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Article abstract

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The second part of the paper will highlight the shortcomings of the international system and the law of state responsibility. They are rooted in the system's focus on the interests of sovereign states and include the vagueness of the relevant rules, the disagreement as to the standard of liability (fault or strict liability), the perception of many polluting activities as « lawful », the system's reactive character, the system's failure to effectively deal with ecological costs rather than injury to state interests.

In its third part, the paper will survey developments and trends that may provide solutions to the aforementioned problems. Possible solutions include the emergence of rules that protect the common interests of the international community rather than the sovereign interests of states, the development of special liability regimes for more narrowly defined environmental concerns (generally : ultrahazardous activities), efforts of the International Law Commission to develop a risk liability regime, the proliferation of regimes designed to prevent or manage environmental problems.

The Responsibility of States for Environmental Harm in a Multinational Context — Problems and Trends

Jutta BRUNNÉE*

The paper begins with a discussion of parallels between problems of environmental liability law at the national and international levels. At both levels, rules built upon concerns and priorities of another era had to be applied to the complex environmental problems of our times. Both systems have proven to be inadequate in addressing modern environmental concerns and have evolved to better meet the challenge.

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Le présent article comporte d'abord une discussion des parallèles entre les problèmes de la responsabilité pour les dommages environnementaux aux niveaux national et international. Dans les deux cas, les règles établies pour des problèmes et priorités d'une autre époque devaient être appliquées aux problèmes complexes de l'environnement de notre temps. Mais les deux systèmes se sont avérés inadéquats à traiter les problèmes actuels de l'environnement et ils ont dû évoluer de façon à mieux faire face aux défis.

La deuxième partie illustre, dans ses grandes lignes, les lacunes du système international et des règles de la responsabilité de l'État. Ces lacunes sont ancrées dans le cœur du système, concentré sur les intérêts des États souverains. Elles comprennent l'imprécision des règles, la mésentente concernant le genre de responsabilité (faute ou responsabilité stricte), la considération de nombreuses activités polluantes comme « légales », le caractère réactif du système et l'incapacité du système à traiter convenablement les coûts écologiques plutôt que les dommages aux intérêts de l'État.

La troisième partie comprend l'énumération des développements et des orientations qui pourraient fournir des réponses aux problèmes mentionnés ci-dessus. Les solutions possibles comprennent l'établissement de règles protégeant les intérêts des États souverains de la communauté internationale, l'institution de régimes spéciaux de responsabilité pour les problèmes environnementaux plus précisément soulignés, les efforts de la Commission de droit international pour instituer un régime de responsabilité pour risques et la diffusion des régimes conçus pour prévenir ou résoudre les problèmes de l'environnement.

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1. State Responsibility in Context

1.1 Municipal Law

During the last two decades, the world has come to realize that human existence on Earth not only entails an ever-increasing number of environmental problems, but also that these are increasingly serious, increasingly complex, and often irreversible[1]. No single tool at our disposal can provide a solution. Change must occur at all levels — societal, ethical, economic, scientific and legal[2]. Whichever the focus, however, it has become clear that concepts and assumptions inherited from previous generations will not be able to guide us into a sustainable future. Thus, legal orders which were built upon concerns and priorities of another era, now require reforms that render them more responsive to modern concerns. The « environmental crisis » is among these modern concerns which fundamentally challenge the building blocks of our legal systems.

The quest for change transcends legal systems. Many countries of the world are currently engaged in debates about appropriate reforms[3]. Classical concepts such as the notion of property are unable to truly capture environmental harm[4]. Thus, along with efforts to make traditional private

1. See *Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration)*, U.N. Doc. A/CONF/48/14/REV.1 ; WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, *Our Common Future*, Oxford, Oxford University Press, 1987 ; WORLD RESOURCES INSTITUTE, *World Resources 1992-93 : A Guide to the Global Environment*, New York, Oxford University Press, 1992 ; *Rio Declaration on Environment and Development*, reprinted in (1992) 31 *Int'l Leg. Mat.* 876.
2. See E.U. VON WEIZSÄCKER, *Erdpolitik : ökologische Realpolitik an der Schwelle zum Jahrhundert der Umwelt*, Darmstadt, Wissenschaftliche Buchgesellschaft, 1989 ; J.R. ENGEL and J.G. ENGEL (eds.), *Ethics of Environment and Development : Global Challenge, International Response*, London, Belhaven, 1990 ; J. MACNEILL, P. WINSEMIUS and T. YAKUSHIJI, *Beyond Interdependence : The Meshing of the World's Economy and the Earth's Ecology*, New York, Oxford University Press, 1991.
3. See M. BOTHE and L. GÜNDLING, *Neuere Tendenzen des Umweltrechts im internationalen Vergleich*, Berlin, Erich Schmidt Verlag, 1990 ; W. HOFFMAN, « Germany's New Environmental Liability Act : Strict Liability for Facilities Causing Pollution », (1991) 38 *Netherlands Int'l L. Rev.* 27 ; COMMISSION OF THE EUROPEAN COMMUNITIES, *Amended Proposal for a Council Directive on Civil Liability for Damage Caused by Waste*, (19) 219 final (June 27, 1991) ; COUNCIL OF EUROPE, *Draft Convention on Civil Liability for Damage Resulting from Activities Dangerous for the Environment*, reprinted in (1991) 21 *Environmental Policy and Law* 270.
4. See ONTARIO LAW REFORM COMMISSION, *Report on Damages for Environmental Harm*, Toronto, The Commission, 1990 ; D. DEWEES, « The Role of Tort Law in Controlling Environmental Pollution », (1992) XVIII *Canadian Public Policy* 425 ; J. VON GERLACH, *Privatrecht und Umweltschutz im System des Umweltrechts*, Berlin, Duncker & Humblot, 1989.

law concepts more receptive to environmental concerns[5], we have witnessed the proliferation and continuing reform of regulatory regimes[6]. This trend is not only rooted in the necessarily narrow focus of private law. It is also explained by the fact that an important function of the traditional approach, that of assigning responsibility and chanelling compensation, does not meet the challenge posed by environmental degradation. It does not provide for the cooperation, coordination, planning, prevention and flexibility necessary to respond to ecological needs[7]. While environmental problems may be framed in terms of interferences with property or other individual rights, traditional solutions, by definition, create an artificial individual context while leaving the larger ecological issue unaddressed. Reforms of these traditional approaches may promote more equitable solutions to the individual target context. By rendering private remedies more effective, they may even enhance the regime's preventive and cost-internalizing aspects and thus its ecologically desirable side-effects[8]. Reforms, therefore, serve an important purpose in their own context. However, one must bear in mind the limitations of that context.

