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Indiana Journal of Global Legal
Studies

Volume 1 | Issue 2

Article 2

Spring 1994

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Sands, Philippe (1994) "The "Greening" of International Law: Emerging Principles and Rules," *Indiana Journal of Global Legal Studies*: Vol. 1: Iss. 2, Article 2.

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The “Greening” of International Law: Emerging Principles and Rules

PHILIPPE SANDS*

The purpose of this article is to identify some recent developments in international environmental law which have implications for U.S. domestic policy. It outlines some of the more controversial (from a U.S. perspective) international legal issues which have arisen in recent years, including in particular the global instruments adopted at the United Nations Conference on Environment and Development (UNCED), held at Rio de Janeiro in June 1992, as well as the regional developments reflecting the efforts of the EC Member States in their attempt to “green” the EEC Treaty.

I welcome this opportunity to consider the implications for the United States of the globalization of environmental law and policy. It is important to recall at the outset that the United States has, historically, played a dominant role in the development of international environmental law. Many of the principles endorsed by the Rio Declaration on Environment and Development were first expressed in U.S. domestic legislation, especially the emerging rules of international law concerning environmental impact assessment, the right of citizens to have access to environmental information and rights of redress before judicial and administrative bodies, and provisions on liability for environmental damage.¹ Many of these emerging international commitments can be traced directly to domestic U.S. law, which has in this and other ways contributed significantly to international law reform.

More recently, however, there has emerged a widely held view that the historic leadership role played by the United States in this field in the 1970s

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1. *Rio Declaration on Environment and Development*, U.N. Conference on Environment and Development, 46th Sess., Agenda Item 9, princs. 10 and 17, at 3, 4, U.N. Doc. A/CONF. 151/5/Rev. 1 (1992), 31 I.L.M. 874, 878, 879 [hereinafter Rio Declaration].

has been replaced by a more defensive posture on the development of international environmental law. In large part this appears to have been determined by the Reagan/Bush view of environmental regulation as an impediment to business development and self-imposed barriers of competitive disadvantage in the international context. But it has also resulted from the dominant ideology in the United States in that period, which placed a premium on the role of the market and the protection of private property and other individual rights.

Nowhere was this more evident than in the run-up to UNCED. During the negotiations of the Climate Change Convention and the Biodiversity Convention, as well as in the Preparatory Committee to UNCED, the United States found itself isolated on several critical issues, sometimes supported only by the United Kingdom and a handful of developing countries which sought, for one reason or another, to limit the development of new rules of international environmental law.

This paper identifies some of the issues which the Reagan/Bush administrations were particularly uncomfortable with, but which have gained a considerable degree of acceptance by other members of the international community, at the national, regional, and global levels. With the change of administration it is likely that resistance to some, if not all, of these developments may diminish; if that is the case, the consequences for domestic law reform in the United States could be significant, as could the implications for the progressive development of international environmental law. The issues which are outlined in this paper relate to emerging international legal principles, new standards of environmental behavior, and new techniques for implementing obligations in the context of the ever-broadening scope of environmental and natural resource issues which are now considered by the international community to be of global concern.

The globalization of environmental law describes the increasing scope of each member of the international community's legal interest (and right) in the conservation and use of the environment and natural resources. International environmental agreements have continuously expanded the boundaries of common responsibility, and UNCED endorsed the general principle that States have a "common responsibility" for environmental protection and sustainable development.²

2. *Id.* princ. 7, at 877.

I. COMMON RESPONSIBILITY

The idea of "common responsibility" has a long history. As early as 1949, tuna and other fish were considered to be "of common concern" to the parties to certain treaties by reason of their continued use by those parties.³ Outer space and the moon, on the other hand, are the "province of all mankind;"⁴ waterfowl are regarded as "an international resource;"⁵ the natural and cultural heritage are "part of the world heritage of mankind as a whole;"⁶ the conservation of wild animals is "for the good of mankind;"⁷ the resources of the seabed, ocean floor and sub-soil are "the common heritage of mankind;"⁸ and plant genetic resources are "a heritage of mankind."⁹

More recently the concept of "common concern" has been developed and applied; the 1992 Climate Change Convention acknowledges that "change in the earth's climate and its adverse effects are a common concern of humankind,"¹⁰ and the 1992 Biodiversity Convention affirms that "biological diversity is a common concern of humankind."¹¹

3. Inter-American Tropical Tuna Convention, May 31, 1949, pmbl., 80 U.N.T.S. 3, 3 (entered into force 1950).

4. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, art. 1, 610 U.N.T.S. 205, 207 (entered into force Oct. 10, 1967).

5. Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Feb. 2, 1971, pmbl., 996 U.N.T.S. 245, 246 (entered into force Dec. 21, 1975).

6. UNESCO Convention on the Protection of the World Cultural and Natural Heritage, Nov. 16, 1972, pmbl., 27 U.S.T. 37, 40, 11 I.L.M. 1358, 1358 (entered into force July 15, 1975) [hereinafter World Heritage Convention].

7. Convention on the Conservation of Migratory Species of Wild Animals, June 23, 1979, pmbl., 19 I.L.M. 11, 15-16 (entered into force Nov. 1, 1985) [hereinafter Bonn Convention].

8. United Nations Convention on the Law of the Sea, Dec. 10, 1982, pmbl. 21 I.L.M. 1261, 1271 (not in force) [hereinafter UNCLOS]. See also G.A. Res. 2749, U.N. GAOR, 25th Sess., at 2, U.N. Doc. A/RES/2749 (XXV) (1970).

9. *United Nations Food and Agriculture Organization Plant Genetics Undertaking*, Art. 1, U.N. FAO, 37th Sess., U.N. Doc. C/83/Rep. (1983).

10. United Nations Framework Convention on Climate Change, May 9, 1992, pmbl., 31 I.L.M. 849, 851 (not in force) [hereinafter Climate Change Convention]. See also G.A. Res. 43/53, U.N. GAOR, 43rd Sess., Agenda item 50, at 1, 2, U.N. Doc. A/RES/43/53 (1988) (acknowledging that climate change is a "common concern of mankind" and rejecting the original proposal in the draft prepared by Malta which described the global climate as the "common heritage of mankind."); G.A. Res. 44/207, U.N. GAOR, 44th Sess., Agenda item 85 at 1, U.N. Doc. A/RES/44/207 (1990).

11. Convention on Biological Diversity, June 5, 1992, pmbl., 31 I.L.M. 818, 822 (not in force) [hereinafter Biodiversity Convention].

