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Evaluating Public and Private Approaches to International Solutions to Acid Rain Pollution

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I. INTRODUCTION

Controversies in international law often are examined in view of public inter-governmental solutions. Two complimentary trends currently challenge the inter-statist framework. First, a re-discovered state-centric approach has legitimized statist solutions over inter-state problem resolution.[1] Secondly, other writers have voiced hope in a broader transnational approach in which diverse and multiple actors become involved in the resolution process (sub-state actors, sub-units of inter-governmental organizations, as well as transnational nongovernmental actors and individuals).[2] Transnational environmental pollution represents an international issue area which we can utilize to evaluate actual and probable resolution approaches. Specific characteristics of transboundary pollution (scientific uncertainty, high damage avoidance, high costs, negative externalities) make it particularly suitable for discussion of public governmental and inter-governmental, as well as private remedies.

This paper places specific emphasis on the air pollution problems of acid rain. Sulfur dioxide released by burning coal and oil crosses boundaries. Sulfur dioxide, once oxidized in the atmosphere with hydrogen sulfide, turns into sulfate. Hydrogen ions (acid) are formed. This acid in the atmosphere falls as precipitation. The result is potentially long-term detrimental effects on terrestrial productivity, as well as acidification of lakes and rivers resulting in both chemical and biological alterations. This problem of long-distance transport, often 1000 kilometers or more, shares important characteristics with other environmental problems:

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1. *See* S. KRASNER, DEFENDING THE NATIONAL INTEREST. RAW MATERIALS INVESTMENTS AND UNITED STATES FOREIGN POLICY (1978) for a discussion of the primacy of the state in resolution of natural resource issues. The state is viewed as an autonomous actor.

2. Keohane and Nye, *Transnational Relations and World Politics: An Introduction and a Conclusion*, TRANSNATIONAL RELATIONS AND WORLD POLITICS (R. O. Keohane and J. S. Nye eds. 1972); Kaiser, *Transnational Politics: Toward a Theory of Multinational Politics*, 25 INT. ORG. 790 (1971).

> The over-riding decision making issue in the field is simply the difficulty of regulating an activity requiring prompt, decisive regulatory attention under conditions of imperfect knowledge, information and understanding. The need for experimentation stems from these uncertainties.[3]

In this paper, we will not attempt to evaluate the scientific merits of the various arguments. That topic has been ably discussed in other sources.[4] The technological reality, however, impinges upon our analysis and evaluation of the various remedies for resolution of the problem.

II. PUBLIC REMEDIES

Public remedies for transboundary environmental pollution are predicated on two legal doctrines: the regime of state competence (states enjoy sovereignty over their natural resources), and the doctrine of state responsibility. While the regime of state competence doctrine grants states the competence to exercise sovereignty, the doctrine of state responsibility imposes limitations on that exercise. Principle 21 of the United Nations Declaration on the Human Environment states succinctly:

> States have . . . the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[5]

The Declaration, however, does not specifically address the critical issue of balancing and weighing these doctrines.

A. Direct Regulation by Governments

The reluctance and inability of states to determine multilaterally the balance between state competence and responsibility has meant that states have traditionally relied on domestic regulation of pollution problems; yet, no single regulatory authority has predominated.

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3. Hagevik, *Legislating for Air Quality Management: Reducing Theory to Practice*, AIR POLLUTION CONTROL 183 (C. C. Havinghurst, ed.) (1969).

4. Beamish, *Long-Term Acidification of a Lake and Resulting Effects on Fishes*, 4 AMBIO 98 (1975); Cogbill & Likens, *Acid Precipitation in the Northwestern United States*, 6 WATER RESOURCES 1133 (1974); Forland, *A Study of the Acidity in the Precipitation in Southwestern Norway*, 15 TELLUS 291 (1973); Luoma, *Troubled Skies Troubled Waters*, AUDUBON 88 (Nov. 1980).

5. STOCKHOLM DECLARATION OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT, 21 U.N. Doc. A/CONF. 48/14 (1972), *reprinted in* 11 I.L.M. 1416 (1972).