1.2 International Law

Giving consideration to the experience at the national level is instructive and serves to put the evolution of the international legal order into

5. These efforts focus primarily on liberalizing restrictive standing rules, on establishing strict liability for certain types of harm, on creating more equitable evidentiary rules, and on remedying the failure of private law to capture ecological damage. See ONTARIO LAW REFORM COMMISSION, *Report on the Law of Standing*, Toronto, Ministry of the Attorney General, 1989 ; F. GERTLER, P. MULDOON and M. VALIANTE, « Public Access to Environmental Justice », in CANADIAN BAR ASSOCIATION, *Sustainable Development in Canada : Options for Law Reform*, Ottawa, Canadian Bar Association, 1990 ; TASK FORCE ON THE ONTARIO ENVIRONMENTAL BILL OF RIGHTS, *Report on the Ontario Environmental Bill of Rights*, Toronto, Ontario Ministry of the Environment, 1992. *Gesetz über die Umwelthaftung* vom 10.12.1990, BGBl. 1990 I, 2634 (German Environment Liability Law) ; *McGhee* v. *National Coal Board*, [1973] 1 W.L.R. 1, [1972] 3 All E.R. 1008 (H.L.) ; *Sindell* v. *Abbott*, 607 P.2d 924 (Cal. S.C. 1980) ; *Michie* v. *Great Lakes Steel Corp.*, 495 F.2d 213 (6th Cir. 1974) ; J. OLSON, « Shifting the Burden of Proof : How the Common Law Can Safeguard Nature and Promote an Earth Ethic », (1990) 20 *Envtl. L.* 891 ; ONTARIO LAW REFORM COMMISSION, *op. cit.*, note 4.
6. See K. WEBB, *Regulatory Approaches to Pollution*, Ottawa, Law Reform Commission of Canada, 1988 ; D.P. EMOND, « Cooperation in Nature : A New Foundation for Environmental Law », (1984) 22 *Osgoode Hall L.J.* 323 ; L. GIROUX, « La loi sur la qualité de l'environnement : les principaux mécanismes et les recours civils », in BARREAU DU QUÉBEC, *Développements récents en droit de l'environnement (1991)*, Cowansville, Éditions Yvon Blais, 1991, p. 1.
7. See D. DEWEES, *loc. cit.*, note 4, 439 ; D.P. EMOND, *loc. cit.*, note 6, 335.
8. See D. DEWEES, *loc. cit.*, note 4.

perspective[9]. In extending the comparison of legal systems to the international level, striking parallels emerge. The sovereignty of states remains one of the foundations of the international legal system. Thus, in the early stages of the development of international environmental law, environmental problems were defined in terms of interferences with a state's sovereign interests[10]. Comparable to the application of concepts such as *abus de droit* or nuisance in domestic systems, rules of international neighbourhood law developed to balance conflicting sovereign interests of states[11]. Here, in the context of transboundary pollution, lie the roots of the most basic principle of customary international law, the notion that no state may use its territory or allow the use of it in such a way as to cause serious damage to the territory of another state[12].

This basic principle has since proven to be deficient in several respects. First, it hinges on the ambiguous notion of « serious damage » and thus allows states to honour the rule in principle while citing scientific uncertainty or lack of proof to escape its application[13]. Secondly, the rule neither adequately protects resources shared by several states[14], nor does it sufficiently protect the global « commons », i.e. spaces and environ-

9. Compare also S. GAINES, « International Principles for Transnational Environmental Liability : Can Developments in Municipal Law Help Break the Impasse ? », (1989) 30 *Harv. Int'l L.J.* 311.
10. See *supra*, note 4 and accompanying text for parallel property focus at the municipal level.
11. In the international context see P. BIRNIE and A. BOYLE, *International Law and the Environment*, Oxford, Oxford University Press, 1992, p. 83 ; A. KISS, *Droit international de l'environnement*, Paris, Pedone, 1989, p. 8 ; J. BRUNNÉE, *Acid Rain and Ozone Layer Depletion : International Law and Regulation*, Dobbs Ferry, Transnational Publishers, 1988, p. 87.
12. See *Trail Smelter* Arbitration, (1941) III U.N.R.I.A.A. 1905.
13. See P. BIRNIE and A. BOYLE, *op. cit.*, note 11, pp. 98-99 ; J. BRUNNÉE, *op. cit.*, note 11, p. 136 ; A. KISS and D. SHELTON, *International Environmental Law*, Ardsley-on-Hudson, Transnational Publishers, 1991, p. 115.
14. See G. HANDL, « Balancing of Interests and International Liability for the Pollution of International Watercourses », (1975) 13 *Can. Y.B. Int'l L.* 156 ; on reform efforts in response to these shortcomings see *infra*, note 50 and accompanying text and INTERNATIONAL LAW ASSOCIATION, *Helsinki Rules on the Uses of the Waters of International Rivers — Report of the 52nd Conference*, London, The Association, 1966, p. 447; UNITED NATIONS ENVIRONMENT PROGRAMME, *Principles of Conduct Relating to Natural Resources Shared by Two or More States*, UNEP/IG.12/2 (1978) ; INTERNATIONAL LAW COMMISSION, *Draft Articles on the Law of the Non-Navigational Uses of International Watercourses*, 43rd Session 1991, U.N. Doc. A/CN.4/L.463 Add. 4.

mental resources beyond the jurisdiction of states[15]. Thirdly, the traditional approach to enforcement of international law relies on the rules of state responsibility. However, like the national norms on delictual responsibility[16], the law of state responsibility struggles with both the limitations of the legal system it is to enforce and the shortcomings inherent in its purpose. In the following pages, this paper will outline the broad features of the state responsibility debate. It will survey the classical theory of state responsibility, its shortcomings in the environmental context and the range of possible solutions. It will conclude with some observations about recent trends.

