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THE ORIGIN OF ENVIRONMENTAL LAW

Until the middle of the twentieth century environmental concern made but a small contribution to the shaping of international law; Throughout most of history there was little understanding of man's capacity to affect the environment on a large scale; and, even when this capacity increased to global dimensions, its implications were only slowly realized. The influence of environmental concern was initially confined to an area where ecosystems of neighboring states were most intimately linked and yet were not vast enough to readily absorb the impact of heavy use and development—that is, to transboundary rivers and lakes. It is in fluvial relations between states that we find the first attempts to apply the principles of good neighborliness and abuse of right. Lauterpacht's examples to support the applicability of abuse of right to international law come from water disputes.[1] Andrassy bolsters the principle of good neighborliness with analogies from state dealings concerning water resources.[2] But the status of abuse of right as a general principle of law, and thus of international law, is far from established even today,[3] and any restrictions on states' rights to deal as they pleased with transboundary waters within their borders were rejected, not only by many 19th-century writers[4], but also by the practice of some leading states.[5] The problem with general principles like good neighborliness and abuse of right is that they lack sufficient precision to permit their application with any degree of confidence in concrete cases; and they become superfluous in any area such as modern fluvial law in which more or less concrete rules are developed. However, from the beginning of the 19th century, neighborliness did force states to conclude treaties which, as a rule, limited their free use of transboundary waters in the frontier zone. These treaties placed a heavy

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1. H. Lauterpacht, The Function of Law in the International Community 290-94 *passim* (1933).

2. J. Andrassy, *Les relations internationales de voisinage*, Academie de Droit International, II Recueil des Cours 77-181 (1951).

3. *E.g.*, F. Berber states: "it has been seen beyond all doubt that such a rule of the abuse of rights does not exist as a general principle of law recognised by civilised nations." Berber, Rivers in International Law 210 (1959).

4. *Id.*, at 14.

5. Such as the United States, in the celebrated turn-of-the-century dispute with Mexico over waters of the Rio Grande, during which Attorney-General Harmon delivered the opinion that the United States was not bound by any "rules, principles, and precedents of international law" in making use of waters flowing through its territory. 21 Op. Att'y Gen. 267 (1895).

obligation on the party states to maintain boundary waters in a natural condition and not to make any alteration in the flow, bed, or banks (including diversion of water), without the consent of the governments concerned.[6]

The correlation between awareness of capacity to inflict injury and the emergence of rules regulating use of the environment is even better illustrated in the case of the oceans. Well into the 20th century, the belief prevailed that ocean resources were generally inexhaustible and could not sustain permanent injury from human activities.[7] As a consequence, freedom to exploit living resources became one of the freedoms of the sea[8] and helped to prevent or, at least, retard the emergence of effective protection rules. Fisheries conventions, which tended to be concerned with division of the spoils, did little to create international machinery which would effectively implement whatever conservation measures they did contain.[9] Likewise, no specific ocean pollution prohibitions evolved in customary interna-

6. *See, e.g.*, Treaty on Boundaries between their Majesties the King of Prussia and the King of The Netherlands, Oct. 7, 1816, 3 Martens Nouveau Recueil 54-55; Treaty for the Regulation of Water from the Meuse between Belgium and The Netherlands, May 12, 1863, 1 Martens Nouveau Recueil 120 (ser. 2); Agreement between Switzerland and the Grand-Duchy of Baden concerning the Navigation of the Rhine from Neuhausen to below Basel, May 10, 1879, (1878-89) 4 Recueil Officiel des lois Ordonnances Switzerland 339 (ser. N); Additional Act of May 26, 1866 to the Treaties Determining Boundaries, concluded Dec. 2, 1856, Apr. 14, 1862 and May 26, 1866 between France and Spain, 9 Clerq, Recueil des Traités de la France 544; Agreement between her Majesty the Queen-Empress and S.A.S. Electorale Palatine, May 13, 1779, 2 Martens Recueil 671 (2d. ed.).

7. *E.g.*, McDougal & Burke, The Public Order of the Oceans vii-viii (1962), in which it is claimed that the living resources of the oceans are "difficult or impossible to deplete in a degree technologically irreversible."

8. It was finally enshrined in Art. 2 of the Convention on the High Seas, *done* April 29, 1958, [1962] 2 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82, which states, "Freedom of the high seas . . . comprises, *inter alia*, both for coastal and non-coastal states:

. . .

(2) Freedom of fishing. . . ."

9. *E.g.*, the 1882 Convention for Regulating the Police of the North Sea Fisheries, 73 British and Foreign State Papers 39 (1882), which remained in force until updated by the London Fisheries Convention of Mar. 9, 1964, 581 U.N.T.S. 57, U.N. Legis. Ser. (Seas) 862 (ST/LEG.SER.B/15) (1970). States parties to the 1964 Convention, which carves up all the North Sea and Atlantic coastlines of western Europe into exclusive and semi-exclusive fishery zones, are empowered but not required or even exhorted to regulate the fisheries. A different approach to division of the catch was tried in the 1952 International Convention for the High Seas Fisheries of the North Pacific Ocean, 205 U.N.T.S. 65, which contains in its Annex the famous abstention principle. The Interim Convention on the Conservation of the North Pacific Fur Seals, signed Feb. 9, 1957, 314 U.N.T.S. 105, provides for equitable sharing of the catch but, in establishing the North Pacific Fur Seal Commission, gives that body no authority to apply conservation measures, only recommendatory powers. As Johnston has noted: "As long as the scheme of allocation is considered generally to be equitable, there will be little motivation for the development of regulatory competences under international authority." D. Johnston, The International Law of Fisheries 269 (1965).

tional law; and whatever prohibitions could be deduced from the principle of freedom of the high seas were never applied.[10]

From the third decade of this century, however, appreciation of man's capacity to affect and destroy the environment on a large scale began to grow. Already in the 1920's there was awareness of the damage that could be done by oil pollution;[11] and soon after World War II, the impact of rapid population growth on food resources and land aroused intensified concern.[12] But the most potent factor in awakening a popular realization of man's destructive power was the development of nuclear energy. Controversy as to the lawfulness of nuclear testing brought environmental pollution sharply into focus.[13]

AREAS AND DIRECTION OF EVOLUTION

A. *Fluvial Law*

New technological advances affected fluvial law earlier than other branches of law because of the particular sensitivity of the fluvial environment to increased use and development. The effects became evident in pressure to abandon all vestiges of absolute state sovereignty (as embodied for instance in the Harmon Doctrine[14]), and to replace unilateral disposition of transboundary waters within state borders with a rule requiring consent of the states involved for any alterations which would affect them. This rule, initially established by convention for waters in the frontier zone,[15] was expressed as a general rule in the Declaration of Montevideo:

> In consequence, no state may, without the consent of the other riparian state, introduce into water courses of an international character, for the industrial or agricultural exploitation of their waters, any alteration which may prove injurious to the margin of the other interested state.[16]

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10. *See* Teclaff, *International Law and the Protection of the Oceans from Pollution*, 40 Fordham L.R. 529, 530-31 (1972) [hereinafter cited as Teclaff, *Pollution*].

11. Shepheard & Mann, *Reducing the Menace of Oil Pollution*, 31 Dep't State Bull. 311 (1954). *See also* 4 M. Whiteman, Digest of International Law 690 (1965).

12. *E.g.*, F. Osborn, Our Plundered Planet (1948); W. Vogt, The Limits of the Earth (1953); W. Vogt, Road to Survival (1948).

13. *See, e.g.*, McDougal & Schlei, *The Hydrogen Bomb Test in Perspective*, 64 Yale L.J. 648 (1955), arguing for the lawfulness, and E. Margolis, *The Hydrogen Bomb Experiments and International Law*, 64 Yale L.J. 629 (1955), against it. *See also* debates in the International Law Commission concerning the draft articles of the Law of the Sea, 1 *Year Book* Int'l L. Comm'n 31-35, (1956).

14. *See supra* note 5.

15. *See supra* note 6.

16. Seventh International Conference of American States, Declaration on Industrial and Agricultural Use of International Rivers, ¶2, text in 28 Am. J. Int'l L. 59 (Supp. 1934). *See also*, the International Law Institute's Madrid Declaration of 1911 which stated:

It is doubtful, however, whether this stricture, amounting to a power of veto by one state over the fluvial projects of another, ever became anything more than a recommendation. The Arbitral Tribunal in the *Lake Lanoux* case rejected it and held that, in the absence of specific obligations imposed by agreement, all that international law requires of states is to take into account the interests of the other riparian.[17]

The *Lake Lanoux* award defined only conditions under which a state can unilaterally undertake projects on an international stream. It did not define the extent to which a state may appropriate the waters of that stream when no agreement between the riparians exists. This question was taken up by the International Law Association (I.L.A.) in the Helsinki Rules of 1966.[18] Reflecting developments in legal

> II. When a stream traverses successively the territories of two or more States:
> 1. The point where this stream crosses the frontiers of two States, whether naturally, or since time immemorial, may not be changed by establishments of one of the States without the consent of the other. . . . 24 Ann. de l'Inst. de Droit Int'l 367 (1911).
> Droit Int'l 367 (1911).

17. In the Lake Lanoux case, the Arbitral Tribunal stated:

> But international practice does not so far permit more than the following conclusion: the rule that States may utilize the hydraulic power of international watercourses only on condition of a *prior* agreement between the interested States cannot be established as a custom, even less as a general principle of law.
> It is for each state to evaluate in a reasonable manner and in good faith the situations and the rules which will involve it in controversies; its evaluation may be in contradiction with that of another State; in that case, should a dispute arise the Parties normally seek to resolve it by negotiation or, alternatively, by submitting to the authority of a third party; but one of them is never obliged to suspend the exercise of its jurisdiction because of the dispute except when it assumes an obligation to do so.
> The Tribunal is of the opinion that, according to the rules of good faith, the upstream State is under the obligation to take into consideration the various interests involved, to seek to give them every satisfaction compatible with the pursuit of its own interests, and to show that in this regard, it is genuinely concerned to reconcile the interests of the other riparian State with its own. Lake Lanoux Case (France v. Spain), 24 I.L.R. 101, 130, 132, 138-139 (1957).

On the general applicability of rules propounded by the Tribunal, *see* A. Gervais, *L'Affaire du Lac Lanoux*, 6 Annuaire Français de Droit International 373, 420-23 (1960), which states:

> Le penchant du Tribunal à élargir les problèmes et à donner des solutions de principe est fortement marqúe dans la definition qu'il adopte des intérêts qui doivent être sauvegardés. . . .
> A partir de cette base étroite, et sans s'y référer, sinon pour la forme dans l'avant-dernier alinéa de son paragraphe 24, la sentence établit une remarquable construction logique, par raisonnement sur la situation juridique à partir de la notion de bonne foi. Dépassant de loin le cas particulier du Lanoux et de l'Acte additionnel de 1866 la méthode ainsi définie par le Tribunal est valable pour résoudre tous les conflits de droits et d'intérêts soulevés par n'importe quel aménagement hydraulique projeté par un Etat quelconque et susceptible d'avoir des répercussions chez ses voisins.

