

1995

## Responsibility for Biological Diversity Conservation Under International Law

Catherine Tinker

Follow this and additional works at: <https://scholarship.law.vanderbilt.edu/vjtl>



Part of the [Environmental Law Commons](#), and the [International Law Commons](#)

---

### Recommended Citation

Catherine Tinker, Responsibility for Biological Diversity Conservation Under International Law, 28 *Vanderbilt Law Review* 777 (2021)

Available at: <https://scholarship.law.vanderbilt.edu/vjtl/vol28/iss4/9>

This Symposium is brought to you for free and open access by Scholarship@Vanderbilt Law. It has been accepted for inclusion in Vanderbilt Journal of Transnational Law by an authorized editor of Scholarship@Vanderbilt Law. For more information, please contact [mark.j.williams@vanderbilt.edu](mailto:mark.j.williams@vanderbilt.edu).

# Responsibility for Biological Diversity Conservation Under International Law

Catherine Tinker\*

## ABSTRACT

*Professor Tinker begins with a general discussion of biodiversity law within the context of existing international environmental issues and traditional international lawmaking. The article analyzes the legal issues that attend the fulfillment of the objectives of the Biodiversity Convention. The article examines the work of the International Law Commission on state responsibility and liability for environmental harm. The article then explores the precautionary principle and argues that it should be more aggressively applied in order to fulfill the mandate of the Biodiversity Convention.*

## TABLE OF CONTENTS

I.	INTRODUCTION.....	778
II.	STATE RESPONSIBILITY AND LIABILITY .....	782
	A. <i>The International Law Commission's Approach: State Responsibility for Internationally Wrongful Acts.....</i>	784

---

\* Associate Professor of Law at Chapman University School of Law in California. Professor Tinker teaches international law, international environmental law, and commercial law. Professor Tinker holds a J.S.D. and an LL.M. in international legal studies from New York University School of Law, and a J.D. from George Washington University School of Law. She was a consultant to the Ford Foundation's International Affairs Program and senior policy analyst at the United Nations Association-USA. The subject of her J.S.D. dissertation was biological diversity and international law.

A version of portions of Parts II and III of this article has been submitted for publication in a forthcoming book. Catherine Tinker, *State Responsibility and the Precautionary Principles*, in *THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL ENVIRONMENTAL LAW: THE CHALLENGE OF IMPLEMENTATION* (David Freestone & Ellen Hey eds., forthcoming 1995).

B.	<i>The International Law Commission's Approach: Liability of States for Injurious Consequences of Acts Not Contrary to International Law</i> .....	787
III.	THE PRECAUTIONARY PRINCIPLE AND THE INTERNATIONAL LAW OF BIOLOGICAL DIVERSITY .....	791
A.	<i>The Precautionary Principle</i> .....	792
B.	<i>The Precautionary Principle and Biological Diversity</i> .....	800
C.	<i>"Soft Law," Customary International Law, and Treaty Law Related to Responsibility for Biodiversity</i> .....	804
IV.	CONCLUSION .....	816

## I. INTRODUCTION

The international law on biological diversity has developed along with scientific understanding and now embodies an ecosystem approach to the conservation of the variety of life. The ecosystem concept and a basic sense of state responsibility not to harm the environment was formulated in 1972 in the Stockholm Declaration<sup>1</sup> and later, in the World Charter for Nature.<sup>2</sup> Since Principle 21 of the Stockholm Declaration, the concept has crystallized in customary international law, but it did not appear in binding treaty law until the United Nations Convention on Biological Diversity (the Convention or Treaty)<sup>3</sup> entered into force in 1993. Earlier wildlife protection treaties contained some aspects of the approach that was later adopted in the Biodiversity Convention. For example, the Ramsar Convention<sup>4</sup> adopted a

---

1. Stockholm Declaration of the United Nations Conference on the Human Environment, June 16, 1972, U.N. Doc. A/CONF.48/14/Rev. 1, 11 I.L.M. 1416 [hereinafter Stockholm Declaration].

For a description of the chronology of international environmental initiatives, from the Stockholm Declaration to the U.N. Convention on Biological Diversity, see David E. Bell, *The 1992 Convention on Biological Diversity: The Continuing Significance of U.S. Objections at the Earth Summit*, 26 GEO. WASH. J. INT'L L. & ECON. 479, 492-507 (1993).

2. G.A. Res. 7, U.N. GAOR, 37th Sess., Supp. No. 51, at 17, U.N. Doc. A/37/51 (1982), reprinted in 22 I.L.M. 455 (1983) (adopted on Oct. 28, 1982) [hereinafter World Charter for Nature].

3. *Opened for signature*, June 5, 1992, 31 I.L.M. 818 (entered into force Dec. 29, 1993) [hereinafter Biodiversity Convention].

4. Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Feb. 2, 1971, 996 U.N.T.S. 245, 11 I.L.M. 969 [hereinafter Ramsar Convention].

habitat and sustainable use approach to the conservation of wetlands; the World Heritage Convention<sup>5</sup> has been a factor in some national development plans that were altered to avoid damage to listed sites.

The nature of state responsibility under Principle 21, which is not to harm the territory of other states or the territory beyond national jurisdiction, is still evolving. One way of implementing the goals contained in Article 3<sup>6</sup> of the Biodiversity Convention is to apply the precautionary principle, which requires restraint of any human activity that may adversely affect biodiversity. The precautionary principle in international environmental law is one response to the popular recognition that preventive action in the face of scientific uncertainty about future harm is necessary. The precautionary principle lowers the burden of proof required for blocking proposed or existing activities that may have serious long-term harmful consequences. There is no agreement on the content of the precautionary principle nor is there consensus on whether a principle, rather than an approach, has actually emerged. "Nevertheless, countries have begun to develop precise and useful formulations of the principle in specific contexts."<sup>7</sup>

There is tremendous scientific uncertainty about the loss of biodiversity caused by various human activities, both lawful and unlawful. The numbers and types of life forms that exist as genes, species, sub-species, microorganisms, and bacteria in various ecosystems and habitats are a vast unknown. In the face of this, the precautionary principle requires an even greater degree of restraint in human activity to conserve and sustainably use biodiversity. Perhaps, for now, the precautionary principle should mandate a policy of "no action." Such an interpretation would be consistent with those who have called for a clarification of the notion of responsibility and prevention in environmental concerns. As one author has asserted, "[i]t is no longer sufficient to talk of state responsibility for environmental damage. The context must change to reflect state responsibility for the preservation of global environmental well-being."<sup>8</sup>

---

5. Convention for the Protection of the World Cultural and Natural Heritage, Nov. 23, 1972, 27 U.S.T. 37, 1037 U.N.T.S. 151 [hereinafter World Heritage Convention].

6. "States have . . . the responsibility to ensure that activities within their jurisdictions or control do not cause damage to the environment. . . ." Biodiversity Convention, *supra* note 3, art. 3.

7. Edith Brown Weiss, *International Environmental Law: Contemporary Issues and the Emergence of a New World Order*, 81 GEO. L.J. 675, 690 (1993).

8. Susan H. Bragdon, *National Sovereignty and Global Environmental Responsibility: Can the Tension Be Reconciled for the Conservation of Biological Diversity?*, 33 HARV. INT'L L.J. 381, 391 (1992).

Traditional international lawmaking or standard-setting is an inherently slow process. This is particularly true in international environmental law where there is very little consensus surrounding existing norms. Soft law, customary law, and treaties are needed to set standards and define legally-binding duties and obligations based on the precautionary approach. Existing environmental treaties need to be enforced and additional states urged to ratify them. To ensure the highest degree of compliance, the principle of precautionary action to avoid environmental harm must be recognized in international law as a means of fulfilling states' obligations to conserve, sustainably use, and equitably share biodiversity.

The United Nations Convention on Biological Diversity codifies a line of soft law and international custom to create hard law in the treaty. The obligations accepted by states party to the Convention are threefold: conservation of biodiversity; sustainable use of biological diversity; and equitable sharing of biodiversity benefits.<sup>9</sup> States party to the Convention are mandated to establish national legislation and plans. In order to fully comply with the treaty, these internal laws and development plans must take into account the responsibility accepted under the Principle 21 language and the jurisdictional scope article, Article 4. Arguably, to fully comply with the letter and spirit of the Convention, states must apply the precautionary principle in their decision-making processes and whenever they take action under national legislation and development plans.

Full application of the principle of precautionary action may require states to forego the short-term financial opportunities available from resource depletion and loss of biodiversity in order to secure long-term human benefits for the planet and future generations. For those developing countries in which poverty, disease, and starvation make it almost impossible to forego short-term but destructive gains, the Convention offers means of financing biodiversity conservation projects and the transfer of appropriate technology. In the meantime, the Convention requires states to monitor, study, and catalogue the rich storehouse of genetic variety contained in their rain forests, coral reefs, wetlands, deserts, and coastal zones. When greater scientific certainty about the effect of human activity on ecosystems and habitats is achieved, planners, lawyers, and diplomats may be better able to balance conservation and sustainable use of biological diversity. In the meantime, the lack of full scientific certainty should not be used as a reason for

---

9. Biodiversity Convention, *supra* note 3, art. 1.

postponing measures to avoid or minimize a threat of significant reduction or loss of biological diversity.

International attention should be drawn to formulating global responsibility for biodiversity conservation and sustainable use. The Convention on Biological Diversity echoes Principle 22 of the Stockholm Declaration with a weak reference to the need to study state liability. It may be fruitful for such a study to follow the guidance of two other Stockholm Declaration principles.<sup>10</sup> Principle 4 states that "[humanity] has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperiled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development."<sup>11</sup> Principle 5 states that "[t]he non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all [humanity]."<sup>12</sup> The arguments for global conservation of biological diversity are weighted in favor of intangibles: aesthetics or preservation of open space or potential value for generations not yet born, based on equity or fairness.

This article analyzes the legal issues that attend fulfillment of the ambitious objectives of the Convention on Biological Diversity. This article also notes areas of ambiguity in the Convention, which remain to be clarified, and emphasizes responsibility for loss of biodiversity and prevention of that loss. Part II explores the failure of the traditional international law of state responsibility and liability to adequately protect the environment. Part II also reviews the U.N. International Law Commission's work on draft articles that incorporate a preventive or precautionary approach, specifically the draft articles on state responsibility and liability for environmental harm from lawful activities. This article suggests that a more appropriate legal approach is the application of the precautionary principle,<sup>13</sup> which seeks to prevent harm rather than determine liability and damages after harm has occurred.

Part III argues that as greater scientific knowledge is achieved, the precautionary principle should be applied to all proposed human actions that may cause a loss of biodiversity, alter ecosystems and habitats, or affect genetic material. The

---

10. Stockholm Declaration, *supra* note 1, princ. 22.

11. *Id.* princ. 4.

12. *Id.* princ. 5.

13. For definitions and sources of the precautionary principle, see *infra* part III.

article concludes that the principle of precautionary action may be seen as the means of enforcing the Biodiversity Convention and used as a procedural test to decide whether a proposed use of biodiversity is sustainable. Ultimately, the real test of the Convention on Biological Diversity will be the extent to which its provisions safeguard the planet's rich biological diversity, and the extent to which humans can undertake development projects without irrevocably destroying their global genetic heritage.

## II. STATE RESPONSIBILITY AND LIABILITY

Under traditional concepts of international law, the doctrine of state responsibility developed to address the relationship between a given state and citizens of other countries.<sup>14</sup> The concept of state responsibility presupposes a clear legal duty or obligation for states to comply with a principle on the international plane or an obligation arising under treaty or customary law. The state-alien example implicates the international principle of nondiscrimination against aliens and treaty obligations involving the treatment of diplomatic persons or the right of innocent passage. In the early 1970s, the concept of state responsibility was broadened to include any internationally wrongful acts.

The problem for international law is to interpret the concept of state responsibility in the environmental context. The U.S. understanding of international law is codified in the *Restatement (Third) of the Foreign Relations Law of the United States*, which states that a nation is obligated to take necessary measures to ensure that activities within the jurisdiction or control of that state conform to "generally accepted" international rules or standards.<sup>15</sup> Even in the absence of an injury, a state is responsible to all other states for any violation of this obligation<sup>16</sup> and for any resultant significant injury to "the environment of another state or to its property, or to persons or property within that state's territory or under its jurisdiction or control."<sup>17</sup> The application of the broad language of Section 601, however, is

---

14. See, e.g., RICHARD B. LILICH, *INTERNATIONAL LAW OF STATE RESPONSIBILITY FOR INJURIES TO ALIENS* (1983); CHITTARANJAN F. AMERASINGHE, *STATE RESPONSIBILITY FOR INJURIES TO ALIENS* (1967); CLYDE EAGLETON, *THE RESPONSIBILITY OF STATES IN INTERNATIONAL LAW* (1928).