2. State Responsibility — Theory, Problems and Evolution

2.1 The Theory of State Responsibility

The theory of state responsibility is concerned with the consequences of internationally wrongful acts[17]. A breach of a customary or treaty-based rule of international law gives rise to the responsibility of the contravening state. According to classical theory, physical damage is not necessarily a requirement of state responsibility, as violations of a state's international rights can cause (immaterial) damage to the state concerned[18]. However, this statement must be qualified in the context of rules, such as the basic

15. The scope of the rule has since been widened to encompass common spaces. See Principle 21 of the *Stockholm Declaration*, *supra*, note 1, at : « States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own natural resources pursuant to their own environmental policies and the responsibility to ensure that activities within their jurisdiction do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction. » See *infra*, note 50 and accompanying text for further developments.
16. See *supra*, notes 7, 8 and accompanying text.
17. Note that the theory is thus concerned with the states' own obligations and not with those of private entities. In the environmental context state responsibility therefore usually revolves around duties of regulation, control or cooperation ; see P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 140. On the law of state responsibility more generally see I. BROWNLIE, *System of the Law of Nations : State Responsibility*, 4th ed., Oxford, Oxford University Press, 1990 ; P.-M. DUPUY, « The International Law of State Responsibility : Revolution or Evolution ? », (1989) 11 *Mich. J. Int'l L.* 105, 109-112 ; INTERNATIONAL LAW COMMISSION, « Draft Articles on State Responsibility », Article 1, in *Yearbook of the International Law Commission*, Vol. II, Part Two, 1980.
18. See K. ZEMANEK, « Causes and Forms of International Liability », in B. CHENG and E.D. BROWN, (eds.), *Contemporary Problems of International Law : Essays in Honour of Georg Schwarzenberger on his Eightieth Birthday*, London, Stevens & Sons Limited, 1988, p. 323 ; see also *Corfu Channel* case (Merits), [1949] I.C.J. Reports 4, 35 ; *The I'm Alone* case, III R.I.A.A. 1609.

rule of international environmental law described above, which rely on damage to determine when a violation occurs[19].

The breach of a (primary) rule of international law triggers certain secondary obligations[20]. These are commonly considered to include the duties to: 1) discontinue the act; 2) apply national legal remedies; 3) re-establish the situation existing before the act in question, or to the extent that this is impossible, pay corresponding compensation; 4) provide guarantees against repetition[21]. If necessary to induce the violating state to honour these secondary obligations, injured states may also resort to reprisals or the suspension of their treaty obligations *vis-à-vis* the former[22]. According to traditional theory, state responsibility triggers a relationship only between the violating state(s) and the immediate victim state(s)[23]. Classical international law does not recognize an *actio popularis* entitling all states to respond to violation of its rules or to demand compensation[24].

The principle of state responsibility is firmly established in international law[25]. Therefore, it should be equally applicable to cases involving transboundary environmental harm and thus provide for the enforcement

19. This basic rule only prohibits activities which cause serious transboundary harm, see *supra*, note 12 and accompanying text. Note that the INTERNATIONAL LAW COMMISSION, *loc. cit.*, note 17, fails to consider this aspect. See also G. HANDL, « Territorial Sovereignty and the Problem of Transnational Polution », (1975) 69 *Am. J. Int'l L.* 50.
20. See A. BOYLE, « State Responsibility and International Liability for Injurious Consequences of Acts Not Prohibited by International Law: A Necessary Distinction? », (1990) 39 *Int'l & Comp. L. Q.* 1, 10; S. GAINES, « Taking Responsibility for Transboundary Environmental Effects », (1991) 14 *Hastings Int'l & Comp. L. Rev.* 781, 787.
21. See INTERNATIONAL LAW COMMISSION, « Draft Articles on State Responsibility », Article 6, in *Yearbook of the International Law Commission*, Vol. II, Part One, 1984, 2. The list of secondary obligations can be traced back to the decision of the Permanent Court of International Justice in the *Chorzow Factory* case, [1928] P.C.I.J. Reports, Ser. A, No. 17, where the Court held at 47, 48 that « reparation must, as far as possible, wipe out the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed ».
22. See INTERNATIONAL LAW COMMISSION, *loc. cit.*, note 21, articles 8-13; M. AKEHURST, *A Modern Introduction to International Law*, 6th ed., London, Unwin & Hyman, 1988, p. 277; *Naulilaa* case, [1928] 2 R.I.A.A. 1012.
23. See K. ZEMANEK, *loc. cit.*, note 18, at 322; P.-M. DUPUY, *loc. cit.*, note 17, 118; P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 154.
24. The International Court of Justice (I.C.J.) rejected the argument that international law accepted the *actio popularis* in the *South West Africa* case, [1966] I.C.J. 4, 47 (Second Phase); see also J. CHARNEY, « Third State Remedies in International Law », (1989) 10 *Mich. Int'l L.J.* 57, 60; and *infra*, note 50 and accompanying text on more recent developments that are eroding this narrow focus of the law of state responsibility.
25. See *Chorzow Factory* case, *supra*, note 21.

of international environmental law[26]. However, not only do a multitude of problems plague the theory of state responsibility itself, there are also various difficulties particular to its application in the environmental context.

2.2 Problems and Limitations

A first limitation is rooted in the vagueness of the very rules the violation of which triggers state responsibility. Given the use of general terms such as « serious damage », the threshold at which a violation occurs is often elusive[27]. This is particularly true for the complex environmental problems of our times and the attendant scientific uncertainty. In addition, the multilateral and often global character of these problems makes the pinpointing of responsible states and victims virtually impossible[28]. Finally, in their generality, customary norms do not provide the precise standards that are required for a solution to modern problems[29].

