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Taking Responsibility for Transboundary Environmental Effects

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I. INTRODUCTION

The ecological truth that the nations of the world are bound together in an indivisible ecosystem for which we are jointly and severally responsible has begun to influence the discourse of international diplomacy and treaty negotiations. The 1985 Vienna Convention for the Protection of the Ozone Layer,[1] its 1987 Montreal Protocol,[2] and the 1990 London Ozone Conference agreement to amend the Protocol[3] evidence a new-found political will among nations to act collectively and decisively to protect the common future even when no tangible harm has yet been observed. Other agreements, negotiations, and individual state actions in recent years confirm that shared responsibility is not a mere fad but a compelling concept gaining stature in international law. The Basel Convention,[4] for all its flaws,[5] establishes the basis for global management of hazardous wastes. The deliberations on climate change in various fora have produced an international convention setting forth a global strat-

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1. Vienna Convention for the Protection of the Ozone Layer, *opened for signature* Mar. 22, 1985, U.N. Doc. UNEP/IG.53/Rev. 1 (1985), at 11, S. TREATY DOC. 9, 99th Cong., 1st Sess. (1985), *reprinted in* 26 I.L.M. 1529 (1987).

2. Montreal Protocol on Substances that Deplete the Ozone Layer, *opened for signature* Sept. 16, 1987, S. TREATY DOC. 10, 100th Cong., 2d Sess. (1987), *reprinted in* 26 I.L.M. 1550 (1987).

3. *Parties to Montreal Protocol Agree to Phase Out CFCs, Help Developing Nations*, 13 Int'l Env't Rep. (BNA) 275 (1990).

4. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, *opened for signature* Mar. 22, 1989, U.N. Environment Programme (Agenda Item 3), U.N. Doc. UNEP/IG.80/3 (1989), *reprinted in* 28 I.L.M. 657 (1989).

5. *See, e.g.*, Note, *International Law and the Transboundary Shipment of Hazardous Waste to the Third World: Will the Basel Convention Make a Difference?*, 5 AM. U.J. INT'L L. & POL'Y 393 (1990) (authored by Marguerite Cusack). For the purposes of this Article, the most significant flaw is the absence of agreed-upon principles for determining liability for environmental damages from improper or unauthorized waste disposal. Hackett, *An Assessment of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*, 5 AM. U.J. INT'L L. & POL'Y 291, 320-22 (1990).

egy.[6] The Scandinavian countries are contributing voluntarily to the control of pollution in Eastern Europe which affects the Baltic Sea and the Nordic forests.[7] Dutch utility companies are investing in reforestation in the Amazon to offset the environmental effects of their operations.[8] The Bush Administration has given official sanction and support to debt-for-nature swaps that effectively put U.S. wealth to work for the protection of ecosystems in Latin America.[9]

The nascent spirit of cooperation and voluntary contribution to the protection of the global environment unfortunately has not yet taken root in the cloistered councils where scholars and diplomats deliberate on the progressive development of international law. In particular, it is long overdue for international law to create a broad standard of legal liability for environmental harms to reinforce the growing body of commitments to international environmental protection. Without firm principles and precedents holding nations fully accountable for the effects of their activities on the environment beyond their borders, the resolution of every international environmental problem—from bilateral contamination of a shared river basin to world-scale degradation of oceans and the atmosphere—is negotiated through a web of reciprocal economic advantage and political expediency that impairs the effectiveness of the resulting agreements. Judge Singh, the President of the International Court of Justice, has laid down the challenge with authority and eloquence:

> May I submit, therefore, that the burning question now confronting jurists in their exercise towards promoting the well-being of the law, concerns the prevailing political framework which displays a totally inadequate political commitment to any regime of regulation other than one based on reciprocal advantage. The result is that regulation can be easily formulated, but cannot be translated into enforceable law. The crucial problem is to bring about a crystallization of international co-operation into the field of enforceable law—an aspect calling for a great deal more than efforts solely directed towards the formulation of new laws or rights without any method or machinery to enforce them.[10]

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6. *Next Steps on Global Warming*, 348 NATURE 181 (1990).

7. *Environmental Agreements Reached by Ministry with Poland, Soviet Union*, 12 Int'l Env't Rep. (BNA) 298 (1989); *Five Nordic Nations Plan to Fund Projects in East Europe Following Action Next March*, 12 Int'l Env't Rep. (BNA) 587 (1989).

8. *Dutch Power Board to Finance Tropical Tree-Planting to Help Offset Emissions*, 13 Int'l Env't Rep. (BNA) 172 (1990).

9. *Plan to Relieve Latin American Debt, Aid Environment Before U.S. Congress*, 13 Int'l Env't Rep. (BNA) 386 (1990).

10. Singh, *Foreward* to EXPERTS GROUP ON ENVTL. LAW, WORLD COMM'N ON ENV'T

What makes Judge Singh's plea so poignant is that it is made in the foreword to a highly competent but ultimately disappointing international effort to respond to his challenge. When the U.N.-sponsored World Commission on Environment and Development (WCED)[11] embarked on its project to define the political and economic terms of a global policy of environmentally sustainable economic development, it recognized both the central importance of legal rules in establishing a new world environmental order and the continuing vacuum in international law.[12] To give legal expression to its concept of environmentally sustainable economic development, the WCED appointed an Experts Group on Environmental Law (Experts Group). This multinational group of distinguished scholars, senior public officials, and environmental affairs specialists[13] prepared a full report[14] containing an annotated statement of legal principles and recommendations on environmental protection and sustainable development. Judge Singh made the remarks quoted above in his foreword to the Experts Group report.

This Article uses the report of these international lawyers as a rhetorical vehicle to explore the limits of traditional doctrines and the possibilities for new paradigms of transboundary liability. The world needs a legal system strong enough to reinforce the WCED's urgent plea to put all economic development on an environmentally sustainable footing. The Experts Group, like other committees that have grappled with this issue, in the end failed to transcend the past, to break new ground, and to provoke the controversy that necessarily accompanies the creation of a new legal order. Taking at face value the WCED's assertion that "[t]he

& DEV., ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT: LEGAL PRINCIPLES AND RECOMMENDATIONS at xv (1986) [hereinafter EXPERTS GROUP].

11. The Commission, sometimes known as the Brundtland Commission in recognition of the outstanding leadership of its Chairwoman, Norwegian Prime Minister Gro Harlem Brundtland, received its charter from the U.N. General Assembly. G.A. Res. 38/161, 38 U.N. GAOR Supp. (No. 47) at 131, U.N. Doc. A/38/702/Add.7 (1983). Its final report to the General Assembly in 1987 was published commercially under the title *Our Common Future*. WORLD COMM'N ON ENV'T & DEV., OUR COMMON FUTURE (1988) [hereinafter OUR COMMON FUTURE].

12. Noting that "international law is being rapidly outdistanced by the accelerating pace and expanding scale of impacts on the ecological basis of development," the WCED made "providing the legal means" one of its six priority areas for institutional change. OUR COMMON FUTURE, *supra* note 11, at 21.

13. To illustrate the composition of the Experts Group, it included Françoise Burhenne of the International Union for the Conservation of Nature and Natural Resources, Dr. Alexandre-Charles Kiss, President of the European Council on Environmental Law, Prof. Akio Morishima of Nagoya University, Japan, and Alberto Szekely, Chief Legal Advisor, Mexican Ministry of Foreign Relations. EXPERTS GROUP, *supra* note 10, at 4.

14. *See generally* EXPERTS GROUP, *supra* note 10.

time has come to break out of past patterns,"[15] and its suggestion that "security must be sought through change,"[16] this Article deliberately throws down the gauntlet to established principles of international law and welcomes the objections that such a challenge invites. Without a more daring approach, international law will remain a "system that cannot prevent one or more States from damaging the ecological basis for development and the very prospects for survival of other—or, possibly, all—States."[17]

II. TRANSBOUNDARY LIABILITY IN THE INTERNATIONAL ENVIRONMENTAL ORDER

At the risk of oversimplifying a topic that has many subtleties, a brief review of the history of currently accepted doctrines regarding responsibility for transboundary environmental harm will establish a context for a discussion of the Experts Group's proposals.