15. *RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES* § 601 (1986) [hereinafter *RESTATEMENT*].

16. *Id.* para. 1.

17. *Id.*

limited by the state's obligation to take only "such measures as may be necessary, to the extent practicable under the circumstances. . . ."<sup>18</sup>

"Generally accepted" international obligations and rules of conduct related to international environmental law now require, *inter alia*, the conservation and sustainable use of biological diversity and nonrenewable natural resources. At the same time, pressures for resource development and short-term economic gain encourage a broad range of public and private activities that adversely affect the environment, either now or in the future. In the area of generally accepted international obligations, state responsibility is triggered by the *de minimis* duty to observe the principle of *sic utere tuo ut alienum non laedas*.<sup>19</sup> Thus, states have a general duty to prevent uses of their territory that cause significant harm to other states.<sup>20</sup> A state causing transboundary pollution is obligated to take reasonable measures to protect neighboring states from harm and to compensate them for damage.<sup>21</sup> In addition, there may be obligations *erga omnes*;<sup>22</sup> the *Restatement* contemplated these obligations as they apply to areas beyond national jurisdiction<sup>23</sup> and they are described by the International Court of Justice in the *Barcelona Traction* case.<sup>24</sup>

---

18. *Id.*

19. This phrase is roughly translated as a form of the golden rule or good neighborliness—an injunction to use one's property in a manner that does not injure another's property. It is related to the civil law concept of "abuse of rights." One classic example of the principle is the idea that neighbors may not build "spite fences" to separate themselves from one another.

National laws also contain "the doctrine that makes an otherwise proper exercise of one's property rights wrongful unless the use [sic] compensates the person who is injured by the use." LOUIS HENKIN ET AL., *INTERNATIONAL LAW: CASES AND MATERIALS* 1380 (3d ed. 1993). See also JAMES BARROS & DOUGLAS M. JOHNSTON, *THE INTERNATIONAL LAW OF POLLUTION* 74-76 (1974).

20. LASSA OPPENHEIM, *INTERNATIONAL LAW* 291 (Hersh Lauterpacht ed., 8th ed., 1955), cited in HENKIN ET AL., *supra* note 19, at 552.

21. JUTTA BRUNNÉE, *ACID RAIN AND OZONE LAYER DEPLETION: INTERNATIONAL LAW AND REGULATION* 115 n.144 (1986) (citing John B. Lyle, Note, *International Liability and Primary Rules of Obligation: An Application to Acid Rain in the United States and Canada*, 13 GA. J. INT'L & COMP. L. 111, 113 (1983)). See also *Trail Smelter Case* (U.S. v. Can.), 3 R.I.A.A. 1911 (1938), 1938 (1941) [hereinafter *Trail Smelter Case*].

22. *Erga omnes* obligations are obligations owed to the international community as a whole, rather than just to another state.

23. *RESTATEMENT*, *supra* note 15, §§ 601, 902(1).

24. *Barcelona Traction, Light and Power Company, Limited* (Belg. v. Spain), 1970 I.C.J. 4 (Feb. 5).



A. *The International Law Commission's Approach: State Responsibility for Internationally Wrongful Acts*

The United Nations International Law Commission (I.L.C.) differentiates internationally wrongful acts from activities not contrary to international law. The first give rise to state responsibility.<sup>25</sup> The second give rise to liability for injurious consequences. It is well established in international law that breach of a rule of international law entails state responsibility for an internationally wrongful act.<sup>26</sup> The I.L.C.'s 1980 Draft on State Responsibility<sup>27</sup> specified: "There is an internationally wrongful act of a State when conduct consisting of an action or omission is attributable to the State under international law; and that conduct constitutes a breach of an international obligation of the State."<sup>28</sup>

The I.L.C. approach to state responsibility is to differentiate between "primary rules" and "secondary rules" of conduct that specify the action or refusal to act, which triggers state responsibility. Primary rules are obligations; secondary rules determine the legal consequences of failure to abide by primary rules.<sup>29</sup> Secondary rules "specifically [deal] with the issues of responsibility and liability, although these issues cannot always actually be separated from the operation of the primary rules."<sup>30</sup> Allott has taken issue with the possibly meaningless distinction

25. THE INTERNATIONAL LAW COMMISSION'S DRAFT ARTICLES ON STATE RESPONSIBILITY (Shabtai Rosenne ed., 1991); UNITED NATIONS CODIFICATION OF STATE RESPONSIBILITY (Marina Spinedi & Bruno Simma eds., 1987).

26. Chorzów Factory Case, 1928 P.C.I.J. (ser. A) No. 17, at 27-28 (Sept. 13).

27. *Report of the International Law Commission to the General Assembly*, U.N. GAOR, 35th Sess., Supp. No. 10, at 59, U.N. Doc. A/35/10 (1980) [hereinafter *Commission Report*], reprinted in [1980] 1 Y.B. INT'L L. COMM'N 32, U.N. Doc. A/CN.4/SER.A/1980/ADD.1 (PART 2).

For a chronology of codification efforts on state responsibility, see David J. Bederman, *Contributory Fault and State Responsibility*, 30 VA. J. INT'L L. 335, 340-42 (1990). See also Pierre-Marie Dupuy, *The International Law of State Responsibility: Revolution or Evolution?*, 11 MICH. J. INT'L L. 105 (1989) (discussing the evolution of the law of state responsibility).

28. *Commission Report*, supra note 27, art. 3.

29. On the distinction between primary and secondary rules, see in particular J. Combacau & D. Alland, 'Primary' and 'Secondary' Rules in the Law of State Responsibility: Categorizing International Obligations, 16 NETH. Y.B. INT'L L. 81 (1985); Günther Handl, *Liability as an Obligation Established by a Primary Rule of International Law*, 16 NETH. Y.B. INT'L L. 49 (1985).

30. Francisco O. Vicuña, *State Responsibility, Liability, and Remedial Measures Under International Law: New Criteria for Environmental Protection*, in ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW 124, 128 (Edith Brown Weiss ed., 1992).

between primary and secondary rules and with the amount of time that has been invested over the past four decades in belaboring the point. Allott charges that the resultant delay in the formulation of the I.L.C. draft on state responsibility, "is doing serious long-term damage to international law and international society."<sup>31</sup> Even more seriously, Allott charges that the I.L.C.'s process and states' substantive approach to state responsibility virtually assure that states will not be held accountable for their actions.<sup>32</sup>

Under traditional public international law, three threshold questions are used to determine state responsibility: Was there a duty under international law? Was the duty breached? Can responsibility be attributed to a state for the violation of international law?<sup>33</sup> Acts by nonstate entities, such as a citizen or official for whose acts a state is not responsible, do not give rise to state responsibility. Through the doctrine of attribution, however, a state can be responsible for the acts of its own citizens against another state.

The I.L.C. maintains that state responsibility attaches only to internationally wrongful acts. Although the violation of a clearly-defined treaty obligation or an unequivocally recognized norm of customary law clearly constitutes an internationally wrongful act, the I.L.C. has neither listed nor defined other potentially wrongful acts. Under the I.L.C. rubric, state responsibility is triggered when a state commits an international delict, regardless of whether any injury results. Once a state accepts binding duties, any failure to observe them necessarily amounts to a breach of international obligations. The breach may provoke a variety of responses, ranging from state protests to formal diplomatic expressions of displeasure and censure throughout the world community.<sup>34</sup>

A state may raise a defense to its breach of an international obligation; in I.L.C. parlance, these defenses are known as "conditions precluding wrongfulness."<sup>35</sup> The defenses include necessity, prior consent, self-defense, and *force majeure*.<sup>36</sup> They

---

31. Philip Allott, *State Responsibility and the Unmaking of International Law*, 29 HARV. INT'L L.J. 1, 1 (1988).

32. *Id.* at 16.

33. See, e.g., IAN BROWNLIE, *SYSTEM OF THE LAW OF NATIONS: STATE RESPONSIBILITY, PART I* (1983); Gunther F. Handl, Book Review, 18 Int'l Law. 748 (1984).

34. See RESTATEMENT, *supra* note 15, §§ 901-07.

35. If state responsibility encompasses an absolute liability rather than a strict liability standard, then no defenses whatsoever are available.

36. HENKIN ET AL., *supra* note 19, at 561-70.

may be raised in many situations, including a failure to observe the precautionary principle that causes transboundary pollution or degradation of biological diversity. Because the international obligation at issue is one that requires the state to balance competing interests, almost every state can be expected to raise a defense such as necessity. Here the difficulty of defining and applying the precautionary principle becomes apparent. If the precautionary principle is merely a guideline to actions that may accomplish other goals, then it cannot be a primary rule or an obligation for purposes of state responsibility analysis. The application of the precautionary principle may be seen as a consequence of attempting to fulfill a primary obligation.

Although state responsibility does not arise unless there is a breach of an international obligation, the breaching action or inaction must be attributable to the state. Difficulties of attribution are inherent in the concept of objective responsibility, because a state is always liable for the acts of its officials and organs, even when they act *ultra vires*.<sup>37</sup> Brownlie notes that Grotius viewed the *culpa* as the proper basis of state responsibility.<sup>38</sup> Brownlie, however, moved beyond the confines of fault to a more realistic test when he wrote that one "need not qualify responsibility of a state for an internationally wrongful act by the negligence (*culpa*) or intention (*dolus*) of the actor."<sup>39</sup> In the I.L.C.'s consideration of objective state responsibility, negligence or fault is not generally important for determining state responsibility<sup>40</sup> or establishing an internationally wrongful

37. "[T]he public law analogy of the *ultra vires* act is more realistic than a seeking for subjective *culpa* in specific natural persons who may, or may not, 'represent' the legal person (the state) in terms of wrongdoing. . . . The state also bears an international responsibility for all acts committed by its officials or its organs which are delictual according to international law, regardless of whether the official organ has acted within the limits of his competency or has exceeded those limits." IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 437-40 (4th ed. 1990) (citing Estate of Jean-Baptiste Caire v. United Mexican States, 5 R.I.A.A. 516, 529-31 (1929)).

38. [T]here is no need to show fault in the sense of malicious intent or negligence on the part of the State officials responsible for the action or inaction. . . . [O]pinions of eminent authorities such as Lauterpacht, Verdross and Eagleton . . . have favoured the Grotian view that State responsibility rests on "the conception of States as moral entities accountable for their acts and omissions in proportion to the *mens rea* of their agents, the real addressees of international duties. . . ."

OSCAR SCHACHTER, INTERNATIONAL LAW IN THEORY AND PRACTICE 203 (1991) (quoting HERSH LAUTERPACHT, PRIVATE LAW SOURCES AND ANALOGIES 137 (1970)).

39. BROWNLIE, *supra* note 37, at 437.

40. *Id.* at 437-39. Negligence and fault are, however, pertinent when determining reparations. *Id.*

act. After several years of inattention to the topic of state responsibility, in 1993 the I.L.C. formally adopted articles on cessation, reparation, restitution in-kind, compensation, satisfaction and assurances, and guarantees of nonrepetition, and included exceptionally detailed commentaries to the articles.<sup>41</sup>

Consideration of whether to include a draft article on "international crimes" was postponed until the I.L.C.'s 1994 session. International crimes include internationally wrongful acts that are considered "essential for the protection of the fundamental interests of the international community" as a whole.<sup>42</sup> In its list of proposed international crimes, draft Article 19(3)(d) includes the serious breach of an international obligation of essential importance for the safeguarding and preservation of the human environment. Thus, according to the proposal, massive pollution of the atmosphere or of the seas would constitute an international crime.<sup>43</sup> The I.L.C. remains divided on this controversial subject. Some members consider the same serious acts to be wrongful acts or to be violations of *ergo omnes* obligations. From this perspective, there is no need to use the label "crimes." In contrast, other I.L.C. members consider the same acts to be crimes and believe that "crimes" is an appropriate label.<sup>44</sup>

#### B. *The International Law Commission's Approach: Liability of States for Injurious Consequences of Acts Not Contrary to International Law*

If an exporting state—or a company within its jurisdiction or control—failed to obtain prior informed consent from the importing state and shipped hazardous biotechnology products,

---

41. *Report of the International Law Commission on the Work of its Forty-Fifth Session*, U.N. GAOR, 48th Sess., Supp. No. 10, at 79, U.N. Doc. A/48/10 (1993) [hereinafter 1993 I.L.C. Report].

The draft articles on countermeasures are not part of this report because they lacked commentaries necessary for their approval. Robert Rosenstock, Current Development, *The Forty-Fifth Session of the International Law Commission*, 88 AM. J. INT'L L. 134, 134 n.1 (1994). Countermeasures are actions that are generally legally impermissible. They may, however, be taken by a victim state against a state that has committed an intentionally wrongful act. Under a further proposal by the Special Rapporteur, countermeasures may require binding third-party dispute settlement. *Id.* at 136.