For many years in the United States, municipal regulation of air pollution was the most prominent form of regulation.[6] Inadequate scientific expertise and locally persuasive political and economic interests, however, hampered effective enforcement. Federal intervention began with the Air Quality Act of 1967[7] and was strengthened by the Clean Air Amendments of 1970.[8] In the Clean Air Amendments, Congress clarified the lengthy, often awkward, procedures established in the 1967 legislation and added specific procedures. The Environmental Protection Agency, for example, is charged with developing air pollution criteria for the major pollutants[9] and applying selective ambient air quality standards uniformly throughout the states. While the individual states propose and implement specific plans, the Amendments charge the EPA with supervision and enforcement of air quality. The Amendments also provide procedures allowing any citizen to commence a civil action against a violator of the standard should the EPA fail to enforce specific provisions.[10] This addition has an important transnational dimension. Not only may U.S. citizens file a civil action, but any foreign national may do the same, *if* the EPA fails to enforce the provision.[11]

Like its American counterpart, the Canadian government has traditionally relied on municipal regulation. The passage of the Clean Air Act,[12] however, altered the Canadian regulatory structure so that it now parallels the American structure. Although federal authorities established ambient air quality, as well as "tolerable," "acceptable," and "desirable" levels,[13] these levels could not be established as mandatory for the provinces.

But national administrators are obligated to support the provisional agencies with basic data. If an environmental condition threatens an individual's health and violates the terms of an international treaty, then the federal authorities are authorized to act.[14] Otherwise, enforcement responsibility remains at the provincial level.[15] The simi-

6. *See e.g.* Edelman, *Air Pollution Control Legislation,* 3 AIR POLLUTION 560 (2d ed., A. C. Stern, ed.) (1968).

7. Air Quality Act, 42 U.S.C. § 857 (1967).

8. Clean Air Amendments of 1970, 42 U.S.C. § 1857 (1970).

9. 42 U.S.C. § 1857(c)(3), (c)(5) (1970).

10. 42 U.S.C. § 1857(h)(2) (1970).

11. Barnett, *United States and Canadian Approaches to Air Pollution Control and the Implication for the Control of Trans-Boundary Pollution,* 7 CORNELL INT'L. J. 154 (May 1974). For a good review of problems in the U.S. trying to administer the amendments from a state-centric perspective, *see* Wetstone, *The Need for a New Regulatory Approach,* 22 ENVIRONMENT 9, 40 (1980).

12. Clean Air Act, 1971, 19 & 20 Eliz. 2,c.47 (Can.).

13. Clean Air Act, 1971, 19 & 20 Eliz. 2,c. 47, § 4 (Can.).

14. Clean Air Act, 1971, 19 & 20 Eliz. 2,c.47, § 7 (Can.).

15. Clean Air Act, 1971, 19 & 20 Eliz. 2,c. 47, § 19 (Can.).

larities between the U.S. and Canadian approaches in terms of direct regulation by government are striking. Canadian legislation, however, grants greater discretion to administrative agencies than its American counterparts. Canadians are operating in a less structured environment.[16]

Governmental methods adopted by the European countries are more diverse. The German Federal Republic, a federal state like Canada and the U.S., passed the Federal Immission Control Law in 1974,[17] giving federal government authorities comprehensive powers to make regulations. Yet, relatively few regulations have been issued and contradictory orders remain in force. Similar to Canadian provinces and American States, the German Lander are responsible for enforcing the federal laws. The government standardizes the methods used by plant managers for monitoring and the Lander administer punishment for failure to comply: imprisonment, fines, or a combination of the two.[18]

These examples of divided governmental authority contrast with the unitary Swedish approach. Under the Swedish Environmental Protection Act of 1969,[19] all "environmentally hazardous activities" (water, air, noise, other nuisances) are regulated nationally. The Swedish EPA issues specific guidelines for the balancing of interests. Pertinent criteria include reasonableness of cost, observation of precautions, limitations on strict liability, and causality between hazardous activity and damages.[20] The EPA operates in conjunction with the Nature Conservation Act,[21] the latter acting to strengthen the interests of society against individual landowners. This act perceptably expanded public interest, and thus allowed the effective curtailment of certain types of activity without compensation to property owners, if government deemed that societal interests prevailed.[22]

The U.S., Canada, German Federal Republic, and Sweden are not "representative" cases of differing approaches to air pollution. These

16. INTERNATIONAL JOINT COMMISSION, JOINT SUMMARY REPORT: CONTROL OF WATER POLLUTION FROM LAND USE ACTIVITIES IN THE GREAT LAKES BASIN: AN EVALUATION OF LEGISLATIVE AND ADMINISTRATIVE PROGRAMS IN CANADA AND THE UNITED STATES 6 (March 1978) [hereinafter IJC REPORT].

17. Federal Republic of Germany, Federal Immission Control Law (1974).

18. J. MCLOUGHLIN, THE LAW AND PRACTICE RELATING TO POLLUTION CONTROL IN THE MEMBER STATES OF THE EUROPEAN COUNTRIES: A COMPARATIVE SURVEY 103, 108, 176 (1976).