Instead of going all the way back to Grotius, I will begin with the most frequently cited declaration of one state's responsibility for the environmental welfare of its neighbors—the decision of the tribunal in the *Trail Smelter* arbitration.[18] Although the arbitral tribunal of three jurists looked primarily to American precedents involving environmental disputes between two states of the Union, it specifically pronounced its decision to be based on accepted principles of international law.[19] In holding that Canada must pay the United States for damage to trees and crops caused by emissions from a smelter on the Canadian side of the border, and that Canada owed the United States the further obligation to abate the pollution, the tribunal declared: "[N]o state has a right to use or permit the use of its territory in such a manner as to cause injury . . . to the territory of another or the properties or persons therein, *when the case is of serious consequence and the injury is established by clear and convincing evidence.*"[20] The degree of injury giving rise to liability and the standard of proof of causation, two major issues encapsulated in the underscored proviso at the end (which is often omitted when *Trail Smelter* is cited for the doctrine of noninterference), remain significant bones of contention in the contemporary debate over transboundary liability.

15. OUR COMMON FUTURE, *supra* note 11, at 22.
16. *Id.*
17. Singh, *Foreword* to EXPERTS GROUP, *supra* note 10, at x.
18. Trail Smelter Case (U.S. v. Can.), 3 R. Int'l Arb. Awards 1938 (1941).
19. *Id.* at 1949-50.
20. *Id.* at 1965 (emphasis added).

After the *Trail Smelter* award in 1941, the matter of responsibility for environmental damage lay dormant until the advent of nuclear power, space flight, and supertankers for oil shipment in the 1960s. While negotiating multilateral treaty regimes for each of these activities, governments could not avoid the question of compensation for injuries that might occur. Borrowing from other precedents in national and international law, they accepted potential liability under a doctrine of strict liability for ultrahazardous activities.[21] These treaties represented a significant but sharply circumscribed expansion of responsibility for transboundary harms.[22]

Shortly after these developments, environmental issues increasingly came to the attention of governments throughout the world. The Declaration on the Human Environment adopted by the delegates to the 1972 U.N. conference in Stockholm (the Stockholm Declaration)[23] restated the international law of the environment, and still stands as the most progressive statement of principles accepted by a broad cross-section of the world's national governments. With respect to the obligation to avoid transboundary environmental interference, the Stockholm Declaration walked a tightrope between the principle of noninterference and an affirmation of national sovereignty over environmental resources.[24] Given this ambivalence, the delegates could not agree on a principle of responsibility for harms caused. Principle 22 deferred the issue with a vague commitment to "cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage."[25]

Since the Stockholm conference, the Organisation for Economic Cooperation and Development,[26] the International Law Commission (ILC),[27] the United Nations Environment Programme,[28] and the Inter-

21. *See generally* Kelson, *State Responsibility and the Abnormally Dangerous Activity*, 13 HARV. INT'L L.J. 197 (1972).

22. *Id.*

23. *Declaration on the Human Environment*, U.N. Doc. A/CONF.48/14 (1972), *reprinted in* 11 I.L.M. 1416 (1972).

24. *Id.*, *reprinted in* 11 I.L.M. at 1420. Principle 21 gives equal recognition to each state's "responsibility to ensure that activities within their jurisdiction or control do not cause damage" outside their jurisdiction and the countervailing "sovereign right [to follow] their own environmental policies."

25. *Id.*

26. *See generally* ORGANISATION FOR ECON. CO-OPERATION & DEV., LEGAL ASPECTS OF TRANSFRONTIER POLLUTION (1977); ORGANISATION FOR ECON. CO-OPERATION & DEV., TRANSFRONTIER POLLUTION AND THE ROLE OF STATES (1981).

27. The International Law Commission in 1978 appointed a special rapporteur on the topic, "International liability for injurious consequences arising out of acts not prohibited by international law." It was understood from the outset that the primary focus for this topic

national Union for the Conservation of Nature and Natural Resources (IUCN),[29] have all taken up the mandate of Principle 22. The work of the ILC on the subject of "International liability for injurious consequences arising out of acts not prohibited by international law,"[30] has been by far the most concerted and sophisticated of these efforts, but the Commission has become mired in the very complexities of the topic and seems no closer to a consensus on new principles than it was fifteen years ago.[31] Only the nongovernmental entity, the IUCN, published a proposal for a complete set of liability principles.[32]

At the time the WCED's Experts Group began its work, therefore, international law—as defined by those principles to which a large number of governments would accede—had hardly progressed beyond the holdings of the *Trail Smelter* tribunal. The one possible limited exception was agreement on responsibility without fault for the consequences of a few ultrahazardous activities. To put it bluntly, the international law community has completely failed to further the progressive development of international law on this critical topic.

The international deliberations described above concerned almost exclusively the question of the responsibility of a state for transboundary injuries. The question frequently arises whether the state should be held liable for the acts of private parties under its jurisdiction as well as for government acts. For purposes of the present discussion, however, the distinction is not particularly significant. As national environmental protection laws proliferate, it becomes increasingly difficult to hypothesize a scenario in which an activity that may cause harmful effects across a border could be conducted without the knowledge, and most likely the affirmative permission, of the home government. Even those transboundary environmental interferences that arise from the aggregated ac-

would be environmental injuries. For a recent short review and discussion of the ILC's work on this topic, see McCaffrey, *The Work of the International Law Commission Relating to Transfrontier Environmental Harm*, 20 N.Y.U.J. INT'L L. & POL'Y 715 (1988).

28. *Report of the Group of Experts on Liability for Pollution and Other Environmental Damage and Compensation for Such Damage*, U.N. Doc. UNEP/WG.8/3 (1977).

29. A. REST, CONVENTION ON COMPENSATION FOR TRANSFRONTIER ENVIRONMENTAL INJURIES: DRAFT WITH EXPLANATORY NOTES (1976) (in collaboration with the Environmental Law Centre of the International Union for the Conservation of Nature and Natural Resources).

30. *See* McCaffrey, *supra* note 27.

31. *See id.*; Magraw, *Transboundary Harm: The International Law Commission's Study of "International Liability,"* 80 AM. J. INT'L L. 305 (1986); O'Keefe, *Transboundary Pollution and the Strict Liability Issue: The Work of the International Law Commission on the Topic of International Liability for Injurious Consequences Arising Out of Acts Not Prohibited by International Law*, 18 DEN. J. INT'L L. & POL'Y 145 (1990).

32. A. REST, *supra* note 29.

tivities of many individuals, such as tropical deforestation or automotive air pollution, have domestic as well as international consequences and are, or easily could be, the subjects of national law and regulation. Unless the specific context demands otherwise, therefore, the references to liability in this Article apply to the state as well as to any private party who may be the cause-in-fact of the injury.[33]

In the legally simple circumstance where a state causes injury to another state by acts that violate international law, its legal liability for damages is said to constitute a secondary obligation of international law springing from the violation of its primary obligation to observe international legal norms. For the most part, this Article does not dwell on this uncommon situation. The more practical and legally vexing problem is the matter precisely defined by the International Law Commission's topic: liability for injuries arising from acts that are not prohibited by international law. If the obligation to pay compensation is independent of the legality of the underlying conduct, and if that obligation can be considered an implicit precondition for lawfully conducting the injuring activity, it should properly be considered a primary obligation of international law.[34]

Whether primary or secondary in this technical sense, international environmental liability will always be secondary in terms of its role in the international legal order. Transboundary liability alone cannot bring about the changes in national behavior that a shift to an environmentally sustainable mode of development will require. For that, international law must promulgate new primary standards of conduct and make new declarations of global policy.[35] Within that context, however, trans-

33. The erasure of any distinction between the liability of the state for governmental acts and the liability of the state for private acts within its jurisdiction is consistent with the trend of doctrinal development in international law. *See, e.g.*, E. WEISS, IN FAIRNESS TO FUTURE GENERATIONS: INTERNATIONAL LAW, COMMON PATRIMONY, AND INTERGENERATIONAL EQUITY 88-89 (1989).