42. *Report of the International Law Commission on the Work of its Twenty-Eighth Session*, U.N. GAOR, 28th Sess., Supp. No. 10, U.N. Doc. A/28/10 (1976), reprinted in 2 Y.B. Int'l L. Comm'n 95, U.N. Doc. A/CN.4/SER.A/1976/Add.1 (pt. 2) (1976).

43. *Id.* at 96.

44. Rosenstock, *supra* note 41, at 137-38.

such an activity could be considered an internationally wrongful act, and thus trigger state responsibility regardless of whether any harm occurred. On the other hand, the shipment could be considered an activity not contrary to international law, which could only trigger liability for the exporting state if there were injurious consequences. The need to fit the facts of a given situation into these particular categories—whether the distinction is meaningful or not—arises from the decision of the I.L.C.<sup>45</sup> to split the issue into two separate topics: state responsibility for internationally-wrongful acts, consisting of both primary and secondary obligations; and international liability for injurious consequences of activities not contrary to international law.

On a theoretical level, it is not clear that the conceptual basis on which it—liability for injurious consequences of activities not contrary to international law—is distinguished from state responsibility is either sound or necessary. On a more practical level, it is questionable whether it represents a useful basis for codification and development of existing law and practice relating to environmental harm, the field in which the Commission has mainly located the topic. From either perspective, it is liable to seem at best a questionable exercise in reconceptualising an existing body of law or, at worst, a dangerously retrograde step that may seriously weaken international efforts to secure agreement on effective principles of international environmental law.<sup>46</sup>

The I.L.C. draft on liability for the injurious consequences of activities not contrary to international law states that civil liability will attach when four factors are present. There must be: (1) human activity; (2) the activity must be within the territory or control of a state; (3) the activity must be capable of giving rise to harm; and (4) there must be actual harm to persons or things within the territory or control of another state.<sup>47</sup> Unlike the doctrine of state responsibility, which can attach even in the absence of harm, the concept of liability requires actual harm. Most commentators agree that the harm must be “substantial” or “serious,” because state liability should not attach to minor

45. For a critique of this decision, see Daniel B. Magraw, *Transboundary Harm: The International Law Commission's Study of 'International Liability,'* 80 AM. J. INT'L L. 305 (1986).

46. Alan E. Boyle, *State Responsibility and International Liability for Injurious Consequences of Acts Not Prohibited by International Law: A Necessary Distinction?*, 39 INT'L & COMP. L.Q. 1, 1 (1990).

47. *Report of the International Law Commission on the Work of its Forty-second Session*, U.N. GAOR, 42nd Sess., Supp. No. 10, U.N. Doc. A/42/10 (1990).

incidents.<sup>48</sup> There are several unanswered questions surrounding the draft. These questions include the draft's intended meaning of "control" and whether the draft applies when a state fails to act to remove a natural danger.<sup>49</sup>

The I.L.C.'s current approach to liability is to "focus on prevention of harm from activities that constitute a particular risk." The I.L.C. begins by clarifying that the scope of the article includes lawful activities that "create a risk of causing significant transboundary harm through their physical consequences." The I.L.C. defines risk to include both "a low probability of causing disastrous harm and a high probability of causing other significant harm." The I.L.C. then goes on to address prior authorization, risk assessment, and measures to minimize risks.<sup>50</sup>

States are most likely to be deterred from causing environmental harm if some standard of liability is imposed. Whether the system is grounded in strict liability or negligence is of considerably less importance. If international law adopts a liability system, states will be liable for environmental damage caused by both public and private actors, regardless of whether the harm occurs within another state or beyond the boundaries of national jurisdiction. The liability approach best protects the rights of innocent victims of environmental harm because it shifts the burden of proof and makes it possible to collect prompt, adequate, and effective compensation<sup>51</sup> once injury is established. Of course, the most effective way to protect the rights of the innocent is to prevent the harm or destruction from occurring in the first place.

One of the most difficult issues facing the I.L.C. is whether to impose a strict liability system or a fault-based system. For a number of obvious political and financial reasons, states are reluctant to adopt strict liability and therefore lack the will to negotiate an environmental liability protocol.<sup>52</sup> On the other hand, "the very absence of responsibility or liability provisions

---

48. *Id.*

49. *Id.*

50. Rosenstock, *supra* note 41, at 139.

51. RESTATEMENT, *supra* note 15, § 604(2).

52. In fear of possible liability for environmental harm from their own activities, no state is leading the charge to impose international liability. For example, following the Chernobyl accident, one might have expected states such as Sweden to bring a case against the U.S.S.R. at the International Court of Justice for damage suffered within their state. In reality, no such case was brought. This suggests Sweden is concerned that it too could be subject to third party claims, such as those resulting from acid rain pollution damage.

may be essential to the success of many environmental protection agreements."<sup>53</sup>

The meaning of strict liability and absolute liability in the context of activities affecting the environment is particularly relevant to hazardous or ultrahazardous activities and has created substantial problems for the I.L.C. The most visible ultrahazardous activity is nuclear and there is precedent for finding liability in cases where nuclear operations have caused environmental damage.<sup>54</sup> The treaties pertaining to nuclear accidents have adopted a variety of approaches.<sup>55</sup> Other treaties have addressed the harms caused by such specialized problems as objects that fall to earth from outer space.<sup>56</sup>

The I.L.C. has had considerable difficulty addressing ultrahazardous activities.<sup>57</sup> The I.L.C. created a working group and later adopted the group's recommendations.<sup>58</sup> In essence, the I.L.C. is attempting to create consensus within itself on the

53. Jutta Brunnée, *The Responsibility of States for Environmental Harm in a Multinational Context—Problems and Trends*, 34 LES CAHIERS DE DROIT [C. DE D.] 827, 845 n.96 (citing A. Rest, *New Tendencies in Environmental Liability/Responsibility Law*, 21 ENVTL. POLY & L. 135 (1991) (supporting the adoption of instruments of legal responsibility and liability)).

54. See Paul C. Szasz, *Measuring Liability for Damage Due to Radioactivity*, in INTERNATIONAL LAW AND POLLUTION 175, 175-95 (Daniel B. Magraw ed., 1991).

55. Convention on Third Party Liability in the Field of Nuclear Energy, July 29, 1960, 956 U.N.T.S. 251 (1974); Convention on Civil Liability for Nuclear Damage, May 21, 1963, 1063 U.N.T.S. 265, reprinted in INTERNATIONAL ATOMIC ENERGY AGENCY, INTERNATIONAL CONVENTIONS ON CIVIL LIABILITY FOR NUCLEAR DAMAGE 7 (1976).

56. E.g., Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187.

57. The location of this topic at the outer edge of progressive development, changes in the person of the special rapporteur and conflicting guidance from the General Assembly have contributed to the Commission's difficulties in dealing with it. In the debate in the Assembly's Sixth Committee in 1991, some states called for broadening the scope of the item, others for narrowing it and some for treating it in accordance with, and as a part of, the topic of state responsibility. Still others noted key areas in which it diverged widely from traditional notions of state responsibility.

Robert Rosenstock, Current Development, *The Forty-Fourth Session of the International Law Commission*, 87 AM. J. INT'L L. 138, 142 (1993).

58. On the recommendation of the working group, the Commission: (1) declined to make any final decision on the precise scope of the topic; (2) decided that it should cover both prevention and remedial measures and that prevention should be considered first; and (3) decided to deal, at least at this stage, with activities involving a substantial risk of causing transboundary harm and not with other activities that, in fact, cause harm. *Id.*

basic issues of prevention and remediation.<sup>59</sup> If general consensus does develop, the I.L.C. will be able to move on to consideration of the specific mechanisms that should be used to address ultrahazardous risks.<sup>60</sup>

### III. THE PRECAUTIONARY PRINCIPLE AND THE INTERNATIONAL LAW OF BIOLOGICAL DIVERSITY

Traditional models of international law and state responsibility focus upon ensuring compensation for transboundary damages and do not adequately address the challenges arising in international environmental law. The classic model poses a bilateral conflict between one state as actor and another state as victim, with significant physical harm occurring across national boundaries attributable to the first state. Emerging conflicts over the fundamental assumptions and value choices inherent in the "sustainable development" and "sustainable use" of nonrenewable natural resources located within a given state do not fit the bilateral paradigm. Presently, unless some transboundary damage is implicated, no state may raise a legal objection to the domestic environmental policies of any other state. Within the confines of their own borders, international law permits each state to deplete or injure its natural resources, to destroy its gene pool, species, and habitats, and to otherwise harm its environment. Thus, the traditional model of international environmental law creates a jurisdictional problem.

A second problem is that the long-standing "duty and damages for breach" model is inherently reactive and simply cannot prevent the loss of biological diversity, the despoliation of

---

59. *Id.* In other words, the Commission will focus first on preventive measures in respect of activities creating a substantial risk of harm, and then on remedial measures after harm has occurred. The goal is to create, in this manner, agreement in the Commission on basic elements of its work on the topic.

60. It remains to be seen whether this procedure will enable the Commission to free itself of the difficulties it has faced. If so, the Commission may be able to focus on various approaches, including insurance schemes of the type contained in the International Convention on Civil Liability for Oil Pollution Damage and the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage. These instruments reflect a market-oriented socialization of the risk with regard to one class of undeniably useful, indeed essential, activities known to be ultrahazardous in terms of their potential damage.



Antarctica, or the destruction of the ozone layer. Although the reactive model once may have been an appropriate response to transfrontier air or water pollution, today a growing number of environmental problems do not fit the mold of narrowly-defined transfrontier pollution and duties imposed on single states. International relations in the field of environmental protection have developed mostly in multilateral frames.<sup>61</sup>

A new, more preventive model is needed to protect transnational ecosystems and the global commons. Under the new model, proponents of development will bear the burden of proving, before they proceed, that the planned use is sustainable and that no harm will result from proposed development. Only compliance with standards based on the precautionary principle<sup>62</sup> and international cooperation<sup>63</sup> will provide the necessary protection for the planet. Ultimately, achieving conservation and sustainable use of biodiversity and nonrenewable natural resources will require changes in human production and consumption. Certain groups or individuals in society will have to sacrifice short-term gains for long-term benefits and to consider meeting the basic needs of future generations as well as those of the present.<sup>64</sup> International law and state responsibility doctrines must necessarily expand to reflect this new imperative for precautionary approaches to human activity and their regulation.

#### A. *The Precautionary Principle*

The precautionary principle has been defined in two ways. It has been defined as an international application of the German law principle of precautionary action (*vorsorgeprinzip*).<sup>65</sup> It has

61. Alexandre Kiss, *Present Limits to the Enforcement of State Responsibility for Environmental Damage*, in INTERNATIONAL RESPONSIBILITY FOR ENVIRONMENTAL HARM 3 (Francesco Francioni & Tullio Scovazzi eds., 1991).

62. See David Freestone & Ellen Hey, *Introduction: Origins and Development of the Precautionary Principle*, in THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL ENVIRONMENTAL LAW: THE CHALLENGE OF IMPLEMENTATION (David Freestone & Ellen Hey eds., forthcoming 1995).

63. "States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem." Rio Declaration on Environment and Development, U.N. Conference on Environment and Development, June 15, 1992, UNCED Doc. A/CONF.151/5/Rev.1, princ. 7, reprinted in 31 I.L.M. 874 (1992) [hereinafter Rio Declaration].

64. See generally EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS (1989) (discussing the theory of intergenerational equity and its application to environmental issues).

65. Lothar Gündling, *The Status in International Law of the Principle of Precautionary Action*, in THE NORTH SEA: PERSPECTIVES ON REGIONAL ENVIRONMENTAL

also been defined as the variety of regulatory approaches adopted by governments to implement the *vorsorgeprinzip* principle; efforts to control emissions at their source by using best available technology are one example of this definition in practice.<sup>66</sup> The precautionary principle can be used as a theory and justification for environmental strict liability; this perspective is rooted in the tort law goal of providing compensation to victims of harm. The precautionary principle also may be understood more broadly as a duty to take precautionary action and to avoid risk.<sup>67</sup> In practice, the precautionary principle informs a substantive duty of care that requires environmental impact assessments or other regulatory investigations prior to permitting given actions.

The phrase "the precautionary principle" has appeared in a number of international instruments. Its meaning varies from "its weakest formulations . . . to its strongest [in which] it can be seen as a reversal of the normal burden of proof, as in the Oslo Convention Prior Justification Procedure."<sup>68</sup> Several recent United Nations documents, including the 1992 Rio Declaration, have articulated the precautionary principle: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."<sup>69</sup> In another formulation, the preamble to the U.N. Convention on Biological Diversity also refers to the precautionary principle, but omits phrases such as "according to their capabilities" and "cost-effective" measures, which qualify the language of the Rio Declaration. The Biodiversity Convention declares its intentions by, "[n]oting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures

---

COOPERATION, SPECIAL ISSUE OF THE INTERNATIONAL JOURNAL OF ESTUARINE AND COASTAL LAW 23, 23 (1990) (citing H. von Lersner, *Vorsorgeprinzip*, in *HANDWORTERBUCH DES UMWELTRECHTS* 1086 (1988)).