18. Helsinki Rules on the Uses of the Waters of International Rivers, International Law Association, Report of the 52nd Conference held at Helsinki, Aug. 17-20, 1966, 477-533 (1967) [hereinafter cited as Helsinki Rules].

thought since the beginning of the century,[19] the Rules substitute the river basin for the individual river as being the appropriate unit for water resources management and exploitation,[20] and apply to the basin waters principles of equitable apportionment developed by the United States Supreme Court and other tribunals.[21]

The principle of equitable apportionment brings a degree of rationality into use of the waters of politically divided river basins. However, it does not encompass, except perhaps by implication, damage done by water resource development to other elements of the environment.[22] It has become increasingly evident that projects which are beneficial for water use per se may have very detrimental side effects—two frequently cited examples being the Aswan and Kariba dams.[23] By the time of the publication of the Rules, concern with the impact of water development on the environment had already spurred a search for principles in municipal water law which would reconcile benefit with detriment. This, for example, was the object of a major study commissioned in the United States by the

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19. *See* L. Teclaff, The River Basin in History and Law 152-155 (1967) [hereinafter cited as Teclaff, River Basin].

20. Helsinki Rules, *supra* note 18, arts. I, II and III. Though adaptable as a guide for the coordinated multi-purpose development of an entire river basin, based on agreement between the co-basin states, the Helsinki Rules are meant rather for the kind of situation in which each basin state develops the waters of its part of the basin individually and separately. This may be seen not only in the choice, in Article V of the Rules, of factors relevant to the establishment of an equitable share in the beneficial use of the waters, but also in the wording and choice of examples in the Comment.

21. *See* Art. IV of the Helsinki Rules and Comment, *supra* note 18. The limitations of the principle of equitable apportionment are well stated in A. Utton, *International Streams and Lakes*, 2 Waters and Water Rights 403, at 427-28 (R. Clark ed. 1967):

> Although flexibility is one of the strengths of equitable apportionment, there is also a kind of narrowness in the principle. Equitable apportionment contemplates independent development by each country on its own side of the border; each country is allocated a quantity of water for its own use and development. Such a settlement, by a negotiated treaty or the decision of an impartial tribunal, may be laudable. But independent development is unlikely to make the maximum use of an international drainage basin. Instead of thinking in terms of artificial boundaries and allocations of quantities of water under theories of equitable apportionment, we must, because of the increasing demand for water, think in terms of the best utilization of the entire resource. (Citations omitted)

See generally on equitable utilization, J. Lipper, *Equitable Utilization*, The Law of International Drainage Basins (A. Garretson *et al.* eds. 1967), especially 41-56.

22. The damage to the environment of a co-basin state may be taken as one of the factors in determining what is a reasonable and equitable share in water development benefits according to Art. V of the Helsinki Rules, *supra* note 18, which does not specifically list environmental damage but is broad enough to be interpreted as including it by implication.

23. *See* W. J. Roberts, *Man-made lakes, their problems and environmental effects*, 7 Nature and Resources 14 (No. 4, Dec. 1971); *see also* B. Ward & R. Dubos, Only One Earth 163 (1972); M. Nicholson, The Environmental Revolution: A Guide for the New Masters of the World 86 (1970).

National Water Commission.[24] Recognition of the problem and the preparatory work of the Stockholm Conference and in its final Recommendation 51. The preparatory text was a strongly worded exhortation:

> that nations agree that when water resources activities are contemplated that may have an environmental effect on another country, the other country be notified well in advance of the activity envisaged. . . .[25]

In its progress through Committee II and the Plenary, however, the passage lost much of its force through amendment.[26]

If the Helsinki Rules failed to take account of the detrimental effects of water use and development on other elements of the environment, they did deal, under the heading of pollution, with the protection of water itself.[27] However, the formulation of the duty of states to prevent and to abate pollution is not absolute; and it permits varying degrees of pollution as a consequence of beneficial lawful uses. Thus the Comment to Article 10 states:

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24. Environmental Quality and Water Development (C. Goldman ed. 1972). The major recommendations of this study were (1) to engage public involvement at all levels of planning so as to balance environmental values against developmental aspects; (2) Incorporation of new techniques of evaluation of water development projects to give a much broader spectrum of social and environmental aspects than is afforded by traditional benefit-cost analysis (specific elements of this would be thorough impact statements and effective monitoring programs); (3) creation of a separate governmental agency for water development planning and evaluation from construction; (4) post-auditing of projects already completed to establish their actual economic return and determine their environmental impact.

25. United Nations General Assembly Conference on the Human Environment, Environmental Aspects of Natural Resources Management, ¶159 (U.N. Doc. A/CONF. 48/7) (Preparatory Document).

26. Recommendation 51 of the Action Plan for the Human Environment, contained in United Nations General Assembly, Report of the United Nations Conference on the Human Environment held at Stockholm, 5-16 June 1972, U.N. Doc. A/CONF. 48/14 (1972) [hereinafter cited as the Stockholm Report]. The Stockholm Report was considered by the 27th Session of the U.N. General Assembly in the fall of 1972. After extensive debate, the Second Committee of the General Assembly recommended the adoption of the Report, with some changes, to the General Assembly. The changes did not affect the Action Plan at all and the Declaration only slightly; they pertained mainly to the institutional and financial arrangements. *See* United Nations Conference on the Human Environment, Report of the Second Committee, U.N. Doc. A/8901 (1972).

27. Art. X of the Helsinki Rules *supra* note 18, states:

> 1. Consistent with the principle of equitable utilization of the waters of an international drainage basin, a State
> (a) must prevent any new form of water pollution or any increase in the degree of existing water pollution in an international drainage basin which would cause substantial injury in the territory of a co-basin State, and (b) should take all reasonable measures to abate existing water pollution in an international drainage basin to such an extent that no substantial damage is caused in the territory of a co-basin State.
>
> Helsinki Rules, *supra* note 18, at 19-20.

> A use that causes pollution to the extent of depriving a co-basin State of an equitable share stands on the same basis (as diversion). By parallel reasoning, a State that engages in a use or uses causing pollution is not required to take measures with respect to such pollution that would deprive it of equitable utilization. . . .[28]

Under this formulation, it is conceivable that pollution deriving from an otherwise reasonable and equitable use might do serious environmental damage before resulting in any substantial injury which would deprive a state of its equitable share. This is true even of a state which does not as yet make much use of a river and, which, because of a primitive economic base, does not plan to use it in the near future. This situation would not occur if, instead of applying the principle of equitable apportionment, the duty to cease polluting would arise as soon as the activities of one co-basin state resulted in noticeable pollution in parts of the river basin under the jurisdiction of other states. Such a rule finds support in the absolute prohibition on pollution contained in some water treaties, though that may have been due rather to a lack of understanding of pollution and the primitiveness of the applicable law than to a desire to eliminate pollution altogether.[29] It is consistent also with a trend in some municipal law—for example, the legislation to amend the Federal Water Pollution Control Act in the United States, which establishes as

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28. *Id.* at 22.

29. *E.g.*, Art IV of the Treaty Relating to Boundary Waters and Questions Arising Along the Boundary between the United States and Canada, Jan. 11, 1909, 36 Stat. 2448, T.S. 548; U.N. Legis. Ser., Legislative Texts and Treaty Provisions Concerning the Utilization of International Rivers for Other Purposes than Navigation 260 (1963) (ST/LEG/SER.B./12) [hereinafter referred to as U.N. Legis. Ser. (Rivers)], which states "the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other." Also Treaty Between Denmark and Germany, Apr. 10, 1922, art. 29 (10 L.N.T.S. 215; U.N. Legis. Ser. (Rivers) 588) "The water course may not be used in such a manner that: (1) The height of the tidal water would be altered or the water polluted to the detriment of other persons. . . ." Some of the agreements concluded by the Soviet Union and socialist states of eastern Europe contain even more emphatic prohibitions. The Finnish-Soviet agreement of June 23, 1960, concerning frontier waters states in Art. 16: "The Contracting Parties shall ensure that the frontier waters are kept clean and are not artificially polluted or fouled in any way. . . ." U.N. Legis Ser. (Rivers) 656. An identical provision occurs in the Norwegian-Soviet agreement of Dec, 29, 1949 (U.N. Legis. Ser. (Rivers) 882). More specific wording is to be found in the Romanian-Soviet Agreement of Nov. 25, 1949, art. 17:

> The competent authorities of the Contracting Parties shall take steps to maintain the frontier waters in such due state of cleanliness as to prevent the waters from being poisoned or polluted by acids or refuse from factories or industrial establishments, or from being fouled by any other means.

U.N. Legis. Ser. (Rivers) 291. Similar phrasing, which is at the same time absolute, specific, and comprehensive, is contained in the Polish-Soviet agreement of July 8, 1948 (U.N. Legis Ser. (Rivers) 890), art. 17, and in the Yugoslav-Hungarian agreement concerning fishing in frontier waters of May 25, 1957 (U.N. Legis. Ser. (Rivers) 836-37), art. 5, which prohibits the discharge of pollutants harmful to aquatic wildlife "irrespective of the manner in which and the distance from which such substances reach the frontier waters."

a national goal the cessation of all discharge of pollutants into United States navigable waters by 1985.[30]

The no-pollution/too-much-pollution dilemma will be greatly alleviated when the duty to formulate pollution standards is generally established by treaty or customary law and the methods of formulating those standards are perfected. The necessity of such a formulation is already widely recognized and has been explicitly acknowledged in a number of recommendations of the Stockholm Conference.[31] It has been voiced by such organizations as the I.L.A.[32] and the Organization for Economic Cooperation and Development (O.E.C.D.).[33] Furthermore, pollution standards have been already included in some draft conventions, for instance, the Council of Europe's Preliminary Draft Convention on the Protection of Fresh Waters Against Pollution.[34] There is little question that the duty to establish standards soon will become mandatory in international law.

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30. Federal Pollution Control Act Amendments of 1972, Pub. L. No. 92-500.

31. *E.g.*, Recommendation 72 of the Action Plan States: "It is recommended that in establishing standards for pollutants of international significance, Governments take into consideration the relevant standards proposed by competent international organizations. . . ." Stockholm Report, *supra* note 26, at 40. *See also* Recommendation 81:

> that the World Health Organization, together with the competent international organizations, continue to study, and establish, primary standards for the protection of the human organism, especially from pollutants that are common to air, water, and food, as a basis for the establishment of derived working limits. *Id.*, at 43.

Similar proposals are contained in Recommendation 82, that increased support be given to the Codex Alimentarius to develop international standards for pollutants in food *id.* at 43-44 and Recommendation 83, that the "appropriate United Nations agencies develop agreed procedures for setting derived working limits for common air and water contaminants" *id.* at 44.

32. International Law Association, New York Conference (1972), Committee on International Water Resources Law, Report, Declaration on Marine Pollution of Continental Origin 58, at 63 (1972). Art. III(a) of which states: "States should establish, as soon as possible, international standards for the control of sea-water pollution, having regard to all relevant factors. . . ."

33. At its meeting in Paris, May 24-26, 1972, the Ministerial Council of the O.E.C.D. adopted a Council recommendation defining a set of Guiding Principles Concerning Environmental Policies (OECD Doc. C (72) 122 (Final)), to be observed by member governments in determining environmental control policies and measures. Principles 6-10 concern environmental standards and, while noting the legitimate differences between national environmental policies and the desirability of avoiding the creation of trade barriers, urge harmonization of protection measures and the establishment of common standards for polluting products that are traded internationally. 66 Dep't State Bull. 837-38 (1972).