34. In his fourth report to the International Law Commission, special *rapporteur* R. Quentin-Baxter structured the concept of international liability as a "compound 'primary' obligation that covers the whole field of preventing, minimizing and providing reparation for the occurrence of physical transboundary harm." Quentin-Baxter, *Fourth Report on International Liability for Injurious Consequences Arising Out of Acts Not Prohibited by International Law*, U.N. Doc. A/CN.4/373 (1983), *reprinted in* 1983 Y.B. INT'L L. COMM'N 201, 213, U.N. Doc. A/CN.4/SER.A/1983/Add.1 (Part 1). For a clear exposition of this "compound primary obligation," see Magraw, *The International Law Commission's Study of International Liability for Nonprohibited Acts as it Relates to Developing States*, 61 WASH. L. REV. 1041, 1043-45 (1986). For an elaboration of the fundamental notion of liability as a "primary" obligation, see Handl, *Liability as an Obligation Established by a Primary Rule of International Law*, 1985 NETH. Y.B. INT'L L. 49.

35. Other commentators are in full agreement. ILC special *rapporteur* Quentin-Baxter

boundary liability can play the vital supporting role of deterring deviations from international norms and assuring compensation for transboundary harms.[36]

As every country knows from its national experience, the development of economic activity on an environmentally sound basis requires specific objectives and precise, often intricate, technical standards of performance promulgated and enforced through legal systems. General assignments of legal liability from the common law or the civil code are simply inadequate for the task of managing the complex interaction of human economic activity with the natural environment, especially where prevention of long-term environmental damage is desired. By the same token, the positive legal norms of environmental statutes and technical regulations themselves often leave particular problems unmanaged or fail to manage them effectively. Thus, environmental liability serves as a safety net, reinforcing through general norms specific regulatory requirements, and offering a means of compensation when damage occurs. The need for a safety net is even more acute in international law, where the framework of specific obligations and standards is much less comprehensive and robust than that of most nations, leaving more gaps for the liability safety net to cover.

In the absence of an international monitoring and enforcement agency that can compel compliance and punish violators (a prospect even more remote than a vibrant liability system), the deterrence function of liability assumes greater significance in the transboundary context than in the usual domestic situation. Transboundary liability expresses the world's moral sanction against nonconforming conduct and thereby, one can reasonably hope, discourages both governments and private parties from a cavalier disregard for their environmental obligations to their neighbors.

By creating a system for compensation, transboundary liability also offers a peaceful procedure by which injured parties may seek redress of

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unequivocally declared that liability rules "are not a substitute for specific conventional or customary rules that engage the responsibility of the State. It is the main purpose of the present topic to encourage the elaboration or emergence of such rules." Quentin-Baxter, *supra* note 34, at 211. Professor Weiss states that "it is becoming increasingly apparent that the emphasis must be on prevention of environmental harm rather than on compensation." E. WEISS, *supra* note 33, at 80.

36. A liability regime can serve both deterrence and compensation functions, but there is a tension between the two that may require favoring one function over the other in specific features of the regime. Gaines, *International Principles for Transnational Environmental Liability: Can Developments in Municipal Law Help Break the Impasse?*, 30 HARV. INT'L L.J. 311, 324-28 (1989).

their environmental grievances. Injuries to human health and the environment continue to occur, across borders as well as within countries. Indeed, every year the inexorable progress of scientific research reveals a wider scope and severity of environmental harms in all parts of the globe in spite of increasing public and private investments in environmental protection. The international legal system needs the same provision for financial liability that national law provides as a means to compensate for the many environmental harms not prohibited by positive legal standards.

One can imagine an infinite variety of fact situations in which a doctrine of responsibility for transboundary environmental interferences might apply. To give some concreteness to the discussion that follows, which might otherwise seem abstract, consider the following illustrative scenarios.

Scenario 1: Activities in one country affecting a single neighboring country of similar development status. This scenario describes the *Trail Smelter* arbitration and also applies to the reverse problem of acid deposition originating at U.S. facilities with adverse consequences for the Canadian environment. The relative economic parity between the two countries and the correlative similarity of their legal standards eases the legal friction that arises from disparities in outlook or circumstance between different countries.[37]

Scenario 2: Activities in one country affecting a single neighboring country of different development status. This scenario describes U.S. environmental relations with Mexico. Whether the environmental interference arises in Mexico and affects the United States (like the discharge of untreated sewage in Tijuana), or arises in the United States with injurious consequences for Mexico (like the salinity in the Colorado River), the wide gulf between the two countries in standard of living, effective exercise of government authority, and availability of human and financial resources to address environmental problems severely complicates the resolution of disputes. In some situations, the wealthier country can provide the money to abate the offending pollution; this approach has been followed in the Tijuana sewage case, for example. In situations where the pollution is structural, however, as with the air pollution from cars, factories, and dumps in Juarez, Mexico, that fouls the air over El Paso, Texas, the source country must bear the responsibility. Here, the issues

37. Magraw, *supra* note 34, at 1058-59, briefly discusses the International Law Commission consideration of a doctrine of "shared expectations" as an important factor influencing the determination of liability in a given case.

of environmental improvement and economic development clearly intersect. Where the pollution emanates from the wealthier country, the problem becomes one of potential dominance and exploitation.

Scenario 3: Regional environmental degradation. Europe provides the most obvious examples of this scenario. The spill of chemicals into the Rhine River from the Sandoz factory in Switzerland affected farms and towns in France, Germany, and the Netherlands. Another, more complex example is the sharp increase in mortality among North Sea seals attributed to the mixture of industrial and municipal pollution coming from several countries. When the injurious consequences can be traced to a single source or a single country, as in the Sandoz case, liability can be effective in providing compensation and vindicating national rights. As the sources and their associated effects become more dispersed, the possibility of effective redress through liability diminishes sharply. When all the countries in the region are both sources and receptors, as with the pollution of the Mediterranean, a collective and cooperative approach should be used.

Scenario 4: Global environmental problems. Some problems of global concern can be traced to a relatively few countries. In these cases, concepts of responsibility and compensation can be integral components of the solution. The agreement at the London Ozone Conference, under which the industrial countries will contribute to a fund to help developing countries cope with the additional costs of eliminating or doing without chlorofluorocarbons (CFCs), represents a limited voluntary assumption of responsibility for CFC-induced ozone depletion. Global warming, if it is indeed upon us, poses the ultimate liability puzzle. Those countries arguably most responsible, for example the United States, may also be among the countries most adversely affected, but the Maldives, a minuscule source of greenhouse gases, may face total eradication, and Canada, a significant source, may actually benefit economically from a warmer world. In such a context, liability for compensation seems preposterous, but a sense of responsibility, in its broader meaning, seems absolutely essential.

III. A CRITICAL REVIEW OF THE EXPERTS GROUP LEGAL PRINCIPLES

A. Overview

As the preceding synopsis of the topic shows, the absence in international law of commonly accepted principles of liability for transboundary environmental harms reflects not neglect but political paralysis born of

the innate complexity and sensitivity of the subject matter. Thus, when the WCED's Experts Group began its work in 1985 they had a rich body of recent and meticulous theoretical work from which to draw. To their great credit, the Experts Group developed a fresh and coherent set of richly annotated principles in little more than a year. Nevertheless, their work lacks the creative spark and visionary spirit that infuses the work of their parent commission. This part of the Article will analyze the Experts Group's principles regarding transboundary environmental interferences and will propose alternative approaches in an effort to stimulate reexamination of the basic premises.

