE POLICY

On January 1, 1970, the National Environmental Policy Act of 1969 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 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,” Section 101(b) of the Act (42 United States Code Section 4331(b)) sets out the Congress’ environmental policy directives 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;
(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


“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’ v. AEC, 2 ERC 1779 (D.C. Cir. 1971), and Committee for Nuclear Responsibility v. Seaborg, 3 ERC 1126 (D.C. Cir. 1971).
(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

IV. "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 National Environmental Policy Act 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. One question is whether the National Environmental Policy Act 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 the National Environmental Policy Act does not vest "substantive rights" in individuals and organizations. It merely prescribes "procedural requirements." Note should, however, be taken of Section 101(c) of the Act (42 United States Code Section 4331(c)). It provides that:

The Congress recognizes each person should enjoy a healthful environment and that each person has a responsibility 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 (42 United States Code Section 4332). 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 the NEPA mandates a particular sort of careful and informed decision making process and creates enforceable duties.

The phrase "enforceable duties" is clearly susceptible of an overzealous emphasis but it does not expressly require the recognition

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17. Id.
18. See, e.g., Calvert Cliffs' v. AEC, 2 ERC 1779, 1783 (D.C. Cir. 1971). See also id. at 1782.
of substantive rights to be vested in individuals. On the other hand, the requirements of its hard core meaning induce the expectation that courts will recognize individuals' "non-Hohfeldian" interests in requiring agencies to pay all 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 it would create new substantive rights of a dangerously disruptive and far-reaching character,20 its sponsors hastened to assure the fearful and the suspicious that they had an entirely procedural enactment before them.21 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.22

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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19. For a discussion of this term see infra, notes 20-22 and the accompanying text.
20. 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. . . .
21. See, for statements as to the policy directive and procedural qualities of the Act, by its main sponsors, Senator Jackson id. at S. 17451 (Dec. 20, 1969), and id. at 17453, 17454; Senator Muskie id. at S. 17458 and S. 17460.
Supreme Court of the United States as far as the preliminary issue of standing to sue in federal courts is concerned; 23

(2) Professor Jaffe’s formulation was offered some three and a half years before the signing of the National Environmental Policy Act 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’ that the National Environmental Policy Act creates “enforceable duties” 24 which individuals and unincorporated entities can pursue;

(3) While “amenities rights” were not crystallized by the National Environmental Policy Act of 1969, even as interpreted by Judge Wright, the possible outline of their contours may become contingently discernible, should the trend of legislation and court decision 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 with 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), imaginate judicial decision, and the classifications of publicists in combination to felt social needs in a specific area. While it is under these auspicious circumstances that substantive rights may come to be “secreted in the interstices of procedure” (to call Sir Henry Maine’s great insight regarding the emergence of substantive law in involving societies) social, political and juridical, these conditions have not, as yet, combined to create


24. See, supra note 1b.
presently-existing substantive rights to amenities which individuals are entitled to vindicate before appropriate administrative courts of law or tribunals.

V. AMENITIES AND IMPACT REPORTS

Through the National Environmental Policy Act 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 decisionmaking processes, 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. These "presently unquantified environmental values" are thus to take their place alongside "economic and technical considerations" as determinative factors for administrators to consider.

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

(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 would be involved in the proposed action should it be implemented.

The foregoing summary of selected provisions of the National Environmental Policy Act poses at least three matters for further development. These are: (A) the significance of the term "appropriate consideration" in Section 102(2)(B) (42 United States Code Section 4332(2)(B)); (B) the problem of the outer limits of relevance—both for the environmental reports and for decisionmaking, and (C) the standards to be applied in determining the protection of the "amenities".

27. Id.
A. "Appropriate Consideration"

The first question is whether "appropriate consideration" permits an agency leeway in considering the relevance of environmental policy issues. In Calvert Cliffs' \textit{v. AEC} 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.\textsuperscript{30}

The duties prescribed in Section 102 (42 United States Code Section 4332) are not inherently flexible. 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 (42 United States Code Section 4334) provides that the environmental legislation does not eliminate any duties already imposed by other "specific statutory obligations". 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.\textsuperscript{31} This is supported by the House conferees who reported that Section 105 (42 United States Code Section 4335) "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".\textsuperscript{32}

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",\textsuperscript{33} and resolve adversary contentions regarding environmental issues. "Rather, it must itself take the initiative of considering environmental values at every distinctive and comprehensive stage of the process..."\textsuperscript{34} 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

\textsuperscript{29} 2 ERC 1779 (D.C. Cir. 1971).
\textsuperscript{30} \textit{Id.} at 1781 n. 16.
\textsuperscript{31} \textit{Id.} at 1782 n. 21.
\textsuperscript{33} 2 ERC 1779, 1785 (D.C. Cir. 1971).
\textsuperscript{34} \textit{Id.}
be raised by one of the parties, and not otherwise, as a "crabbed interpretation" 35 of the National Environmental Policy Act. 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 (42 United States Code Section 4334) envisages. As to water quality standards in particular, Section 104 (42 United States Code Section 4334) does bring into play consideration of the Water Quality Improvement Act of 1970. 36 This does not, however, call for abdication; for other "specific statutory obligations" are not to replace the National Environmental Policy Act entirely. It 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." 37) 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. 38

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.