34. Council of Europe Preliminary Draft of the European Convention on the Protection of Fresh Waters Against Pollution, Art. 3, Doc. 2561, May 12, 1969:

> Each Contracting Party shall take all measures appropriate to the maintenance or improvement of the quality of the water of international drainage basins to a level which is not inferior to the minimum standards defined in the Appendix to this Convention.

See also The 1968 European Agreement on the Restriction of the Use of Certain Detergents in Washing and Cleaning Products, Sept. 16, 1968, European T.S. 64 brought about through the instrumentality of both the Council of Europe and the Organization for Economic Cooperation and Development.

Along with the formulation of standards—indeed, a prerequisite to them—goes the acquisition and exchange of information for the protection of the environment. Gathering information about particular aspects of the environment has long been required by some municipal laws,[35] and, in the international sphere, has been performed by various organizations in specialized fields.[36] Generally, however, there has been little correlation between this data gathering and the protection of the environment as a whole; in fact, it was geared rather to development than to protection. Not until the Stockholm Conference did the subject receive the attention that it deserves. Monitoring was made one of the key points of the Action Plan,[37] and the individual states are required to support international monitoring systems, which it is the duty of international organizations to develop.[38]

35. For example, the so-called 308 Reports prepared in accordance with a Congressional directive of 1925 authorizing the Corps of Engineers to carry out a comprehensive study of navigable streams with a view to their development for power production, flood control and irrigation. Act of Mar. 3, 1925, ch. 467, §3, 43 Stat. 1190. The Engineers' data-gathering role goes back to 1871 when observations were begun on the Mississippi River.

36. *E.g.*, the Food and Agriculture Organization (FAO) gathers environmental data on agriculture, forestry, and fisheries; the World Meteorological Organization (WMO) on the atmosphere; the World Health Organization (WHO) on pollutants as they effect human health; the International Labor Organization (ILO) and WHO on the working environment; the International Atomic Energy Agency (IAEA) on safe use of nuclear energy; the Inter-Governmental Maritime Consultative Organization (IMCO) on marine pollution; and the United Nations Economic and Social Council (UNESCO) has a continuing, long-term programme of scientific and technical information exchange. For a detailed account of information collection and interpretation by international organizations, *see* United Nations General Assembly, Consolidated Document on the United Nations System and the Human Environment Submitted by the Administrative Committee on Co-ordination, at 36-39, U.N. Doc. A/CONF.48/12 (1971).

37. The recommendations on monitoring are numbers 18, 25, 29, 30, 40, 46, 51, 55, 57, 67, 73, 74, 76, 77, 78, 79, 80, 87, 90, 91, 94, 95, and 105. *See* Stockholm Report, *supra* note 26.

38. The basic recommendation is No. 74:

> the Secretary-General, drawing on the resources of the United Nations system, and with the active support of Governments and appropriate scientific and other international bodies:
>
> (a) Increase the capability of the United Nations system to provide awareness and advance warning of deleterious effects to human health and well-being from man-made pollutants;
>
> (b) Provide this information in a form which is useful to policy-makers at the national level;
>
> (c) Assist those Governments which desire to incorporate these and other environmental factors into national planning processes;
>
> (d) Improve the international acceptability of procedures for testing pollutants and contaminants by:
>
> (i) International division of labour in carrying out the large-scale testing programmes needed;
>
> (ii) Development of international schedules of tests for evaluation of the environment impact potential of scientific contaminants or products. Such a schedule of tests should include consideration of both short-term and long-term effects of all kinds and should be reviewed and brought up

The Stockholm Conference also goes far beyond the existing international law in recognizing the necessity for states to provide information on the environmental effects of their major projects.[39] If incorporated into formal agreements, this would bring into interna-

to date from time to time to take into account new knowledge and techniques;

(iii) Development and implementation of an international intercalibration programme for sampling and analytical techniques to permit more meaningful comparisons of national data;

(iv) Develop plans for an International Registry of Data on Chemicals in the Environment based on a collection of available scientific data on the environmental behaviour of the most important man-made chemicals and containing production figures of the potentially most harmful chemicals, together with their pathways from factory *via* utilization to ultimate disposal or recirculation.

Stockholm Report, *supra* note 26, at 40-41.

39. Recommendation 3 of the Action Plan:

that the attention of Governments be drawn to the need to consult bilaterally or regionally whenever environmental conditions or development plans in one country could have repercussions in one or more neighbouring countries. Stockholm Report, *supra* note 26, at 10.

Recommendation 51:

[t]hat when major water resource activities are contemplated that may have a significant environmental effect on another country, the other country should be notified well in advance of the activity envisaged. . . . *Id.* at 33. (But the force of this is blunted by the preambular statement that it should merely be "considered by the States concerned when appropriate." *Id.*)

The original Draft Declaration on the Human Environment (preliminary doc. A/CONF.48/4) contained in its Principle 20 a strongly worded exhortation:

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

Disagreement at Stockholm prevented the inclusion of this principle in the Declaration adopted by the Conference, Stockholm Report, *supra* note 18, at 4-7, and it was referred to the General Assembly for consideration. In modified form it reappeared in Draft Resolution II of the Report of the General Assembly's Second Committee, *see supra* note 26, A/8901, at 34 as follows:

The General Assembly,

Having considered the text of principle 20 of the Declaration of the United Nations Conference on the Human Environment, referred to it for consideration by the United Nations Conference on the Human Environment,

1. *Emphasizes* that, in the exploration, exploitation, and development of their natural resources, States must not produce significant harmful effects in zones situated outside their national jurisdiction;

. . . .

2. *Recognizes* that co-operation between States . . . will be effectively achieved if official and public knowledge is provided of the technical data relating to the work to be carried out by States within their national jurisdiction with a view to avoiding significant harm that may occur in the human environment of the adjacent area;

3. *Recognizes further* that the technical data referred to . . . will be given and received in the best spirit of co-operation and good neighbourliness, without this being construed as enabling each State to delay or impede the programmes and projects . . . of the States in whose territories such programmes and projects are carried out.

tional law the nearest approximation to the environmental impact statements required in United States law under the National Environmental Protection Act;[40] and, even if not implemented in the near future, it undoubtedly indicates a trend.

Although the foregoing discussion has concerned itself with matters to be established by agreement, it may be that the duty to give warning of impending natural disasters has already passed into customary international law. This contention finds support in the *Corfu Channel* case, where the International Court of Justice stated that Albania had the duty to warn other states of the peril from mines in her territorial waters.[41] The *Corfu Channel* judgment may be interpreted narrowly as pertaining only to warning of perils *within* a state's territory, but other support for this contention can be derived from the clauses of the numerous flood control treaties which require adequate warning of flood peril passing from one state to another.[42] Moreover, the Action Plan of the Stockholm Conference contains

40. 42 U.S.C.§4332 (2)(C)(1970). Some of the Stockholm Conference recommendations already approach the requirement of impact statements. *See, e.g.,* Recommendation 60, that systematic audits of natural resource development projects in representative ecosystems of international significance be undertaken (by the appropriate U.N. agencies and governments concerned) after "and, where feasible before," the implementation of such projects. Stockholm Report, *supra* note 26, at 37. Recommendation 61, *id.* at 38, urges that pilot studies be conducted in such representative ecosystems to assess the environmental impact of alternative approaches to planning and development of particular projects, and Recommendation 63, *id.*, forthrightly lays upon the Secretary-General the duty to ". . . ensure that international development assistance agencies, in co-operation with recipient Governments, intensify efforts to revise and broaden the criteria of development project analysis to incorporate environmental impact considerations."

41. The International Court of Justice stated in the Corfu Channel Case:

> The obligations incumbent upon the Albanian authorities consisted in notifying, for the benefit of shipping in general, the existence of minefield in Albanian territorial waters and in warning the approaching British warships of the imminent danger to which the minefield exposed them. Such obligations are based, not on the Hague Convention of 1907, No. VIII, which is applicable in time of war, but on certain general and well-recognized principles, namely elementary considerations of humanity, even more exacting in peace than in war; the principle of the freedom of maritime communication; and every state's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other states. [1949] I.C.J. 4, 22.

42. Provisions on the duty to exchange information and flood warnings can be found in treaties from different parts of the world, *e.g.*: Egypt-United Kingdom (on behalf of Uganda), Exchange of notes . . . regarding cooperation in meteorological and hydrological surveys in certain areas of the Nile Basin, Jan. 19, Feb. 28 and Mar. 20, 1950, 226 U.N.T.S. 288, U.N. Legis. Ser. (Rivers) 112; Mexico-U.S.A., Colorado-Tijuana-Rio Grande treaty of Feb. 3, 1944, 59 Stat. 1219, T.S. No. 994, 3 U.N.T.S. 314, U.N. Legis. Ser. (Rivers) 236; India-Pakistan, Indus Waters Treaty of Sept. 19, 1960, 362 U.N.T.S. 4, U.N. Legis. Ser. (Rivers) 300; Germany (Democratic Republic)-Poland, Feb. 6, 1952, 304 U.N.T.S. 160, U.N. Legis. Ser. (Rivers) 766; Poland-U.S.S.R., July 8, 1948, 37 U.N.T.S. 66, U.N. Legis. Ser. (Rivers) 887.
Discussion and an exhaustive list of flood-control agreements can be found in F. Berber, Report on Flood Control of the Rapporteur, International Law Association, New York Conference (1972), Committee on International Water Resources Law, Report 4-58 (1972).

recommendations for the establishment of a worldwide warning system based on existing and to-be-established national and international institutions devoted to this task.[43]

B. *The Law of the Sea*

The law of the sea was another area that began to respond to the increased awareness of perils to the environment not much later than fluvial law. After World War I, oil slicks from the growing tanker fleets shook the belief in the invulnerability of the oceans, and the remedy proposed then was a total ban on oil pollution. However, this was too radical for the times, and the draft convention of 1926 merely proposed offshore zones in which oil discharge would be barred.[44] It took until 1954 to conclude a convention incorporating even this concept;[45] and the zones, after all, were not really oil-free. The Convention simply reduced the amount of permissible discharge and provided for its control;[46] it left the punishment for violations in the hands of the state of registry.[47] The advent of supertankers, however, and the spread of concern for the oceans led to a tightening up of the Convention, first by the 1962 amendment (extending the system of zones outward to 100 miles in most areas),[48] and, most recently, by the 1969 amendments which are not yet in force.[49] The latter approach, but do not quite achieve, a total ban by dispensing with zones and limiting the oil discharge rate anywhere for ships other than tankers to no more than 60 liters per mile and to an oil content of less than 100 to 1 million parts of the mixture. For tankers, the total quantity of oil discharge on a ballast voyage is limited to one-fifteen thousandth of the total cargo carrying capacity.[50]

Total elimination of international pollution by intentional dis-

43. *See,* Recommendation 18(d) of the Action Plan, that the Secretary-General, with the assistance of the Disaster Relief Co-ordinator and in consultation with the appropriate bodies of the United Nations system and non governmental bodies:

> [p]romote, through existing national and international organizations, the establishment of an effective world-wide natural disaster warning system, with special emphasis on tropical cyclones and earthquakes, taking full advantage of existing systems and plans, such as the World Weather Watch, the World Meteorological Organization's Tropical Cyclone Project, the International Tsunami Warning System, the World-Wide Standardized Seismic Network and the Desert Locust Control Organization. . . . Stockholm Report, *supra* note 26, at 14-15.