Since the work of the Experts Group has not attracted much attention in the literature, it seems appropriate to preface the analysis with a brief descriptive overview of the full report.

Formally titled "Principles for Environmental Protection and Sustainable Development," the report comprises twenty-two articles, with explanatory commentary accompanying each article, grouped under four major headings. It begins with eight general principles, followed by twelve "Principles Specifically Concerning Transboundary Natural Resources and Environmental Interferences." The last two headings have just a single article each, one on state responsibility, and one on peaceful settlement of disputes. The report also contains a prefatory section on the use of terms, and an annex listing international agreements and other legal instruments.

The eight general principles establish important philosophical predicates and call for improved institutional processes for environmental management. The experts were not at all reluctant to give environmental affairs a paramount position in international law. Article 1 declares forthrightly: "All human beings have the fundamental right to an environment adequate for their health and well-being."[38] This restates, more simply and directly, a legal right first explicitly recognized in the Stockholm Declaration.[39] Although the commentary acknowledges that this right "remains an ideal which must still be realized,"[40] the experts properly reaffirm it as a matter of principle.

Article 2 brings the concept of intergenerational equity[41] into the picture, again with eloquent directness: "States shall ensure that the en-

38. EXPERTS GROUP, *supra* note 10, at 38.

39. *Declaration on the Human Environment*, *supra* note 23. Principle 1 phrased the right more obliquely in terms of a right to "adequate conditions of life, in an environment of quality that permits a life of dignity and well-being." *Id.* at 4.

40. EXPERTS GROUP, *supra* note 10, at 42.

41. E. WEISS, *supra* note 33, at 17-46.

vironment and natural resources are conserved and used for the benefit of present and future generations."[42] Just how much regard we in the present generation should have for the future, given our own urgent needs and the historical evidence that the magic of technological ingenuity will pull resource rabbits out of the hat, is a central question in the environmental policy debate.[43] The Experts Group does not purport to answer that broad question. In keeping with their legal advisory role, they simply present equity between generations as a legal principle to be observed in policy selection.

The other six articles in the first section articulate a variety of principles regarding basic elements of environmental policy. Article 3 mandates maintenance of ecosystems, maintenance of "maximum biological diversity,"[44] and observation of the principle of "optimum sustainable yield"[45] in the use of renewable resources. Article 4 calls upon states to establish "specific environmental standards" and environmental monitoring programs.[46] In language reminiscent of the U.S. National Environmental Policy Act environmental impact statement requirement,[47] article 5 requires states to "make or require" an assessment of environmental effects "before carrying out or permitting" activities that "may significantly affect a natural resource or the environment."[48] Shifting to procedural issues, article 6 makes timely public access to information about proposed projects or environmental conditions a matter of principle.[49] The Article also requires states to give persons affected by a government decision "access to and due process in administrative and judicial proceedings."[50] Article 7 mandates the integration of environmental management with development planning, and calls for states to provide

42. EXPERTS GROUP, *supra* note 10, at 42.

43. In 1980 Paul Erlich and Julian Simon placed a bet on whether prices of natural resources would go up or down between 1980 and 1990. Simon bet that prices would go down; he won the bet. However, the terms of the bet missed the point, which is not the availability of substitutes, but the condition and availability of the ecosystem which is equally vital to our survival. Tierney, *Betting on the Planet*, N.Y. Times, Dec. 2, 1990, § 6 (Magazine), at 52, col. 3.

44. EXPERTS GROUP, *supra* note 10, at 45.

45. Optimum sustainable yield differs importantly from the traditional resource management policy of maximum sustained yield in giving primacy to ecosystem health and productivity over maximization of economic return. EXPERTS GROUP, *supra* note 10, at 47-48. Compare the even more ecologically oriented concept "optimum sustainable population" used in the U.S. Marine Mammal Protection Act, 16 U.S.C. § 1362(9) (1989).

46. EXPERTS GROUP, *supra* note 10, at 54.

47. 42 U.S.C. § 4332(2)(C) (1989).

48. EXPERTS GROUP, *supra* note 10, at 58.

49. *Id.* at 63.

50. *Id.*

technical assistance, especially to developing countries, to support such integrated management approaches.[51] Finally, article 8 invokes notions of neighborliness: "States shall co-operate in good faith with other States or through competent international organizations in the implementation of the provisions of the preceding articles."[52]

Many of the twelve articles in the section of "Principles Specifically Concerning Transboundary Natural Resources and Environmental Interferences" embellish themes announced in the eight general principles. For example, article 9 provides that "States shall use transboundary natural resources in a reasonable and equitable manner."[53] Article 9 thus builds upon the intergenerational equities declared in article 2 and the ecosystem management principles of article 3. Article 14 reiterates the article 9 obligation of states to cooperate in the specific context of transboundary natural resource use and the prevention of environmental problems, and sets forth the objectives of optimal use of resources and maximum effectiveness of environmental protection measures.[54] Article 15, which calls for the exchange of "relevant and reasonably available data"[55] between states, extends the article 6 principle of timely public access to information to the level of international relations. Article 16, titled "Prior Notice of Planned Activities, Environmental Impact Assessments,"[56] article 18, titled "Co-operative Arrangements for Environmental Assessment and Protection,"[57] and article 19, titled "Emergency Situations," deal with the common circumstances in which neighboring states have specific needs for information.[58]

The individual articles regarding state responsibility and peaceful settlement of disputes, which complete the statement of principles, bear directly on the question of the state's response to matters of actual or anticipated environmental interference. Article 21, "State Responsibility," reiterates familiar principles that states have a responsibility not to engage in internationally wrongful acts and to make restitution or compensation for breaches of international laws and rules requiring the prevention or abatement of a transboundary environmental interference.[59] As the commentary makes abundantly clear, the doctrine of state respon-

51. *Id.* at 65.
52. *Id.* at 69.
53. *Id.* at 72.
54. *Id.* at 90.
55. *Id.* at 95.
56. *Id.* at 98.
57. *Id.* at 108.
58. *Id.* at 116.
59. *Id.* at 127.

sibility is distinct from the idea that states should be held liable through strict liability or other legal theories, for the injurious consequences of acts that are not unlawful under international law.[60]

Article 22, "Peaceful Settlement of Disputes," goes into unusual detail to outline a three-step process by which states may resolve particularly intractable disputes.[61] First, it would require states to choose any peaceful means to settle disputes, including but not limited to negotiation, conciliation, arbitration, or judicial settlement.[62] Should the dispute remain unresolved after eighteen months, article 22 would automatically impose conciliation at the request of any involved state unless another means is agreed to by the parties.[63] Should conciliation also fail, the article mandates the use of binding arbitration or judicial settlement unless the parties agree to another means. The Experts Group proposal for progressive escalation from negotiation through conciliation to arbitration or litigation gives new vitality and substance to the exhortations of the U.N. Charter and other documents for the use of peaceful means to settle international disputes.

B. The Key Liability Principles

Articles 10, 11, and 12 constitute the heart of the principles of liability for transboundary environmental interferences. Because the articles themselves, as well as the commentaries, contain significant cross-references to one another, they should be viewed as a group, rather than separately. Article 10 states the primary obligation to prevent or avoid interference in the environmental integrity of other states or the global commons.[64] Article 11 defines the circumstances under which one state shall compensate another for transboundary harms incurred.[65] Article 12 qualifies the liability obligation when the costs of preventing or reducing the environmental interference are much greater than the expected harms.[66] With that general scheme in mind, this section closely analyzes each of the three articles.

60. *See supra* notes 34-35 and accompanying text.
61. EXPERTS GROUP, *supra* note 10, at 130.
62. *Id.* at 131.
63. *Id.*
64. *Id.* at 75.
65. *Id.* at 80.
66. *Id.* at 85.