35. Id. at 1784.
37. Calvert Cliffs' v. AEC, 2 ERC 1779, 1789-90 (D.C. Cir. 1971) (Judge Wright's emphasis).
38. See, e.g., Committee for Nuclear Responsibility v. Seaborg, 3 ERC 1126, 1128 (D.C. Cir. 1971) [hereinafter cited as "Amchitka"]: 
B. "Detailed Statement"—An Obligation of Full Disclosure

In *Environmental Defense Fund Inc. v. Corps of Engineers* 39 Judge Parker indicated the duty of the Federal Government to work on the basis of a detailed and systematic impact statement in the following terms:

The [National Environmental Policy Act] 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. 40

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* 41 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 possibility 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 relevant scientific discipline. 42

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 modification during agency review so that

40. Id. at 886.
42. Id. 1403.
the results to be achieved will be in accordance with national
environmental goals.43

In a similar vein Judge Eisele, in Environmental Defense Fund Inc. v. Corps of Engineers, 44 gave the Act the very interesting characterization of an "environmental full disclosure law" 45 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.46

C. 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 process 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 limits of its intended scope; they must be read into it by a reasonable construction. 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 combined the degree of knowledge with the foreseeability of specific environmental degradation should not be beyond the ingenuity of the draftsmen to formulate or judges to apply.

43. Id. at 1403-04.
45. Id. at 759.
46. Id.
"Relevance" in this context could be illustrated by distinguishing a Federal Housing Authority considering the granting of loans for houses in a development whose area had been cleared through the chopping down of a uniquely valuable forest 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 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 calls for its own application 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 rôle 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.

D. The Standards

The Guidelines 47 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 authority each enjoyed. My proposal here is merely to indicate some of the underpinning values to 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 facts of life that this process of converting "nature" into "goods" has its own spillover 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

47. See, supra note 9.
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 its
concomitant of a high level of spillover pollutions 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 or, in the industrial states, 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 from the modalities of liability for the harms those
transformations bring in their train, are becoming urgent tasks for
lawyers. It is thus becoming increasingly urgent to define independent
environment base values which can be built into the contemporary
exploitative consumer values of free enterprise and socialist societies
alike. One such 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.

VI. THE DOCTRINAL UNDERPINNINGS OF
IMPACT REPORTS

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 reliances of the weaker or more vulnerable parties.
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 they 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 emerges into the law when it becomes capable of
expression in specific and technical legal terms. The emergence and
reception of a general notion of justice emerging into the practical
formulations of the law is thus also a process of both clarification and
implementation. In addition, the time must be ripe for the reception
into the legal order of those emerging ideas. Reception is a dispository act by designated personnel, for example judges, and so is to be distinguished from clarification and emergence. These are part of the processes of society at large.

Thus 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; those rules and doctrines themselves become grouped around the idea as it clarifies in the law's process of claim, counterclaim and accommodation. 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.

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, 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 a judicially created legal doctrine. 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 the case law's, 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 the National Environmental Policy Act of 1969 satisfies the criteria for a legal doctrine. It is 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.

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 use of impact reports to ensure that society will not be called upon to bear an undertaking's environmental

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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 the black and white formulation of the Section, 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 the National Environmental Policy Act of 1969, namely the doctrine requiring economic enterprises to minimize their environment degradations, to carry the costs of their environmental alternations 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.

VII. ADAPTABILITY OF IMPACT REPORTS FOR INTERNATIONAL RECEPTION: AN APPRAISAL

A. 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 the environmental factors; yet part of the record dealing with the environment must be given full consideration. The environmental factors are not merely to be found in the record as fortuitously and as the result of the assiduity of private groups, or of contending parties at a hearing, but must be placed there by the agency itself. 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' decisions. For example, in Amchitka, the Circuit Court of Appeals for the District of Columbia tells us:

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.

As a device which should provide an important input in the appraisal

48. Supra note 38.
49. Supra note 36, at 1128.
of a proposal, a plan or an application, an environment report has a number of facets. These include:

(1) Its informational and fact-collating function by the agency;
(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” 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 give parties “standing” before the courts into substantive rights to life in terms of the amenities which make such a right viable, meaningful and practical.