44. Final Act of the Preliminary Conference on Oil Pollution of Navigable Waters, Annex, art. 1, [1926] 1 Foreign Rel. U.S. 238, 245 (1941).

45. International Convention for the Prevention of Pollution of the Sea by Oil, *done* May 12, 1954, [1961] 3 U.S.T. 2989, T.I.A.S. No. 4900, 327 U.N.T.S. 3.

46. *Id.* art. III.

47. *Id.*, art. X.

48. International Convention for the Prevention of the Pollution of the Sea by Oil, *adopted* Apr. 11, 1962, [1966] 2 U.S.T. 1523, T.I.A.S. No. 6109, 600 U.N.T.S. 332.

49. For the text of the completely amended convention, see 9 Int'l Leg. Materials 1 (1970).

50. *Id.*, art. III(a)(b), at 3-4.

charge of oil and noxious substances from ships is the main objective of the 1973 IMCO Conference on Marine Pollution. In addition, a new international convention is being drafted with the purpose of achieving this goal by 1975, if possible, or, if not, by the end of the decade.[51]

Once the 1954 Convention had paved the way, other forms of ocean pollution were dealt with, albeit in a somewhat piecemeal and inadequate fashion, by the 1958 Geneva Convention on the High Seas[52] which established the duty of states to draw up regulations for the prevention of oil discharge not only from ships but from pipelines as well.[53] It established a similar duty concerning the dumping of radioactive waste,[54] but omitted the dumping of other toxic materials. This omission is in the process of being remedied. Thus, in preparation for the Law of the Sea Conference in 1973, the United States submitted a draft convention which imposed on states a duty to regulate ocean dumping by permit, which, while allowing each state to establish its own dumping criteria, would limit discretion to issue permits when unreasonable pollution would result.[55] Another draft convention, adopted by the 29-nation Intergovernmental Meeting on Ocean Dumping held at Reykjavik in April 1972, was forwarded to the Stockholm Conference on the Human Environment for further consideration. It was even stronger than the United States proposals,[56] prohibiting the dumping of some substances, such as mercury and cadmium,[57] altogether and subjecting others to special permits as well as requiring general permits or approvals for a third category.[58] As a result of the Stockholm Conference, a convention was adopted in London on November 13, 1972, which generally embodies the approach to the problem worked out at Reykjavik.[59] Previously, along the general lines of these proposals, six European states had signed a regional convention embodying a total prohibition on the dumping

51. *See* Council on Environmental Quality, Third Annual Report, Environmental Quality 81 (1972).

52. Convention on the High Seas, *done* Apr. 29, 1958, [1962] 2 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82.

53. *Id.*, art. 24.

54. *Id.*, art. 25.

55. U.S. Draft Convention on the Regulation of Ocean Dumping, reprinted in 10 Int'l Leg. Materials 1021 (1971).

56. Draft Articles of A Convention on Ocean Dumping, in United Nations, Conference on the Human Environment, Identification and Control of Pollutants of Broad International Significance, *Addendum* No. 1, U.N. Doc. A/CONF. 48/8 Add. 1 (1972).

57. *Id.*, Annex I, at 11.

58. *Id.*, art. VI, Annexes II and III.

59. Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter, *done at* London, Nov. 13, 1972. Text in 67 Dep't State Bull. 711-17 (1972).

from ships and aircraft of the most toxic materials and the control in varying degree of others, depending on their toxicity.[60]

Although these conventions, whether still in draft or already adopted, are an important step forward in the protection of the oceans, the question still remains whether the marine environment is entitled to protection outside the conventional law. It may be safely assumed by now that the *Trail Smelter*[61] and *Corfu Channel*[62] cases have established state responsibility for pollution of the sea emanating from the territory of one state and causing injury to that part of the marine environment which is under the jurisdiction of another state. Similarly, it can be assumed that if states do not perform the supervision which might reasonably be expected over ships under their flags, they can be held responsible for damage done by those ships to the interests of other states. The Geneva Convention on the High Seas which recognizes that a state must exercise a degree of control over ships flying its flag,[63] probably restates customary international law in this respect. However, responsibility for damage to the marine environment in general, and especially to that part outside the jurisdiction of any state, is a new development. It is included both in several new or draft conventions concerning the sea[64] and in the International Law Association's declaration on marine pollution of continental origin.[65] It has also been adopted as a major principle by the Stockholm Conference in its final Declaration, which proclaims:

> States have, in accordance with the Charter of the United Nations and the principles of international law . . . the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of *areas beyond the limits of national jurisdiction.*[66] (Emphasis added).

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60. Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, *done at* Oslo, Feb. 15, 1972. Text in 11 Int'l Leg. Materials 262 (1972).

61. Trail Smelter Case 23 (United States v. Canada), 3 U.N.R.I.A.A. 1905, 1965 (1938).

62. *See* Corfu Channel Case (United Kingdom v. Albania) [1949] I.C.J. 4, 44.

63. Geneva Convention on the High Seas, *supra* note 52, at art. V.

64. The latest instruments, such as the United States Draft Convention on the Regulation of Ocean Dumping, *supra* note 55; the Reykjavik draft convention on Ocean Dumping, *supra* note 56; and the United States Draft Convention On the International Seabed Area, 9 Int'l Leg. Materials 1046 (1970) all impose on states the duty not to inflict damage on the marine environment in general. *See also* the new Oslo Convention on Dumping, *supra* note 60.

65. International Law Association, Draft Articles on Marine Pollution of Continental Origin, art. II, *supra* note 32, at 61.

66. Stockholm Report, *supra* note 26, at 7, Principle 21. The importance of Principle 21 was expressly recognized by the U.N. General Assembly's Second Committee in Draft Resolution III of its Report, *see supra* note 26, at 35) which stated:

> Recalling principles 21 and 22 of the Declaration . . . concerning the international responsibility of States in regard to the human environment,

Since this principle is reasonable and necessary and corresponds to the interests of the international community, it would seem to be on its way to becoming a rule of international customary law, just as the right to exploit the continental shelf was earlier. It may even be argued that these provisions and statements really bring out and give precision to the prohibition on pollution that has lain dormant within the concept of freedom of the sea.[67]

It is one thing, however, to acknowledge state responsibility for injury to the marine environment and quite another to bring states to actually discharge this responsibility.[68] Only in the case of oil pollution has liability for damage been adequately worked out—by the 1969 Brussels Convention on Civil Liability for Oil Pollution from Ships which establishes limited strict liability and gives jurisdiction over claims to the courts of the state which sustains the damage;[69] and by the 1971 Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage.[70] However, the 1969 Liability Convention channels the liability to the shipowner and does not establish state responsibility (except in the case of state-owned merchant vessels).[71] On the other hand, the Convention on the Fund does establish state responsibility but only indirectly by providing for the creation, by States who were parties to the

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> Bearing in mind that those principles lay down the basic rules governing this matter,
>
> Declares that no resolution adopted at the twenty-seventh session of the General Assembly can affect principles 21 and 22. . . .

Generally on responsibility of states for injury to the marine environment, *see* Teclaff, *Pollution, supra* note 10, at 541-47 (1972).

67. *See* Teclaff, *Pollution, supra* note 10, at 530-31:

> Until specific customary rules do emerge the only limitations on pollution, apart from conventions, must be sought in or deduced from rules regulating the use of the oceans in general. Pollution of the sea is not itself a use—it is a modality or consequence of a use. As such, it is a factor which can make any use permissible or impermissible. Even if a use becomes accepted and established, it cannot be exercised without regard to the welfare of other users. Thus, under the theory that only recognized uses of the sea are permissible, pollution resulting from any one of these uses would be prohibited if it unreasonably interfered with other uses or users of the ocean. Similarly, under the theory that permits any uses of the oceans as long as they are exercised in a reasonable fashion for peaceful purposes, there must come a point when the detrimental effect of pollution reaches a level which condemns that use or its exercise as unreasonable. (Citations omitted).

68. *See generally,* Bleicher, *An Overview of International Environmental Regulation,* 2 Ecology L.Q. 1, 12-30 (1972); Teclaff, *Pollution, supra* note 10, at 561.

69. International Convention on Civil Liability for Oil Pollution Damage, arts. 3, 4 and 9, reprinted in 9 Int'l Leg. Materials 45 (1970) [hereinafter cited as Brussels Liability Convention].

70. Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, *done at* Brussels, Dec. 18, 1971, text in 11 Int'l Leg. Materials 284 (1972) [hereinafter cited as Brussels Compensation Fund Convention].

71. Brussels Liability Convention, *supra* note 68, arts. 2 and 14.

Convention, of the fund which is to assume compensation when liability exceeds the limits imposed by the 1969 Brussels Convention or when the persons liable are unable to pay.[72]

The difficulty of collecting any damages in international pollution cases in the absence of a treaty is well illustrated by Judge Read's comment on the *Trail Smelter* case:

> The ordinary course followed by persons damaged by fumes from a smelter was to bring a suit in the court of justice for damages and for an injunction to prevent future damage. This, however, was not satisfactory for the claimant in the State of Washington. It was the general opinion of the lawyers concerned at the time that the British Columbian courts would be compelled to refuse to accept jurisdiction in suits based on damage to land situated outside of the province. Apart, therefore, from the practical difficulty confronting some hundreds of claimants in bringing suit in a foreign forum, there was the moral certainty that they would lose.[73]

This inadequacy of the law concerning liability for international pollution was singled out by the Stockholm Conference in Principle 22 of the Declaration:

> States shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such states to areas beyond their jurisdiction.[74]

It is clear that the task of development will have to be done by convention, as in the case of oil pollution.

For pollution caused by private entities under their legal jurisdiction, states are not directly responsible. Responsibility in these circumstances, however, can be imputed or transferred to the state when it has knowledge of pollution emanating from its territory or has neglected its duty of supervising ships on the high seas.[75] The fact that there are provisions in the 1967 Space Treaty[76] and the United States draft of the U.N. Convention on the International Sea Bed Area,[77] for example, imposing direct responsibility on a state for damage caused

72. Brussels Compensation Fund Convention, *supra* note 69, art. 4.

73. Read, *The Trail Smelter Dispute*, 1 Can. Yearbook Int'l L. 213, 222 (1963).

74. Stockholm Report, *supra* note 26, at 7. *See also supra* note 65.

75. *See* Teclaff, *Pollution*, *supra* note 10, at 545-47.

76. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *done* Jan. 27, 1967, art. 6, [1967], 3 U.S.T. 2410, T.I.A.S. No. 6347.