What these attributes of “commonality” share, and disagreement exists as to the precise legal nature and consequence of each, is that certain legal rights and responsibilities flow to states in respect of these environmental media and natural resources in accordance with the attribution by treaty or custom of a particular legal interest. The legal interest which a state has can be translated into a legal right of equitable access to, and use of, a particular environmental resource, and a legal responsibility to prevent harm to it. While the precise extent and legal nature of that interest will differ as a result of the particular attribution, the responsibility of each State to prevent harm to them, in particular by the adoption of national environmental standards and international environmental obligations, will also differ. Broadly speaking, the difference could define the nature and extent of the international environmental obligations of developed and developing countries.

For all members of the international community the implications of extending the notion of common responsibility to one of general application, as reflected in the Rio Declaration, is clear: states will increasingly be required to take into account the needs of all members of the international community in developing and applying their policies and laws previously thought to be solely a matter of domestic jurisdiction. Areas previously subject to the exclusive determination of states will be more likely to become subject to international environmental regulation, including commerce, energy, transport and agriculture.¹²

It is in this global environmental context that one must now consider domestic law reforms on issues relating to environmental protection and the use of natural resources. It is widely felt that the UNCED process endorsed an approach which gives increased weight to environmental considerations in the development context; others believe that the globalization of environmental concerns could significantly limit the policy discretion of industrialized countries and, over time, shift the balance away from private property rights towards a more communitarian approach.

Emerging principles of international environmental law which troubled U.S. delegations include the precautionary principle (requiring regulatory and other action in the face of scientific uncertainty), the integration of environment and development (requiring environmental considerations to be

12. See generally *Report of the U.N. Conference on Environment and Development*, U.N. GAOR, 47th Sess., Agenda 21, U.N. Doc. A/CONF.151/26/Rev. 14 (Vol. I) (1992) [hereinafter Agenda 21].

taken into account in respect of all economic matters), and the principle of common but differentiated responsibility (requiring industrialized countries to take the lead in combating environmental degradation and providing for differentiated environmental standards between different countries). New substantive standards for which the United States has, in international fora, expressed particular hostility include increasingly stringent limits on fossil fuel use (in the context of the negotiation of the 1992 Climate Change Convention), and possible limitations on the granting of, and use of, private property rights (in the context of the 1992 Biodiversity Convention).

II. THE PRECAUTIONARY PRINCIPLE: SHIFTING THE BURDEN OF PROOF IN POLICYMAKING

The precautionary principle has been regularly opposed by the United States in the negotiation of international environmental treaties, in large part because of a perception that it will limit the development and application of new technologies, processes, and practices. Nevertheless, the precautionary principle has been widely adopted and applied, particularly in the European context since the late 1980s, and is actively supported by other economic giants such as Germany and Japan, who see it as one route to achieving competitive technological advantage.¹³

The precautionary principle is now an important instrument for providing guidance to states and the international community in the development of international environmental law and policy in the face of scientific uncertainty, and was unanimously endorsed by the Rio Declaration.¹⁴ The emergence of the principle reflects a shift away from the traditional approach which calls on parties to international environmental treaties, to adopt decisions which are based upon "scientific findings" or

13. See Philippe Sands, *The United Nations Framework Convention on Climate Change*, 1 REV. EUR. COMMUNITY INT'L ENV'T. L. 270 (1992).

14. Rio Declaration, *supra* note 1. Principle 15 provides that:

In order to protect the environment, the precautionary approach shall be widely applied to 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.

Id. at 879.

methods,¹⁵ or are “in the light of knowledge available at the time.”¹⁶ Lack of full scientific certainty previously might have meant no action.

That traditional approach to the burden of proof began to shift as early as 1969. The 1969 Oil Pollution Intervention Convention, which allows measures to be taken to prevent grave and imminent danger to coastlines from threat of pollution, requires account to be taken of, *inter alia*, “the extent and probability of imminent damage if those measures are not taken.”¹⁷ The 1985 ASEAN Convention was the first to introduce into the decision-making process the notion of the ‘reversibility’ of environmental damage, requiring parties to prevent changes or minimize risk of changes in the ecosystem considered “which are not reversible over a reasonable time.”¹⁸

The first treaty to use the term was the 1985 Vienna Convention, which was mindful of the “precautionary measures” which had already been taken at the national and international levels.¹⁹ By 1987 the Montreal Protocol had noted the “precautionary measures” to control emission from certain chloroflourocarbons (CFCs) at the national and international levels and by 1990, the amendments to the Montreal Protocol provided that the parties were “determined to protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it.”²⁰ For the first time in a treaty, precautionary measures were expressly stated to be one of the reasons for adopting international measures.

15. See, e.g., Bonn Convention, *supra* note 7, arts. III(2) and XI(3), 19 I.L.M. 11, 18, 26 (action on the basis of “reliable evidence, including the best scientific evidence available”); World Heritage Convention, *supra* note 6, pmbl., 27 U.S.T. at 40, 11 I.L.M. at 1358; Convention for the Conservation of Antarctic Seals, June 1, 1972, annex, ¶ 7(a), 11 I.L.M. 251, 261 (entered into force Mar. 11, 1978); International Convention for the Regulation of Whaling, Dec. 2, 1946, art. V(2), 161 U.N.T.S. 72, 80 (entered into force Nov. 10, 1948), amended Nov. 19, 1956, 338 U.N.T.S. 336.

16. I.L.O. Convention (no. 115) Concerning the Protection of Workers Against Ionizing Radiation, June 22, 1960, art. (3)(1), 431 U.N.T.S. 41, 44 (entered into force June 17, 1962) [hereinafter Radiation Convention].

17. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Damage, Nov. 29, 1969, arts. I and V(3)(a), 9 I.L.M. 25, 25, 29 (entered into force May 6, 1975).

18. Association of South East Asian Nations Agreement on the Conservation of Nature and Natural Resources, July 9, 1985, art. 4(1)(d) (not in force), *in* I.A. INTERNATIONAL PROTECTION OF THE ENVIRONMENT 43, 45 (Bernd Rüster and Bruno Simma, eds., 1991).

19. Convention for the Protection of the Ozone Layer, Mar. 22, 1985, pmbl., 26 I.L.M. 1520, 1529 (entered into force Sept. 22, 1985) [hereinafter Vienna Convention].

20. Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, art. I(A)(1), 26 I.L.M. 1541 (entered into force Jan. 1, 1989) [hereinafter Montreal Protocol], amended in Adjustments and Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, June 29, 1990, 30 I.L.M. 537, 541 [hereinafter 1990 Amendments].

The precautionary approach has now been used in relation to a range of environmental issues. In 1987, the Ministerial Declaration of the Second North Sea Conference accepted that "in order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary."²¹ In March 1990, at the Third North Sea Conference, the Ministers pledged to continue to apply the precautionary principle.²² The 1990 Bergen Ministerial Declaration on Sustainable Development in the ECE Region was the first international act to state the principle as one of general application which was linked to sustainable development. The Declaration stated that:

In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, attack and prevent the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.²³

Since then at least seven international treaties, two of which are of global application on environmental matters of broad concern, have adopted the precautionary principle or its underlying rationale. The 1992 Biodiversity Convention notes 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 to avoid or minimize such a threat,"²⁴ and the 1992 Climate Change Convention states that:

[Parties] should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse

21. Second International Conference on the Protection of the North Sea, Ministerial Declaration, London, Nov. 25, 1987, ¶ VII, 27 I.L.M. 835, 838.