1. Article 10: Prevention and Abatement of a Transboundary Environmental Interference

Article 10 has, on the surface, the same simplicity and directness as articles 1 and 2: "States shall, without prejudice to the principles laid down in Articles 11 and 12, prevent or abate any transboundary environmental interference or significant risk thereof which causes substantial harm—*i.e.*, harm which is not minor or insignificant."[67] As the commentary points out, however, the obligation to prevent or abate environmental harm is in fact relative, not absolute. The carefully chosen but poorly defined qualifiers "significant" and "substantial" signify relativity, and the reference to articles 11 and 12 further softens the duty of noninterference.

Before considering the restrictive features of article 10, it should be noted that it extends the fundamental doctrine *sic utere tuo ut alienum non laedas*[68] beyond physical harm to significant risks of substantial harm. At the time of the Experts Group report, their attention to risks of harm represented a clear departure from the focus of the ILC and others on actual physical harm suffered as a *sine qua non* for international liability. An obligation to prevent a significant risk of harm has the effect not only of broadening the scope of potential liability, but of infusing the *sic utere tuo* doctrine with an anticipatory or preventive character it had previously lacked. This innovation holds promise for revitalizing the principle of noninterference for application to the host of environmental problems in which long latency periods or the imperceptible accretion of trivial damages leading in the end to serious environmental damage make it unwise to wait for "dead bodies." Professor Weiss faulted the traditional liability scheme for its retrospective character when a situation demands prospective measures;[69] adding the prevention of risk to the principle of noninterference opens the door to liability for imposing such risks.

Unfortunately, the benefits of expanding the state obligation to activities creating a risk of harm come at a price. International law has been perplexed for many years by the problem of defining a flexible "soft law" version of the duty not to interfere with the transboundary environment. To introduce the nebulous concept of risk into the framework complicates the already difficult line-drawing problem. To make matters

67. *Id.* at 75.

68. Under this doctrine, you "[u]se your own property in such a manner as not to injure that of another." BLACK'S LAW DICTIONARY 1238 (5th ed. 1979).

69. E. WEISS, *supra* note 33, at 79-81.

worse, to include risk in the primary obligation to prevent or abate environmental interference means that the associated principles of liability must also account not only for the magnitude of legally redressable harm and the robustness of proof, but also for some calculation of the degree of risk that one country may impose upon another without triggering the obligation to guarantee compensation.

The primary qualifier in article 10 is that the transboundary interference cause (or threaten to cause) substantial harm. Defining substantial as that which is not minor or insignificant contributes little to an understanding of the term. If anything, in both domestic American usage and international law, the term "substantial" connotes a magnitude of harm that is a quantum step greater than merely "not insignificant."[70] It is not clear whether the experts intended the generally accepted connotation of the term, or whether they purposefully used the "not minor or insignificant" language to suggest that any nontrivial harm should be prevented or abated. The international law instruments cited in the commentary do not clarify the experts' intent. For example, the *Trail Smelter* arbitral award speaks of harms of "serious consequence."[71]

It is also possible that the experts deliberately avoided giving definition to the term "substantial" in order to leave its interpretation flexible. Professor Rest, in his 1975 draft convention for the IUCN, also limited compensation to substantial environmental impairment.[72] In his commentary, he explained substantial as a term establishing "a correlation between the demand for improvement in quality of life and the reality of our social existence."[73] So defined, the meaning of substantial depends on the particular context of the injury, and is subject to constant reinterpretation. The Experts Group brings in cost-benefit relativism explicitly in article 12, which would seem to render a circumstantial usage of substantiality redundant.

These ambiguities bring a more fundamental question to mind: why does responsibility for transboundary environmental interference arise only when the harm (or threatened harm) is substantial? One answer is that dozens of international law precedents establish a threshold of significant or substantial harm before responsibility arises, making it a prin-

70. Sachariew, *The Definition of Thresholds of Tolerance for Transboundary Environmental Injury Under International Law: Development and Present Status*, 37 NETH. INT'L L. REV. 193, 194-99 (1990). The article reviews the usage of terms such as "serious," "significant," and "substantial" in various international instruments.

71. Trail Smelter Case (U.S. v. Can.), 3 R. Int'l Arb. Awards 1938, 1965 (1941).

72. A. REST, *supra* note 29, art. 4, at 19.

73. *Id.* at 44.

ciple of firm and virtually universal international agreement. However, resort to precedent only begs the question whether the precedent should be followed or whether the circumstances of the late twentieth century do not, after all, require new doctrines. When population densities and scales of economic activity were lower, and scientific awareness of the subtleties of environmental injury was less highly developed, a doctrine of substantiality comported with prevailing legal norms and economic expectations. Given the Eurocentric tendencies of international law, there may have also existed an apprehension that without a threshold test, trivial environmental slights along intensively developed borders such as the Rhine might become sources of international disputes.

Whatever justification may have supported a substantial harm test in the past, it has become an obstacle to the application of international law to the environmental concerns of our day—acid deposition, toxic contamination, habitat loss, species extinction, regional air pollution, and groundwater contamination. Rather than impose the burden on the receiving country to show that the injurious effect has risen above some threshold level, we really should begin to develop doctrine from the opposite presumption—that any transboundary environmental interference represents an unauthorized infringement of the sovereignty and territorial integrity of the affected country. This can be conceptualized as a doctrine of transboundary trespass applied to instances of air pollution, akin to the common law doctrine of trespass.[74] The intrusion itself, and not the damage it caused, constitutes the gravamen of the legal wrong. The magnitude of the harm is relevant only to the amount of compensation owed.

I do not propose a standard of absolute liability for every molecule of pollution that crosses a border. I do maintain that the legal analysis should begin with the premise that each state has a right to be free of any environmental interference. Some standard for toleration of minor infractions can then be formulated on the theoretical basis of countervailing rights of others or reciprocal obligations. Starting with a right to be free of interference has some practical benefits as well as moral appeal. The burden of proof of the degree of injury would shift from the victim of the harm to the perpetrator of the harm. The acting state would have the burden of showing that the harm caused by its interference was truly insignificant; the injured country would not have to establish the severity of its injury. If the trespass doctrine is strictly followed, the injured party

74. *See* Martin v. Reynolds Metals Co., 221 Ore. 86, 101, 342 P.2d 790, 797 (1959), *cert. denied*, 362 U.S. 918 (1960).

would also be relieved of the burden, often impossible to meet, of proving that the injuries suffered were caused by the defendant's conduct and not by some other factor. Under a trespass analysis, only a showing of some physical transboundary interference, such as the pollution of a river, would need to be shown to establish a prima facie claim for liability. These results comport fully with the broader policy purpose of shifting the orientation of economic activity away from a casual presumption of a right to use the environment and toward a more active and anticipatory sense of environmental stewardship.

There are two basic approaches to setting the standard for the degree of transboundary interference that states may be obliged to suffer without legal recourse. One approach would be to set some quantum of incremental change in environmental conditions combined with some consideration of the absolute condition of the environment after the interference.[75] The difficulty with such an apparently rational approach is that environmental impairment is almost impossible to quantify, and new scientific information causes almost constant revision of the levels of air pollution, water pollution, or exposure to chemicals that are deemed safe or harmful. Moreover, any approximation of a quantitative standard for legally sufficient interference would require the parties to attempt proof of, and the court to pass judgment on, complex and often controversial technical issues of monitoring and causation just to determine whether a claim may lie.