77. United States Draft of U.N. Convention on the International Seabed Area, *supra* note 63, at art. 11 (4).

by all entities under its legal jurisdiction, may point to a trend that a state should be responsible for any activities of all entities under its legal jurisdiction even those which take place in areas outside its territorial jurisdiction. Thus, on the high seas, for example, the activities of entities other than state organs would be strictly imputed to the state as soon as they were found to transgress a pertinent rule of law. The finding of transgression might or might not depend on fault. A state would simply become as responsible for private enterprises as for its own activities. This is reflected in Principle 21 of the Stockholm Declaration that states are responsible for injury to the environment outside the jurisdiction of any state.[78]

Whereas environmental concern is producing, however, slowly and painfully, new and more effective anti-pollution rules, this can hardly be said of the protection of marine living resources. Fisheries treaties still pay mere lip service to the protection of living resources, as such, and, for the most part, are geared merely to dividing the catch among nations. This tendency may be somewhat disguised in the Alaskan fur seals convention[79] and the newly concluded Antarctic seals convention,[80] but it is amply evident in the convention which established the International Whaling Commission.[81] Not only was the Commission unable from its inception to afford any meaningful protection to whales, but it was powerless to impose the moratorium recommended by the Stockholm Conference.[82] The whaling nations appear bent on dividing the dwindling catch until the last whale disappears, and—faced with this prospect of extinction—some of them (notably Japan) have already moved on to the hunting of dolphins and porpoises in the same manner. There is as little excuse for Japan's activities in her claim of need to provide protein for human consumption as there is for United States tuna fishermen who, by their reckless and wasteful methods, kill several hundred thousand dolphins annually.[83] Environmental concern has made little impact on international law in this area; and, before it takes hold, the dolphin may suffer the same fate as its cousin, the whale.

The slowness of development of international rules for the protec-

78. Stockholm Report, *supra* note 26, at 7. *See also supra* note 65.

79. Interim Convention on the Conservation of the North Pacific Fur Seals signed Feb. 9, 1957, 8 U.S.T. 2283, T.I.A.S. No. 3948, 314 U.N.T.S. 105.

80. Convention for the Conservation of Antarctic Seals, London, (Feb. 3-11, 1972), text in 11 Int'l Legal Materials 251 (Mar. 1972).

81. International Convention For the Regulation of Whaling, *done* at Washington, D.C., Dec. 2, 1946, 62 Stat. 1716, T.I.A.S. No. 1849, 161 U.N.T.S. 72.

82. Recommendation 33 of the Action Plan, Stockholm Report, *supra* note 26, at 23. The moratorium was rejected by the International Whaling Commission at its meeting June 26-30, 1972, in London. *See* Council on Environmental Quality, Third Annual Report 79.

83. Council on Environmental Quality, *Id.* at 96.

tion of the marine environment in general is having an unexpected side effect in that it has strengthened the claims of coastal states to jurisdiction over large areas of the sea.[84] Thus, in 1969, Canada enacted a statute which gives it power to control pollution in Arctic waters out roughly to 100 miles from its coast and to lay and enforce regulations for foreign ships.[85]

The goal of the Canadian statute is to protect the unique and fragile ecology of the Arctic, and its enactment was spurred by the discovery of oil deposits in Alaska and by the opening up of the Northwest Passage. The claim of a right to control potential pollution more than 12 miles offshore[86] is reinforced by the fact that, in the past, states have asserted the right to control certain activities such as customs and immigration at a reasonable distance from their coasts,[87] though whether this included regulations for sanitary purposes (which would encompass pollution) is debateable.[88] While the claim of a right to control potential pollution beyond 12 miles offshore is still resisted even when special circumstances are invoked, as in the Arctic, a coastal state's unilateral move to protect itself against the threat of existing pollution coming from the high seas outside the contiguous zone seems to have been accepted as a justified form of

84. It strengthens and accelerates the trend begun by the Truman Proclamation of 1945, Proclamation 2667, 10 Fed. Reg. 12303 (Oct. 2, 1945), which laid claim to national jurisdiction over the resources of the sea bed beyond the territorial sea. These claims were promptly accepted by other states and not only became embodied in a convention (Geneva 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), but also passed into customary international law, as indicated in the judgment in the *North Sea Cases:*

> With respect to the other elements usually regarded as necessary before a conventional rule can be considered to have become a general rule of international law, it might be that, even without the passage of any considerable period of time, a very widespread and representative participation in the convention might suffice of itself, provided it included that of States whose interests were specifically affected. . . .

[1969] I.C.J. 4, at 42. The very ease and success of this extension of state jurisdiction invited similar claims concerning jurisdiction over resources in the superjacent waters, especially, though not excusively, along coasts with poorly developed continental shelves, as, for example, along the Pacific coast of South America. This is what is happening now in the widening of fisheries zones, and rights to living resources in the superjacent waters may very likely become assimilated to the rights states currently possess to the natural resources of the continental shelf as far as concerns content and distance at which they can be exercised.

85. An Act to Amend the Territorial Sea and Fishing Zones Act, Can. Rev. Stat. c. 45 (1st Supp. 1971).

86. Up to twelve miles beyond the territorial seas, states have this right on the basis of the Geneva Convention on the Territorial Sea and the Contiguous Zone, *done* Apr. 29, 1958, art. 24 [1964] 2 U.S.T. 1606, T.I.A.S. No. 5639, 516 U.N.T.S. 205. *See* Teclaff, *Pollution, supra* note 10, at 551.

87. *See* L. Hydeman & W. Berman, International Control of Nuclear Maritime Activities 195-97 (1960); M. McDougal & W. Burke, The Public Order of the Oceans 602 (1962).

88. Hydeman & Berman, *Id.* at 200; *see also* International Law Commission, Report to General Assembly, [1956] 2 Yearbook Int'l L. Comm'n 294-295, U.N. Doc. A/3159 (1956).

self-defense or self-protection.[89] The British hesitated, at first, to apply it against the leaking hulk of the *Torrey Canyon*. However, once they did, nobody protested; and, soon afterwards, the conclusion of the 1969 Brussels Convention on Intervention on the High Seas in Cases of Oil Pollution Casualties attested further to its acceptance.[90]

The Latin American states, too, claim an extended jurisdiction, but over a zone extending 200 miles from the coast. In this case, the prevention of pollution is only a secondary consideration; emphasis is placed upon the protection of the living resources of the sea from extinction through indiscriminate fishing practices. Thus, the Lima Declaration of 1970, in paragraph 1, follows the established Latin American line of arguments regarding the use and protection of resources:[91]

> The inherent right of the coastal State to explore, conserve and exploit the *natural resources* of the sea adjacent to its coasts and the soil and subsoil thereof, . . . , in order to promote the maximum development of its economy and to raise the level of living of its people. . . .[92]

Paragraph 4 reinforces the usual arguments with a new argument

89. *See* Teclaff, Pollution, *supra* note 10, at 557-58.

90. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, done Nov. 29, 1969, in 9 Int'l Legal Materials 25 (1970). Art. 1 (1) states:

> Parties to the present Convention may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.

Only "in cases of extreme urgency requiring measures to be taken immediately," may a state resort to such action without prior notification or consultation with the flag state and other states affected by the casualty (Art. III (d)). *See* generally, Teclaff, Pollution, *supra* note 10, at 557-58.

91. *See* Declaration of Santiago, adopted by Chile, Ecuador and Peru in 1952, which states: "the geological and biological factors affecting the existence, conservation and development of the marine fauna and flora of the waters adjacent to the coasts of the declarant countries . . ." which had rendered the former extent of territorial sea and contiguous zone: "insufficient to permit of the conservation, development and use of those resources, to which the coastal countries are entitled." Declaration of the Maritime Zone, U.N. Legislative Series, Laws and Regulations on the Regime of the Territorial Sea, U.N. Doc. ST/Leg. Ser. B/6, treaty No. 20, at 724 (1957). *See also* the comments of the Chile, Ecuador & Peru delegations at the Santiago negotiations of 1955 between Chile, Ecuador, Peru and the U.S.A. concerning fishery problems, 4 M. Whiteman, Digest of International Law 1202-03 (1965):

> Precisely, the extension which the three countries have given to their sovereignty over the sea has, as its scientific basis, *the defense of the great 'bioma' implanted in this region of the Pacific; and not merely the conservation of stocks of fish* in which other countries may have a commercial interest . . .
>
> From the above we infer that *a perfect unity and inter-dependence exists between the communities that live in the sea,* which supports their life, *and the coastal population* which requires both to survive. (Emphasis added.)

92. Latin American Meeting on Aspects of the Law of the Sea: Declaration and Resolutions, U.N. Doc. A/AC.138/28 (1970), in 10 Int'l Legal Materials 207, at 208 (1971).

concerning pollution: "The right of the coastal State to prevent contamination of the waters and other dangerous and harmful effects that may result from the use, exploration or exploitation of the area adjacent to its coasts. . . ."[93]

Similar argument and emphasis were shown more recently by the Caribbean countries at their meeting in Santo Domingo de Guzman in June, 1972.[94]

Obviously a very strong reason for the extension of jurisdiction in these cases is the desire of the Latin American coastal states to allocate to themselves as large a share as possible of the dwindling sea resources. This in itself, however, is evidence of a concern over present methods of using the environment. The extension of jurisdiction or of exclusive fishery zones by coastal states is spreading. The latest to join the group is Iceland which recently extended its fishery zone from 12 to 50 miles.[95]

C. *Pollution of the Air*

Air is another element which, like water, knows no boundaries and can carry pollutants far and wide. An oft-cited and well-documented example of such pollution is the acid rain of southern Scandinavia which, a Swedish study has demonstrated, results from the emission of sulfur from industrial sources hundreds of miles away in Western Europe.[96] Even more dramatically, the distance traveled by nuclear

93. *Id.*

94. Specialized Conference of Caribbean Countries Concerning the Problems of the Sea: Declaration of Santo Domingo, *done* at Santo Domingo de Guzman, June 9, 1972. Text in 11 Int'l Legal Materials 892 (July 1972).

95. Iceland, Resolution on Fisheries Jurisdiction, Feb. 15, 1972. Text in 11 Int'l Legal Materials 643 (May 1972). *See also* table of territorial sea and fishing-zone limits claimed, in The Statesman's Year-Book 1972-1973 at xxiv-xxv (1972).

The special interests and rights of the coastal state in the protection (though not exclusive exploitation) of marine living resources off its coasts beyond territorial waters were already recognized by the 1958 Geneva Convention on Fishing and Conservation of the Living Resources of the High Seas [1966] 1 U.S.T. 138, T.I.A.S. No. 5969. The United States Draft Articles on Territorial Sea, Straits and Fisheries, submitted to the U.N. Sea-Beds Committee, may be prepared to recognize an exclusive right, though not at the distance claimed by the Latin American states:

> In most cases where broader jurisdictional claims have been made, the reasons for those claims were resource-oriented. We believe that the real concerns of those few states that have claimed broader limits for the territorial sea can be accommodated in the course of the work of this and the other subcommittees.

U.N. Doc. A/AC. 138/SC. II/L.4 (1971), in 65 Dep't State Bull. 261-262 (1971). In view of this it would seem that there exists at least a right of the coastal state to protect living resources off its shores. It is not clear how far from shore such right extends, but the trend seems to be to grant the coastal state exclusive rights to exploit these living resources in rather large areas.