22. Third International Conference on the Protection of the North Sea, Ministerial Declaration, Mar. 8, 1990, 1990 Y.B. INT'L ENVTL. L. 658.

23. *Bergen Ministerial Declaration on Sustainable Development in the ECE Region*, G.A. Preparatory Committee for the United Nations Conference on Environment and Development, 44th Sess., Annex I at 19, U.N. Doc., A/CONF.151/PC/10 (1990), 1990 Y.B. INT'L ENVTL. L. 429, 431 [hereinafter *Bergen Ministerial Declaration*].

24. Biodiversity Convention, *supra* note 11, at 822.

effects. Where there are threats of serious or irreversible damage, lack of full scientific uncertainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost effective so as to ensure global benefits at the lowest possible cost.²⁵

The precautionary principle has also been adopted in the 1991 Bamako Convention,²⁶ the 1992 UN/ECE Transboundary Watercourses Convention,²⁷ the 1992 OSPAR Marine Environment Convention,²⁸ and the 1992 Baltic Sea Convention.²⁹

The precautionary principle, or the principle of precautionary action, has now received widespread support by the international community, particularly in relation to the protection of the marine environment and in the instruments adopted at UNCED, as well as in the several months which followed. What does the principle mean, and what status does it have in international law?

There is no uniform understanding of the meaning of the precautionary principle among States and other members of the international community. At the most general level, it has been understood to mean that States will agree to act carefully and with foresight when making decisions which concern activities that may have an adverse impact on the environment. A more generally accepted view is that the principle requires activities and substances which may be harmful to the environment to be regulated, and possibly prohibited, even if no conclusive or overwhelming evidence is available as to the harm or likely harm they may cause to the environment. As the Bergen Ministerial Declaration put it, "lack of full scientific certainty

25. Climate Change Convention, *supra* note 10, art. 3(3), 31 I.L.M. at 854.

26. Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, Jan. 29, 1991, art. 4(3)(f), 30 I.L.M. 773, 781 (not in force).

27. United Nations/Economic Commission for Europe Convention on the Transboundary Effects of Industrial Accidents, Mar. 17, 1992, art. 2(5)(a), 31 I.L.M. 1330, 1333 (not in force).

28. Convention for the Protection of the Marine Environment of the North Atlantic, Sept. 22, 1992, Fr.-U.K., art. 2(2)(a), BRITISH PARLIAMENTARY PAPERS, 1992/1993, Command Paper 2265 (not in force) [hereinafter OSPAR Marine Environment Convention].

29. Proposal for a Council Directive on the Accession of the Community to the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention - 1974), Apr. 9, 1992, art. 3, 1993 O.J. (C 222) 16 (not in force).

should not be used as a reason for postponing measures to prevent environmental degradation."³⁰

A more fundamental change would be adopted by an interpretation of the precautionary principle which would shift the burden of proof away from those who are opposing certain activities on environmental grounds and onto those who are carrying out the activities which are the subject of possible regulation. This interpretation would require polluters, and polluting states, to establish that their activities and the discharge of certain substances would not adversely or significantly affect the environment before they were granted the right to release the potentially polluting substances or carry out the proposed activity. This interpretation may also *require* international regulatory action, as a matter of law, where the scientific evidence suggests that lack of action may result in irreversible harm to the environment.

There is some evidence to suggest that this interpretation is gaining acceptance, even if it cannot yet be considered to be a rule of general application. The European Community's (EC) 1991 Urban Waste Water Directive provides that certain urban waste water discharges may be subjected to less stringent treatment than that established by the Directive providing that, *inter alia*, "comprehensive studies indicate that such discharges will not adversely affect the environment."³¹ The 1992 OSPAR Convention provides that the contracting Parties (France and the United Kingdom) wishing to retain the option of dumping low and intermediate level radioactive wastes at sea will be required to report to the OSPAR Commission on, *inter alia*, "the results of scientific studies which show that any potential dumping operations would not result in hazards to human health, harm to living resources or marine ecosystems, damage to amenities or interference with other legitimate uses of the sea."³²

The status of the precautionary principle as a governing rule of international law has been challenged as questionable. In the context of the 1992 Climate Change Convention, the United States sought to limit, probably without success, the effect of the precautionary principle. At a minimum, however, there is sufficient evidence of state practice to justify the conclusion that the principle, as elaborated in the Rio Declaration, reflects a broadly accepted basis for international action, even if the

30. Bergen Ministerial Declaration, *supra* note 23, ¶ 7.

31. Council Directive 91/271, art. 6(2), 1991 O.J. (L 135) 42.

32. OSPAR Marine Environment Convention, *supra* note 28, Annex II, art. 3(3)(c), at 17.

consequence of its application in a given situation remains open to interpretation.

The implications of the precautionary approach could be significant for the United States. In the context of global obligations, the precautionary approach is likely to lead to increasingly stringent global commitments. Examples of areas in which its application would introduce limitations on the actions of states include, in relation to fossil fuel use, the transportation and disposal of radioactive and other hazardous wastes, and mineral activities in ecologically sensitive areas.

III. INTEGRATING ENVIRONMENT AND DEVELOPMENT

A central element of the concept of "sustainable development" is the commitment to integrate environmental considerations into economic and other social development, and to take into account development needs in crafting, applying, and interpreting environmental obligations. This aspect of 'sustainable development' may be the most legalistic: its formal application requires the collection of appropriate environmental information and its dissemination, as well as the conduct of appropriate environmental impact assessments, both matters in which the United States is a world leader. Formally integrating environment and development has important implications. In particular, it may serve as the basis for allowing, or requiring, "green conditionality" in bilateral and multilateral development assistance, as well as the application of differentiated legal standards for states on the basis of, *inter alia*, their historic responsibility in contributing to an environmental problem and their capacity to respond to environmental requirements. On both counts the United States is likely to find that the integration of environment and development leads to international demands for the transfer of technology and provision of financial resources to developing countries,³³ and at the domestic level to the increased

33. It is also no coincidence that at UNCED the United States, as part of the comprehensive package, lent its support to a document which recognized the "right to development." See Rio Declaration, *supra* note 1, princ. 3, at 875. This was, however, subject to a written statement by the United States according to which it stated that by joining consensus on the Rio Declaration it did not change its long-standing opposition to the so-called "right to development," but rather understood principle 3 as meaning that "economic development goals and objectives must be pursued in such a way that development and environmental needs of present and future generations are taken into account." *Report of the United Nations Conference on Environment and Development*, U.N. GAOR, 47th Session, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. II), at 17 (1992).

application of environmental considerations to policy areas such as energy, transport, and agriculture.