66. *Id.*

67. See, e.g., James Cameron & Juli Abouchar, *The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment*, 14 B.C. INT'L & COMP. L. REV. 1 (1991) (summarizing examples of the precautionary principle in national legislation, European Community (EC) law, and international declarations); Panel, *New Developments in International Environmental Law*, 85 PROC. AM. SOC'Y INT'L L. 401, 413-17 (1991) (remarks by Professor Daniel Bodansky).

68. David Freestone, *The Precautionary Principle*, in *INTERNATIONAL LAW AND CLIMATE CHANGE* 21, 30 (Robin Churchill & David Freestone eds., 1991).

69. Rio Declaration, *supra* note 63, princ. 15.

to avoid or minimize such a threat."<sup>70</sup> In the Biodiversity Treaty, the language of obligation has been softened by using "should" to replace the mandatory "shall" used in the Rio Declaration. Other references to the precautionary principle appear in recent multilateral treaties, conference declarations, and regional agreements, especially in agreements related to oil pollution of the North Sea. It has been noted that the precautionary principle turns away from the 'assimilative capacity' approach to environmental pollution, and recognizes the limitation to scientific knowledge on ecosystems.<sup>71</sup>

Each of these formulations of the precautionary principle gives rise to different applications of the international law of state responsibility and liability. At its strongest, the precautionary principle may be interpreted to prohibit virtually all uses of natural resources and all human activities in certain ecosystems. Such a moratorium could continue indefinitely, until sufficient scientific knowledge developed about the effects of proposed activities or uses. At its weakest, the precautionary principle may be merely hortatory language that is intended to guide states as they adopt national legislation and plans. This permissive approach to resource use and human activity creates a balancing of interests that makes it possible for developmental and quality of life considerations to outweigh the need to conserve biodiversity and take other preventive action. Although the international community may strive to achieve an expansive application of the precautionary principle in the future, the permissive interpretation dominates the status quo.

The precautionary principle has appeared as soft law in numerous conference declarations and other statements of what governments think international law should be. In the absence of strong evidence of state practice and *opinio juris*,<sup>72</sup> such as an explicit statement from a high-level government minister that precautionary measures were adopted because they are mandated under international law, it is difficult to conclude that the precautionary principle is currently customary international law.<sup>73</sup> Examples of national legislation that refer to the

70. Biodiversity Convention, *supra* note 3, pmb., para. 9.

71. Ellen Hey, *The Precautionary Concept in Environmental Policy and Law: Institutionalizing Caution*, 4 GEO. INT'L ENVTL. L. REV. 303, 307-09 (1992).

72. The *opinio juris communis*, or expression of a legal obligation, relates to a nation's perception of its duties. Proof of obligation can be found in decisions of national courts, and in statements by leaders and jurists as to the legal effect of a declaration, etc. See, e.g., SCHACHTER, *supra* note 38, at 38-46.

73. Some writers assert that the precautionary principle is recognized as binding international law. E.g., HARALD HOHMANN, PRECAUTIONARY LEGAL DUTIES

precautionary principle or that are implicitly based on such a principle are insufficient to demonstrate a binding *international* legal obligation.

Apart from any sense of legal obligation under international law, there are many subjective variables that may affect a state's choice of precautionary action. Precautionary actions may save money in several situations: when there is a great likelihood that damages will occur; when damages, while unlikely, will be of great magnitude should they occur; and when a large number of people are likely to be injured if the harm is not prevented. The type or degree of damage contemplated and the ease of adopting precautionary measures may also induce precautionary action, particularly if there is public demand or political support for precautionary action. A state may act voluntarily based on a moral or ethical imperative. It may also voluntarily adopt a precautionary course for economic reasons. Sometimes it is more cost-efficient to prevent damage than to wait for damage to occur and pay the resulting costs.

It is never easy to say precisely when a rule crystallizes into customary international law. There is no convenient bright line test or formula to apply; the number of years that have elapsed since the original articulation of the principle and the number of times the principle has been quoted in soft law documents are not dispositive. To find the *opinio juris*, it is always necessary to locate the reasons for state practice.<sup>74</sup> Similarly, if states adopt the language of international instruments that are neither binding nor intended to be binding upon the parties, then the mere fact that states have adopted that language is insufficient to prove that a customary rule of international law exists.

If a state happens to follow such a nonbinding principle, it may not necessarily believe that it was under a legal compulsion to do so and may not accept that it could be liable for breach under international law for failing to follow the law. To structure the definition of customary international law otherwise would be to erase the difference between nonbinding and binding international law, and to eliminate the incentive for states to join the soft law declarations from which international environmental law frequently evolves. For purposes of this article, it is not necessary to definitively state whether the precautionary principle

---

AND PRINCIPLES OF MODERN INTERNATIONAL ENVIRONMENTAL LAW, 344 (1994). Others are critical of this assertion. See, e.g., Günther Handl, *Environmental Security and Global Change: The Challenge to International Law*, in ENVIRONMENTAL PROTECTION AND INTERNATIONAL LAW 59, 78-79 (Winfried Lang et al. eds., 1994); PATRICIA W. BIRNIE & ALAN E. BOYLE, INTERNATIONAL LAW AND THE ENVIRONMENT 98 (1992).

74. See SCHACHTER, *supra* note 38.

is or is not customary law. Rather, the question is whether the precautionary principle affects the international law of state responsibility and liability when the principle is or becomes law, either through treaty obligations or through the future development of customary international law.

The relationship between state responsibility and the precautionary principle has yet to be fully defined. The first element of state responsibility is the existence of a clear legal duty or obligation that gives rise to the concept of an "internationally wrongful act."<sup>75</sup> The second element is a breach of the legal duty. The next step is evaluation of possible defenses to the breach. Finally, compensation for victims of the breach must be determined.

The first element is the crux of the relationship between the precautionary principle and state responsibility. If the precautionary principle has not yet risen to the level of a legal duty or obligation, then it is difficult or even impossible to move on to the problems of breach, defenses, and compensation. Certainly, it may also be impossible to deter harmful behavior.<sup>76</sup> Because the concept of environmental harm is relatively new in international law, there are few clearly-defined internationally wrongful acts that could trigger state responsibility. As principles of international environmental law become recognized as binding law through customary law and treaty law, more obligations will exist. Breach of those obligations may then lead to state responsibility. At present, a state's failure to follow the precautionary principle is not an internationally wrongful act that can trigger state responsibility. Even when a state is obligated by treaty to observe the precautionary principle, an internationally wrongful act has not necessarily occurred. It is necessary to examine the precise language of the treaty obligation. If the treaty says "should" instead of "shall," the offending state is not bound. Similarly, state obligations are often conditioned by phrases such as "to the extent practicable" and "according to their capabilities." Treaties frequently require adoption of only those preventive measures that are "cost-effective." Another problem in

75. See discussion *supra* part II.A.

76. Deterrence theory posits that a change in behavior will occur when the threatened consequences of an act become too painful or expensive, and when it is clear that such consequences will occur. Deterrence works only if the consequences are sufficiently unpleasant.

For a discussion by a leading proponent of deterrence theory in U.S. law, see GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 68-94 (1970) (discussing the general deterrence approach in the context of accident costs of activities); Guido Calabresi & Jon T. Hirschoff, *Toward a Test for Strict Liability in Torts*, 81 *YALE L.J.* 1055 (1972).

the relationship between the precautionary principle and the law of state responsibility is that some treaties referring to the precautionary principle are quite new and have not entered into force. In such situations, it is impossible to gauge the extent of compliance to be expected from states parties, or to imagine extending the obligation to states not party to the treaty. If the treaty is regional, it is difficult to draw out a clear rule of international law with global applicability. Furthermore, the problem identified by Gündling<sup>77</sup> remains: how to determine what action must be taken to fulfill the obligation.

One starting point is to consider the relationship between the precautionary principle and Principle 21 of the Stockholm Declaration.<sup>78</sup> It may be possible to achieve compliance with Principle 21 through observation of the precautionary principle. Principle 21 of the Stockholm Declaration<sup>79</sup> is an example of an international environmental text containing the principle of state responsibility.<sup>80</sup> It states that all nations have a responsibility to ensure that activities under their jurisdiction or control do not cause damage to the environment of other states or to areas beyond national jurisdiction. Principle 21 should be read in conjunction with Principle 22, which calls for the development of international law "regarding liability and compensation for the victims of pollution and other environmental damage. . . ."<sup>81</sup>

The Stockholm Declaration can also be read as a policy shift. Some developed nations addressed newly-recognized global environmental problems and, at the same time, some developing nations asserted sovereignty over their own natural resources. The broadening of the responsibility concept can be seen both in the second clause of Principle 21 and in the World Charter for Nature,<sup>82</sup> in which states accepted the responsibility principle in relation both to other states and to nature itself. Perhaps the notion of state responsibility to nature will be further extended in the future to include a state's responsibility to international civil society.<sup>83</sup> The foregoing discussion demonstrates that the principle of precautionary action may be considered a secondary

---

77. See Gündling, *supra* note 65.

78. Stockholm Declaration, *supra* note 1. The Stockholm Declaration created an obligation under international customary law.

79. *Id.* princ. 21.

80. ALEXANDRE KISS & DINAH SHELTON, INTERNATIONAL ENVIRONMENTAL LAW 348-49 (1991).

81. Stockholm Declaration, *supra* note 1, princ. 22.

82. World Charter for Nature, *supra* note 2.

83. See Ronnie D. Lipschutz, *Reconstructing World Politics: The Emergence of Global Civil Society*, 21 MILLENNIUM: J. INT'L STUD. 389 (1992).

obligation or a consequence of the states' primary responsibility not to harm the territory of another state or the territory beyond national jurisdiction. It remains to be seen whether Principle 21 applies to harms that occur within a state's own territory.

Efforts to link Principle 21 to states' responsibility not to breach international obligations are supported by the recommendations of the World Commission on Environment and Development.<sup>84</sup> The Brundtland Report noted that "recognition by states of their responsibility to ensure an adequate environment for present as well as future generations is an important step toward sustainable development."<sup>85</sup> The Brundtland Report defined international environmental obligations the breach of which triggers the duty to pay compensation by saying that states have a responsibility toward their own citizens and to other states.<sup>86</sup> While the Brundtland Report provides a road map for the future development of general principles of international environmental law, it is not a source of binding legal duties or obligations for states.

The Brundtland Commission convened a group of legal experts that drafted one obligation on state responsibility and a second obligation on "liability for transboundary environmental interferences resulting from lawful activities"; the International Law Commission divided consideration of the two subjects in a similar manner.<sup>87</sup> The main object of the liability article clearly is payment of compensation for transboundary environmental harm. Indeed, the article seems to assume that the cost of preventing harm or reducing the risk is so great that prevention is

84. WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 348-51 (1987) [hereinafter THE BRUNDTLAND REPORT].

85. *Id.* at 330.

86. The Brundtland Report specifically recognized obligations of states to maintain ecosystems and related ecological processes essential for the functioning of the biosphere; to maintain biological diversity by ensuring the survival and promoting the conservation in their natural habitats of all species of flora and fauna; to observe the principle of optimum sustainable yield in the exploitation of living natural resources and ecosystems; to prevent or abate significant environmental pollution or harm; to establish adequate environmental protection standards; and to undertake or require prior assessments to ensure that major new policies, projects, and technologies contribute to sustainable development. *Id.* at 331.

87. EXPERTS GROUP ON ENVIRONMENTAL LAW OF THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT: LEGAL PRINCIPLES AND RECOMMENDATIONS 80, 84, 127 (1987) [hereinafter ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT]. This admirable final report is not binding international law, but represents consensus among a small group of highly skilled legal experts from every region and legal system in the world.

realistically impossible.<sup>88</sup> In Article 11, the state responsibility article of the Brundtland Commission's legal experts group report,<sup>89</sup> the mandate is much broader than in Article 21.<sup>90</sup>

88. *Id.* arts. 11 and 21.

89. Article 11: Liability for transboundary environmental interferences resulting from lawful activities.

1. If one or more activities create a significant risk of substantial harm as a result of a transboundary environmental interference, and if the overall technical and socio-economic cost or loss of benefits involved in preventing or reducing such risk far exceeds in the long run the advantage which such prevention or reduction would entail, the State which carried out or permitted the activities shall ensure that compensation is provided should substantial harm occur in an area . . . beyond the limits of national jurisdiction.