19. For an analysis of the Swedish Environmental Protection Act (EPA) of 1969, *see* Bengtsson, *Balancing of Interests and Compensation Rules in Environment Law,* SCANDINAVIAN STUD. IN L. 13 (1978).

20. Swedish Environmental Act (EPA) of 1969 §§ 5, 6, and 30.

21. Nature Conservation Act (NCA) of 1964.

22. *Id.,* §§ 7, 10.

national approaches nonetheless suggest expanded federal/national legislation, even though widespread and consistent enforcement is a relatively new phenomena. Each country may pursue available national remedies if the cause of the pollution problem and the remedy can be effectively identified within national borders. In fact, scientists in these states have prescribed to policy makers an array of technological solutions for national control strategies. These include the use of low sulphur fuels, desulphurization of flue gas, fluidized bed combustion systems, energy conservation, tall stacks, and liming to reduce acidity.[23] These various national solutions may alleviate deleterious effects of the acid rain problem in the short term; however, the longer term resolution will be international due to the transboundary character of the problem.

B. Institutionalized Inter-Governmental Procedures

The International Joint Commission (IJC)[24] between the U.S. and Canada presents the most active example of institutionalized procedures for resolution of bilateral environmental problems. The functions of the IJC are to investigate, to monitor compliance, to exercise final authority in disputes, and to serve as an arbitral tribunal between the two member governments regarding environmental and particularly water pollution problems. The capacity to provide an arbitral forum is potentially the IJC's most comprehensive power, but that power has never been invoked.

The IJC acts as a single body and makes decisions on the basis of majority vote. The Commissioners' vote usually reflects a consensus and frequently reflects unanimity. The Commission instructs individual commissioners (three appointed from each government) to act in their own capacity.[25] These commissioners are not representative of their respective governments. Although the IJC has made important decisions relating to water issues,[26] the Commission has failed to

23. Barnes, *The Long Transport of Air Pollution,* 29 J. OF AIR POLLUTION CONT. 1228 (1979).

24. INTERNATIONAL JOINT COMMISSION, U.S. AND CANADA, RULES OF PROCEDURE TEXT OF TREATY: Ottawa, Canada and Washington, D.C. (1965). The IJC was established under Art. VII of the 1909 Boundary Waters Treaty with Great Britain relating to Boundary Waters and Questions Arising with Canada, Jan. 11, 1909, 36 Stat. 2448 (1911) T.S. No. 548 (effective May 13, 1910).

25. U.S. Dept. of State, International Joint Commission, U.S. and Canada (1974) (pamphlet).

26. The governments gave extensive power to the IJC under the Great Lakes Water Quality Agreement of 1972 and 1978. Projects include monitoring water pollution levels in the Great Lakes and cross boundary rivers such as the St. John River and Poplar River. For an evaluation *see* IJC REPORT, *supra* note 16 and Beaupré, *A Survey of Water and Air Pollution Cases Involving the International Joint Commission (Canada-United States),* ENVT'L PROTECTION IN FRONTIER AREAS 439 (1979).

take definitive action on other issues.[27] In 1966, the question of transboundary air pollution between Detroit and Windsor and Sarnia-Port Huron was referred to the IJC. On the basis of the IJC report, the two governments were asked to monitor air quality in that area—an example of the fact-finding function.[28]

In 1979, the American Bar Association (ABA) and the Canadian Bar Association (CBA) jointly issued a report confirming dissatisfaction with the IJC provisions and performance.[29] Their "Draft Treaty on a Regime of Equal Access and Remedy in Cases of Transfrontier Pollution"[30] suggests that any person in an exposed country who suffers from transnational pollution should be allowed to receive equivalent treatment to that afforded in the Country of Origin. Administrative and judicial remedies would be available to assess compensation. Equivalent rights would apply to individuals, public, and private organizations. These suggestions are directed at alleviating procedural weaknesses of the IJC—jurisdiction would be unequivocally seized by either the American or Canadian courts. Without such action, individuals have few options. A second proposed "Draft Treaty on a Third-Party Settlement of Disputes"[31] suggests submitting specific disputes (environmental or civil/criminal cases) to third-parties for resolution. Although the present institutional framework may be legally sound, it has not functioned effectively. A variety of other mechanisms need to be utilized, including both private and public action.

The Convention on the Protection of the Environment between Denmark, Finland, Norway, and Sweden[32] (also known as the Nordic Convention) does institutionalize the recommendations of the ABA/CBA study for a different geographic area. The Nordic Convention, in contrast to the IJC, covers all types of environmental problems, including problems relating to water, sand drift, air pollution, noise, vibration, changes in temperature, ionizing radiation, and light. Article 3 of the Nordic Convention contains the important procedural innovation:

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27. R. SWANSON, INTERGOVERNMENTAL PERSPECTIVES ON THE CANADA-UNITED STATES RELATIONSHIP 164 (1978).