The integration of environment and development is also likely to lead to transformation in the structure of national and international government. For many years the international regulation of environmental issues has taken place in international fora, such as United Nations Environmental Programme (UNEP) and the conferences of the parties to environmental treaties, which are not directly connected to international economic organizations, such as the World Bank and the General Agreement on Tariffs and Trade (GATT). The result has been a divergence in approaches to problem solving. This is a constitutional problem, and one which appears also in the structure of national government. Moreover, the constituent instruments which established the United Nations and its specialized agencies, and in particular the GATT, the World Bank, the multilateral development banks, and regional economic integration organizations such as the European Community, are conspicuous in their failure to address or mention environmental needs or sustainable development. Environmental concerns have historically been addressed on the periphery of international economic concerns.

A. Rio Declaration

The UNCED process and the instruments adopted at the Conference have changed that, probably permanently. Principle 4 of the Rio Declaration provides that:

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.³⁴

From an integrated approach certain consequences will flow, the most significant being that environmental considerations are increasingly likely to become a feature of international and domestic economic policy and law. This is already borne out by the steady changes which took place in the late 1980's: the amendment of the EEC Treaty to include a new section on the

34. Rio Declaration, *supra* note 1, at 877.

environment; the establishment of an Environment Department by the World Bank, together with the formal adoption of environmental assessment procedures; the convergence of trade with environment at the GATT; the integration of environmental considerations into the North American Free Trade Agreement (NAFTA); the elaboration of language on sustainable development in the Articles of Agreement of the European Bank for Reconstruction and Development (EBRD); and the development of environmental jurisprudence on matters such as competition, subsidy, and intellectual property law.³⁵

The process leading to the formal integration of environment and development goes back to the 1972 Stockholm Conference and beyond and is now reflected in numerous treaty obligations. Thus, the 1989 Fourth Lomé Convention provides that the development of African, Caribbean, and Pacific (ACP) States "shall be based on a sustainable balance between its economic objectives, the rational management of the environment and the enhancement of natural resources," and requires the "preparation and implementation of coherent modes of development that have due regard for ecological balances."³⁶ Recent environmental treaties of global application contain similar provisions.³⁷

B. European Community

The integration of environment and economic development by the progressive amendment of the EC Constitution provides an important point of reference for the United States. The European Community has gone a significant way toward greening the 1957 EEC Treaty. In 1986 the Single European Act (SEA) transformed a rather marginal body of environmental policy and law into one of central importance, bringing environmental considerations to bear on areas of the law which might previously have been considered beyond bounds, including corporations, tax, financial services, broadcasting, and civil procedure.

35. See PHILIPPE SANDS, *PRINCIPLES OF INTERNATIONAL LAW*, Chapters 18 and 19 (forthcoming in 1994).

36. African, Caribbean and Pacific States—European Economic Community: Final Act, and Fourth ACP—EEC Convention at Lomé, Dec. 15, 1989, arts. 4 and 34, 29 I.L.M. 783, 814, 819 (entered into force Sept. 1, 1991).

37. See, e.g., Biodiversity Convention, *supra* note 11, art. 6(b), at 825; Climate Change Convention, *supra* note 10, pmb., at 851.

Article 25 of the 1986 SEA added a new Title VII on "Environment" to the EEC Treaty, consisting of Article 130R, 130S, and 130T. It went beyond mere codification of existing environmental law, and established a formal legal basis for the future development of EC environmental law, in effect bringing the whole of the EC's extensive range of economic activities within the scope of environmental lawmaking. Article 130R of the amended Treaty of Rome provides that Community action related to the environment has the following objectives:

- i. to preserve, protect and improve the quality of the environment;
- ii. to contribute towards protecting human health;
- iii. to ensure a prudent and rational utilization of natural resources.

The amended EEC Treaty additionally provides that EC action is to be preventive, that environmental damage should as a priority be rectified at its source, that the polluter should pay for damage,³⁸ that environmental protection shall be a component of other EC policies, and that the EC may participate in international environmental agreements.³⁹

The Maastricht Treaty on European Union introduces further amendments to the EEC Treaty with the objective of establishing European Monetary and Political Union.⁴⁰ The Maastricht Treaty establishes a EUROPEAN COMMUNITY, which has as its task, by establishing a common market and monetary union and by implementing common policies and activities

to promote throughout the Community a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment, a high degree of convergence of economic performance, a high level of employment and of social protection, the raising of the standard of living and quality of life, and economic and social cohesion and solidarity among Member States.⁴¹

38. Single European Act, Feb. 17, 1986, tit. VII art. 130R(2), 25 I.L.M. 503, 515.

39. *Id.* art. 130R(5).

40. Treaty on European Union and Final Act, Feb. 7, 1992, 31 I.L.M. 247 (entered into force Nov. 1, 1993) [hereinafter Maastricht Treaty].

41. *Id.* amended art. 2, at 256.

The Maastricht Treaty would elevate environmental protection to one of the fundamental objectives of the Community and includes as one of the EC's fundamental activities, as set out in Article 3, "a policy in the sphere of the environment."⁴² The environmental provisions in the EEC Treaty would also be amended by Maastricht. Under Article 130R Community policy is extended to promote measures at the international level to deal with regional or worldwide environmental problems, and under Article 130R(2) environmental policy is to aim at "a high level of protection taking into account the diversity of situations in the various regions of the Community."⁴³ The precautionary principle is added to the list of principles, and environmental protection requirements must, under the Maastricht Treaty, be "integrated into the definition and implementation of other Community policies," rather than just a "component."⁴⁴

Most significantly, and apparently unmatched in any other treaty, provision is made for the inclusion, where appropriate, of a "safeguard clause" in EC harmonization measures to allow Member States to take "provisional measures, for non-economic environmental reasons, subject to a Community inspection procedure."⁴⁵ Recognizing that certain measures may impose disproportionate costs for public authorities, provision is also made for temporary derogations and financial support from the new Cohesion Fund.⁴⁶

The political and geographic expansion of environmental considerations has continued since Maastricht. In May 1992 the EC Member States and the seven European Free Trade Association (EFTA) States signed the Agreement on the European Economic Area (EEA Agreement) as an agreement of association to promote a "continuous and balanced strengthening of trade and economic relations" between the Parties with "equal conditions of competition, and the respect of the same rules, with a view to creating a homogenous [EEA]."⁴⁷ These objectives are to be achieved by applying

42. *Id.* amended art. 3(k) at 257.

43. *Id.* at 285.

44. *Id.* amended art. 130R(2) at 285.

45. *Id.*

46. *Id.* amended art. 130S(5) at 286. The Cohesion Fund will be set up under the amended art. 130D, *id.* at 283.