2. A State shall ensure that compensation is provided for substantial harm caused by transboundary environmental interferences resulting from activities carried out or permitted by that State notwithstanding that the activities were not initially known to cause such interferences.

....

This obligation to ensure that compensation is provided constitutes an instance of strict liability *under international law*, to the extent that the State of origin is financially liable vis-à-vis the victim State for the harmful consequences of an act not prohibited under international law. . . .

Such liability may arise for activities which involve a risk of causing extraterritorial harm of a possibly exceptionally serious dimension, i.e. for so-called ultrahazardous activities.

....

The increasing acceptance of strict liability for ultrahazardous activities at the national level is evidence of an emerging principle of (national) law recognized by civilized nations. As known, according to Article 38(1)(c) of the Statute of the International Court of Justice, such a principle may also govern the relationship between sovereign States when there is no treaty or rule of customary international law calling for the application of a different principle or rule.

*Id.* at 80-84.

90. Article 21:

1. A State is responsible under international law for a breach of an international obligation relating to the use of a natural resource or the prevention or abatement of an environmental interference.

2. In particular, it shall:

(a) cease the internationally wrongful act;

(b) as far as possible, re-establish the situation which would have existed if the internationally wrongful act had not taken place;

(c) provide compensation for the harm which results from the internationally wrongful act;

(d) where appropriate, give satisfaction for the internationally wrongful act.

....

The notion of State responsibility must not be confused with the notion of strict liability under international law . . . . While the rules and principles of international law regarding State responsibility (also called *secondary* rules and principles of international law) deal with the occurrence and the consequences of internationally *wrongful* acts, i.e.



Under Article 11, the state must cease the internationally wrongful act and restore the *status quo ante* as far as possible. Where appropriate, the state must give satisfaction and pay compensation for harm caused by its breach of international obligations.

In order to identify the possible impact of the precautionary principle upon the international law of state responsibility, it is necessary to examine the nature of the obligations that the precautionary principle as international law would create. Given the uncertainty over the scope and meaning of the precautionary principle and the extent to which it obligates a state to act, violation of the precautionary principle presently does not constitute a breach of international law. This section suggests that the precautionary principle may develop into its own treaty and customary norm. If this occurs, the precautionary principle will be analytically similar to the duty to warn and the duty to mitigate; through these duties a link will be forged between state responsibility and the obligation not to harm the territory of another state or the territory beyond national jurisdiction.

#### B. *The Precautionary Principle and Biological Diversity*

International biodiversity law and policy objectives are strongly affected by ideas concerning the value of biodiversity and the root causes of biodiversity loss. These same value judgments affect related national and regional policies and laws. Valuing biodiversity is difficult because little is understood about genes, species, and ecosystems. First, biodiversity has direct economic value from products derived from biodiversity, such as medicines or new breeds of animals or plants. Second, biodiversity has indirect value, such as ecotourism.

Third, biodiversity possesses options value, because it offers uses not yet known but of value to future generations. Fourth, biodiversity possesses existence value, which is drawn from the mere continuance of life forms in and of themselves, without regard for their economic utility. In addition to these economic, aesthetic, and ethical values, biodiversity has ecological and scientific value, because it is a storehouse of genes and micro-organisms that may permit organisms and ecosystems to recover

---

breaches of so-called *primary* rules or principles of international law, strict liability involves the financial accountability of States under international law for the harmful consequences of acts which are *not* unlawful under international law.

from various afflictions. The World Charter for Nature recognized humanity's powerful impact upon the environment,<sup>91</sup> the benefits of biodiversity,<sup>92</sup> and the causes of biodiversity destruction.<sup>93</sup>

Given the potential transboundary impact of the loss of biodiversity and the attendant mitigation costs, loss of biodiversity is clearly a matter of international concern. Furthermore, human activity is undeniably responsible for the accelerating loss of global biodiversity.<sup>94</sup> Human activity is rapidly altering both terrestrial and aquatic ecosystems at an unprecedented and alarming rate. Human impact far exceeds the impact of catastrophic natural events, such as periodic fires, floods, and pestilence, that have occurred since prehistoric times. Although the planet possesses a remarkable ability to recuperate from natural disasters and even some human-made disasters, many authorities agree that the planet has reached the limits of its endurance.<sup>95</sup>

Conditions of poverty are the impetus for the governments of developing countries to seek an improved quality of life for their citizens. This legitimate and worthy goal must be counterbalanced by the need to prevent further loss of biodiversity or, at the least, to make informed choices reflecting both long-term and short-term costs and benefits. Importantly, the Rio Declaration repeated the World Charter for Nature's

---

91. "[Human beings] can alter nature and exhaust natural resources by [their] action[s] . . . and, therefore, must fully recognize the urgency of maintaining the stability and quality of nature and of conserving natural resources." World Charter for Nature, *supra* note 2, pmb., para. 8.

92. "Lasting benefits from nature depend upon the maintenance of essential ecological processes and life support systems, and upon the diversity of life forms, which are jeopardized through excessive exploitation and habitat destruction by [human beings]. . . ." *Id.* pmb., para. 11(a).

93. "The degradation of natural systems owing to excessive consumption and misuse of natural resources, as well as to failure to establish an appropriate economic order among peoples and among States, lead to the breakdown of the economic, social and political framework of civilization. . . ." *Id.* pmb., para. 11(b).

94. "Both affluence and poverty contribute to extinctions, through unsustainable consumption patterns . . . habitat loss, commercial hunting and poaching, predator and pest control, pets and decorative plants, climate change and pollution, and introduced or alien species." WALTER V. REID & KENTON R. MILLER, KEEPING OPTIONS ALIVE: THE SCIENTIFIC BASIS FOR CONSERVING BIODIVERSITY 3 (1989).

95. See, e.g., JAMES E. LOVELOCK, GAIA: A NEW LOOK AT LIFE ON EARTH (1979); JAMES LOVELOCK, THE AGES OF GAIA (1988) (discussing the Gaia hypothesis, which states that "the temperature, oxidation state, acidity, and certain aspects of the rocks and waters are at any time kept constant, and that this homeostasis is maintained by active feedback processes operated automatically and unconsciously by the biota. . . ." *Id.* at 19).

concern for unsustainable consumption and production patterns.<sup>96</sup>

The Convention on Biological Diversity requires party states to draw up national plans and legislation to achieve the Convention's objectives. If a state produces a plan claiming to address the conservation and sustainable use of biological diversity, that state has fulfilled its Convention obligations. At present, no mechanism exists to assess the substantive adequacy and consistency of national plans with the goals of the Convention. Without this important oversight mechanism, it is nearly impossible to charge a state party with breach of its Convention obligations. Similarly, until clear international standards of sustainability are developed, it is impossible to gauge the effects of a state's plan or a proposed activity on the long-term conservation and sustainable use of biological diversity.

The Convention also failed to explain its relationship to other treaties, such as the Convention on International Trade in Endangered Species<sup>97</sup> and the Ramsar Convention.<sup>98</sup> Under the

96. "To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies." Rio Declaration, *supra* note 63, princ. 8.

[T]hrough the rapid acceleration of science and technology, [human beings have] acquired the power to transfer [their] environment in countless ways and on an unprecedented scale.

.....

In our time, [the human] capability to transform . . . surroundings, if used wisely, can bring to all peoples the benefits of development and the opportunity to enhance the quality of life. Wrongly or heedlessly applied, the same power can do incalculable harm to human beings and the human environment. We see around us growing evidence of [hu]man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies, harmful to the physical, mental and social health of [all people], in the [hu]man-made environment, particularly in the living and working environment.

.....

In the developing countries most of the environmental problems are caused by under-development. Millions continue to live far below the minimum levels required for a decent human existence, deprived of adequate food and clothing, shelter and education, health and sanitation.

Stockholm Declaration, *supra* note 1.

97. Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 27 U.S.T. 1087, 993 U.N.T.S. 243 [hereinafter CITES].

98. Ramsar Convention, *supra* note 4.

specific language of the treaty, the general "last in time rule"<sup>99</sup> of treaty interpretation and preemption does not apply. Determining the effect of an action taken under multiple international instruments is difficult. The Law of the Sea Treaty<sup>100</sup> clearly trumps the Biodiversity Convention according to the Convention itself.<sup>101</sup> But under earlier conservation and wildlife treaties, it is much less certain whether a decision from the Conference of the Parties (COP) overrides a decision by the treaty body of a different instrument. The interrelationship and overlapping jurisdiction of various U.N. bodies also creates problems. For example, the location of the forests issue is being debated in numerous fora including the COP to the Convention on Biological Diversity; the U.N. Commission on Sustainable Development (CSD);<sup>102</sup> the Global Environment Facility (GEF); the U.N. Food and Agriculture Organization (FAO); and other treaty bodies. Although this may be a salutary multi-fora approach to a complicated problem, it may also permit special interests to "forum-shop" for a receptive audience.

New treaties and soft law declarations of the past two decades and states' increasingly serious reports on their environmental protection activities have created an international environmental

---

99. The "last in time rule" provides that in the case of a direct conflict between a treaty and a federal statute, the last in time will prevail. See, e.g., *United States v. Dian*, 476 U.S. 734, 738 (1986).

100. United Nations Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, U.N. Doc. A/CONF.62/122, 21 I.L.M. 1261.

101. Biodiversity Convention, *supra* note 3, art. 23. The Convention "imposes upon Contracting Parties an affirmative obligation to implement the Convention in accordance with and subject to the customary international law of the sea, including the law reflected in" the U.N. Convention on the Law of the Sea. Melinda Chandler, *The Biodiversity Convention: Selected Issues of Interest to the International Lawyer*, 4 COL. J. INT'L ENVTL. L. & POL'Y 141, 153 (1993).

102. One opportunity arose in April 1995, the consideration by the U.N. Commission on Sustainable Development of Article 15 of Agenda 21 on biodiversity. Accordingly, the COP considered a statement to transmit to the high-level segment of the Commission on Sustainable Development (CSD).

The statement adopted at Nassau acknowledged the complementarity of the Commission on Sustainable Development's consideration of biodiversity and the work of the COP under the Convention on Biological Diversity. The COP requested the CSD to consider the provisions of the treaty when reviewing elements of sustainability under Agenda 21, and offered to jointly explore ways in issues can be developed within the Convention and its three objectives. The COP further considered biodiversity as a multisectoral issue, which is relevant to virtually all the concerns involved in sustainable development, and is closely interrelated to poverty. The statement concluded that the COP and the CSD "should establish links . . . to facilitate a collaborative approach to issues of mutual concern." *Draft decision on statement of the Conference of the Parties to the Commission on Sustainable Development submitted by the Chairman of the Contact Group*, at 7, ¶ 18, UNEP Doc. UNEP/CBD/COP/1/CW/L. 9 (1994).

law that is strong and growing. The goals of conservation, sustainable use, and equitable benefit-sharing have at last elicited common efforts at the local, national, and international levels that are mutually reinforcing, as will be seen in the next subsection's examination of the international law on biodiversity.

C. "Soft Law," Customary International Law, and Treaty Law  
Related to Responsibility for Biodiversity

Commentators frequently refer to international conference statements that represent international consensus or aspiration as "soft law,"<sup>103</sup> a legal form that is not actually binding on states. Soft law is the newest and most common form of law-making in the international system; it frequently appears in new areas of international law-making in which obligations are not dependent upon custom. International soft law states global goals and public expectations. Once the expectations are stated, they may lead to increased public pressure, and ultimately states may recognize the soft law goals as enforceable international prohibitions. Examples of soft law include declarations and resolutions by conferences on the ministerial level or head of state level,<sup>104</sup> multi-disciplinary meetings of scholars or professionals,<sup>105</sup> and U.N. General Assembly resolutions.<sup>106</sup> Even if soft law declarations are not initially binding, they indicate the direction in which the international community is interested in moving and how far states are willing to go.

103. ALEXANDRE C. KISS, SURVEY OF CURRENT DEVELOPMENTS IN INTERNATIONAL ENVIRONMENTAL LAW 23 (1976) (citing Rene J. Dupuy, *Droit déclaratoire et Droit Programmatore: de la Coutume Sauvage à la Soft Law*, in L'ÉLABORATION DU DROIT INTERNATIONAL PUBLIC 132 (1975)). See also Christine M. Chinkin, *The Challenge of Soft Law: Development and Change in International Law*, 38 INT'L & COMP. L.Q. 850 (1989); Panel, *A Hard Look at Soft Law*, 82 PROC. AM. SOC'Y INT'L L. 371 (1988).

104. E.g., Economic Declaration from the Paris Economic Summit, July 16, 1989, reprinted in 28 I.L.M. 129 (1989).

105. E.g., Statement of the InterAction Council Meeting on Global Interdependence and National Sovereignty in Lisbon, Portugal, Mar. 9-11, 1990 (on file with author) (meetings of nongovernmental organizations and professional groups to formulate positions and recommendations for the Earth Summit in Rio de Janeiro, Brazil, June, 1992).