The vagueness of the relevant rules can be explained largely by the features that gave rise to the perception of international law as a « primitive » legal system[30]. Whether one agrees with this label or not, states continue to be the primary subjects of international law as well the primary law-makers, enforcers and adjudicators, so that their interests significantly shape the content of rules[31]. Thus, apart from early cases dealing with relatively localized transboundary annoyances[32], states have not pursued pollution incidents to an extent that would have allowed the formation of

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26. See A. REST, « Responsibility and Liability for Transboundary Air Pollution Damage », in C. FLINTERMAN, B. KWIATKOWSKA and J. LAMMERS (eds.), *Transboundary Air Pollution : International Legal Aspects of the Cooperation of States*, Dordrecht, Martinus Nijhoff Publishers, 1986, 299 at 317-318 ; for sceptical opinions see L. GÜNDLING, « Verantwortlichkeit der Staaten für grenzüberschreitende Umweltbeinträchtigungen », (1985) 45 *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht 265 ;* ANONYMOUS, « International Environmental Law », (1991) 104 *Harv. Int'l L.J.* 1484, 1499-1511.
27. See *supra*, note 13 and accompanying text.
28. Consider ozone layer depletion and attempts to assign responsibility for harm to a particular state ; see J. BRUNNÉE, *op. cit.*, note 11, p. 140 ; note also that the largely reactive responsibility model *per se* is not capable of addressing the problem itself ; see *infra*, note 45 and accompanying text.
29. See P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 134.
30. *Id.*, p. 549.
31. See A. CASSESE, *International Law in a Divided World*, Oxford, Oxford University Press, 1986 ; J. BRUNNÉE, « Common Interest—Echoes from and Empty Shell ? Some Thoughts on Common Interest and International Environmental Law », (1989) 49 *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* 792.
32. See *Trail Smelter* case, *supra*, note 12 ; *Lac Lanoux* Arbitration, (1957) XII R.I.A.A. 315.

more specific rules[33]. The more complex environmental problems become, the more the solutions involve the economic interests and sovereign spheres of states[34]. Intent on protecting their sovereign interests and on retaining control over sovereign affairs, states hesitate to create precedents[35]. The evolution of generally applicable principles would carve into the sovereign realm of states in a potentially unpredictable range of situations. Given the impossibility of avoiding all transboundary impact, states are also reluctant to create precedents which might subsequently work to their disadvantage. Furthermore, the ecological links between states cannot be separated from their economic and political relations. For all these reasons, even clear cases of violations of international law such as the Sandoz spill in the Rhine, the Chernobyl reactor incident or the Gulf War have not been followed by a pursuit of available state responsibility channels[36].

Seen against this background, it is hardly surprising that there also has been little agreement as to the applicable standard of liability. Traditional theory relies on a standard of due diligence and efforts to deduce or develop a strict liability regime cannot be considered reflective of international custom[37]. Neither international practice nor the scarce precedents permit

33. Accordingly, there was no opportunity for the International Court of Justice or international arbitration tribunals to interpret notions such as « serious damage » to assist the development of customary international law in a way comparable to the contribution of courts in civil and common law systems.

34. Consider the example of climate change ; a solution could not be based on limitations to individual areas of national activity ; an effective international regime would have implications for virtually all sectors of national life and would place an unprecedented burden on national financial resources. See S. MASSEY, « Global Warming — International Environmental Agreements — The 1992 United Nations Conference on the Environment and Development Most Likely Will Not Culminate in a Successfully Preventive Global Warming Treaty Without the United States' Support », (1992) 22 *Ga. J. Int'l & Comp. L.* 175.

35. P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 159 ; A. SPRINGER, *The International Law of Pollution*, Westport, Quorum Books, 1983, p. 130.

36. See P. SANDS, *The International Law of Liability for Transboundary Nuclear Pollution*, Cambridge, Grotius Publications, 1989 ; A. REST, « Tschernobyl und die internationale Haftung — Volkerrechtliche Aspekte », (1989) 37 *Versicherungsrecht* 609 and « The Sandoz Conflagration and Rhine Pollution : Liability Issues », (1987) 30 *German Yearbook of International Law* 160 ; A. SCHWABACH, « The Sandoz Spill : The Failure of International Law to Protect the Rhine from Pollution », (1989) 16 *Ecology L.Q.* 443 ; C. JOYNER and J. KIRKHOPE, « The Persian Gulf War Oil Spill : Reassessing the Law of Environmental Protection and the Law of Armed Conflict », (1992) 24 *Case W. Res. J. Int'l L.* 29.

37. Pointing to the parallels in the national debate of liability standards see K. ZEMANEK, *loc. cit.*, note 18, 327 ; on the continuing validity of the due diligence standard see P.-M. DUPUY, *loc. cit.*, note 17, 114.

the conclusion that strict liability is the standard generally applicable to environmental injury[38]. In fact, states have avoided statements that would allow any conclusion as to the relevant standard[39]. For this reason alone it is doubtful that the work invested by the International Law Commission in developing a strict liability regime applicable, *inter alia*, to environmental damage will win the support of states in the near future[40]. Only in the context of ultra-hazardous activities is there evidence of the acceptance, albeit within the confines of individual treaties, of strict liability[41].

Beyond the theoretical difficulties outlined above, further problems arise from the fact that many environmental concerns are side-effects of activities essential to our modern societies. It is, therefore, argued that state responsibility and the resulting duty to cease violations of international law are unrealistic in the context of modern life[42]. Furthermore, it is suggested that many activities are not captured by traditional state responsibility theory[43]. According to this second argument, the operation of factories, motor vehicles, power plants, is not prohibited by international law, so that there is no obligation to cease or modify these activities or to compensate for injury. As will be pointed out below, both of these

38. See G. HANDL, *loc. cit.*, note 14, 167-170; G. DOEKER and T. GEHRING, « Private or International Liability for Transnational Environmental Damage: The Precedent of Conventional Liability Regimes », (1990) 2 *Journal of Environmental Law* 1, 2; but see for the opposite conclusion: J. SCHNEIDER, « State Responsibility for Environmental Protection and Preservation », in R. FALK, F. KRATOCHWIL and S.M. MENDLOVITZ (eds.), *International Law : A Contemporary Perspective*, Boulder, Westview Press, 1985, 602 at 618; A. SPRINGER, *op. cit.*, note 35, pp. 133-134.