28. ABA-CAN. B.A. SETTLEMENT OF INTERNATIONAL DISPUTES BETWEEN CANADA AND THE USA (1979). (Resolution adopted by the ABA and CBA, with accompanying reports and recommendations.) [hereinafter ABA-CAN. B.A.].

29. *Id.*

30. *Id.*, art. 2(a)-(c).

31. *Id.*

32. DENMARK-FINLAND-NORWAY-SWEDEN: CONVENTION ON THE PROTECTION OF THE ENVIRONMENT (Feb. 1974), *reprinted in* 13 I.L.M. 591-597 (1974) [hereinafter DENMARK].

> Any person who is affected or may be affected by a nuisance caused by environmentally harmful activities in another Contracting State shall have the right to bring before the appropriate Court or Administrative Authority of the State the question of the permissibility of such activities, including the question of measures to prevent damage, and to appeal against the decision of the Court or the Administrative Authority to the same extent and on the same terms as a legal entity of the State in which the activities are being carried out. . . . The question of compensation shall not be judged by rules which are less favorable to the injured party than the rules of compensation of the State in which the activities are being carried out.[33]

Thus, the proposals made by the ABA/CBA draft treaties have become operational in Scandinavia–the possibility of redress by individuals in a setting other than their home jurisdiction. A supervisory authority was established in each country to administer the program and/or to conduct inspections if necessary. The states may agree to choose a third party intermediary to provide this service.[34]

Other European institutions have similarly addressed the issue of transboundary pollution relying on approaches ranging from the strict application of the forementioned Nordic Convention to the looser recommendations of the Organization for Economic Co-operation and Development (OECD) and the Council of Europe. The OECD has *recommended* that member countries follow certain principles:[35] Countries should,

> a) Make their environmental policies mutually compatible;
> b) Bring closer together quality objectives and environmental standards adopted by Countries;
> c) Work out additional rules of conduct of States to be applied in matters of transfrontier pollution.

Most importantly, in the same document, the OECD suggests that:

> . . . each Country should ensure that its regime of environmental protection does not discriminate between pollution originating from it which affects or is likely to affect the area under its national jurisdiction and pollution originating from it which affects or is likely to affect an exposed Country.[36]

Clearly, the country in which environmental problems originate

33. *Id.*, art. 3.
34. *Id.*, art. 4, art. 10.
35. ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, RECOMMENDATION OF THE COUNCIL FOR THE IMPLEMENTATION OF A REGIME OF EQUAL RIGHT OF ACCESS AND NON-DISCRIMINATION IN RELATION TO TRANS-FRONTIER POLLUTION May 1977, Annex, Title (A)(2).
36. *Id.*, Annex, Title (A)(3).

should treat those problems in a manner resembling the treatment of environmental problems in other countries. Furthermore individuals have

> the right to take part in, or have resort to, all administrative and judicial procedures existing within the Country of Origin, in order to prevent domestic pollution, to have it abated and/or to obtain compensation for the damage caused.[37]

Thus, while the provisions and clearly the intent of the OECD recommendations resemble those enunciated in the Nordic Convention, they do not have the Convention's authoritative force. The OECD merely recommends member states to take action.

The OECD has continued to make recommendations specifically addressing air pollution. Both the "Guidelines for Action to Reduce Emissions of Sulphur Oxides and Particulate Matter from Fuel Combustion in Stationary Sources[38] and "Co-operative Long-Range Transport of Air Pollutant"[39] provide pertinent examples. The procedures in both cases are similar: recommendations that "each country bear in mind" a group of specific factors, generally in accord with Principle 21 of the Stockholm Declaration on the Environment.

The same decentralized approach characterizes the actions of the Council of Europe. Despite numerous Council activities (European Conservation Year, 1970; Ministerial Conference on the Environment, 1973), local and regional authorities are responsible for implementing the environmental policies.[40] Considering the diversity of memberships in the Council, such decentralized solutions are appropriate. The Council recognizes the problems of a common law when states represent both unitary and federal systems and when implementation approaches differ substantially from jurisdiction to jurisdiction.[41]

The wide differences in the degree of authoritative control among approaches relying on institutionalized proceedings presents a for-

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37. *Id.*, Annex, Title (B)(4).

38. ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, RECOMMENDATION OF THE COUNCIL FOR GUIDELINES FOR ACTION TO REDUCE EMISSIONS OF SULPHUR OXIDES AND PARTICULATE MATTER FROM FUEL COMBUSTION IN STATIONARY SOURCES June 1974, *reprinted in* 15 INT'L PROTECTION OF THE ENVIR.: TREATIES AND RELATED DOCUMENTS 7627 (1979).

39. ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, CO-OPERATIVE LONG-RANGE TRANSPORT OF AIR POLLUTANTS (June 1974).

40. W. GORMLEY, HUMAN RIGHTS AND ENVIRONMENT: THE NEED FOR INTERNATIONAL COOPERATION 74 (1976) [hereinafter GORMLEY].

41. The most complete statement of this multi-legal reality can be found in Colliard, *Air Pollution Control,* COUNCIL OF EUROPE, COMMITTEE OF EXPERTS ON AIR POLLUTION, LEGAL ASPECTS OF AIR POLLUTION CONTROL (EXP/Air (72)) 11, 2 (1972).

midable problem. The OECD and the Council of Europe recommends principles of environmental dispute resolution to the diverse member states. In contract, the IJC and the Nordic Convention have more far-reaching jurisdictions and authority allowing resort to both statist and individual resolutions. The IJC, however, has not exercised its authority, while the Nordic Convention signators have just begun to avail themselves of this procedural innovation. Although the Nordic Convention is uniquely suited for dealing with certain types of transboundary environmental problems, the remedies for the acid rain problem may once again be outside the Convention's reach. The states signatory to the Convention do not include Great Britain, France, Belgium, and the German Federal Republic, the primary sources of transboundary pollution. The IJC includes the source countries, but has avoided involvement in the problem.[42]

C. *Arbitration*

The resolutions of two prominent international disputes have involved arbitration mechanisms: the familiar Lake Lanoux Arbitration[43] and the Trail Smelter Association.[44] Both cases invoked a prolonged arbitration process—a characteristic of the method not unique to these cases. The quality of scientific work in both cases fails to warrant commendation; in the first, general assessments were issued, and in the second, the scientific method was ineptly applied. These cases point to the inability of political arbitrators to generate, weigh, and assess scientific information. This inability may provide the most plausible explanation for the dearth of environmental cases settled by international arbitration. The scientific complexity of the acid rain problem suggests that states will hesitate to adopt arbitration procedures involving predominantly political judgment criteria.

D. *Justifications for Public Remedies*

The doctrine of state responsibility has traditionally been utilized as a justification for statist action in international environmental dis-

42. For an analysis of the IJC, *see* Munton, *Dependence and Interdependence in Transboundary Environmental Relations,* 36 INT'L J. 139 (1980). For an optimistic assessment arguing that the IJC will probably become a more supranational authority, *see* Hertz, *Managing the Transboundary Environment Between the United States and Canada: the IJC and the Great Lakes Water Quality Agreement of 1972* (paper presented at the Annual Meeting of the International Studies Association, Phil., PA (March 1981)).

43. Lake Lanoux Arbitration, 12 R. INT'L ARB. AWARDS 281 (1957 [hereinafter Lake Lanoux Arb.].

44. Trail Smelter Arbitration, 3 R. INT'L ARB. AWARDS 1907 (1974) [hereinafter Trail Smelter Arb.].

putes.[45] As Schneider ably points out,[46] there are three components of this doctrine. First, the state has the responsibility to prevent environmental deprivation (sic utere tuo ut alienum non laedas: use your own property so as not to injure that of another). Second, the state has the responsibility to deter or prevent impending environmental harm. Third, the state has the responsibility to offer reparation or compensation for resulting environmental injury. Thus, the state must seek to "restore" relationships among the parties as well as to "rehabilitate," and "to reconstruct" relations to prevent future abuses. This interpretation of the state responsibility doctrine, as applied to environmental problems, is unequivocally sweeping. The doctrine suggests that the state's mandate to remedy the situation is broader than generally acknowledged under contemporary international law. As yet, this broad justification has not been successfully invoked in acid rain cases. So-called polluters maintain that definitive determinations of whether environmental deprivation has occurred have not been made.

Proponents of a human rights approach to environmental issues have proffered another wide-ranging justification for public remedies: individuals are entitled to a healthful and clean environment as a basic human right.[47] Viewing environmental protection as a human right compels acknowledgement of the individual as a procedural subject of international law. Individuals would have to possess the right to bring cases directly before an international or transnational court on their own behalf. Currently, states are decidedly reluctant to recognize the right of individual petition. Potential state liability discourages authorities from subjecting themselves to a flood of individual petitions. Despite these practical limitations, the basic argument supporting individual standing to seek redress remains viable. To develop international environmental law, inclusion of environmental protection through the extension of the basic human rights doctrine could be directly accomplished through codification. In this case, the resolution of acid rain disputes would be forestalled until the completion of a lengthy general codification process—an unlikely and impractical alternative.