47. Agreement on the European Economic Area, May 2, 1992, art. 1(1), 1994 J.O. (L37) 3 at 1/9 (entered into force January, 1994). The seven EFTA members are Austria, Finland, Iceland, Liechtenstein, Norway, Sweden, and Switzerland (Switzerland will not become a Party to the EEA Agreement following a majority vote against ratification in December 1992).

rules on free movement of persons, goods, services, and capital, as well as competition rules and closer cooperation on, *inter alia*, environmental protection.⁴⁸ The Preamble to the EEA Agreement reflects the determination of the Parties to "preserve, protect and improve the quality of the environment and to ensure a prudent and rational utilization of natural resources on the basis, in particular, of the principle of sustainable development, as well as the principle that precautionary and preventive action should be taken,"⁴⁹ and to take a high level of environmental protection as a basis for the further development of rules. The EEA Agreement includes specific rules on environmental protection, including provision for the formal incorporation of the most important acts of EC environmental law into the internal law of the EFTA States.⁵⁰

The EC example suggests how a treaty developed to further regional and international economic integration and development has been amended to introduce and to apply environmental issues, which are now considered by the European Court of Justice to be an "essential objective" of EC law.⁵¹ That process now places the EC on the threshold of adopting important new environmental proposals for protecting the environment through the introduction of a carbon tax and the development of a new regulatory approach known as Integrated Pollution Prevention and Control (see below).

IV. COMMON BUT DIFFERENTIATED RESPONSIBILITY

The principle of common but differentiated responsibility is one of the most important developments of UNCED, resulting from the application of the broader principle of equity in general international law, together with the recognition that the special needs of developing countries must be taken into account in the development, application, and interpretation of rules of international environmental law. Principle 7 of the Rio Declaration states the principle in the following way:

48. *Id.* art. 1(2) at 1/9.

49. *Id.* pmb. at 1/4.

50. *Id.* art 73 at 1/19; protocol I at 1/37-1/38; Annex XX at 1/494-1/500.

51. Case 240/83, Procureur de la Republique 51.v Association de Defense des Bruleurs d'Huiles Usagees, 1985 ECR 531, ¶ 13.

In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.⁵²

The principle of common but differentiated responsibility comprises two elements. The first relates to the common responsibility of states for the protection of the environment, or parts of it, at the national, regional, and global levels.⁵³ The second relates to the need to take account of differing circumstances, particularly in relation to each state's *contribution* to the creation of a particular environmental problem and its *ability* to respond to, and limit and prevent, the threat.

In practical terms the application of the principle of common but differentiated responsibility entitles all concerned states to participate in international response measures aimed at addressing environmental problems. It is also likely to lead increasingly to the development and application of differing environmental standards between and among different States, and the likelihood of increasingly contentious disputes between developed and developing countries on the appropriate level at which each should set their environmental standards. The difficulties of applying differentiated standards in the context of free trade obligations were illustrated by the dispute between Mexico and the United States over the latter's ban on imports of yellowfin tuna from Mexico, justified on environmental grounds but ultimately rejected by a GATT Dispute Settlement panel as an unwarranted incursion into Mexico's domestic affairs.⁵⁴

52. Rio Declaration, *supra* note 1, princ. 7 at 2, 31 I.L.M. at 877. Similar language may be found in the 1992 Climate Change Convention, *supra* note 10, art. 3(1), 31 I.L.M. at 854, which provides that the Parties should act to protect the climate system "on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities."

53. See Rio Declaration, *supra* note 1.

54. General Agreement of Tariffs and Trade: Dispute Settlement Panel Report on United States Restrictions on Imports of Tuna, Sept. 3, 1991, 29 I.L.M. 1594.

A. Differentiated Responsibility

The differentiated responsibility of states for the protection of the environment is widely accepted in treaty and other practices of States. It translates into differentiated environmental standards set on the basis of a range of factors, with account being taken of the special needs and circumstances particularly relating to future economic development of developing countries.

This concern is reflected in the 1972 Stockholm Declaration, which emphasized the need to consider "the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries."⁵⁵ By the time of UNCED the international community was able to agree that "environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply,"⁵⁶ and that "the special situations and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority."⁵⁷ It is noteworthy that a distinction is often made, in legal terms, between the capacities and needs of developing countries.

The differentiated approach is now reflected in several treaties. Under the 1972 London Dumping Convention, the measures required under the Convention are to be adopted by Parties "according to their scientific, technical and economic capabilities."⁵⁸ Other treaties identify the need to take account of: the "capabilities" of states,⁵⁹ their "economic capacity and the need for economic development,"⁶⁰ and of the "means at their disposal and their capabilities."⁶¹ The princ. of differentiated responsibility has also been applied to treaties and other legal instruments applying to developed

55. *Report of the United Nations Conference on the Human Environment*, U.N. Conference on the Human Environment, 26th Sess., princ. 23, U.N. Doc. A/CONF.48/14 (1972); 11 I.L.M. 1416, 1420.

56. Rio Declaration, *supra* note 1, princ. 11, at 3, 31 I.L.M., at 878. *See also* Climate Change Convention, *supra* note 10, pmbi., at 847.

57. Rio Declaration, *supra* note 1, princ. 6, at 2, 31 I.L.M., at 877.

58. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Dec. 29, 1972, art. II, 1046 U.N.T.S. 120 (entered into force Aug. 30, 1975).

59. West and Central African States: Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region, Mar. 16-23, 1981, art. 4(1) 20 I.L.M. 746 (entered into force Aug. 5, 1981).

60. UNCLOS, *supra* note 8, art. 207, at 1310.

61. Vienna Convention, *supra* note 19, art. 2(2), at 1530.

countries. Examples include the 1988 EC Large Combustion Directive (limiting SO₂ emissions), which sets different levels of emission reductions for each member State;⁶² the 1991 VOC Protocol (limiting emissions of volatile organic compounds), which allows Parties to specify one of three different ways to achieve reduction;⁶³ and the 1992 Maastricht Treaty (amending the EEC Treaty), which provides that:

Without prejudice to the principle that the polluter should pay, if a measure . . . involves costs deemed disproportionate for the public authorities of a Member State, the Council shall, in the act adopting that measure, lay down appropriate provisions in the form of:

- temporary derogations; and/or
- financial support from the Cohesion Fund. . . .⁶⁴

The special needs of developing countries are expressly recognized in other instruments.⁶⁵ Account is to be taken of their “circumstances and particular requirements,”⁶⁶ or of their “specific needs and special circumstances,”⁶⁷ or of their “special conditions” and “the fact that economic and social development and eradication of poverty are the first and overriding priorities of the developing country Parties.”⁶⁸

In practical terms differentiated responsibility has been translated into different legal obligations under certain treaties, and this practice seems likely to develop further. Under the 1987 Montreal Protocol, the special situation of developing countries entitles them, provided that they meet certain conditions, to delay their compliance with control measures.⁶⁹

62. Council Directive 88/609/EEC, 1988 O.J. (L 336) 1 (on limitation of emissions from large combustion plants).

63. United Nations: Protocol to the 1979 Convention on Long Range Transboundary Air Pollution Concerning the Control of Emissions of Volatile Organic Compounds and Their Transboundary Fluxes, Nov. 18, 1991, art. 2, ¶ 2, 31 I.L.M. 568 (not in force).