39. See Article 235 of the *U.N. Convention on the Law of the Sea*, reprinted in (1982) 21 *Int'l Leg. Mat.* 1261, which merely refers to the rules of international law; or note 1 to Article 9(f) of the 1979 *ECE Convention on Long-Range Transboundary Air Pollution*, reprinted in (1979) 18 *Int'l Leg. Mat.* 1442, which states that the « Convention does not contain a rule on State liability as to damage ».

40. See INTERNATIONAL LAW COMMISSION, « Report on Liability for Injurious Consequences Arising Out of Acts not Prohibited by International Law », in *Yearbook of the International Law Commission*, Vol. II, Part One, 1984, p. 15; see further *infra*, note 85 and accompanying text.

41. See *infra*, notes 58-62 and accompanying text; see also G. HANDL, « Liability as an Obligation Established by a Primary Rule of International Law », (1985) 16 *Netherlands Yearbook of International Law* 49, 58-61, who argues that even in the context of ultra-hazardous activities strict liability is not part of general international law.

42. The International Law Commission is the primary proponent of this conception, see INTERNATIONAL LAW COMMISSION, *Yearbook of the International Law Commission*, Vol. II, Part One, 1982, p. 60, para. 39; see also K. ZEMANEK, *loc. cit.*, note 18, 326.

43. See INTERNATIONAL LAW COMMISSION, *Yearbook of the International Law Commission*, Vol. II, Part 1, 1981, p. 122, para. 85, et *Yearbook of the International Law Commission*, Vol. II, Part 1, 1986, p. 152, para. 31.

lines of argument are erroneous and, from the perspective of environmental protection, misguided[44].

While the alleged gap in the coverage of environmentally harmful activities by the law of state responsibility may present a problem if considered from a compensatory perspective, a more serious shortcoming is inherent in this very dimension of state responsibility. Apart from the deterrence function it might assume were it to work more effectively, state responsibility is of a largely reactive character. Secondary obligations are only triggered once environmental harm has already occurred[45]. This is problematic for two reasons. First, experience has shown that much environmental damage cannot be compensated or reversed. Secondly, and perhaps more importantly, solutions to most modern environmental problems require pro-active management and are thus beyond the scope of what the theory of state responsibility is conceptually able to provide. In addition, state responsibility is based upon a confrontational paradigm that runs counter to the cooperation required to manage the international environment[46].

Finally, when considering the damage captured by traditional state responsibility principles, it becomes apparent that true ecological costs and systemic damage are not adequately covered[47]. This failure has both practical and conceptual reasons. At the practical level, difficulties arise in the valuation of resources and proof or assessment of damage. Conceptually, the territorial underpinnings of most customary rules exclude damage to resources beyond national jurisdiction from the range of circumstances in which states could demand discharge of secondary obligations.

In briefly returning to this article's comparative point of departure, it should be noted that the aforementioned problems find parallels at the national level. Some problems, such as the vagueness of rules and the sovereignty dimension may be typical of the international legal order. However, national environmental lawyers will be only too familiar with concerns over expediency and non-enforcement of available rules, the protection of common resources, the compensation of ecological damage, and the discussion about merits and feasibility of a strict liability regime.

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44. See *infra*, notes 73-78 and accompanying text.
45. J. BRUNNÉE, *op. cit.*, note 11, p. 112.
46. See P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 136.
47. See H.-U. MARTICKE, « Liability for Ecological Damage », (1992) 22 Environmental Policy and Law 28 ; A. REST, « Ecological Damage in Public International Law », (1992) 22 *Environmental Policy and Law* 31.

2.3 The Range of Solutions

The first and perhaps most obvious possibility for improvement would be to address the shortcomings of the primary norms of international environmental law. Efforts to develop more effective rules long focused on the procedural realm and cooperative concepts such as information, notification or consultation[48]. Substantively, the more recent restatements of the general rules have not increased their specificity when compared to the classical formulation of Principle 21 of the 1972 Stockholm Declaration[49]. However, they have begun to widen their scope to encompass spaces and environmental resources beyond national jurisdiction as well as future generations[50]. The emerging principles are evidence that states are moving to acknowledge that their responsibility extends to protecting the environment in the « common interest of the international community[51] ». The need to protect the « commons » and environmental life support systems upon which all nations depend may thus lead to the recognition of environmental norms with effect *erga omnes*[52]. All states would be bound by these rules and each state, even if not directly and individually affected, could

48. Most notable in this context are the work of the International Law Association as embodied in : INTERNATIONAL LAW ASSOCIATION, *Montreal Rules of International Law Applicable to Transfrontier Pollution, Report of the Sixtieth Conference*, 1982.

49. For the text of Principle 21 see *supra*, note 15 ; subsequent formulations include Principle 3 of the UNEP Principles of Conduct in the Field of the Environment Concerning Resources Shared by Two or More States, UNEP/IG/12/2 (1978) ; Principles 21, 22 of the World Charter for Nature, UNGA Res. 37/7, 28 Oct. 1982, reprinted in (1983) 23 *Int'l Leg. Mat.* 455 ; Article 10 of the Legal Principles formulated by the Experts Group on Environmental Law of the WORLD COMMISSION ON ENVIRONMENT and DEVELOPMENT, *op. cit.*, note 1, p. 349 [hereinafter WCED Experts Principles] ; and Principle 2 of the *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/5, 7 May 1992, reprinted in (1992) 31 *Int'l Leg. Mat.* 876.