Thus, resolution of environmental problems (and acid rain) by

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45. *See, e.g.*, cases cited in Lake Lanoux Arb., *supra* note 43 and in Trail Smelter Arb., *supra* note 44. *See also:* Great Britain v. Albania (Corfu Channel Case) 4 I.C.J. (1949); Hoffman, *State Responsibility in International Law and Transboundary Pollution Injuries*, 25 INTL. AND COMPARATIVE L. Q. 509 (1976).

46. J. SCHNEIDER, WORLD PUBLIC ORDER OF THE ENVIRONMENT: TOWARDS AN INTERNATIONAL ECOLOGICAL LAW AND ORGANIZATION 142, 151 (1979).

47. GORMLEY, *supra* note 40.

public remedies could occur through a number of different actors including governments acting solely on behalf of national interests, inter-governmental agencies (some capable of instituting multilateral solutions, some only able to recommend, and others permitting private remedies within the inter-governmental frameworks), and international arbitrators. The variety of public remedies available suggests the viability of a transnational framework. Each individual alternative, however, probably will not provide effective relief from the exigencies of the acid rain problem. National approaches lack the scope of geographic jurisdiction necessary, and international arbitration procedures have characteristically failed to provide mechanisms for gathering and evaluating scientific information for legal decisions.[48] Inter-governmental approaches offer the most promising possibility and the IJC was established to resolve such issues, if national political authorities allow the mechanism to function.

III. PRIVATE REMEDIES

Private remedies focus on legal relief for the individual. As Ianni points,

> . . . the private action much ignored in the past, may be viewed as an attractive short-term alternative that might ultimately generate a more compehrehensive long-term international solution. Indeed, environmental control may prove to be the most fertile ground for the interaction of municipal and international law.[49]

This approach derives from common law legal precedent: courts do not generally entertain actions brought by foreign lands, thus, private litigation provides an attractive alternative.[50] Even in situations involving countries with apparently compatible legal traditions, the litigants face the pragmatic obstacles in acquiring the services of lawyers willing to learn another country's procedures and in incurring the added expense which transboundary litigation entails. These difficulties may be exacerbated by differences in the legal traditions of the countries involved.

A private remedies approach entails several advantages. Private bargaining between two individuals assures, as much as possible, that other issues do not affect the dispute debated, thus making the resolution of a single issue more probable. Actual bargaining between pri-

48. *E.g.*, Lake Lanoux Arb., *supra* note 43 and Trail Smelter Arb., *supra* note 44.

49. Ianni, *International and Private Actions in Transboundary Pollution*, THE CAN. YB. OF INT'L L. 270 (1974).

50. *See* Bulwer's Case, 77 E.R. 411.

vate individuals tends to focus on the contents of the dispute or the case, not on the question of whether there *should* be such a dispute resolution mechanism or whether the state "can afford" specific long-term solutions to mitigate the injury.[51] Finally, while the international payment system may be undeveloped and the methods for making compensatory payments between countries remain imperfect, the private remedy solution in individual jurisdictions rests on ample precedent.[52] Under private remedy solutions, the authority of the legal regime is assumed and thus the uncertainty of bargaining at the international level is mitigated.

The case of *Michie v. Great Lakes*[53] illustrates the private remedy approach. In *Michie*, residents of Ontario, Canada brought suit against Great Lakes Steel, Allied Chemical Corporation, and the Detroit Edison Company seeking actual and punitive damages for personal and property injury allegedly caused by air pollution from the defendant's plants. Following an extended series of procedural actions, the case went to the U.S. Court of Appeals.[54] The U.S. Supreme Court denied certiorari.[55] In the *Michie* case, it was held that plaintiffs could join the defendants since the acts of each of the particular defendants could not be separated. Thus, the burden of proof shifted to those responsible. The plaintiffs could claim jointly for actual damages. The court held that because there was no Michigan precedent for joint punitive damages against all three defendants, punitive claims would have to be made on an individual basis.[56]

The *Michie* decision delineates the strengths and weaknesses of a private remedies approach. Compared with the public law approach, private litigation resulted in a more expeditious disposition of the case. Further, national concerns do not prevent the initiation of private suits. This case was actually litigated even though in both countries high unemployment impeded cooperation between national government and private industry necessary for settlement in an international tribunal. The establishment of a dispute procedure that would invite a flood of litigation was probably contrary to both American and Canadian interests. The inter-governmental machinery proved in-

51. Two examples of public sector bargaining where several issues are negotiated simultaneously are the Law of the Sea negotiations and negotiations over the New International Economic Order. In both cases, numerous "secondary" issues have impeded resolution.