96. Royal Ministry for Foreign Affairs, Air Pollution Across National Boundaries: The Impact on the Environment of Sulfur in Air and Precipitation (Sweden's Case Study for the United Nations Conference on the Human Environment) 87 (1971).

> The probable average time of a few days during which sulfur pollutants remain

fall-out from tests shows the extent to which pollutants can be carried around the world in the upper atmosphere. Realization of the damage which nuclear pollution can cause led to the nuclear test-ban treaty of 1963.[97] However, the ban is not complete since two nuclear powers (China and France) have refused, so far, to be bound by the treaty. More recently, the U.N. General Assembly adopted, and requested that it be opened for signature by all states, a convention prohibiting the development, production, and stockpiling of bacteriological (biological) and toxin weapons.[98] This is the latest link in a long line of attempts[99] to limit or prohibit the use of weapons that, by contamination of the air, destroy or impair the life-supporting environment of large areas.[100]

The number and widespread acceptance of these agreements points to the emergence of a rule of customary international law. Air pollution itself, however, did not explicitly receive international attention until the late thirties, in the *Trail Smelter* case.[101] Although Canada admitted responsibility for damage inflicted by the smelter (and this in itself is of considerable significance), the Arbitration Tribunal, drawing on the limited jurisprudence of the United States Supreme Court in air pollution and on analogies from international water cases (since it could not find international air pollution precedents), declared generally: "no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another. . . ."[102] The Tribunal thus boldly transferred to international air pollution a general but vague

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airborne means that *the deposition in any one place will be dependent on the emissions within a surrounding area with a radius of one to two thousand kilometres. The problem is thus an international one.*

97. Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, [1963] 2 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43.

98. United Nations Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, in 11 Int'l Legal Materials 310 (1972).

99. Declaration Concerning the Prohibition of the Use of Projectiles Which Have as Their Sole Purpose the Spreading of Asphyxiating or Noxious Gases, *done* at the Hague, July 29, 1899, 26 Martens Nouveau Recueil Général, ser. 2 998. Regulations Respecting the Laws and Customs of War on Land, annexed to the Hague Convention respecting the Laws and Customs of War on Land, Oct. 18, 1907, 2 Malloy, Treaties, Conventions, International Acts, Protocols and Agreements, 2281, 2285. Treaty of Peace Between the Allied and Associated Powers and Germany, signed at Versailles, June 28, 1919, art. 171, [1919] Foreign Rel. U.S. 13 Paris Peace Conf. 329 (1947). Protocol Prohibiting the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, *opened for signature* June 17, 1925, 94 L.N.T.S. 65, 3 Int'l Legislation 1670 (M. Hudson ed. 1932).

100. *See* generally, Baxter & Buergenthal, *Legal Aspects of the Geneva Protocol of 1925*, 64 Am. J. Int'l L. 853 (1970).

101. Trail Smelter Arbitration, 3 U.N.R.I.A.A. 1905 (1941), 35 Am. J. Int'l L. 684 (1941).

102. Trail Smelter Arbitration, *supra* note 101, at 1965; Trail Smelter Arbitral Tribunal, *supra* note 101, at 716.

principle—that a state could not allow private persons to use its territory for activities injurious to another state—which until then had been applied mostly to the attacks of revolutionary bands across frontiers.[103] This generalization so far has had little application in state relations concerning air pollution; and only now can it be expected to find support and concrete expression in conventions—probably at first in Europe, where both the concern and the search for remedies have reached a comparatively advanced stage.[104] However, this principle did underlie the preoccupation with the protection of climate shown by the Stockholm Conference in several recommendations charging states to consult with each other before undertaking activities that might affect climate.[105] Here, even more than in other and older areas of international environmental law, the Stockholm exhortation that rules of states' liability for damage be further elaborated is applicable.[106]

THE INTERNATIONALIZATION OF ENVIRONMENTAL CONCERN

The expansion of conventional and customary international rules on the protection of the environment points to a shift from the internal to the external plane amounting to the internationalization of environmental concern. This has a parallel in human rights where international law was first applied to the rights of aliens[107] and only later, and quite recently, to the treatment of nationals by their own governments. The transition in human rights from concern with situations involving the interest of other individual states (protection of aliens) to concern with situations involving the interest of the

103. *See* United Nations Secretariat, Survey of International Law, U.N. Doc. A/CN.4/1/Rev. 1, at 34 (1949). The relevant passages are conveniently quoted in W. Bishop, International Law, Cases and Materials 398-99 (3rd. ed. 1971). *See also* D. Bowett, Self-Defense in International Law 30-31 (1958).

104. *See* Bleicher, *supra* note 68, at 43-45.

105. Stockholm Report, *supra* note 26, at 40. Recommendation 70 urges governments to:

> be mindful of activities in which there is an appreciable risk of effects on climate, and to this end:
>
> (a) Carefully evaluate the likelihood and magnitude of climatic effects and disseminate their findings to the maximum extent feasible before embarking on such activities;
>
> (b) Consult fully other interested States when activities carrying a risk of such effects are being contemplated or implemented. *Id.* at 42.

Recommendation 79 proposes the establishment of a network of stations to monitor "long-term global trends in atmospheric constituents and properties" which might cause climatic changes. *Id.* at 4. Principle 6 of the Declaration proclaims:

> The discharge of toxic substances and the release of heat in such quantities or concentrations as to exceed the capacity of the environment to render them harmless must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems . . .

106. Principle 22 of the Declaration. *Id.* at 7; *see also supra* note 65.

107. *See e.g.*, H. Lauterpacht, International Law and Human Rights 121 (1950).

international community (treatment of nationals) was marked by the adoption of the U.N. Charter in 1945 which specifically referred to Human Rights.[108] Though the binding effect of these articles was challenged, the U.N. General Assembly gradually asserted its authority to discuss and investigate human rights violations in the internal affairs of particular states.[109] The growing number of conventions—the latest of which is the American Convention of 1969[110]—further attests to the rapid internationalization of this subject.

International protection of the environment also evolved from areas where the interests of states were directly and immediately affected (transboundary waters), to other areas and situations in which states' interests are less visibly involved (protection of the marine environment). Although, in the principles and recommendations of the Stockholm Conference, there is no explicit attempt at the regulation of internal environmental standards in situations not directly affecting other states, concern with such standards can be deduced as an ultimate conclusion from some of them. For instance, Paragraph 128 of the preparatory document A/CONF. 48/8 refers to pollution problems which "may be of international significance because of their common occurrence in many states."[111] This is but a short step away from an implied exhortation to adopt international standards for problems limited to the confines of a single state. With some stretching of the point, it may even be claimed that the whole chapter of the Stockholm Report concerning pollutants of international significance already contains such an implied exhortation.[112] Similarly, there are hints in the Stockholm Declaration that population growth is no longer the domain of national policy alone, but has become a problem of international dimensions. Principle 16 of that Declaration states:

> Demographic policies, which are without prejudice to basic human rights and which are deemed appropriate by Governments concerned, should be applied in those regions where the rate of population growth or excessive population concentrations are

108. U.N. Charter arts. 1, 13, 55, 56, 62, 68 and 76.

109. *See* Everyman's United Nations 349-69 (1968); *See also* 1972 Int'l L. Ass'n, Conference, Int'l Comm. on Human Rights, Rep.; Lauterpacht, *supra* note 107, at 166-220; G. Ezejiofor, Protection of Human Rights Under the Law 72-90 (1964).

110. American Convention on Human Rights, done Nov. 22, 1969, O.A.S. Official Records, O.E.A. Ser. K/XVI/I.I, Doc. No. 65, Rev. 1, Corr. 2 (1970); in 65 Am. J. Int'l L. 679 (1971).

111. United Nations General Assembly, Conference on the Human Environment, Stockholm, 5-16 June 1972, Identification and Control of Pollutants of Broad International Significance (Subject Area III), U.N. Doc. A/CONF. 48/8 at 47 (1972).

112. Stockholm Report, *supra* note 26, at 40-44.

> likely to have adverse effects on the environment or development. . . .[113]

This may be the first step on the long road to the establishment of a norm-setting process in this area.

The relative primitiveness of environmental protection, as compared with protection of human rights, is also evident in the stage of evolution of machinery to implement it. The Environment Council and Secretariat, envisaged at the Stockholm Conference and established by the General Assembly, are confined to information gathering, coordination of U.N. programs, and the issuance of non-binding guidelines.[114] They have not the power, for example, of the U.N. Political Rights Covenant's Committee to receive and pass on complaints by states or individuals.[115] This is understandable because the Stockholm Declaration and Recommendations are not international agreements and do not impose binding obligations on states. However, environmental organs of the U.N. could have been given powers similar to those of the United Nations Economic, Social and Cultural Rights Committee to study and comment on reports submitted by states[116] since the right to a good environment is similar to and partakes of all the difficulties and drawbacks of social and economic rights. One interesting aspect of the similarity of the right is that, just as the developing nations have a privileged position under the U.N. Economic, Social and Cultural Rights Covenant in that they may, when necessary, discriminate against aliens in the application of these rights,[117] so may they claim a wider latitude in the application of environmental protection measures.[118]

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113. *Id.* at 6.

114. Stockholm Report, *supra* note 26, at 62-63; Report of the U.N. Second Committee, *supra* note 26, at 36-39.

115. International Covenant on Civil and Political Rights, arts. 40-43, and its Optional Protocol in 61 Am. J. Int'l L. 870, at 88 2-85, 887-90 (1967).

116. International Covenant on Economic, Social and Cultural Rights, arts. 16-22, in 61 Am. J. Int'l L. 861, at 867-68 (1967).

117. *Id.* at 862. Art. 3 states:

> Developing countries, with due regard to human rights and their national economy, may determine to what extent they would guarantee the economic rights recognized in the present Covenant to non-nationals.

118. *See e.g.*, Stockholm Report, *supra* note 26, at 7. Principle 23 of the Declaration would authorize a dual system of standards, since those standards "which are valid for the most advanced countries . . . may be inappropriate and of unwarranted social cost" for the developing countries. *See also* Stockholm Report, *supra* note 26 at 61-65. The Resolution on Institutional and Financial Arrangements sets up the Governing Council, Environmental Secretariat and Environmental Fund, which recommends that the Council:

> maintain under continuing review the impact of national and international environmental policies and measures on developing countries, as well as the problem of additional costs that might be incurred by developing countries in the implementation of environmental programmes and projects, to ensure that such

LONG-RANGE IMPLICATIONS: THE CLOSED-WORLD CONCEPT

A. *Potential and Actual Impact on National Sovereignty*

The immediate and direct effect of environmental concern on international law has been to promote the creation of rules for protection of particular elements of the environment with the main emphasis on pollution control. In addition, this concern is visibly contributing to the elaboration of the rules of state responsibility for injury to the environment outside national jurisdiction. The general aim of most of these existing and emerging rules is to patch up the environment so that economic expansion can go on as before. This is based on a belief that present problems are primarily due to neglect and lack of organization; that technology can clean up the environment and keep it clean; and that the same technology can continue to increase food supply and eke out even non-renewable resources at a reasonable rate in the foreseeable future.[119] This is the optimistic view. The pessimistic view is that the life-supporting capacity of the earth—that is, the absorptive capacity of the environment and the supply of food and natural resources—is inexorably finite; that exponential increases in population and industrial production are the real causes of environmental deterioration and destruction. The theme is evident in *Only One Earth*;[120] in some parts of the

> programmes and projects shall be compatible with the development plans and priorities of those countries. . . . (para. 2f)

and:

> in order that the development priorities of developing countries shall not be adversely affected, adequate measures should be taken to provide additional financial resources on terms compatible with the economic situation of the recipient developing country. . . . (para. 10).