50. See Principles 2, 3 of the WCED Experts Principles, *supra*, note 49 ; Principles 2, 3 of the *Rio Declaration on Environment and Development*, *supra*, note 49 ; *The Hague Declaration on the Environment*, reprinted in (1989) 28 *Int'l Leg. Mat.* 1380 ; *Bergen Ministerial Declaration on Sustainable Development in the ECE Region*, U.N. Doc. A/CONF.151/PC 10/Annex I, 6 August 1990, reprinted in (1990) 1 *Yearbook of International Environmental Law*, 429.

51. See J. BRUNNÉE, *loc. cit.*, note 31.

52. *Id.*, 801 ; P.-M. DUPUY, *loc. cit.*, note 17, 119 ; and, significantly, see the most recent deliberations of the INTERNATIONAL LAW COMMISSION, *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/46/10 (1991), 303 ; some members felt the Commission should « come in touch [...] with the general orientation of the international community, which was increasingly asserting the importance of protecting the « global commons » ». It was argued that « [a]t the very least, the Commission should work out a more detailed definition of the meaning of an obligation *erga omnes* [...] and determine [...] conditions for the exercise of an *actio popularis* with regard to the resources of the « global commons » ».

demand compliance[53]. Such a development would contribute significantly to the closing of the gap left by the current focus of the theory of state responsibility.

However, given the potentially enormous implications of recognizing generally applicable rules, states have preferred other approaches when creating compensation and environmental protection regimes. All of these « preferred » approaches are characterized by being less invasive of the states' sovereign spheres. They either single out a narrow sector with clearly defined obligations, or they avoid the issue of state responsibility in the traditional sense altogether. The latter approach is common in the context of general environmental risk. Most modern environmental protection agreements make no mention of state responsibility for harm caused[54], limit themselves to a reference to the general rules of international law[55], or even explicitely exclude the issue of responsibility[56]. These approaches essentially amount to maintaining the *status quo*, i.e. the ambiguous state of the law of state responsibility, while addressing the environmental problem at hand through international cooperation[57].

In the context of ultra-hazardous activities, narrowly defined regimes have been able to establish more effective liability schemes. Yet rather than addressing the controversial area of state responsibility, these regimes typically establish frameworks for the civil liability of those undertaking the activity in question[58]. They aim to distribute losses in the case of certain activities considered socially and economically beneficial despite high risks of accidental damage[59]. Thus, while the activity is not *per se* harmful to the environment, accidents may result in serious environmental damage. The transportation of oil by sea and the operation of nuclear power plants are classical examples of activities that fall into this category[60]. Generally, the applicable regimes impose strict liability on operators while tempering the severity of the approach by excluding certain consequences from

53. See P. BIRNIE and A. BOYLE, *op. cit.*, note 11, pp. 154-157.
54. See *Vienna Convention for the Protection of the Ozone Layer*, reprinted in (1987) 26 *Int'l Leg. Mat.* 1529.
55. *U.N. Convention on the Law of the Sea*, *supra*, note 39.
56. See *supra*, note 39.
57. See *infra*, notes 79-84 and accompanying text.
58. The only regime providing for the absolute responsibility of states is the 1972 *Convention on Liability for Damage Caused by Space Objects*, 961 U.N.T.S. 187. For details on civil liability regimes see G. DOEKER and T. GEHRING, *loc. cit.*, note 38, 4-8.
59. See G. DOEKER and T. GEHRING, « Liability for Environmental Damage », in P. SAND (ed.), *The Effectiveness of International Environmental Agreements*, Cambridge, Grotius Publications, 1992, p. 393.
60. See accordingly the *Convention on Civil Liability for Nuclear Damage*, reprinted in (1963) 2 *Int'l Leg. Mat.* 727, and the *International Convention on Civil Liability for Oil Pollution Damage*, reprinted in (1970) 9 *Int'l Leg. Mat.* 45.

liability and establishing liability ceilings[61]. In addition, those subject to the regimes are usually required to take out sufficient insurance coverage[62]. At times, these regimes also establish international compensation funds[63]. As is clear from these features, the regimes are based on the premise that the covered activities must continue and that attendant risks can be adequately addressed by way of a compensation scheme.

What should have emerged from the preceding discussion is that states have been reluctant to apply the existing rules, let alone to develop the law of state responsibility. Be it reluctance to use the label of « violation of international law », or concern over the development of onerous rules — the law of state responsibility does not currently produce satisfactory results. As mentioned above, some have also considered its rules as unsuited to deal effectively with the environmentally harmful consequences of our modern way of life.

The International Law Commission (ILC), the United Nations body established to codify rules of international law[64], decided in 1978 to divide its work in the field into two separate topics[65]. In addition to its Draft

61. See Article V of the *Vienna Convention on Civil Liability for Nuclear Damage* (note that this Convention imposes absolute liability, Articles II, IV), *supra*, note 60; and Articles IV and V of the *International Convention on Civil Liability for Oil Pollution Damage*, *supra*, note 60.
62. See Article VII of the *Convention on Civil Liability for Nuclear Damage* and Article VII of the *International Convention on Civil Liability for Oil Pollution Damage*, *supra*, note 60; note that the Nuclear Damage Convention contains an element of state responsibility in that the licensing state of a facility must ensure payment of compensation beyond insurance coverage.
63. See the *International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage*, reprinted in (1972) 11 *Int'l Leg. Mat.* 284.
64. The work of the International Law Commission (ILC) was successful in a number of areas. It was adopted, for example, in the cases of the *Convention on Diplomatic Relations*, 500 U.N.T.S. 95, and the *Vienna Convention on the Law of Treaties*, reprinted in (1969) 8 *Int'l Leg. Mat.* 679.
65. The ILC began its work aiming to codify the traditional law of state responsibility. Decades of work yielded the Draft Articles on State Responsibility, *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/35/10 (1980), without being able to generate substantial agreement on the topic. Debate of the topic continues, see *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/47/10 (1992). In 1978, the Commission began to work on a second topic and produced the « Draft Articles on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law », see *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/45/10 (1990). More recently the ILC has been working on a third topic and the Draft Code of Crimes Against Peace and Security of Mankind, *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc A/45/10 (1990). This last topic is concerned not with the responsibility of States, but with that of individuals committing acts considered to be international crimes.