52. C. PEARSON, A. PRYOR, ENVIRONMENT: NORTH AND SOUTH: AN ECONOMIC INTERPRETATION 252 (1978).

53. Michie v. Great Lakes Steel, 1 ENVIR. L. REP. 65150, 65151 (1971).

54. Michie v. Great Lakes Steel, 495 F.2d 213, *cert. denied*, 419 U.S. 997 (1974).

55. 419 U.S. 997 (1974).

56. Following Maddux v. Donaldson, 362 Mich. 425, 433 (1961) and Poledna v. Bendix Aviation Corp., 360 Mich. 129 (1960).

adequate because the International Joint Commission had never been granted any enforcement powers and the Great Lakes Basin focused attention on water related problems.

Yet, the *Michie* approach illustrates some glaring weaknesses of private remedies. The court decided the case on circumscribed grounds—the issue of whether a joint suit could be initiated against the company defendants under Michigan law. The precedents established (the possibility for joint suits for damages, but not for punitive damages) only applied to the U.S. In Canada, the courts still lack jurisdiction to entertain actions for recovery of damages for injuries to foreign land.

Provisions like those of the Nordic Convention and the ABA/CBA joint proposals discussed previously,[57] would partially mitigate the frailties of the *Michie* decision. These provisions would allow individual litigants to bring cases before foreign courts. Private litigants would have standing equivalent to that enjoyed by nationals, and could benefit from remedies comparable to those granted nationals. Yet, the different possible justifications for private law remedies in acid rain cases brought by either individuals or public authorities must be assessed.

A. Justifications for Private Law Remedies

Asserting claims of private nuisance affords one alternative for those injured. In a private nuisance suit, an individual claims that his rights have been disturbed in the use or enjoyment of his land and sues to have the offending activity enjoined. The court determines whether the disturbance complained of amounts to an actionable nuisance by considering the effect the disturbance would have on ordinary and reasonable persons.[58] The court also weighs the equities between the two parties.[59] Private nuisance law, however, has been primarily directed at protecting land rights in an agrarian society. Both the criteria that "the interference must be substantial and a continuing one as seen by or affecting a person of ordinary sensibilities"[60] and that the invasion of only land rights are protected[61] often prove to be sufficiently narrow to deny plaintiffs relief in environ-

57. ABA-CAN. B.A., *supra* note 28; DENMARK, *supra* note 32.

58. 66 C.J.S. *Nuisances* § 18(c) at 765 (1950).

59. 66 C.J.S. *Nuisances* § 118(a) at 888 (1950).

60. Lohrmann, *The Environmental Lawsuit: Traditional Doctrines and Evolving Theories to Control Pollution,* 16 WAYNE L. REV. 1085, 1113 (1970). For specific cases, *see* Fish v. Hanna Coal and Ore Corp., 164 F. Supp. 870, 872 (D. Minn. 1958); Smillie v. Continental Oil Co., 127 F. Supp. 508 (D. Colo. 1954).

61. Prosser, *Private Action for Public Nuisance,* 52 VA. L. REV. 997, 998 (1966). *See* Warren v. Webb, 127 E. R. 880 (C.P. 1808).

mental cases. If the plaintiffs in acid rain cases can prove that the use of land and/or water had been detrimentally altered (for example, by showing a change in speciation of trees or fish resulting in a decline of a harvested natural resource), then a private nuisance theory may provide an appropriate justification for granting a private remedy.

However, a second rationale might be more useful. A plaintiff may prove trespass if there has been an intrusion of protected interests by either visible or invisible "pieces of matter or by energy."[62] Plaintiffs in trespass suits are not required to demonstrate actual injury. Thus, a trespass action would not present the formidable barriers to relief posed in nuisance suits. Plaintiffs would undoubtedly encounter less difficulties in proving "intrusion" by acid rain than in showing a detrimental alteration of land or water resources. Yet, trespass theory affords only weak relief–injunctions to ensure that the guilty party refrain from repeating such action.[63] Compensation or redress is not included. Plaintiffs claiming injury from acid rain generally seek more stringent redress.