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

(1) Environmental Problems of Deep-Sea Mining

The International Declaration on Human Rights, Article 3, proclaims a “right to life” to all individual human beings. This right 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 areas of international action. Among these, necessarily, is deep-sea mining with its possibilities of major pollution damage to the world’s oceans. Deep-sea mining can be classified into a number of subdivisions. Those offered here are: (a) winning fossil fuels under the seabed; and (b) capturing surficial deposits, especially nodules from the seabed of the deep oceans. The winning of minerals in suspension in seawater will

50. For the connotation and significance of Professor Jaffe’s development of the term “interests” in the context of “standing” see, supra note 22 and its accompanying text.
barely be 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.

(a) 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.52 (The outer limit of the legal continental shelf as defined in terms of an isobath.)53 This technological trend54 will become intensified as demand increases.55 Thus, Our Nation and the Sea tells us:

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.56

As claims to develop more offshore oil and gas resources go into deeper and deeper regions, they will inevitably give rise to more acute problems of polluting the seas and the coasts.

52. See, Goldie, The Exploitability Test — Interpretation and Potentialities, 8 NATURAL RESOURCES J. 434-36 (1968), especially notes 1 and 2, the accompanying text and Appendix I for an outline of this trend off the coasts of the United States.


54. Experimental drillings have already been conducted through over 11,000 feet of water into the sediment beneath. See e.g., the report of the 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, N.Y. 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 November 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 N.Y. 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 N.Y. 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 or 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 contrast with the Gulf and Southern California coasts. Taken together, these factors greatly increase the dangers of major oil catastrophes near great population centers.

55. See, Our Nation and the Sea, supra note 2, at 122-30, for a projection in both demand for and production of offshore oil “twenty years from now” (i.e., 1969).

56. Id. at 122.
The New York Times reports 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 massively engaging in 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 ⁵⁷ has a necessary place here, just as it has with regard to the obligation 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, recreation 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 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 that 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 parts of commercial fisheries, sportfishing, and recreational areas. ⁵⁸

(b) Surficial Deposits

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

... [S]ubstantial engineering data and calculations show that


⁵⁸. 1 PANEL REPORTS (III) 52-53.
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 are our present land resources. 59

While these minerals may be won increasingly from the sea, they undergo a cycle of constant renewal 60 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, carry risks of polluting the environment. The Commission on Marine Sciences, 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 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 in each trip. If multiple vessel operations are anticipated, one collecting and processing vessel could operate continuously while transport vessels shuttle to port. 61

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. 62 A number of such ships could turn sea areas


60. See, e.g., Mero, Mineral Values at 76.

61. See 2 PANEL REPORTS at (VI) 186; see also id. at (V) 184-85.

62. But see 2 PANEL REPORTS at (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 compatibility of a marine mining operation with exploitation...
(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 appear to promise to resemble greatly those connected with the beneficiation or processing at sea of hard minerals dredged from the seabed.

(2) 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 reports which the National Environmental Policy Act of 1969 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 consideration 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, the 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 it ought to impose in order to diminish the possibility of either slow leaks of polluting material 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 of the other resources of the sea, particularly the food resources, will depend principally on the effectiveness of the tailings-disposal system.
activities beyond the limits of state jurisdiction, but also quickly provide guidance for the fixing of accountability for polluting harms.

C. The General Adaptability of Impact Reports to International Regional and Universal Regimes

(1) 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 that nation state legislatures could introduce them 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 full disclosure) have an important function applicable in all economies which are guided by policies of attaining (or of increasing) high levels of productivity. All of these are, inevitably, exposed to the "spillover effects" attendant upon working towards such goals. Confronted by the dialectic of values calling for high productivity at minimal cost and those insisting on environmental integrity, decisionmakers cannot avoid hard choices and adjustments. These choices and adjustments can be better informed and buttressed when environmental statements or reports are adapted to other legal systems, and especially to the proposed international regime to govern deep sea mining activities.

(2) Needed, A "Devil's Advocate"

Because of the great influence of both public and private enterprises which are likely to engage successfully in deep-sea mining activities, and because of the increase in costs which a scrupulous observance of environmental protection would incur, it may not be enough merely to engraft impact reports onto a deep-sea mining regime. They should be submitted to a specially designated and highly qualified official who should be given the task of "Devil's Advocate" (naturally under a more bureaucratically appealing title). He should closely and publicly question all applications to ensure that possible environmental hazards are eliminated. He should be guided by a deeply felt sense of obligation towards the preservation of this planet as a health environment for future generations. He should also have a clear grasp of man's ever-increasing need to convert the planet's raw materials into commodities.