In its Draft Resolution IX, the General Assembly's Second Committee, commenting on the Stockholm Recommendations, went further still and requested assurance of the compatability of environmental programs with "the objectives and policy measures of global strategies and sectoral guidelines for the economic development of developing countries," as well as a comprehensive report from the Secretary-General on all U.N. programs and special-purpose funding so as to permit "an evaluation of their conformity with the over-all policies and priorities of development." Report of the Second Committee, *supra* note 26, at 47, ¶¶2 and 5.

119. Belief in the omnipotence of technology is the underlying assumption, for example, of the so-called Green Revolution, a radical breakthrough in agricultural production, which relies on massive applications of fertilizer to boost yields of new hybrid grains to unprecedented levels, but which brings into play a new spectrum of environmental problems. *See* B. Ward & R. Dubos, Only One Earth: the Care and Maintenance of a Small Planet 156-66 (1972). Another example is the speech of Robert S. McNamara, president of the World Bank, to the Stockholm Conference on June 8, 1972, in which he claimed that there was no evidence that economic growth would necessarily involve an unacceptable burden on the environment and referred to "alarmist views about continued growth." It is evident also in the provisions of the Stockholm Conference concerning the Environment Fund, which refer to "promotion of environmental research and studies for the development of industrial and other technologies best suited to a policy of *economic growth compatible with adequate environmental safeguards*. . . ." (Emphasis added) Stockholm Report, *supra* note 26, at 64.

120. Ward & Dubos, *supra* note 119, at 111.

> What is certain is that our sudden, vast accelerations—in numbers, in the use of

Stockholm Conference Declaration and recommendations;[121] in the M.I.T. study for the Club of Rome, *The Limits of Growth*, which gives it a scientific underpinning by attempting to show mathematically that such growth must inevitably lead to eventual collapse.[122] In consequence, the only way seen to stave off further deterioration of the environment and the collapse of civilization is to stabilize world population and production and to keep them in a state of constant equilibrium.[123]

The findings of studies such as *The Limits to Growth* are hotly contested,[124] but a belief in the finiteness of the earth's life-supporting capacity is widely held. Regardless of the basic soundness of the theory, if it were to become dominant, it would tend to transform present economic and political institutions, since a world community which strove to attain the desired equilibrium would become an

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energy and new materials, in urbanization, in consumptive ideals, in consequent pollution—have set technological man on a course which could alter dangerously and perhaps irreversibly, the natural systems of this planet upon which his biological survival depends. Today when only a third of humanity has entered the technological age, the pressures are already apparent.

121. *See e.g.*, Stockholm Report, *supra* note 26, at 6. Principle 16 states:

> Demographic policies, which are without prejudice to basic human rights and which are deemed appropriate by Governments concerned, should be applied in those regions where the rate of population growth or excessive population concentrations are likely to have adverse effects on the environment. . . .

See also Stockholm Report, *supra* note 26, at 13. Recommendation 12(2) states:

> the World Health Organization should promote and intensify research endeavor in the field of human reproduction, so that the serious consequences of population explosion on human environment can be prevented. . . .

Principle 6, on the absorptive capacity of the environment (quoted *supra* note 105), Principle 5, warning that the non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion (Stockholm Report, *supra* note 26, at 4), and Recommendation 106(a):

> the Secretary-General, in cooperation with other international bodies as appropriate, should examine the extent to which the problem of pollution could be ameliorated by a reduction in the current levels of production and in the future rate of growth of the production of synthetic products. . . . (*Id.* at 57).

122. D. Meadows, The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind 124, 127 (1972). Figure 35 is a world model "standard" run assuming, as of 1970, a 250-year supply of all resources at 1970 usage rates and no major change in physical, economic or social relationships. Figure 36 is a world model based on the assumption that new discoveries or advances in technology could double the amount of resources economically available. Both figures show collapse within the next century, the first caused by a resource crisis, the second by pollution exceeding the absorptive capacity of the environment.

123. *Id.* at ch. 5. *See also* Schachter, *New Directions in International Law*, 49 Chi.-Kent L. Rev. 13, 14-17 (1972).

124. *See* Forum, June 8, 1972, at 2. The report was bitterly attacked in a debate on June 7, 1972 at the Environment Forum, which ran simultaneously with the U.N. Conference on the Human Environment at Stockholm. It also received some unflattering comments from economists, such as Simon S. Kuznets ("It's a simplistic kind of conclusion") and Henry C. Wallich, who termed a no-growth economy an "upper-income baby," referring to those who have "enough money and now . . . want a world fit for them to travel in and look at the poor," quoted in article by Robert Reinhold, in N.Y. Times, Feb. 27, 1972, at 1, col. 5.

economically (and probably politically) closed society. Can any sign of such a transformation be seen? Before attempting to answer this question, some broad assumptions must be made about the rules governing such a future world community in the economic and political spheres.

First, it seems reasonable to postulate that the widespread restrictions necessary to keep population and production stable would require a strong central authority. It is interesting to note that most of the regional communities of the world that ceased to expand in the past became, as Toynbee attempted to show, regional universal states subject to a central authority.[125] One regional society which escaped this fate was western Europe. It may be argued that it did so because it became an expanding community. However, this escape may be only temporary. If the environmentalist predictions come true, western Europe will be absorbed into a non-expanding world community. Theoretical considerations apart, the integrative influence of environmental concern on international politics has so far been slight. Resistance to it can be seen in the reluctance of delegates at the Stockholm Conference to create a really strong, independent environmental organization. The Environmental Secretariat may strengthen the United Nations organization through the embodiment of a new, vital purpose; but this will be on an economic level in which even the United Nations' predecessor, the League of Nations, showed some success, rather than on a political one in which both organizations represent a pluralistic world. However, it seems most likely that the central authority postulated for a world community in equilibrium with the environment would be imposed rather than agreed upon. Fear of exhaustion of natural resources may lead the stronger nations to try to secure for themselves as large a share as they can—a development already heralded by the expanding jurisdictional claims over marine resources; instead of a diminution of national sovereignty, the conviction that an economically closed society is inevitable might have entirely the opposite effect, ushering in a period of upheaval, which in Toynbee's scheme, is the invariable prelude to the emergence of a universal state.[126]

The second assumption is that the law of a closed world community would be concerned rather with distribution than with production. Distribution might be on a basis of equality or inequality, in which latter case it would tend to freeze the economic status quo between states and between groups within states. We already have, in

125. *See generally*, A. Toynbee, A Study of History (abridgment by D. Somervell 1947), especially at 2-3 of vol. 1.

126. *Id.*

international law, examples of concern with distribution in situations where a finite resource must be divided between a number of states. One such example is the principle of equitable apportionment, an essentially distributive device, in international river basins.[127]

The growing interest in division and distribution of resources is most plainly visible in the proliferation of coastal states' claims to a larger share of marine resources caused, in great part, by the realization that these resources are not infinite but rapidly diminishing.[128] Emphasis on distribution is also evident in the demands of the developing countries for assistance as of right, expressed in the Preamble to the Stockholm Declaration: ". . . the industrialized countries should make efforts to reduce the gap between themselves and the developing countries."[129] Repeatedly, the Conference recommends that the costs and the economic consequences of environmental measures should be equitably distributed, that is, they should be borne mainly by the developed countries. Principle 12 of the Declaration, for example, proclaims:

> Resources should be made available to preserve and improve the environment, taking into account the circumstances and particular requirements of developing countries and any costs which may emanate from their incorporating environmental safeguards into their development planning and the need for making available to them, upon their request, additional international technical and financial assistance for this purpose. . . .[130]

and the Action Plan recommends:

> where environmental concerns lead to restrictions on trade, or to stricter environmental standards with negative effects on exports, particularly from developing countries, appropriate measures for compensation should be worked out within the framework of existing contractual and institutional arrangements and any new such arrangements that can be worked out in the future. . .[131]

and:

> the preoccupation of developed countries with their own environmental problems should not affect the flow of assistance to developing countries, and that this flow should be adequate to meet the additional environmental requirements of such countries.[132]

127. Helsinki Rules, *supra* note 18.
128. *See supra* note 95.
129. Stockholm Report, *supra* note 26, at 2.
130. *Id.* at 5.
131. *Id.* at 55 (Recommendation 103).
132. *Id.* at 57-58 (Recommendation 109).

Thirdly, in such a closed community, the ultimate disposal of natural resources would reside in the postulated central authority, rather than in local units. This central authority would control these resources either for the benefit of all (under the most favorable and optimistic conditions) or in some other way imposed by the needs of society. This assumption of diluted national sovereignty over natural resources is a corollary of, and proceeds from, the two first assumptions of central authority and emphasis on distribution.

In today's world, national sovereignty over natural resources seems, at first sight, to be as strongly entrenched as ever. It was vehemently defended at the Stockholm Conference by countries such as Brazil, and is enshrined in the Principle 21 of the Declaration: "States have . . . the sovereign right to exploit their own resources pursuant to their own environmental policies. . . ."[133] But this Principle is coupled with emphasis on a state's responsibility for damage to resources and to the environment outside its territory. With some stretching of the imagination, this may be seen as a sign that national sovereignty over resources is beginning to shrink. More could perhaps be read into the recognition that at least some resources belong to the international community, to be kept in trust for all mankind, rather than to individual nations. The concept of world heritage has begun to find legal expression in instruments such as the draft conventions concerning wetlands, islands, and historical sites[134] and the proposal for a draft convention on endangered species of wildlife.[135] It may be that this awareness of world heritage in respect of certain resources is a precursor of the emergence of a new concept of international trust over all resources which would replace national ownership or sovereignty.

Do these assumptions find any support in the record of past societies which can be considered closed? A future closed world

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133. *Id.* at 7; *see also supra* note 66.

134. International Conference on the Conservation of Wetlands and Waterfowl, Final Act and Summary Record, Ramsar, Iran, Jan. 30, Feb. 3, 1971. Text of Convention at 17. United Nations Conference on the Human Environment, Intergovernmental Working Group on Conservation, Draft Convention on Conservation of Certain Islands for Science U.N. Doc. A/CONF.48/IWGC.I/12 (Oct. 11, 1971), and Draft Convention on Conservation of the World Heritage, U.N. Doc. A/CONF.48/IWGC.I/13 (Oct. 11, 1971).

135. Recommendation 99 of the Action Plan:

> that a plenipotentiary conference be convened as soon as possible, under appropriate governmental or intergovernmental auspices, to prepare and adopt a convention on export, import and transit of certain species of wild animals and plants.