Negligence theory represents the third possibility. Negligence theory will justify recovery when one of two conditions occur: 1) the defendant has carelessly impinged on the unalterable rights of others; 2) the defendant has failed to carry out a legally recognized duty, the breach of which caused damage to another party.[64] Under negligence (in contrast to trespass), the successful plaintiff must show a causal link between the defendant's action and the plaintiff's injury. The plaintiff, however, must establish negligence before proving injury. Negligence theory promises to afford stronger, more coercive and permanent solutions in the future because plaintiffs must prove a causal link between offending action and injury. This requirement, however, currently imposes a bottleneck in acid rain cases. The long-range transport phenomenon, as well as the length of time elapsed before injury actually occurs makes the causal link more difficult to prove. The selection of the appropriate rationale to be employed depends on the facts in the case and the degree of permanent solution and compensation for injuries sought by the plaintiff. Negligence theory, however, seems to provide the most plausible and promising route to substantial redress of injury.

For most environmental cases, the liability standard is based on fault. Fault liability arises for harm caused intentionally or negligently.[65] Despite the availability of such standards, establishing liabil-

62. I. SLOAN, ENVIRONMENT AND THE LAW 45 (1971).
63. *Id.* at 47.
64. Prosser, *supra* note 61, at 1018.
65. Goldie, *Liability for Damage and the Progressive Development of International Law*, 14 INT. AND COMPARATIVE L. Q. 1189, 1196 (1965).

ity in international environmental cases presents difficulties. Liability standards usually apply first and foremost to individuals and business entities.[66] Most scholars reject the notion that liability applies to states.[67] Further, liability standards are geographically limited.[68] Environmental problems, specifically acid rain, cross beyond proximate boundaries. Additionally, liability theories tend to protect only readily measurable and identifiable interests. Environmental damages (particularly disperse air pollution such as acid rain) are difficult to measure in the short term. Finally, the plaintiff must wait until damage has actually been proven before liability can attach. In environmental cases, and specifically in acid rain cases, this process may take years. Further irrevocable damage may occur by the time any actual damages can be proven. Even if the plaintiff establishes liability, he still must confront problems of *enforcing* extra-territorial claims. Neither the Nordic Convention, nor the ABA/CBA proposals answer enforcement questions unambiguously. Thus, the difficulty of applying the liability standards to states suggests the utility of private over public remedies. Yet, the problems of determining damages in any circumstances and of actually enforcing extra-territorial claims make both the public and private solutions less than optimum.

Few states have pursued either domestic legislation or treaties with neighboring countries which allow citizens of one country to avail themselves of private remedies in another state's jurisdiction. This fact suggests that the private remedy approach has not been widely accepted. The U.S. and the Nordic states are the exceptions rather than the rule, and even in those nations acid rain cases are just beginning to appear on the public agenda. Without a provision allowing foreigners to file environmental complaints under the law of the offending state, the difficulty of determining the court of appropriate jurisdiction becomes an effective barrier to competent legal resolution.

IV. CONCLUSION

The prognosis for the future is uncertain. If policy makers employ the current variety of public and private approaches on an ad hoc basis, nations will continue to exercise their own discretion in selecting appropriate regulations. This approach approximates an affirmation of a nationalist state-centric perspective. Other plausible alternatives, however, could lead to widely differing prognoses. Uibopuu[69]

66. *Id.* at 1200.

67. *Id.* at 1220; *See also* Goldie, *International Principles of Responsibility for Pollution*, 9 COL. J. TRANS. L. 306 (1970).

68. Kiss, *Legal Aspects of Air Pollution Control*, 1 EARTH L. J. 44 (1975).

69. Uibopuu, *The Internationally Guaranteed Right of an Individual to a Clean Environment*, 1 COMPARATIVE L. YB. 105 (1978).

sees an order emerging out of the current ad hoc approach. Once transnational proceedings are deemed acceptable so that individuals have direct redress, national governments, for expediency, will develop extensive treaty arrangements leading to institutional cooperation. Thus, according to this perspective, private approaches, illustrative of a transnational framework, are a step toward more extensive regulations. In contrast, Bilder[70] presents a convincing case that any legalistic solutions to transboundary environmental problems will be shunned in the future. Legal proceedings are often viewed as unfriendly acts; they are complex, lengthy, expensive, and inflexible. These inadequacies pertain equally to national and transnational solutions. The approach to future international policy will be largely determined by the interplay between legal pessimists like Bilder and the political realists. Meanwhile, the scientific community cautiously marshalls its evidence concerning the ubiquity and potential destructiveness of the transborder environmental problem of acid rain.

70. Bilder, *The Settlement of International Environmental Disputes* (U. of Wis. Sea Grant C. Program, Tech. Rep. 231, 58) (Feb. 1976).