64. Maastricht Treaty, *supra* note 40, tit. XVI, art. 130s(5), at 286.

65. *See, e.g.*, Convention for the Protection of the Mediterranean Sea Against Pollution, Feb. 16, 1976, art. 11(3), 15 I.L.M. 290; 1982 UNCLOS, *supra* note 8, pmbl., at 1261.

66. Vienna Convention, *supra* note 19, pmbl., at 1529.

67. Climate Change Convention, *supra* note 10, art. 3(2), at 854 (policies and measures “should be appropriate for the specific conditions of each Party and should be integrated with national development programmes.” *Id.* art. 3(4), at 855).

68. Biodiversity Convention, *supra* note 11, pmbl. and art. 20(4), at 822, 831. *See also* Climate Change Convention, *supra* note 10, art. 4(7), at 858.

69. Montreal Protocol, *supra* note 20, art. 5(1), at 1555. *See also* 1990 Amendments, *supra* note 20, art. 1P, at 547.

Under the terms of the 1992 Climate Change Convention, the principle of "common but differentiated responsibilities" translates into "specific commitments" on the mitigation of climate change only for developed country Parties and other developed Parties, and differentials in reporting requirements.⁷⁰ The special needs of developing countries, the capacities of all countries, and the principle of "common but differentiated" responsibilities has also resulted in the establishment of special institutional mechanisms to provide financial, technological, and other technical assistance to developing countries to help them implement the obligations of particular treaties.⁷¹

The implications of the principle of differentiated responsibility will be important for the United States and other industrialized countries which have been responsible over the past two centuries for a great proportion of global environmental damage. The principle of common but differentiated responsibility creates the moral and legal basis for requiring environmental action by the developed countries responsible for causing the environmental harm.

V. NEW REGULATORY APPROACHES

The United States has for some time been pushing innovative new approaches to environmental protection based on market mechanisms.⁷² Although Europeans tend to be more skeptical about the place of the market in environmental protection, the EC and individual Member States have also moved toward adopting new approaches to environmental protection.

Some of these techniques would clearly run into difficulty with the U.S. Constitution. It is difficult to imagine a U.S. legislative act adopting the approach found in the EC's 1989 Broadcasting Directive, which provides that television advertisements "shall not encourage behaviour which is prejudicial to the protection of the environment."⁷³ The EC Directive on

70. Climate Change Convention, *supra* note 10, arts. 4 and 12, at 856, 865.

71. See SANDS, *supra* note 35, Chapter 19.

72. See Daniel Dudek et al., *Environmental Policy for Eastern Europe: Technology-Based versus Market-Based Approaches*, 17 COLUM. J. ENVTL. L. 1 (1992); Bruce A. Ackerman & Richard Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333 (1991); Bruce A. Ackerman & Richard Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 COLUM. J. ENVTL. L. 171 (1988).

73. Council Directive 89/552, art. 12(e), 1989 O.J. (L 298) 23. The Directive is considered by some to be a welcome first step towards the prohibition of car advertisements; others see it as an

Eco-Labeling is marginally more acceptable, although its centralized and bureaucratic approach to the grant of eco-labels would clearly not have found favor with the Bush administration. Two approaches which are, however, being studied with interest by the new U.S. Administration are the proposed EC carbon tax and the OECD recommendations on integrated pollution prevention.

A. Carbon Tax

The rationale behind charges and taxes is said to be that they create an incentive for polluters to limit activities which can be harmful to the environment: such as emissions, the generation of waste, and the excessive use of natural resources.⁷⁴ To date, charges and taxes have not been the subject of international legal measures. In May 1992, the first international environmental tax was proposed by the EC to contribute to the implementation of its commitment to stabilize carbon dioxide emissions at 1990 levels by the year 2000. The EC Commission has proposed a Directive to provide for the harmonized introduction in the EC Member States of a specific tax on certain fossil fuel products (coal, lignite, peat, natural gas, mineral oils, ethyl and methyl alcohol, and electricity).⁷⁵ The Proposal is to levy the tax on the basis of carbon dioxide emissions and energy content.⁷⁶

The introduction of the tax is made conditional upon the introduction by the other OECD members of a similar tax or of measures having a financial impact equivalent to the draft Directive and is to take account of issues of international competitiveness. The proposal would also allow the EC Commission to authorize Member States to allow a graduated reduction or full and temporary exemption from the tax to firms with a high energy consumption which would be "seriously disadvantaged on account of an increase in imports from third countries."⁷⁷ The draft Directive would

unwarranted incursion into free speech rights.

74. The difference between a charge and a tax relates to the way in which the revenues are allocated: tax revenues are added to the general public budget while charge revenues are used specifically to finance environmental measures.

75. EC Commission Proposal for a Council Directive introducing a Tax on Carbon Dioxide Emissions and Energy, COM(92) 226 final, at 8, June 30, 1992 (the draft excludes certain products).

76. *Id.* at 2, 5, 23.

77. *Id.* at 14, 16, 22.

also allow Member States to reduce the amounts of tax payable or to grant refunds to firms to cover the cost of new investment expenditure in order to improve the efficient use of energy or limit carbon dioxide emissions.⁷⁸ The carbon/energy tax proposal is also intended to be tax neutral by not resulting in an increase in the overall tax burden.⁷⁹

In light of the recent proposal by the Clinton Administration to introduce a BTU (heat output) tax the prospects for the introduction of the EC's carbon tax may have marginally increased. The two proposals differ, however, in one important respect: the EC proposal is designed to be fiscally neutral, whereas the Clinton proposal was originally designed to raise revenue and was not, in that sense, intended to be an environmental tax.⁸⁰

B. Integrated Pollution Control

The continuous increase in pollution levels and environmental degradation, even in the face of stringent standards and regulatory mechanisms, provides evidence of the fundamental failure of traditional environmental law-making to achieve significant changes in human behavior and patterns of production and consumption. New approaches are being sought. The traditional approach to environmental regulation, whether at the local, national, regional, or global level, has been to address particular activities, substances, or environmental media (air, water, soil, and biota), and to focus pollution control and prevention efforts on each environmental medium. In reality, different substances and activities can move among, and have effects upon, a range of environmental media as they travel along a "pathway" from a particular source to a particular receptor, and in that process may accumulate in the environment. The regulation and establishment of controls over releases of a substance to one environmental medium can lead to that substance being shifted to another environmental medium, as has been recognized by the attempts of certain treaties and other

78. *Id.* at 16.