The alternative strategy for setting a threshold would place a premium on the analysis of the legal status of and relationship between the parties, the type of analysis well-suited to adjudication or legal arbitration. Under this approach, whether the environmental interference crosses the threshold would be determined by considering a range of relevant factors such as the degree of harm, the strength of the causal connection, the ability of the source to reduce the interference, and the preexisting condition of the environment. This approach avoids, or at least mitigates, the line-drawing problem of a more objective threshold, emphasizing instead an equitable balancing of all the interests involved in each case. What this amounts to, in effect, is the application of the special *rapporteur* Quentin-Baxter's balance of interests test[76] for liability to

75. This proposal is based on the interpretation by the Second Circuit of the phrase "significantly affecting the quality of the human environment" in section 102(2)(C) of the National Environmental Policy Act, 42 U.S.C. § 4332(2)(C) (1990). Hanly v. Kleindienst, 471 F.2d 823, 828-31 (2d Cir. 1972), *cert. denied*, 412 U.S. 908 (1973).

76. Mr. Quentin-Baxter listed 17 different factors that "may be relevant to a balancing of interests." Quentin-Baxter, *Third Report on International Liability for Injurious Consequences*

the threshold determination of the legal sufficiency of the claim of injury.

Critics may object that an equitable balancing test with no definite threshold will invite harassing or petty claims for trivial interferences. This result seems highly implausible. The community of nations has many of the attributes of a small town in a remote desert. There are only about 180 inhabitants; everybody knows everybody else; they will live with each other for many years to come; and they all have to get along with each other and settle their differences by themselves. States will quarrel with each other, but with rare exceptions they quarrel only when one of the parties believes an important principle is at stake. The absence of a fixed threshold is likely to promote consultation, negotiation, and voluntary settlement of transboundary disputes because neither party can be sure of the outcome of an arbitration or adjudication. In any event, the proper outcome for cases of real but small injury is for the injury to be abated or compensated, in keeping with the fundamental principle that the creators of harm rather than the innocent victims should bear the costs.

The other important qualifier in article 10, significantly, places some limit on the novel obligation to prevent or abate risks of environmental harm. In American environmental law, significant risk is loosely understood to connote some (unspecified) level of objectively measured or estimated risk that is legally cognizable in the context of statutory objectives or other indicia of policy.[77] Thus, releases of large quantities of ordinary pollutants may be deemed not significant, while even minute quantities of other pollutants are considered significant because of their potential effects on human health.[78] Similarly, in international law discussions, significant has come to mean a relatively modest threshold, comparable to appreciable but probably less than substantial.[79] The commentary to article 10 points out that the standard usage of the term "significant risk" implies a calculation of both the probability of the adverse event and the

Arising Out of Acts Not Prohibited by International Law, U.N. Doc. A/CN.4/360 (1982), *reprinted in* 1982 Y.B. INT'L L. COMM'N 51, 53, 64.

77. As I have pointed out elsewhere, however, there is no inherent or practical distinction among the various qualifiers (such as "unreasonable" or "acceptable") that are attached to the term "risk." Gaines, *Science, Politics, and the Management of Toxic Risks Through Law*, 30 JURIMETRICS 271, 290, 298 (1990).

78. The clearest example is the table of de minimis (insignificant) values for emissions of regulated air pollutants, which is used to determine whether a planned increase in emissions at a facility needs prior review and permitting. For common pollutants, a source can increase emissions by as much as 100 tons per year without prior review; for the most hazardous pollutant, beryllium, the significance level is a mere 0.0004 tons per year, which is less than 1 pound. 40 C.F.R. § 52.21(b)(23) (1990).

79. Sachariew, *supra* note 70, at 197.

severity or scale of the harm that would result.[80] The experts fail, however, to offer any guidance whatsoever on the magnitude of risk they would deem to be "significant." They also appear not to appreciate the degree to which the subjective factor of political or social acceptability suffuses the whole enterprise of risk assessment.[81] In U.S. environmental law, the significance threshold for risk varies from one program to the next and one agency to the next, and has so far resisted standardization. Similar inconsistencies and disparities are to be expected between neighboring countries' notions of significant risk. Significant risk might be a workable benchmark where the affected parties have shared values, but it is likely to raise more issues than it resolves in cases of wide disparity in levels of development, in cultural values, or simply in the degree to which each party will bear the risk.[82] Except for formal agreements in specific contexts, international law is unlikely to develop a consensus about what constitutes significant risk.

A new international order certainly needs to retain as a principle the obligation to prevent or reduce threats of environmental injury rather than waiting for disaster before invoking the law. Conventions or other preventive standards must clearly play the dominant role, but a residual general obligation seems fitting. After the fact efforts to repair environmental damage will either be exorbitantly expensive (and thus economically wasteful), or ineffective. Monetary damages never suffice to compensate injured health, death, or lost species. Nevertheless, significant risk is too loose a term to provide a basis for negotiations between sovereign states. A more objective, yet still flexible, standard is needed. A foreseeability test might fufill this need, especially if it is tied to the obligation for environmental assessment for planned activities. Thus, if the potential impairment to health or the environment is both plausible (that is, more than remotely likely to occur) and nontrivial, it should be assessed, and the assessment itself can provide an estimate of the risk involved.[83] The affected parties can then negotiate the prevention, abatement, or management of the assessed risks. As the Experts Group wisely provides in article 11, however, a foreseeability test for the prevention or abatement of risk should not become an exoneration from the duty to

80. EXPERTS GROUP, *supra* note 10, at 78-79.

81. Gaines, *supra* note 77, at 276-91.

82. For example, the risk of global warming from fossil fuels may be judged significant in Bangladesh, which will suffer severely if temperature increase and sea level rise predictions are accurate, but may seem a matter of little consequence in Chile.

83. Broadly speaking, this is the policy behind the regulations under the National Environmental Policy Act requiring environmental assessment of plausible scenarios when hard information is incomplete or unavailable. 40 C.F.R. § 1502.22 (1990).

compensate for actual harms from risks that were not foreseeable when the activities were undertaken.

2. Article 11: Liability for Transboundary Environmental Interferences Resulting From Lawful Activities

Article 11 addresses the matter of liability for transboundary environmental harms within the context established by article 10. It has two parts which apply to two distinct circumstances. Oddly, in its focus on two special cases, the article apparently omits any statement of general obligation to compensate for or remedy actual harms. We can only infer from this omission that, except as specifically provided in this article, the Experts Group posits no general primary obligation to provide compensation for transboundary environmental interferences or their resulting harms. Implicitly, liability only extends to harms from activities that violate the principle of noninterference as set forth in article 10. Article 10 thus must be read as creating a perfectly symmetrical system in which the following occur: (1) all activities that create substantial harm are by definition unlawful, and compensation is therefore owed for the resulting harms; and (2) activities creating less than substantial harm are lawful, and there is no independent obligation to compensate for insubstantial harm.

Article 11 should be interpreted, therefore, as providing two limited exceptions in which compensation should be provided even though the harm-causing activity was lawful under the terms of article 10. Article 11 provides that when a substantial (and therefore compensable) harm occurs as the result of an activity which the state undertook or permitted without knowing that it would cause this unlawful degree of harm, such harm is compensable.[84] This provision applies to cases in which a party engages in good faith in an activity which at the time appears to be lawful, but which unexpectedly turns out to have unlawful consequences. The article stipulates that the state is nevertheless obligated to "ensure that compensation is provided"[85] for the substantial harms caused by such transboundary environmental interferences. This obligation runs both to activities carried out by the state and activities permitted by the state.[86]

84. EXPERTS GROUP, *supra* note 10, at 80.

85. This phrasing artfully finesses the matter of state versus private liability by obliging the state not to pay compensation, but simply to ensure that it is provided from some source. One way the experts specifically suggest to provide it is through a national law of strict liability obligation. *Id.* at 81.