106. E.g., *Protection of the Global Climate*, G.A. Res. 43/53, U.N. GAOR, 43d Sess., U.N. Doc. A/RES/43/53 (1989), reprinted in 28 I.L.M. 1326 (1989); *Establishing the Agenda for the UNCED*, G.A. Res. 44/227 and 44/228, U.N. Doc. A/RES/44/227-228, reprinted in 29 I.L.M. (1991); *Permanent Sovereignty Over Natural Resources*, G.A. Res. 3171, U.N. GAOR, 28th Sess., U.N. Doc. A/RES/3171 (1974), reprinted in 13 I.L.M. 238 (1974).

The U.N. World Charter for Nature, adopted by the General Assembly in 1982, is a good illustration of a "soft law" that formulated a rule and caused some countries to follow the rule as a matter of policy.<sup>107</sup> The General Assembly "expressed its conviction that the benefits which could be obtained from nature depended on the maintenance of natural processes and on the diversity of life forms and that those benefits were jeopardized by the excessive exploitation and the destruction of natural habitats."<sup>108</sup> The General Assembly also "solemnly invited Member States, in the exercise of their permanent sovereignty over their natural resources, to conduct their activities in recognition of the supreme importance of protecting natural systems, maintaining the balance and quality of nature and conserving natural resources, in the interests of present and future generations."<sup>109</sup>

The World Charter for Nature was adopted against this background as a statement of aspirations. The Charter contained a number of far-reaching significant statements regarding the relationship of human beings to other forms of life and the consequences of human activity for natural resources. Some of these statements were dropped or altered significantly in the UNCED documents and in the Biodiversity Treaty ten years later. The general principles in the World Charter for Nature included respect for nature,<sup>110</sup> preservation of global genetic resources,<sup>111</sup> global conservation,<sup>112</sup> and sustainable use.<sup>113</sup>

---

107. World Charter for Nature, *supra* note 2, pmb. General Assembly Resolution 37/7 was adopted on October 28, 1982, by a vote of 111 in favor of 1 against (United States), with 18 abstentions (Algeria, Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Ghana, Guyana, Lebanon, Mexico, Paraguay, Peru, the Philippines, Suriname, Trinidad and Tobago, and Venezuela). Later the U.N. Secretariat was informed that Mexico had intended to vote in favor of the Resolution.

108. *Id.*

109. *Id.*

110. "Nature shall be respected and its essential processes shall not be impaired." *Id.* art. I(1).

111. "The genetic viability on the earth shall not be compromised; the population levels of all life forms, wild and domesticated, must be at least sufficient for their survival, and to this end necessary habitats shall be safeguarded." *Id.* art. I(2).

112. "All areas of the earth, both land and sea, shall be subject to these principles of conservation; special protection shall be given to unique areas, to representative samples of all the different types of ecosystems and to the habitats of rare or endangered species." *Id.* art. I(3).

113. "Ecosystems and organisms, as well as the land, marine and atmospheric resources that are utilized by [human beings], shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as

Customary international law is another recognized method of international lawmaking. The central problem in customary international law is determining whether and when a rule has reached the point of universality and legality. Although the traditional two-pronged test of customary international law searches for evidence of state practice and evidence of *opinio juris*, the test does not necessarily provide a simple answer. Principle 21 of the Stockholm Conference on the Human Environment<sup>114</sup> provides a useful case study of the long road leading to becoming customary international law. Principle 21 provides that "[s]tates 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."<sup>115</sup> This statement is the result of a long progression that began with the appearance of the general idea of the principle in the *Trail Smelter* arbitration,<sup>116</sup> a decision with no precedential value in any judicial forum. *Trail Smelter's* principle was repeated in a decision of the International Court of Justice in the *Corfu Channel* case,<sup>117</sup> and later included as part of the declaration of the 1972 Stockholm Conference. The principle was repeated more strongly in the "soft law" World Charter for Nature resolution. Each of these steps was evidence that at some point, Principle 21 had become customary law.<sup>118</sup> Finally, the principle became hard law when it was included in the U.N. Convention on Biological Diversity.

The language that became Principle 21, and later Article 3 of the Convention on Biological Diversity, changed slightly through its various incarnations. The *Trail Smelter* arbitration decision said that no state has the right "to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence."<sup>119</sup> The *Corfu Channel* case

to endanger the integrity of those other ecosystems or species with which they coexist." *Id.* art. I(4).

114. For the authoritative history of the negotiations over each principle in the Stockholm Declaration, see Louis B. Sohn, *The Stockholm Declaration on the Human Environment*, 14 HARV. INT'L L.J. 423 (1973).

115. Stockholm Declaration, *supra* note 1, princ. 21.

116. *Trail Smelter Case*, *supra* note 21.

117. *Corfu Channel Case* (U.K. v. Alb.), 1949 I.C.J. 4 (Apr. 9).

118. See, e.g., KISS & SHELTON, *supra* note 80.

119. *Trail Smelter Case*, *supra* note 21, at 1965.

expanded the general principle to recognize every state's obligation not to knowingly allow its territory to be used for acts contrary to the rights of other states.<sup>120</sup> The Stockholm Declaration was much more specific and prohibited states from activities that "cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."<sup>121</sup> The U.N. General Assembly revised the principle's language somewhat. The "soft law" World Charter for Nature appeared and announced that "[s]tates and, to the extent they are able, other public authorities, international organizations, individuals, groups and corporations shall . . . [e]nsure that activities within their jurisdictions or control do not cause damage to the natural systems located within other States or in the areas beyond the limits of national jurisdiction. . . ."<sup>122</sup>

Although the World Charter for Nature changed the term "environment" to "natural systems," it still limited the prohibition against harm to areas "within other States or in the areas beyond the limits of national jurisdiction." This jurisdictional scope limitation persisted in later formulations, including the Biodiversity Treaty. The addition of a phrase referring to both nations' developmental and environmental policies emphasizes the concern for sustainable development that was articulated first, and most effectively, in the Brundtland Report.<sup>123</sup> This concern for sustainability characterized the UNCED documents, including the Rio Declaration, Agenda 21, and the U.N. Convention on Biological Diversity.

In its next incarnation, Principle 21 appeared in the Rio Declaration, and said:

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental 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.<sup>124</sup>

The recognized test for whether Stockholm Principle 21 has become customary law is the traditional inquiry of evidence of

---

120. Corfu Channel Case, *supra* note 117.

121. Stockholm Declaration, *supra* note 1, princ. 21.

122. World Charter for Nature, *supra* note 2, art. III (21)(d).

123. The Brundtland Report, *supra* note 84. But note that Stockholm Principle 13 called for states to "adopt an integrated and coordinated approach to their development planning."

124. Rio Declaration, *supra* note 63, princ. 2.



both state practice and *opinio juris*.<sup>125</sup> Evidence of state practice can be found in the presence of statements made by governments since 1972 that support Principle 21; in the inclusion of the principle in other treaties or formal declarations; and in the decisions of arbitral panels and judicial bodies that cite or rely on the principle. *Opinio juris* is evidenced by the writing of jurists who claim to have found an acceptance of Principle 21 in major legal systems around the world, as well as by a number of bilateral and regional agreements that have referred specifically to the Stockholm Declaration in their texts. Each of these documents establishes that states are following Principle 21 in practice and believe themselves to be obligated.<sup>126</sup>

Statements and declarations by the U.N. General Assembly and other multilateral conferences that include the text of Principle 21 can also be cited as proof that the principle has indeed crystallized into customary law. Principle 21's language has been copied countless times in other declarations and resolutions.<sup>127</sup> Moreover, when Principle 21 was codified in the Biodiversity Treaty, it earned international acceptance. Once codified in a treaty, Principle 21 is separately binding on all parties to the treaty, regardless of whether it is customary law.<sup>128</sup>

Since Principle 21 was codified in the Biodiversity Treaty, it becomes necessary to define the meaning of Principle 21 in that context. The existence of states' rights implies that states have a corresponding moral, ethical, and increasingly legal responsibility. The principle of sovereignty guarantees the right of a state to act. Principle 21 balances that right with a state's duty to protect the environment within its jurisdiction or control and to prevent transboundary harm. This responsibility necessarily limits a

125. SCHACHTER, *supra* note 38, at 11-12.

126. RESTATEMENT, *supra* note 15, at 101 n.8 (citing ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, NON-DISCRIMINATION IN RELATION TO TRANSFRONTIER POLLUTION: LEADING OECD DOCUMENTS, 8, 32, 49 (1978); Canada-United States joint statement on transboundary air quality, 1979 DIG. U.S. PRAC. INT'L L. 1612-1615; Memorandum of Intent Concerning Transboundary Air Pollution, Aug. 5, 1980, U.S.-Can., 32 U.S.T. 2521, 2522 (expressing "common determination to combat transboundary air pollution in keeping with their existing international rights, obligations, commitments and cooperative practices, including those set forth in . . . the 1972 Stockholm Declaration on the Human Environment (footnote omitted)); Agreement to Co-operate in the Solution of Environmental Problems in the Border Area, Aug. 14, 1983, U.S.-Mex., art. 2, 22 I.L.M. 1025 (undertaking "to the fullest extent practical, to adopt the appropriate measures to prevent, reduce, and eliminate sources of pollution in their respective territory which affect the border area of the other.").

127. See, e.g., Hague Declaration on the Environment, Mar. 11, 1989, 28 I.L.M. 1308; Rio Declaration, *supra* note 63.

128. HENKIN ET AL., *supra* note 19, at 54-94.

state's right to use its natural resources with unfettered discretion. Similarly, international law restricts a state's right to use force at will through the requirements of necessity and proportionality. States' absolute sovereignty is already restricted by the global imperative to survive in the face of grave threats to the planet's soil, water, and air. Absolute freedom of consumption without regard for environmental costs and nonsustainable means of production are also becoming the target of restrictions under international law and policy.<sup>129</sup>

States may find themselves increasingly under prohibitions regarding the protection or sharing of scarce natural resources, under both permissive and prohibitive systems of laws. As described above, in a permissive system, everything that is not prohibited is permitted and states' sovereignty is absolute. In a prohibitive system, everything not explicitly permitted is assumed prohibited unless clear permission can be found from some supranational source. Principle 21 as binding customary law appears to be a permissive system, tempering states' absolute rights with only the responsibility not to harm the territory of another or territory beyond national jurisdiction. Both the precautionary principle and Principle 21 of the Stockholm Declaration as contained verbatim in the Biodiversity Convention embody the concept of responsibility and need to consider sustainability.

The shift toward prevention and responsibility, and away from the notion of liability and compensation after harm occurs, is a crucial step in accepting the fundamental concept of international biological diversity. Once the basic premises of responsibility and sharing are accepted, resources can be redirected to find the means to achieve these ends. Some possible solutions include transfer of environmentally-sound technology, access to genetic resources, and distribution of some of the royalties from successful genetically-derived products to the source countries and local communities. Greater international cooperation will benefit those who participate; countries may choose not to share, but they will be denied access to valuable resources.

Protection of biological diversity requires more than species preservation. Scientists have discovered the importance of ecosystems; they act both as corridors between habitats that support endangered species and as rich depositories of un-

---

129. See, e.g., 6 AGENDA 21 & THE UNCED PROCEEDINGS 629-784 (Nicholas A. Robinson ed., 1993) (containing the CSD discussions on implementation of UNCED's Agenda 21 action plan).

identified organisms. It is inadequate to measure the value of an ecosystem by reference to its utility for human beings, because it is impossible to value uses that have not yet been imagined. Utility valuation also fails to account for the intrinsic value of ecosystems and life forms.<sup>130</sup> The degree of environmental harm and the true cost of biodiversity loss are important in decision-making and risk analysis; they also have implications for any future liability and compensation regime. Given the present inability to accurately value biodiversity, it is best to adopt a preventive approach rather than to risk unknown harm. The precautionary principle does not require absolute scientific certainty as a prerequisite to preservation of an area or species that may be irreparably harmed before it is fully understood.

The new United Nations Convention on Biological Diversity attempts to balance interests on a global level and represents a general commitment to the conservation and sustainable use of biodiversity. In an effort to clarify the interests being balanced, the Convention carefully defines biological diversity,<sup>131</sup> biological resources,<sup>132</sup> and biotechnology.<sup>133</sup> Although the Convention codifies Principle 21, it does not resolve the problem of liability for the loss of biodiversity.<sup>134</sup>

The parties to the Biodiversity Convention accepted a binding obligation to conserve biodiversity and received an affirmation of their sovereign right to use forests, wetlands, and other ecosystems for development, tempered by the requirement of sustainable use. This obligation was a new departure for developing countries. In return for guaranteed access to the genetic resources located in genetically rich developing countries, developed countries accepted an obligation to share the benefits

130. WORLD RESOURCES INSTITUTE ET AL., GLOBAL BIODIVERSITY STRATEGY 23 (1992).

131. "[T]he variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Biodiversity Convention, *supra* note 3, art. 2.