79. *Id.* at 17.

80. Clinton's proposal to tax British Thermal Units (BTUs) used was included in his 1993 deficit reduction package. Originally it included most forms of energy, and was projected to raise \$15 billion in annual revenues to offset the deficit. However, it was watered down by Congress into a 4.3 cent tax on gasoline and diesel fuel, which is projected to generate less than \$5 billion in annual revenue. John E. Peterson, *The High Cost of Federal Policies*, SACRAMENTO BEE, Oct. 2, 1993, at B6.

instruments to limit and prevent such a shifting. This is recognized by a number of international environmental agreements which include provisions requiring parties not to transfer pollution or environmental damage elsewhere in the implementation of their treaty obligations.

Certain states and groups of states have now begun to realize that efforts to address each environmental medium separately may not be the most efficient or effective way to protect the environment. In 1990 the United Kingdom Environmental Protection Act introduced the idea of integrated pollution control, to provide for the regulation of entire production processes.⁸¹ Integrated pollution prevention or control was defined in 1991 by the OECD Council as:

taking into account the effects of activities and substances on the environment as a whole and the whole commercial and environmental life-cycles of substances when assessing the risks they pose and when developing and implementing controls to limit their release.⁸²

This broader, almost holistic approach to environmental regulation and protection is reflected in a number of international instruments, including the attempts by the EC to take a "cradle-to-grave" approach to eco-labelling and to address "waste streams" in its developing waste prevention policy. The 1992 OSPAR Convention also reflects this approach by seeking to regulate particular industrial sectors and activities, including their processes.⁸³

The 1991 OECD Council Recommendation calls on Member countries to support integrated pollution prevention and control by addressing impediments to an integrated approach, removing those impediments, and adopting appropriate new laws and regulations, taking account of the Guidance on Integrated Pollution Prevention and Control set out in the Appendix to the Recommendation.⁸⁴ For the first time in an (non-binding) international instrument, the Guidance sets out a detailed approach to implementing integrated pollution prevention and control, and preventing or

81. Environmental Protection Act, 1990, ch. 43 (U.K.), part I, *reprinted in* HMSO, THE PUBLIC GENERAL ACTS AND GENERAL SYNOD MEASURES, PART III (1991), at 2152.

82. OECD Council Recommendation on Integrated Pollution Prevention and Control, C(90)164/FINAL, January 31, 1991, ¶ I(a).

83. OSPAR Marine Environment Convention, *supra* note 28.

84. Environmental Protection Act, *supra* note 81, ¶ I(b) and (c).

minimizing the risk of harm to the environment taken as a whole. It recognizes the integrated nature of the environment by taking account of the substances or activities on all the environmental media (air, water, soil), the living organisms (including people) that these media support, and the stock of cultural and aesthetic assets.⁸⁵ The Guidance identifies five important elements of an integrated approach: the "cradle to grave" concept; anticipation of effects in all environmental media of substances and activities; minimisation of waste quantity and harmfulness; the use of a common means to estimate and compare environmental problems (such as risk assessment); and the complementary use of effects oriented measures (environmental quality objectives) and source oriented measures (emission limits).⁸⁶

The OECD Recommendation also recognizes that certain policies are "essential to an effective integrated approach," including sustainable development, the use of no or low waste technology and recycling strategies, cleaner technologies and safer substances, precautionary action, public information, integration of environmental considerations onto private and public decision-making, and consistent and effective compliance and enforcement policies.⁸⁷ Under the Recommendation an integrated approach would shift from traditional focuses for decisionmaking, and refocus on a combination of the substances, the sources (including processes, products and economic sectors) and the geographical regions. It would provide for the use of a range of legislative forms such as mineral rights, development aid, and taxes.⁸⁸ The Recommendation recognizes that an integrated approach would require changes in institutional arrangements, management instruments, and technical methods.

Integrated Pollution Prevention and Control (IPPC) will also require new institutional arrangements to ensure co-ordination within and among government bodies and international co-operative arrangements and among different levels of government within countries.⁸⁹ Proposals relating to management instruments include the following: issuing single permits which cover all releases and processes; linking environmental instruments

85. *Id.* Guidance, ¶ 1.

86. *Id.* app., ¶ 1.

87. *Id.* ¶ 2.

88. *Id.* ¶¶ 3 and 4.

89. *Id.* ¶ 5.

with land-use planning and natural resource management; undertaking environmental impact assessments for policy proposals and projects; establishing integrated inspection and enforcement authorities; using economic instruments; encouraging and/or subsidizing cleaner technologies; and covering whole life cycle issues in the development of industry management plans.⁹⁰ An integrated approach to technical methods encompasses such things as lifecycle analysis (from design through manufacture to disposal), analysis of multiple pathways of exposure, the use of inventories of releases and inputs, and more effective monitoring of the condition of environmental media, the biota they support, and the condition of cultural and aesthetic assets.⁹¹

VI. PRIVATE PROPERTY RIGHTS: INTELLECTUAL PROPERTY, BIOLOGICAL DIVERSITY AND BIOTECHNOLOGY

For the U.S. government, the most threatening development at UNCED was the assault on private property rights and technological innovation which it considered to have been launched by the 1992 Convention on Biological Diversity. In his speech to UNCED, President Bush declared that the Convention would "retard biotechnology and undermine the protection of ideas."⁹² In deciding not to sign the Biodiversity Convention President Bush was expressing U.S. concern at the subjugation of individual property right to community rights; such concerns about the Convention were not shared by many other countries, developed or developing. To the extent that they were, however, they are also subject to the growing acceptance, particularly in the European context, that certain private rights may have to be limited in the interests of regional and global environmental protection and in order to ensure the realisation of broader community benefits associated with environmental protection (such as the conservation of biological diversity).⁹³

The differences over the Biodiversity Convention and other legal issues associated with intellectual property rights and the development of

90. *Id.* ¶ 6.

91. *Id.* ¶ 7.

92. See *Excerpts from Speech by Bush on 'Action Plan'*, N.Y. TIMES, June 13, 1992, at A5.

93. In April 1993 President Clinton announced that the United States would sign the Biodiversity Convention. William Stevens, *Gore Promises U.S. Leadership on Sustainable Development Path*, N.Y. TIMES, June 15, 1993, at C4.

biotechnology illustrate the extent to which environmental considerations are increasingly being integrated into new areas. Until relatively recently international environmental law was, with a few exceptions, concerned with the development and application of rules concerning institutions, procedures and substantive obligations outside established and mainstream economic concerns or rules and the institutions of international economic or commercial law. Since the mid-1980's, however, the rules of international environmental law have been further developed in relation to the provision of financial resources and the establishment of international financial mechanisms. As the dispute over the Biodiversity Convention showed, the relationship between environmental protection and patent and other intellectual property rights guaranteed at the national and international level has become an international issue.