86. *Id.*

The second limited exception created by article 11 allows one state to create a significant risk of substantial harm to another when the "overall technical and socio-economic cost"[87] of preventing or abating the risk "far exceeds in the long run the advantage which such prevention or reduction would entail."[88] This allowance to create transboundary risk of harm is subject to the condition[89] that the state ensure that compensation is provided should substantial harm in fact occur.[90]

Although this bespeaks a doctrine of strict liability for all foreseeable harms from environmental interferences, the commentary illustrates strict liability through references to generally recognized international law precedents and selected national law principles, all of which limit strict liability to ultrahazardous activities. The commentary thus raises a substantial (that is, not insignificant) doubt whether the experts intended an obligation to provide compensation for nonultrahazardous activities that might create a significant risk of substantial harm that is costly to prevent, such as sulfur dioxide emissions from power plants.

The traditional international law concept of strict liability has become an obstructive anachronism in the environmental field and should be discarded in favor of the emerging principle in state practice of strict polluter liability for all remediation costs and natural resource damages. In U.S. environmental law, concepts of strict liability extend far beyond ultrahazardous activities, and cost-benefit analyses are not favored as defenses to liability where the risks were known and preventable.[91] For example, the U.S. Superfund Law (CERCLA)[92] makes those who participated in the disposal of hazardous substances strictly liable for cleanup costs without regard to fault or any discernible environmental injury,[93]

87. *Id.*

88. The commentary plainly states that the effect of this paragraph of article 11 is to provide that the article 10 duty "does not exist" under the prescribed conditions. *Id.*

89. The commentary frankly describes this condition as "[t]he price to be paid for the right to continue with or undertake the activity." *Id.*

90. *Id.*

91. *See, e.g.*, Grimshaw v. Ford Motor Co., 119 Cal. App. 3d 757, 174 Cal. Rptr. 348 (1981), in which the court not only upheld a compensatory damage award, but allowed punitive damages on a theory of malice against Ford for the design of cars which it knew were vulnerable to fire in rear-end collisions, but where the cost of prevention (through a different design, for example) was substantially greater than the estimated value of the expected injuries and deaths.

92. Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9657 (1990).

93. *Id.* § 9607. *See* United States v. Wade, 577 F. Supp. 1326, 1333-34 (E.D. Pa. 1983). Superfund strict liability is based in turn on section 311 of the Clean Water Act, 33 U.S.C. § 1321 (1990). The identical concept also appears in the newly enacted Oil Pollution Act of 1990, Pub. L. No. 101-380, 104 Stat. 484.

and the European Community is on the verge of adopting a similar rule.[94] Waste disposal certainly does not meet the international law definition of ultrahazardous. If it can be said to meet the common-law abnormally dangerous activity test in its contemporary form, that is only because the contemporary rule in the United States involves a balancing of factors.[95] The strict liability rule for waste cleanup is a matter of legislated policy driven by the demand for remediation and compensation of significant but generally not life threatening accumulations of environmental contaminants in soil and groundwater.

Even if article 11 is read broadly to invoke strict liability for any substantial harm resulting from any activity creating a significant risk of harm from environmental interference, it is still shackled by its built-in cost-benefit test. One can only hope that the Experts Group use of a cost-benefit test represents a deviation from the main trend of international law, induced perhaps by the political and scholarly fascination with cost-benefit and risk-benefit analysis in the early 1980s. Such a test should have no reserved seat in the house of international liability law, though it might be applied as part of a balance of interests evaluation in appropriate cases. Particularly with respect to transboundary interferences that involve nations in different circumstances (scenario 2, described above), a cost-benefit approach will almost always favor the wealthy nation at the expense of the impoverished nation because of the higher value of every economic activity in a highly developed economy.

Even in scenarios involving roughly equivalent parties on both sides, cost-benefit analysis has profound flaws that make it unsuitable for environmental liability analysis. First, it continues to be much easier to count costs or benefits associated with commercial and industrial activities (which typically have very precise accounting systems) than it is to count the costs (or benefits) associated with human health, ecological values, or aesthetic values.

Second, cost-benefit analysis of long-term activities and effects, which is what article 11 explicitly calls for, relies on discount rates to reduce all factors to constant dollars. Discount rates effectively shorten the time horizon of the analysis because costs and benefits more than fifteen or twenty years in the future have a negligible effect on the calculation. Thus, the technique does not fully account for effects on the cur-

94. *Proposals on Civil Liability, Research Approved by Parliament After Amendments*, 13 Int'l Env't Rep. (BNA) 500-01 (1990).

95. *See, e.g.*, Sterling v. Velsicol Chemical Corp., 647 F. Supp. 303, 316 (W.D. Tenn. 1986), *aff'd*, 855 F.2d 1188 (6th Cir. 1988) (applying the six factors in RESTATEMENT (SECOND) OF TORTS § 520 (1977)).

rent generation, and future generations do not enter into the calculation at all.[96] Eminent ecologists and some economists have raised a strong protest against the cost-benefit approach because of the inherent bias of the analysis in favor of the short-term consequences.[97]

Third, the whole notion of cost-benefit compromises has the semblance of betrayal. The experts declare the paramount environmental protection principles, and then propose the cost-benefit test. The time has come, as the WCED itself has said, "to break out of past patterns."[98] Our past patterns have included an overwhelming emphasis on technical and socioeconomic costs and benefits to the neglect of the ecological infrastructure. To allow those same technical and socioeconomic considerations to become the justification for imposing, albeit with monetary compensation, substantial environmental harm on other countries is to perpetuate, not to break with, the past patterns that have brought us to our current juncture. Every legal principle, including principles granting opportunities to take risks and principles defining the permissible depletion or degradation of nonrenewable resources, must reflect and express a full integration of economic desires with the imperative need to maintain and, if at all possible, revitalize, local and global ecosystems.

While the fact that an activity creates merely a risk of harm rather

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96. E. WEISS, *supra* note 33, at 152-53. The parent body of the Experts Group, the World Commission on Environment and Development, was made directly aware of intergenerational equity, and discussed the issue with feeling in its report:

> But the results of the present profligacy are rapidly closing the options for future generations. Most of today's decision makers will be dead before the planet feels the heavier effects of acid precipitation, global warming, ozone depletion, or widespread desertification and species loss. . . . In the Commission's hearings, it was the young, those who have the most to lose, who were the harshest critics of the planet's present management.

OUR COMMON FUTURE, *supra* note 11, at 8.

97. The most influential group to speak out on this issue is the Science Advisory Board of the U.S. Environmental Protection Agency. In their provocative report on setting priorities and strategies for environmental protection, delivered in September 1990 to Administrator William Reilly, the science advisors made improvements in methods for valuing natural resources and long-term effects one of their top ten priorities. As they summarized the problem:

> Traditional forms of economic analysis, as applied to the costs and benefits of economic development and environmental protection, have systematically undervalued natural resources. This practice threatens the world's natural resources—like estuaries and rainforests—without which the lives of future generations will be impoverished. The failure of current analytical techniques to estimate properly either the full benefits of natural ecosystems or the full costs of activities that degrade them too often has allowed the justification of long-term ecological degradation for the sake of present gain.

U.S. ENVTL. PROTECTION AGENCY SCIENCE ADVISORY BOARD, REDUCING RISK: SETTING PRIORITIES AND STRATEGIES FOR ENVIRONMENTAL PROTECTION 25 (1990).

98. OUR COMMON FUTURE, *supra* note 11, at 309.

than an immediate harm should not be allowed to become an excuse for ignoring the basic responsibility to respect the environmental integrity of other nations, neither should countries be liable for engaging in risky activities as if they were sure to cause the worst potential injury. The unhappy history of special *rapporteur* Barboza's attempt to follow the trail blazed by the Experts Group in the work of the ILC dramatizes the difficulty of forging links between risk and liability.[99] It also raises the specter that an orientation of liability toward risk might detract from, or even supplant entirely, liability's principal focus on legal responsibility for manifest harms.[100]

In light of the unsatisfactory results from either Barboza's or the Experts Group's approach to risk-liability interface, I am inclined once again to take refuge in the "soft law" balance of interests approach articulated and defended by Quentin-Baxter.[101] This position also conforms easily to the principle of prior consultation and negotiation of high risk ventures contained in article 12 of the Experts Group's principles.