132. "[G]enetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity." *Id.*

133. "[A]ny technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific uses." *Id.*

134. Aside from precatory remarks in a number of declarations and treaties calling for future discussion or study, it is clear that no customary law governs liability for biodiversity loss. The Biodiversity Convention calls for a subsequent protocol to be drafted on the subject of liability for environmental harm. Principle 22 of the Stockholm Declaration relates specifically to environmental liability, calling for rules or principles to be adopted.

of biotechnology. The final compromise, then, endorsed both the conservation of biodiversity and its sustainable use. To some, this trade-off has ominous overtones. The Third World Network, an Indian nongovernmental organization, fears that the North is attempting to preserve its access to the South's genetic resources. Thus, the South would supply the "raw material for the [North's] next industrial revolution," in the North's privately-held biotechnology industry.<sup>135</sup>

International law does not yet possess a general theory of state responsibility or means of calculating appropriate damages for the accidental or willful destruction of biodiversity. Nevertheless, since the Convention on Biological Diversity entered into force in December 1993, it is plausible that the international law of precautionary action may rise to the level of a duty, which can trigger state responsibility when breached. The breach may occur when states fail to regulate activities within their jurisdiction or control or cause damage in areas beyond national jurisdiction. In order to achieve the conservation and sustainable use of biological diversity, it may be necessary to use the international legal system to regulate or restrict development patterns in accordance with the precautionary principle.<sup>136</sup>

When a state breaches its duty to uphold the precautionary principle, Article 3 of the Convention on Biological Diversity offers a basis for assessing the state's responsibility. Although the duty applies only to extraterritorial harm, the Convention's article on jurisdictional scope may give rise to responsibility for a state's activities, regardless of where the effect occurs.<sup>137</sup> The Convention's jurisdiction varies somewhat. The Convention's jurisdiction over components of biodiversity is consistent with Principle 21 and extends only to harms caused in the territory of other states or in the territory beyond national jurisdiction. The Convention's jurisdiction over processes and activities is

---

135. Dr. Vandana Shiva, Third World Network, Comments on the vital link between biodiversity and biotechnology to UNCED PrepCom3, Geneva, Switzerland, August 19, 1991. Similar remarks were made by the Indian government's delegate in the UNCED Working Group I, August 21, 1991, arguing for the joinder of the topics of biotechnology and biodiversity in the agenda for UNCED and in Agenda 21. This suggestion was defeated by the chair, who reminded the Working Group that the agenda had been set by the General Assembly in G.A. Res. 44/228, December, 1989, which treated biodiversity and biotechnology as two separate topics.

136. See Edward Christie, *The Eternal Triangle: The Biodiversity Convention, Endangered Species Legislation and the Precautionary Principle*, 10 ENVTL. & PLAN. L. J. 470 (1993).

137. For an excellent discussion of the implications of the jurisdictional scope of the treaty, see Chandler, *supra* note 101, at 147-48.

considerably broader and leaves room for further interpretation of responsibility beyond the transborder context. Such an extension of jurisdictional scope is inherently necessary to the conservation of biological diversity.

New principles of international environmental law have developed quickly in recent years in response to global imperatives for sustainable development; nowhere is that trend more noticeable than in the formation of international law on biodiversity. The United Nations Convention on Biological Diversity,<sup>138</sup> which entered into force as binding international law on December 29, 1993, has been ratified by 127 nations.<sup>139</sup> The first Conference of the Parties took place in late 1994, formally adopting many of the interim institutional and financial mechanisms for the operation of the treaty established when the treaty was opened for signature during the United Nations Conference on Environment and Development in June, 1992.<sup>140</sup> A declaration adopted at the close of the first COP noted that states party to the Convention on Biological Diversity regard it "as much more than just a set of rights and obligations: it is a global partnership with new approaches to multilateral cooperation for conservation and development. . . ."<sup>141</sup>

The U.N. Convention on Biological Diversity represents a new style of treaty negotiation, in that the Convention's subject matter is very broad and the Convention was negotiated with unusual speed and openness. Other features also contribute to the treaty's uniqueness. First, the treaty pioneers an ecosystem approach to conservation that moves beyond the species-specific or habitat-specific approaches of earlier conservation treaties, including those on migratory birds, wetlands, and trade in endangered species. Second, both the preamble and the body of the treaty emphasize the participation of women, local communities, and nongovernmental organizations (NGOs) in biodiversity protection. This language is a significant departure

138. Biodiversity Convention, *supra* note 3.

139. A list of states party to the treaty can be found in *Status of Ratification of the Convention on Biological Diversity*, at 3-9, UNEP Doc. UNEP/CBD/COP/1/Inf.4/Rev.1 (1994). A current list of states that have ratified the Convention can be obtained from the Interim Secretariat for the U.N. Convention on Biological Diversity, 15 Chemin de Anemones, 1219 Chatelaine, Geneva, Switzerland. As of August 25, 1995, 127 states had accepted, approved, or acceded to the Convention.

140. For documentation on the U.N. Conference on Environment and Development, held in Rio de Janeiro, Brazil, see 1-6 AGENDA 21 & THE UNCED PROCEEDINGS (Nicholas A. Robinson ed., 1993).

141. The Bahamas Ministerial Declaration on the Convention on Biological Diversity, Dec. 6, 1994, para. 6 (on file with the author).

from most other multilateral instruments, which address only the role of the states party to the treaty. The Convention's identification of nonstate actors is a recognition that successful implementation of the treaty will require cooperation from many sectors.

Third, the initial formulation of the treaty was marked by the initiative and contributions of NGOs; indeed, the first draft of the treaty was prepared by an NGO.<sup>142</sup> Fourth, the Biodiversity Treaty is unique, because the text of Stockholm Principle 21 appears verbatim as Article 3, marking the first time this language has appeared in binding international law, rather than in "customary law" or "soft law."<sup>143</sup> The idea of national sovereignty over resources is balanced or tempered to some degree by the requirement that each state accept its responsibility not to harm the territory of any other state or the territory beyond its own national jurisdiction. Finally, the treaty represents a trade-off of mutually beneficial goods, a trade-off that is possible because both developing and developed states have something of value that the other group wants.

Although it is too early to tell how effectively the treaty will be implemented, there is cause for some optimism. The Convention calls for the study of the creation of a Clearinghouse Mechanism for Technical and Scientific Cooperation,<sup>144</sup> which would share knowledge on biological diversity and promote cooperation. In addition, the Convention establishes the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA).<sup>145</sup> On-

---

142. The World Conservation Union (IUCN) began to develop elements for a global convention on biological diversity as early as 1981; draft articles were prepared by the IUCN Commission on Environmental Law and the Environmental Law Centre beginning in 1984, "[w]ell before governmental negotiations began under the aegis of the United Nations Environment Programme (UNEP). . . ." Françoise Burhenne-Guilmin & Susan Casey-Lefkowitz, *The Convention on Biological Diversity: A Hard Won Global Achievement*, 3 Y.B. INT'L ENVTL. L. 43, 44 (1992).

143. In customary law, a rule or principle is followed by states over time and comes to be accepted as obligatory. Customary law is a type of "soft law." Unlike "hard law," "soft law" is any nonbinding statement, recommendation, or declaration of principles from international meetings, conferences, the U.N. General Assembly, or nongovernmental organizations that "arguably . . . constitute[s] a new source of international law . . . or at least establish[es] a new technique for creating international juridical norms." KISS & SHELTON, *supra* note 80, at 109.

144. Biodiversity Convention, *supra* note 3, art. 18(3).

145. *Id.* art. 25. See also *Draft Decision submitted by the Chairman of the Committee of the Whole*, UNEP Doc. UNEP/CBD/COP/1/L.4/Rev.1 (1994) (describing the recommendations of the Open-Ended Intergovernmental Meeting of Scientific Experts on Biological Diversity). The SBSTTA concept was further developed in accordance with recommendations of the Open-Ended

going discussions at the two meetings of the Intergovernmental Committee on the Convention on Biological Diversity and at the first COP centered on the institutional and organizational entities needed to implement the Convention, as well as on related concerns such as financial mechanisms,<sup>146</sup> intellectual property rights,<sup>147</sup> and biosafety.<sup>148</sup> Most of the NGOs in attendance at

Intergovernmental Meeting of Scientific Experts on Biological Diversity, meeting in Mexico City, Mexico, April 11-15, 1994; the report can be found in UNEP Doc. UNEP/CBD/COP/1/16 (1994). This expert group meeting, a forerunner of the SBSTTA, was intended to provide scientific ideas to expedite the work of the second Intergovernmental Committee on the Convention on Biological Diversity (ICCBD2), (Nairobi, Kenya, June 20 - July 1, 1994) and to provide the basis for decision-making at the first COP (Nassau, Bahamas, November 28 - December 9, 1994).

The desired results of the Open-Ended Intergovernmental Meeting of Scientific Experts on Biological Diversity, UNEP Doc. UNEP/CBD/COP/1/16 (1994), may still be considered a useful agenda for the next scientific experts meeting in Paris (September 4-8, 1995):

a general assessment of the range and adequacy of ongoing scientific programmes; a framework of elements that might be included in the programme of work for the international scientific community; and identification of the main components, including indigenous knowledge, for technology transfer and for the assessment and management of biological resources.

*Id.* at 5, para. 15.

146. A hotly contested issue was the proposed continuation of the restructured Global Environment Facility (GEF) (a joint project of the World Bank, the United Nations Development Program (UNDP), and the United Nations Environment Programme (UNEP)) as the financial mechanism of the treaty. Although many developing countries were adamantly opposed to the GEF, in the final hours of the 1992 Nairobi treaty negotiation they accepted the GEF as an interim financing mechanism. Since that time a number of meetings have debated the issues underlying the GEF's role. Donor states do not want to proceed under anything other than the GEF, and maintain that the most serious objections to the GEF's lack of transparency and democracy have been met by the restructuring effort in 1994. Those opposed to the GEF call for further restructuring and consideration of alternative funding mechanisms. UNEP Doc. UNEP/CBD/COP/1/L.9/Add.1 (1994). Tentative progress has been made in formulating a scale of contributions from developed countries to the GEF, which will enable developing countries to fulfill their treaty obligations. The call for review of additional financial mechanisms to fund biodiversity projects was repeated at the first COP. Suggested alternatives include private donations, project financing from multinational development banks, and financing from other sectors that impact biodiversity. A final decision on the treaty's permanent financing mechanism must be made at COP2 in November 1995 in Jakarta, Indonesia.

147. Another unresolved issue is the uniformity of parties' duties and obligations relating to intellectual property rights. Despite the prominent role of the United States in the negotiation of the treaty, the United States refused to sign the Convention on June 5, 1992, in Rio de Janeiro. This refusal stemmed from the Bush Administration's concern that intellectual property rights protected

the meetings on the Convention in 1993 and 1994 called for efforts to address the relationships between poverty, unsustainable production and consumption, unequal trade relations, and biodiversity; the discussions did not, however, directly address these underlying causes of biodiversity loss.

By the end of the first COP, many of the organizational issues required to set up a new treaty were resolved.<sup>149</sup> Meetings will be held annually for the next three years, after which time the matter will be reconsidered. The United Nations Environment Programme (UNEP) was designated the appropriate institutional

---

in some articles were undermined by ambiguous language in other articles. The relationship between strong intellectual property rights protection and the objectives of the Convention on Biological Diversity remains unclear. Developed states ratifying the Convention have not appeared to be troubled by this point, and the issue appears to be fading, as additional developing countries, such as Brazil and Taiwan, consider or adopt domestic legislation establishing intellectual property rights where none existed before. The United States eventually joined the list of treaty signatories when President Clinton signed the Convention on June 4, 1994, but the United States has not yet ratified the treaty.

148. The possible need for a biosafety protocol is one of the unresolved matters from the treaty negotiations and the Agenda 21 discussions of biotechnology in 1992 at UNCED. Biosafety continues to be a matter of concern to many states and NGOs. The first COP created an ad hoc working group authorized to meet for one week in Madrid, Spain (July 24-28, 1995). The working group's mandate was first to consider the need for and modalities of a protocol to the Convention and second to analyze parties' existing domestic legislation regarding safety precautions and the release of genetically modified organisms. If a biosafety protocol is created, it will address procedures for the safe transfer, handling, and use of any living modified organism resulting from biotechnology. The protocol will probably address advance informed agreements, and its scope will include any biotechnology that might adversely affect the conservation and sustainable use of biological diversity.