Articles on State Responsibility, it began to work on the Draft Articles on Liability for the Injurious Consequences of Acts Not Prohibited by International Law. The title of the undertaking, indicative of its complexity, also captures its key theoretical underpinnings[66]. The Commission's assumption is that a large range of modern activities may not (yet) be prohibited by international law while having harmful consequences for other states which should not remain uncompensated[67]. Since the inception of the topic, debate has been controversial in many respects. In particular, the Commission continues to struggle with the basis of liability[68]. In this context it should not be forgotten that the very idea of imposing strict liability on states meets with resistance[69]. Authors have also taken issue with the ILC's move toward reliance on the creation of « appreciable risk » rather than on actual transboundary harm as the source of liability[70]. Yet others have criticized that the ILC's regime creates merely a « negotiable duty[71] », as a balancing of the states' interests according to criteria such as

66. See D. BARSTOW-MAGRAW, « Transboundary Harm : The International Law Commission's Study of International Liability », (1986) 80 *Am. J. Int'l L.* 305 ; M. AKEHURST, « International Liability for Injurious Consequences Arising Out of Acts Not Prohibited by International Law », (1985) 16 *Netherlands Int'l L.J.* 3.
67. According to the ILC, « state responsibility » is thus concerned with violations of international law and its consequences, while the notion of « liability » is concerned with the consequences of legal activities. Authors such as A. BOYLE, *loc. cit.*, note 20, 8-10, have sharply criticized the Commission's terminology and its theoretical basis. In response to these criticisms, the ILC has acknowledged that the two topics overlap ; see most recently : *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/47/10 (1992) at 104.
68. See most recently *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/45/10 (1990) at 246-251 and *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/47/10 (1992) at 103-106 ; *id.*, at 102-103, the Commission also acknowledged that its work on procedural obligations within the framework of the Draft Articles may be misconceived as a breach of such obligations would entail state responsibility.
69. See *supra*, note 38, 39 and accompanying text on the reluctance of states to support strict liability regimes and their efforts to « de-emphasize their own responsibility by adopting civil liability schemes » ; P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 146.
70. For a detailed discussion of the attendant theoretical difficulties see C. 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 », (1990) 18 *Den. J. Int'l L. & Pol'y* 145.
71. G. HANDL, « Liability as an Obligation Established as a Primary Rule of International Law : Some Basic Reflections on the International Law Commission's Work », (1985) 16 *Netherlands Int'l L.J.* 49, 72.

probability and extent of injury, importance of the activity, and economic viability, would determine the states' actual obligations[72].

Most importantly, however, the majority of writers consider the conceptual framework of the topic to be fundamentally flawed[73]. Some charge that the topic could be effectively addressed within the traditional state responsibility topic if one was to recognize the existence of strict liability in addition to the generally recognized fault standard[74]. Others rightly point out that the topic is wrongly extended beyond activities which entail the risk of disastrous consequences in the case of an accident but otherwise have no adverse impact, to activities which cause continuous and thus foreseeable harm[75]. In these latter cases, it is argued, it is the state responsibility regime that applies since the causation of serious transboundary harm is prohibited by international law[76]. The consequence should be the cessation of the violation which, in turn, does not normally involve cessation of the activity, but merely its modification to comply with international standards[77]. One might add that stopping the violation is not only the consequence required by international law, it is also more ecologically sound than the « pollute and pay » approach inherent in the ILC's liability topic[78].

All the difficulties inherent in the state responsibility approach, as well as the need for proactive responses to environmental problems have led to the proliferation of international agreements establishing cooperative environmental protection regimes[79]. The emphasis of these regimes is on

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72. See the ILC's initial « Schematic Outline », reprinted in *Yearbook of the International Law Commission*, Vol. II, Part One, 1982, ss. 3-5 ; see also Article 17 of the current Draft Articles, reprinted and discussed in the *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/45/10 (1990) at 264.
73. See A. BOYLE, *loc. cit.*, note 20, 1, who considers the topic « liable to seem at best a questionable exercise in reconceptualising an existing body of law, or at worst, a dangerously retrograde step which may seriously weaken international efforts to secure agreement of effective principles of international environmental law » ; P.-M. DUPUY, *loc. cit.*, note 17, 113, who speaks of « profound theoretical and practical difficulties ».
74. See P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 149 ; see also P.-M. DUPUY, *loc. cit.*, note 17, 109-112.
75. See in particular G. HANDL, *loc. cit.*, note 71, 56-59 ; see also K. ZEMANEK, *loc. cit.*, note 18, 331-332, who, however, merely argues one should consequently distinguish between liability for the risk of accidents and liability for harmful activity.
76. See G. HANDL, *loc. cit.*, note 71, 59 ; P.-M. DUPUY, *loc. cit.*, note 17, 117.
77. See P. BIRNIE and A. BOYLE, *op. cit.*, note 11, p. 141, who point out that not the activity, but the resulting harm is prohibited by international law.
78. The « pollute and pay » approach would appear to be no longer justifiable in the context of frequently irreversible environmental damage.
79. See for example the extensive list compiled by P. BIRNIE and A. BOYLE, *op. cit.*, note 11, pp. XI-XXVII.

the prevention and mitigation of environmental harm[80]. As problems such as long-range transboundary air pollution, ozone layer depletion or climate change cannot be addressed without international cooperation, states are increasingly willing to take on obligations within cooperative treaty frameworks. Within these frameworks, general obligations to cooperate, exchange information, collect data or provide technical assistance are gradually complemented by specific emission reduction targets[81]. Such regimes attempt to invite adherence by creating « win-win situations » in which all states can claim to cooperate to protect the environment and which contribute to the environmental benefit no state can achieve alone[82]. More recently, states have come to recognize their « common but differentiated » responsibility to bear the burden of international environmental protection[83]. Not only is there a recognition of the differing priorities and abilities between industrialized and developing countries. More importantly, industrialized countries have begun to acknowledge their predominant share in the creation of global environmental problems.