3. Article 12: Transboundary Environmental Interferences Involving Substantial Harm Far Less Than Cost of Prevention

Article 12 of the Experts Group's principles states the *ex ante* counterpart to the *ex post* liability rule of article 11. If a state is planning an activity which will definitely result in substantial transboundary harm for which abatement or prevention would cost far more than the anticipated loss from the harm, article 12 requires that the acting state negotiate with its affected neighbors to seek agreement on the "equitable conditions, both technical and financial, under which the activity could be carried out."[102] Should the negotiations fail, article 12 then invokes the dispute resolution procedures of article 22.[103]

Article 12, if implemented, might emerge as the most powerful of all the principles in the Experts Group's report. Although it legitimizes one nation's plan to authorize the otherwise unlawful imposition of substantial transboundary harm,[104] it compels a process through which the potentially affected countries have an opportunity to influence the planning,

99. O'Keefe, *supra* note 31, at 146-54, 204-07.

100. *Id.* (quoting extensively in the notes from the ILC discussions).

101. *See supra* notes 34-35 and accompanying text.

102. EXPERTS GROUP, *supra* note 10, at 85.

103. *Id.* at 85-86.

104. As the commentary puts it, article 12 "exempts" the activities described from the operation of article 10. *Id.* at 87.

siting, design, emergency response, and financial assurance aspects of the project. It is difficult to gauge the true import of article 12, however, because it leaves many critical issues unresolved.

The most fundamental question unresolved by article 12 is whether the requirement for the acting state to negotiate gives the receiving state the power to veto the project. Although the commentary does not allude to this question at all, the legitimacy that the article gives to the planned activity suggests that the article intends the acting state's right to engage in the activity to take precedence over any right in the affected state to be free of the interference. As discussed earlier,[105] it seems better to reverse the ranking of these rights and establish the right to be free of environmental interferences imposed by others as a paramount right subject to curtailment only in compelling circumstances.

Another matter left open is whether compensation must be paid or is simply a topic for negotiation. The commentary, observing that the article implies an obligation to ensure compensation, goes on to conclude that compensation "must always be provided for if the activity . . . is to be carried out or permitted."[106] Would it be sufficient for the acting state to create an insurance fund to compensate for possible injuries? Why should the principle restrict the affected state's option to trade away some or all of the compensation in return for other benefits, such as risk abatement measures?

The article itself gives no clue as to what equitable conditions should shape the course of negotiations or arbitration, and the commentary sheds no additional light on this critical phrase. Is facility location, for example, entirely at the acting state's discretion, or is it an appropriate equitable factor for the affected state to bargain over? Suppose that from the affected state's point of view the whole project looks like a pork barrel project with no real economic justification; who gets to judge the merits of the planned activity, and by what information? Is linkage with other projects on either side of the boundary acceptable as part of the broader equity between the two states?

Another intriguing open question arises as to whether there will be long-range environmental interferences. How far does the obligation to negotiate extend? One presumes, for example, that article 12 would require France to negotiate with Germany if France wanted to build a dam on the Rhine River near Strasbourg. Would article 12 require France to negotiate with the Netherlands as well? If we count acid rain as a sub-

105. *See Declaration on the Human Environment, supra* note 23.

106. EXPERTS GROUP, *supra* note 10, at 87.

stantial harm, does the United States have to negotiate with Canada before issuing permits for a coal-burning power plant in Kentucky? Does Brazil need to negotiate with the Maldives if it plans to clearcut a section of the Amazon because the forest loss will enhance global warming that threatens, quite literally, the national security of the Maldives?

The proliferation of questions that article 12 brings to mind suggests the potential fruitfulness of its principles. To some extent, the obligation to consult is already part of the structure of international relations, as in the hazardous waste export notification requirements of the Basel Convention or the consultation provisions of treaties governing allocation of river basin flows. Is it going too far to suggest that the principles of article 12 should be applied to a much broader range of activities that have transboundary consequences? A more active pattern of consultation before action, multilaterally as well as bilaterally, would go far towards developing mutual respect and a system of shared expectations across the full range of shared environmental concerns.

IV. CONCLUSION

The *Trail Smelter* decision was easy: There was only one possible source of the air pollution; the damage was observable; and once the smelter undertook pollution abatement (while the tribunal was still deliberating), the damage also abated, giving the tribunal clear evidence to support both its finding of causation and its conclusion that Canada owed a duty of abatement.[107] Few cases of transboundary environmental interference exhibit these characteristics. This fact probably goes a long way toward explaining why there have been no other adjudications of transnational environmental liability. Few, if any, new instances of transboundary environmental interference will rise to such a clear level of an international wrong.

The international environmental issues of the late twentieth century are not only more threatening than sulfurous fumes, but are much more subtle and complex. Many of them are not amenable, in practice, to assignments of liability through fault-based theories.[108] Thus, international law cannot escape the challenge to define liability standards that approach the broad sweep of strict liability without fault in American tort law and environmental legislation.

Liability without fault is an unsettling idea to international lawyers and to national governments. Even while feeling frustrated by the re-

107. Gaines, *supra* note 36, at 337-38.
108. *Id.* at 348-49.

hashing of doctrine without apparent progress in the work of the ILC on international liability, one can understand, and even sympathize with their reluctance to come to terms with new realities. Similarly, the Janus-like quality of the WCED's Experts Group's articles, some progressive and forward-looking, others locked in the grip of past doctrines, reflects the difficulty of adjusting mindsets in a fast-paced world.

Economic development and scientific understanding of environmental systems proceed headlong regardless of the paralysis in legal systems, and in their rapid progress they throw up new issues and generate new pressures on our archaic legal machinery. If the international law community does not soon, on its own initiative, break with the past (as the WCED has urged) on the subject of international liability for transboundary environmental harms, it runs the risk of being left behind altogether, an irrelevant curiosity from an earlier age.

This Article has described and criticized the international law principles proposed by the WCED's Experts Group on Environmental Law, with particular emphasis on the liability system contained in articles 10, 11, and 12. In the course of the critique, it proposes alternative approaches to several of the key legal questions which, taken together, would result in a much broader scope for liability for transboundary environmental harms. The proposals in this Article favor environmental values, and the right of states to vindicate those values, at the expense of traditional doctrines of freedom of economic activity.

It seems increasingly apparent that classic notions of economic efficiency and value are fundamentally incompatible with measures necessary to achieve an environmentally sustainable relationship with the natural world. This is not to deny the central message of the World Commission on Environment and Development—that economic development is essential to the achievement of environmental sustainability throughout the world. Rather, we need a new definition of what it means to develop economically. Economic development must emphasize efficiency in the use of resources, and wise investment in the ecological infrastructure. The generation of wealth must come from doing with less rather than making more.

Once we see economic development in a new light, the prospect of broad-scale liability for transboundary environmental interferences becomes something to be anticipated rather than dreaded. Environmental harm, regardless of its location, will be counted fully as a cost rather than as a free good. Costs of preventing environmental interferences become investments in ecological welfare, or at least sharp stimuli for encouraging economic arrangements that have a lighter impact on the environ-

ment. Either way, full internalization of the environmental costs of economic activities moves from an academic theory to an operating principle, so that compensation, when owed, becomes a cost of production rather than an unfunded liability.

A dread of liability hangs over international environmental law and impedes progress on substantive agreements. It is time to slay the liability dragon and liberate ourselves from fear. However we define the international liability to compensate for transboundary harms, economically significant amounts of money are unlikely to be transferred from country to country on its account. The challenge then is simply to find the right theories and the right formulas of words that will fit environmental liability comfortably into the larger framework of international law. At least we can feel confident that lawyers are the right people to assign to this job.