149. The first COP established certain "standing items," including the following: the financial mechanism; the budget; reports from SBSSTA and the Clearinghouse Mechanism; reports from the parties; and the relationship of the Convention to the U.N. Commission on Sustainable Development and to other conventions and institutions that are relevant to biodiversity.

In addition to annual consideration of these standing items, future COPs will consider "rotating issues" on a year-by-year basis; each year, the COP will consider some aspect of the Convention's three objectives. For example, the second meeting of the COP in 1995 will consider: general measures for conservation and sustainable use, the form and interval for reporting by the parties, and the need for a biosafety protocol.

In 1996, the third COP will consider: the identification, monitoring, and assessment of biological diversity (Art. 7); the knowledge, innovations, and practices of indigenous and local communities (Art. 8(j)); access to genetic resources (Art. 15); and transfer of technology (Arts. 16, 18). In 1997, the fourth COP will consider models and mechanisms for linkages between *in-situ* and *ex-situ* conservation (Arts. 7, 8); measures for implementing the Convention (Arts. 13, 14); and considerations of benefit-sharing (Art. 19). This agenda is meant to be flexible and may be adjusted at subsequent COPs.



body to function as the Secretariat, and the rules of procedure were established. Finally, the work of the next three years was divided into topics and compiled as the Medium Term Programme of Work of the Conference of the Parties 1995-1997.<sup>150</sup> Despite progress at the first COP, many aspects of the Biodiversity Treaty remain open to interpretation. These gray areas include: state responsibility for prevention of loss of biodiversity; the meaning of "sustainable use" of biological diversity; the extent of a party's obligations to enforce the treaty's objectives through domestic laws; the relationship of the Convention to other wildlife and habitat treaties; and the relationship of the COP and Secretariat to other U.N. bodies whose mandates include aspects of biodiversity.

#### IV. CONCLUSION

New international environmental law principles, including sustainable development and recognition of serious human threats to the global environment, have created new applications for the doctrines of state responsibility and liability, although states' environmental obligations under international law remain ill-defined. It is difficult to reconcile most activities threatening loss of biological diversity with the I.L.C.'s language on state responsibility for "primary" and "secondary" obligations and "internationally wrongful acts." Furthermore, the concept of "injurious consequences arising from acts not contrary to international law"<sup>151</sup> appears to be of limited use when only ultrahazardous activities are examined. The concept's use is limited, because biodiversity loss most frequently occurs through the accumulation of ordinary human activities that affect an ecosystem.

Principle 21's concept of state responsibility links sovereign power and privilege with general obligations not to harm the territory of another state or the area beyond national jurisdiction. The legal principles relevant to air, space, aircraft, and maritime boundary disputes are considerably less relevant to problems involving micro-organisms and migratory species. Similarly, territorially-based concepts are not very useful in assessing states' responsibility when they fail to regulate multinational commercial entities that destroy or unsustainably exploit

---

150. *Draft decision submitted by the Chairman of the Informal Contact Group*, UNEP Doc. UNEP/CBD/COP/1/CW/L.11 & Add.1 (1994).

151. *See supra* part II.B.

biodiversity resources. One option is to define such commercial activities as internationally wrongful or otherwise prohibited under international law. Unfortunately, this step is unlikely to occur. Another option is to recognize the precautionary principle as a means to comply with state responsibility not to harm the environment. Failure to adopt national plans or procedures incorporating a precautionary approach may then trigger international responsibility or liability.

In other words, a state's duty to take precautionary action may be seen as one of a cluster of procedural norms similar to the duties to warn other states, to mitigate damages, and to assist in case of emergency. For example, the Rio Declaration reaffirms a state's obligation to provide early notification in an emergency and when activities may have a significant transboundary impact.<sup>152</sup> The Rio Declaration also affirms a state's obligation to assist in the event of such emergencies.<sup>153</sup> Moreover, some states are required by treaty to provide both early notification of risk to other states and assistance to other states in the event of a nuclear accident.<sup>154</sup> The goal of these procedural norms is to make information widely available to local communities and to the international community so that states can make informed choices and undertake appropriate responses. A state wishing to comply with the principle of precautionary action may do so by incorporating environmental impact assessment procedures in national planning and legislation.

At the 1992 United Nations Conference on Environment and Development (UNCED), participating states affirmed the importance of environmental impact assessment (EIA) procedures as an integral part of the development process.<sup>155</sup> Currently,

---

152. See Rio Declaration, *supra* note 63, princ. 18 ("States shall immediately notify other States of any . . . emergencies that are likely to produce sudden harmful effects on the environment of those States."); *id.* princ. 19 ("States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect . . .").

153. *Id.* princ. 18 ("Every effort shall be made by the international community to help States so afflicted.").

154. Convention on Early Notification of a Nuclear Accident, Sept. 26, 1986, 25 I.L.M. 1370; Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, Sept. 26, 1986, 25 I.L.M. 1377. See generally LAKSHMAN D. GURUSWAMY ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND WORLD ORDER: A PROBLEM-ORIENTED COURSEBOOK 513-41 (1994). For a good survey of the law of state responsibility for environmental harm, see *id.* at 323-59.

155. See Rio Declaration, *supra* note 63, princ. 17 ("Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.").

more than fifty nations require EIA as a matter of domestic law; and sixteen states of the United States have adopted laws that are more substantive than the National Environmental Protection Act (NEPA).<sup>156</sup> In addition, international organizations, such as the World Bank, have adopted EIA procedures as part of their decision-making process.<sup>157</sup> The popularity of EIAs is due in large measure to their proven effectiveness in anticipating and mitigating the adverse environmental impacts of development projects, and their usefulness in providing environmental information to decision-makers. Moreover, EIA procedures often give potentially affected local communities an opportunity to participate in the decision-making process.<sup>158</sup>

The widespread acceptance of environmental impact assessments is demonstrated by the passage of the Espoo Convention on Environmental Impact Assessment in a Transboundary Context,<sup>159</sup> which was opened for signature in 1991. As of mid-1995, twenty-eight states have signed the convention; a majority of Western and Eastern European states, the United States, and Canada are among the signatories. The convention requires parties to "take all appropriate and effective measures to prevent, reduce, and control significant adverse transboundary environmental impact from proposed activities."<sup>160</sup> To comply with the Convention, states must notify potentially affected states of environmental dangers, and must consult with affected states to reduce or eliminate adverse environmental effects. The use of EIAs, then, may be one way to implement the precautionary principle in national and international law and

156. ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW AND SOCIETY 230-31 (Supp. 1994) (citing David Sive, *Little NEPAs and the Environmental Impact Process*, 806 A.L.J. 1, 1-4, 6-7 (1992), and Nicholas A. Robinson, *SEQRA's Siblings: Precedents from Little NEPA's in the Sister States*, 46 ALB. L. REV. 1155, 1156-62 (1982)). Some of the United States state laws apply to actions by county and municipal governments as well as to state action; state laws often contain a lower EIA threshold than the federal law. The California, New York, and Minnesota state laws are some of the strongest. Michael C. Blumm, *The National Environmental Policy Act at Twenty: A Preface*, 20 ENVTL. L. 447, 451 n.18 (1990); California Environmental Quality Act (CEQA), CAL. PUB. RES. CODE §§ 21000-21176 (West 1986 & Supp. 1995).

157. See, e.g., Kevin Huyser, Note, *Sustainable Development: Rhetoric and Reform at the World Bank*, 4 TRANSNAT'L L. & CONTEMP. PROBS. 253 (1994).

158. See A. Dan Tarlock, *Local Government Protection of Biodiversity: What Is Its Niche?*, 60 U. CHI. L. REV. 555 (1993); see generally Nicholas A. Robinson, *International Trends in Environmental Impact Assessment*, 19 B. C. ENVTL. AFF. L. REV. 591 (1992).

159. Convention on Environmental Impact Assessment in a Transboundary Context, Feb. 25, 1991, 30 I.L.M. 802.

160. *Id.* art. 2(1).

policy. It is an approach with particular relevance to the conservation and sustainable use of biological diversity.

Another conceptual way to approach the goal of biodiversity conservation under international law, as explored *supra* in Part II, is through state responsibility and liability. The current limitation of obligations not to harm territory within the jurisdiction of another state or beyond the national jurisdiction does not fully protect global biodiverse resources, for states may still destroy such resources within their territorial boundaries under existing international law. What is needed in the future, then, is to extend responsibility to all states to conserve and sustainably use such resources as a global storehouse of genetic information or medicine chest, separate and apart from claims of sovereign rights, unless subject to the balances and tradeoffs negotiated in the Convention on Biological Diversity.

Applying the principle of state responsibility in areas beyond national jurisdiction, such as Antarctica and the high seas,<sup>161</sup> creates an opportunity to apply the doctrine of state responsibility in a context free from the claims of sovereign rights. The U.N. Convention on the Law of the Sea (LOS) offers a plan that is tailored for the maximum preservation of humanity's common heritage. Similarly, Antarctica offers the chance to preserve a unique ecosystem of "enormous scientific, ecological, spiritual, and aesthetic importance."<sup>162</sup> The Madrid Protocol to the Antarctic Treaty<sup>163</sup> "implicitly adopts the precautionary principle of environmental planning."<sup>164</sup> In the concept of pollution on the high seas, "[d]octrine and practice . . . now evidence the existence of a parallel obligation to prevent harm to the shared resource of the high seas environment . . . . The 1982 LOS Convention [codifies a duty] as the obligation to act with 'due regard' for other states."<sup>165</sup>

The concept of "internationally wrongful act" creates problems for the application of traditional notions of state responsibility for environmental damage. Because clear norms of international environmental law have not yet been fully and universally recognized, the application of the doctrine of state responsibility is not particularly useful at this time. Thus, "[i]t

---

161. See BRIAN D. SMITH, *STATE RESPONSIBILITY AND THE MARINE ENVIRONMENT: THE RULES OF DECISION* (1988).

162. David J. Bederman, *The Antarctic and Southern Ocean Coalition's Convention on Antarctic Conservation*, 4 *GEO. INT'L ENVTL. L. REV.* 47, 47 (1991).

163. Protocol on Environmental Protection to the Antarctic Treaty, Oct. 4, 1991, 30 *I.L.M.* 1461.

164. Bederman, *supra* note 162, at 49

165. SMITH, *supra* note 161, at 89.

may be concluded that, with respect to transfrontier pollution, the principle of state responsibility is undergoing a process of development and consolidation, but it is not yet to be considered to have hardened into a rule of international law.<sup>166</sup> As discussed by the I.L.C.,<sup>167</sup> much serious environmental harm can result from activities that are not "wrongful" in themselves, but whose cumulative effect is disastrous. The international system still awaits the development of an international law on liability and compensation for victims and a broader concept of state environmental responsibility.<sup>168</sup> Obviously, the best strategy for a state that is mindful of its responsibility is to avoid a breach of international obligations entirely or to adopt preventive measures. It is the duty of the international community to develop a full understanding of those obligations.

The creation of international environmental law has led to the recognition of certain legal obligations, such as states' responsibility not to harm the territory of another state and the territory beyond national jurisdiction. This responsibility should be expanded to address threats to global resources and biodiversity even when the threats occur within the territory of individual states. The new international environmental legal system should encourage states to observe their obligations to conserve and sustainably use the environment. In cases where it is difficult to know whether an activity is sustainable, the best course for legislators and policy makers is to apply the precautionary approach and prevent environmental harm. States that take their environmental responsibilities seriously, comply with their treaty obligations, and strengthen their national regulatory systems need not fear the establishment of international standards and an extended notion of state environmental responsibility. The international community soon must formulate a clear understanding of state environmental responsibility that is proactive and designed to minimize risk. The duty to take precautionary action is becoming customary international law. As such, it offers one way for states to undertake sustainable development, to uphold Stockholm Principle 21, to conserve and sustainably use biological diversity, to protect areas beyond national jurisdiction, and to meet other global obligations. In the process, states' and citizens' self-

---

166. BRUNNÉE, *supra* note 21, at 113 (citing Lothar Gündling, *Verantwortlichkeit der Staaten für grenzüberschreitende Umweltbeeinträchtigungen*, 45 ZEITSCHRIFT FÜR AUSLÄNDISCHES OFFENTLICHES RECHT UND VOLKERRECHT [ZAÖRV] 265, 273 (1985)).

167. See *supra* part II.B.

168. See Stockholm Declaration, *supra* note 61, princ. 22.

interest in adopting precautionary measures will become apparent as the Biodiversity Convention is implemented and other sources of international law develop.<sup>169</sup>

---

169. Ellen Hey, *Increasing Accountability for the Conservation and Sustainable Use of Biodiversity: An Issue of Transnational Global Character*, 6 COLO. J. INTL. ENVT'L L. & POL'Y 1 (1995).