One may thus argue that, ironically, a new form of « state responsibility » has emerged. While states avoid the step of establishing that international norms were violated, they do accept an obligation to take steps against the degradation of the global environment. Furthermore, while no traditional state responsibility link is established, states are increasingly ready to bear the burden of environmental protection in proportion to their shares in the causation of the problem at hand[84]. It remains to be seen whether this phenomenon can consolidate from a mere response to danger into a stable legal concept.

2.4 Concluding Remarks and Recent Trends

After this brief account one may be inclined to ask whether there is any role to play for state responsibility in the context of environmental protection. My answer would be « yes ». However, as in the national context, one must bear in mind what this role can realistically be in light of both the

80. See *Convention on Long-Range Transboundary Air Pollution*, *supra*, note 39 ; *Vienna Convention for the Protection of the Ozone Layer*, *supra*, note 54 ; *Framework Convention on Climate Change*, reprinted in (1992) 31 *Int'l Leg. Mat.* 831.

81. See J. BRUNNÉE, *op. cit.*, note 11, pp. 266-267.

82. On recent trends in international treaty-making see P. SAND, « International Cooperation : The Environmental Experience », in J. TUCHMAN MATTHEWS (ed.), *Preserving the Global Environment : The Challenge of Shared Leadership*, New York, W.W. Norton, 1991, 236.

83. *Id.*, 244-246 ; and see *Framework Convention on Climate Change*, *supra*, note 80, art. 4.

84. Note, however, that there currently is no « perfect » proportionality as the U.N. pay scale normally applies to industrialized countries' contributions to international agreements.

particularities of the system and the requirements of effective environmental protection.

In this vein, recent years have witnessed numerous efforts to revitalize and renew the law of state responsibility and liability in the context of environmental protection. An emerging trend is the reliance on civil liability regimes either exclusively or in combination with state liability or responsibility. Another common theme is the focus on forms of strict liability while avoiding the issue of international wrongfulness[85]. Finally, international liability schemes are beginning to give consideration to ecological damage and the restoration of environmental resources[86].

The Council of Europe's Draft Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment is the most comprehensive attempt to develop a civil liability regime[87]. The draft convention attaches the civil liability of operators to damage resulting from a wide range of dangerous activities involving, *inter alia*, dangerous substances and dangerous genetically modified organisms[88]. Contracting states must ensure that operators active in their territories obtain adequate insurance coverage[89].

More narrowly defined civil liability regimes are currently envisaged by organizations such as the International Maritime Organization (IMO) and by the contracting states of the Basel Convention on the Transboundary Movement of Hazardous Wastes[90].

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85. The exception would appear to be the ILC's Draft Articles on the Law of the Non-Navigational Uses of International Watercourses, see *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/46/10 (1991) at 161 ; Draft Article 8 stipulates that « Watercourse States shall utilize an international watercourse [system] in such a way as not to cause appreciable harm to other watercourse States ». While some members of the Commission considered that a violation of the provision would result in strict liability, the majority perceived such a violation as an « internationally wrongful act » ; see S. McCAFFREY, « The International Law Commission and Its Efforts to Codify the International Law of Waterways », (1990) XVIII *Annuaire suisse de droit international* 32, 52-54.
86. See A. REST, *loc. cit.*, note 47.
87. Council of Europe Paper DIR/JUR(91)3, reprinted in (1991) 21 *Environmental Policy and Law* 270.
88. *Id.*, Article 2.
89. *Id.*, Article 13.
90. The Legal Committee of IMO is considering a *Draft International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea* ; see (1992) 22 *Environmental Policy and Law* 311. An ad hoc Working Group of Legal and Technical Experts is currently working on a *Liability Protocol to the Basel Convention* ; see (1991) 21 *Environmental Policy and Law* 49.

Perhaps the most progressive initiative is the Economic Commission for Europe's (ECE) Draft Guidelines on Responsibility and Liability regarding Transboundary Water Pollution[91]. The draft guidelines combine strict liability for the consequences of certain hazardous activities with the responsibility of states for the breach of legal duties[92]. In doing so, the drafters seek to address the inability of civil liability schemes to capture the international and ecological dimensions of environmental harm[93]. Consequently, the guidelines include « detrimental changes in ecosystems » and the costs of restoration in the definition of damage[94].

In conclusion, one cannot hope to solve complex environmental problems by way of an essentially reactive responsibility regime[95]. However, it is possible to devise mechanisms that could complement and reinforce the necessary proactive approaches[96]. Such mechanisms must be mindful of the limitations of the responsibility approch and must seek to focus on narrow areas of application or established fields of international cooperation and practice. Recent efforts suggest that the international community has recognized the role that responsibility or liability regimes can play.

91. Doc. ECE/ENVWA/TFLR 90/WP6 ; they are to complement the *Code of Conduct on Accidental Pollution of Transboundary Inland Waters* adopted by the Economic Commission for Europe at its forty-fifth session by decision C(45), Doc. E/ECE/1225 ; ECE/ENVWA/16.
92. For a detailed discussion see A. REST, « New Tendencies in Environmental Liability/Responsibility Law », (1991) 21 Environmental *Policy and Law* 135, 136. Note that the more recent work of the ILC also relies on a combination of state and civil liability ; see *Report of the International Law Commission to the U.N. General Assembly*, U.N. Doc. A/45/10 (1990) at 279.
93. See A. REST, « Effektiveres Internationales Umwelthaftungsrecht durch verbesserte Sanktionsmechanismen und einen neuen UN Umweltgerichtshof », (1991) 11-12 *Umwelt- und Planungsrecht* 417, 419.
94. See the Guidelines, *supra*, note 91, under « A. Definitions ».
95. Note in this context that the deterrence effect of the international responsibility regime is manifestly smaller than that of its national counterparts.
96. A. REST, *loc. cit.*, note 92, 135, argues that instruments of legal responsibility and liability can contribute to changing « toothless paper tiger conventions into effective, operationable agreements ». One should bear in mind, however, that the very absence of responsibility or liability provisions may be essential to the success of many environmental protection agreements.