Stockholm Report, *Supra* note 26, at 52. *See* United Nations Conference on the Human Environment, Intergovernmental Working Group on Conservation, Draft Convention on Export, Import and Transit of Certain Species of Wild Animals and Plants, prepared by IUCN, June 1971, U.N. Doc. A/CONF.48/IWGC.I/6 (July 1971).

community would not be expected to become a replica of those past communities, since it would differ from them radically in economic and technical level and in being, for the first time, planetary in scope; nevertheless, their institutions may indicate trends and direction of development. Thus, for example, medieval Europe, that slowly expanding and at times stagnating society, had a supreme authority in the institution of the Papacy and Empire.[136] Its political system, in contrast to the classical international law, was based on inequality and subordination of political units. Hierarchy was inherent in the feudal system. Power over territory was given by the supreme ruler; and, therefore, the idea of territorial sovereignty, including sovereignty over resources, was little developed.[137] (It is noteworthy that the first theoretical discussion of sovereignty was written in the 16th century when the expansion of the European community had already begun.[138]) Medieval Europe was a class society with the share of each class in the community wealth pre-ordained and defined. Trade and industry were minutely regulated by traditionally established rules. Such occupation was considered inferior and constraints on moneylending and credit so restricted development that wealth was increased rather by war and private violence than by the expansion of production.[139]

B. *The Encouragement of Utopian Trends*

The idea of an irrevocably closed, finite world hurtling through space in frightening loneliness not only favors the emergence of rules for dividing and distributing resources in accordance with the known

136. Other similar (that is, slowly expanding) regional societies also developed central authorities, as a rule in the final stage. *See supra* note 125.

137. *See* generally on this subject, R. Tawney, Religion and the Rise of Capitalism (Mentor ed., 1952), Chapt. I, *The Medieval Background*; H. Pirenne, Economic and Social History of Medieval Europe (1937); G. Sabine, A History of Political Theory (1937); and F. Ganshof, The Middle Ages: A History of International Relations (1970).

138. J. Bodin, La République (1583).

139. Tawney (*supra* note 137, at 28) states:

> In spite of the ingenuity of theorists, finance and trade . . . were not easily interpreted in terms of social function. Comparatively late intruders in a world dominated by conceptions hammered out in a pre-commercial age, they were never fitted harmoniously into the medieval synthesis. . . ,

and:

> At every turn, therefore, there are limits, restrictions, warnings against allowing economic interests to interfere with serious affairs. It is right for a man to seek such wealth as is necessary for a livelihood in his station. To seek more is not enterprise, but avarice, and avarice is a deadly sin. Trade is legitimate . . . but it is a dangerous business. A man must be sure that he carries it on for the public benefit, and that the profits which he takes are no more than the wages of his labor. Private property is a necessary institution . . . but it is to be tolerated as a concession to human frailty, not applauded as desirable in itself. . . .

Id. at 35.

limitations of supply, but also reveals glimpses of a more distant society in which other forms of life may be admitted to fuller partnership with man. Belief in a sort of companionship—brotherhood even—of all living things can be found in varying degree in the writing of theoreticians on environment.[140] What the result of this full partnership would be must be left to speculation and may never be realized. However, it can be assumed that if man were displaced from his unique position as the focal point of all nature, the law in such a society would inevitably be less anthropocentric. It would have to consider not only the welfare and interests of man but also of other animate beings and even inanimate objects. It has already been quite seriously argued that perhaps the only way to preserve the environment from ultimate destruction is to accord living, and in some cases non-living, elements of the environment legal rights, enforced through the institutuion of guardianship (somewhat similar to guardianship of incompetents and minors).[141]

Enlarging the scope of law beyond intra-human relationships is not new. Many primitive societies, past and present, have (or had) a

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140. *See, e.g.*, the concluding lines of J. Krutch, *Preface* to J. Fisher, et al., Wildlife in Danger at 8 (1969):

> Others (and I would include myself among them) are inclined to insist that there is such a thing as human nature and that it needs contact with the natural world of which it is a part. Perhaps the late William Morton Wheeler, an impeccable technical scientist, put the whole thing most succinctly when he wrote about our fellow creatures: "That, apart from the members of our own species, they are our only companions in an infinite and unsympathetic waste of electrons, planets, nebulae and stars, is a perennial joy and consolation."

Also L. White, Jr., *The Historical Roots of Our Ecological Crisis*, in The Environmental Handbook 26 (G. De Bell ed. 1970):

> The greatest spiritual revolutionary in Western history, Saint Francis, proposed what he thought was an alternative Christian view of nature and man's relation to it: he tried to substitute the idea of man's limitless rule of creation . . . We must rethink and refeel our nature and destiny. The profoundly religious, but heretical, sense of the primitive Franciscans for the spiritual autonomy of all parts of nature may point a direction. I propose Francis as a patron saint for ecologists.

141. *See* Stone, *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. Cal. L. Rev. 450 (1972). See also the dissenting opinion of Justice William O. Douglas in Sierra Club v. Morton, 405 U.S. 727 (1972). He would confer standing upon environmental objects to sue for their own preservation, citing ships and corporations as inanimate objects which have long been parties in litigation:

> So it should be as respects valleys, alpine meadows, rivers, lakes, estuaries, beaches, ridges, groves of trees, swampland, or even air that feels the destructive pressures of modern technology and modern life.

Id. at 743. The element of guardianship is evident in his statement:

> Those who hike it (Mineral King), fish it, hunt it, camp in it, or frequent it, or visit it merely to sit in solitude and wonderment are legitimate spokesmen for it, whether they may be a few or many. Those who have that intimate relation with the inanimate object about to be injured, polluted, or otherwise despoiled are its legitimate spokesmen.

Id. at 744-45.

well-developed body of rules governing their relations with animate and inanimate nature;[142] and the majestic system of natural law encompassed the relations of the whole universe.[143] However, the natural law system dealt in a remote and somewhat theoretical manner with the non-human element in nature; and the rules governing human affairs were man-centered. The law of all living things, as presently conceived, has more affinity with primitive law because of the closer and more equal relationship between man and nature in the latter. However, while in primitive law harmony between man and nature was to be achieved through rules protecting *man* from nature and securing him nature's benefits, this law seems designed to protect nature from man and, in this respect, is the least anthropocentric system of all.

But there are few traces of the enlargement of existing law in this direction. It would be an exaggeration to claim that conventions for the so-called protection of certain sea mammals,[144] for example,

142. *See, e.g.*, E. Hoebel, The Law of Primitive Man: A Study in Comparative Legal Dynamics (1954), in which he says of the Ifugao of Northern Luzon in the Philippines at 120:

> Animals are attributed with legal personalities. Maliciously to kill an animal is akin to killing a person; an animal is a sort of household member, and to the Ifugao mind the assault is an assault of a personal nature. The damages are called *labod*, exactly as the damages assessed in the homicide cases that may be composed—and they are heavy indeed.

On the sense of separation of modern man from non-human nature, *see* J. Tolkien's illuminating passage in The Tolkien Reader (Ballantine ed., 1966) at 66:

> A vivid sense of that separation is very ancient; but also sense that it was a severance: a strange fate and a guilt lies on us. Other creatures are like other realms with which Man has broken off relations, and sees now only from the outside at a distance, being at war with them, or on the terms of an uneasy armistice.

143. *See* Aquinas, *Summa Theologica*, Part II (First Part), in Readings in Jurisprudence 29-30 (J. Hall ed. 1938).

> Thus implying that the light of natural reason, whereby we discern what is good and what is evil, which is the function of the natural law, is nothing else than an imprint on us of the Divine light. It is therefore evident that the natural law is nothing else than the rational creature's participation of the eternal law . . .
>
> Even irrational animals partake in their own way of the Eternal Reason, just as the rational creature does. But because the rational creature partakes thereof in an intellectual and rational manner, therefore the participation of the eternal law in the rational creature is properly called a law, since a law is something pertaining to reason as stated above. Irrational creatures, however, do not partake thereof in a rational manner, wherefore there is no participation of the eternal law in them, except by way of similitude.

See also T. Rutherforth, *Institutes of Natural Law, Id.* at 68:

> A LAW is a rule to which men are obliged to make their moral actions conformable. The word law has indeed a much more extensive signification: all rules, from which any beings whatsoever either will not, or cannot, or ought not to deviate, are so many laws to them. The rules, which God has set to himself to work by; the rules, which brute creatures are led by their instinct to obey; and the rules, which inanimate matter in its motions and operations cannot but observe, are usually called the laws of their several natures.

144. *See supra* at 19-21.

imply a distinct right of wildlife, or that they are concluded primarily for the benefit of the species protected. The language they employ—terms such as "sustained yield" and "harvest"—likens wildlife rather to field crops and other vegetative resources and in no way represents the anti-anthropocentric viewpoint. Perhaps domestic legislation protecting threatened forms of life, such as the United States statute on the importation of endangered species,[145] points toward an enlargement of the law concerning protection of wildlife in a rather restricted area. However, the slow progress toward a draft convention on the subject[146] suggests that the idea that it is illegal to exploit other forms of life to the point of extermination is still struggling to become a rule of law on the international plane. Were it not so, the International Whaling Commission's refusal in July 1972 to heed the whaling moratorium adopted by the Stockholm Conference[147] would be a violation of international law, despite the fact that the Stockholm recommendations are not binding. The most powerful argument for the illegality of "speciecide" may be that it would eventually deprive nature of its laboratory and might thus mortally endanger man himself. This was well understood at the Stockholm Conference, which devoted substantial time and effort to formulating recommendations for the establishment of genetic pools.[148]

CONCLUSION

The impact of environmental concern on the international community and on international law has already been considerable; and there are indications that, as time goes on, that impact will rapidly increase. The immediate, but far-reaching, consequence of this impact is the emergence of a nucleus of environmental international law. Its constitutional aspects are based upon the statutes and powers of institutions dealing with the environment. Its substantive laws are carved from those particular rules of international water law and law of the sea devoted to the protection of the fluvial and marine environment, to which are being added developing rules for the protection of the atmosphere and of resources on land. Its procedural elements, embracing the difficult task of how to make states and individuals comply with the laws and how to implement valid international environmental decisions, are being built upon existing procedural rules of state responsibility for injury to other states and individuals.

145. Endangered Species Conservation Act of 1969, 16 U.S.C. §668aa et seq. (1970).
146. *See* 3 BNA Environmental Reporter [1972 Transfer Binder] Current Dev. 302 (1972).
147. *See supra* note 82.
148. Stockholm Report, *supra* note 26, at 24-31 (Recommendations 39-45).

The long-range consequences may be even more far-reaching, depending on whether technology will make economic expansion compatible with preservation of the life-sustaining environment. If not, then eventually, by agreement or otherwise, the expansion of production will have to be reduced or stopped altogether; and, predictably, the emphasis would shift in the international community in general, and in international law in particular, from development to distribution. It is also possible to foresee, in such a society, the emergence, after perhaps a period of unrest, of a central authority which would assure the distribution of limited resources on an equal or unequal basis, depending on how the period of unrest were resolved.

Finally, far beyond the horizon, lies the dreamland of the environmentalists—the goal to which the environmentalist movement may eventually lead—a rationally ordered community in which the rights to existence of all, or almost all, species are recognized, limited only by the similar rights of others. In such a community, man would cease to be a destroyer and become a benevolent steward with the responsibility of assuring the survival of other species within the limitations imposed by the life-sustaining capacity of the environment and within a legal system enlarged to encompass interests other than those purely human.