Legal issues arising out of the application of patent and other intellectual property rights have been raised in the development of international environmental law and policy, mainly in two contexts. The first concerns the frequent invocation by developed States, in the negotiation of international environmental treaties, of the limitations imposed upon them in relation to technology transfer by the obligations flowing from rules related to the protection of intellectual property. The second concerns the growing acceptance that environmental and other reasons may justify limiting the development of biotechnology, partly in application of the precautionary principle.

A. Technology Transfer and Intellectual Property Rights

The technology transfer issue has been particularly acute in the context of biodiversity, and is also addressed by Agenda 21, where the international community declared the need to consider the role played by patent protection and intellectual property rights, and to examine their impact on the access to and transfer of environmentally sound technology, particularly to developing countries.⁹⁴ Agenda 21 signals acceptance by the international community that intellectual property rights may limit the international transfer of technologies and thus contribute to global environmental degradation.⁹⁵ Agenda 21 calls for measures to be taken

94. Agenda 21, *supra* note 12, part IV, ch. 34, ¶¶ 34.10 and 34.18, at 3-4.

95. *Id.* Similar considerations apply in other contexts, such as climate change, ozone depletion,

(including acquisition through compulsory licensing and the provision of “equitable and adequate compensation”) which are in “compliance with and under the specific circumstances recognized by the relevant international conventions adhered to by States.”⁹⁶

The 1992 Biodiversity Convention was the first international environmental treaty to tackle the issue of intellectual property.⁹⁷ Its provisions reflect the concern about the possible threat to intellectual property rights posed by technology transfer obligations, as well as the need to ensure equitable allocation of ownership rights. Concern over these provisions lay behind the failure of the United States to sign the Biodiversity Convention at Rio.

The Biodiversity Convention provides that the access to and transfer of technology which is subject to patents and other intellectual property rights is to be provided “on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights.”⁹⁸ The Convention recognizes that intellectual property rights may have an influence on its implementation and calls on parties to cooperate on intellectual property rights “subject to national legislation and international law in order to ensure that such rights are supportive and do not run counter to [the Convention’s] objectives.”⁹⁹ In Article 22, however, the Convention leaves open the possibility that intellectual property rights and obligations deriving from an existing international agreement might be overridden “where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.”¹⁰⁰ The interpretation and application of this latter provision raises the possibility of conflict between two international treaties, to be resolved by recourse to the ordinary rules of public international law, which may ultimately allow for exceptions to the protection granted to certain private property rights.

oil transportation, and waste disposal. *Id.*

96. *Id.* part IV, ¶ 34.18(e)(iv), at 7.

97. The Convention’s three objectives are “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.” Biodiversity Convention, *supra* note 11, art. 1, at 823.

98. *Id.* art. 20(2), at 830.

99. *Id.* art. 20(5), at 831.

100. *Id.* at 832.

B. *Biotechnology and the Grant of Patents*

A related issue concerns the extent to which environmental considerations may limit or prevent the grant of patent or other intellectual property rights to products which may have adverse environmental consequences. Recent developments in the context of the Biodiversity Convention and in Europe suggest greater concern outside the United States about the development of biotechnology, including concerns based on environmental grounds.

The Biodiversity Convention plants the seeds for restricting the development of biotechnology. Article 19(3) requires the parties to consider the need for and modalities of a protocol "setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity."¹⁰¹ In the meantime, each party will be required to provide any available information about the use and safety regulations required by it in handling living modified organisms, as well as information on the potential adverse impact of specific organisms."¹⁰² The EC has adopted two Directives placing limits on the development of "genetically modified organisms," and there is some evidence of disquiet about the grant of patent and other intellectual property rights in respect to such organisms.¹⁰³

The recent case concerning the "Harvard Mouse" illustrates how environmental considerations are now being integrated into European patent law, in ways which may have important consequences in the United States in coming years. The applicants sought the grant of a European patent for the United States patented Harvard onco mouse, whose genetic make-up had been manipulated by the introduction of a single specified oncogene making it abnormally sensitive to carcinogenic substances and stimuli and, consequently, prone to develop tumours, which necessarily caused suffering. The patent was challenged on the grounds that it was, *inter alia*, incompatible with Article 53(a) of the European Patent Convention (EPC).

101. *Id.* at 830.

102. *Id.* art. 19(4), at 830.

103. Council Directive 90/219/EEC, 1990 O.J. (L 117, 8.5) 1 and Council Directive 90/220/EEC, 1990 O.J. (L 117, 8.5) 15.

The EPC provides that European patents will not be granted for inventions, the publication or exploitation of which would be contrary to "ordre public" or morality, provided that the exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the parties.¹⁰⁴ The EPC also prohibits the grant of patents in respect of "plant or animal varieties or essentially biological processes for the production of plant or animals."¹⁰⁵ The Examining Division of the European Patent Office held, on appeal, that the invention was not immoral or contrary to public order. It also held that each individual invention requires the question of morality to be examined and the possible detrimental effects and risks, including those of an environmental nature, had to be weighed and balanced against the merits and advantages.¹⁰⁶ Three different interests were involved and required balancing in deciding whether to grant a patent:

[T]here is a basic interest of mankind to remedy widespread and dangerous diseases, on the other hand the environment has to be protected against the uncontrolled dissemination of unwanted genes and, moreover, cruelty to animals has to be avoided. The latter two aspects may well justify regarding an invention as immoral and therefore unacceptable unless the advantages, i.e. the benefit to mankind, outweigh the negative aspects.¹⁰⁷

In this case the Examining Division held that the invention was useful to mankind, it contributed to the reduction of the overall extent of animal suffering, and that animal test models were at present considered

104. Convention on the Grant of European Patents, Oct. 5, 1973, art. 53(a), 13 I.L.M. 268, at 286.

105. *Id.* art. 53(b).

106. Decision of the Examining Division, Apr. 3, 1992 (Onco-mouse/Harvard), O.J. EPO 1992, 589 at 591. This Decision followed the ruling by the European Patent Convention Technical Board of Appeal in Decision T 19/90 (Re Harvard College (President and Fellows)) that the danger of unforeseeable and irreversible effects following the release of genetically-manipulated animals into the environment was to be considered in applying Article 53(a). EUROPEAN PATENTS HANDBOOK (2nd ed.) Rel 9 1991, 103:T 19/90-1 which, in turn, had overruled the Examining Division's refusal of a patent application on the grounds that patent law was not the right tool for regulating, *inter alia*, "the problem of drastically disrupting evolution." Decision of the Examining Division, July 14, 1989 (Onco-mouse), O.J. EPO 1989, 451, at 458-59.

107. O.J. EPO 1992, at 591-92.

indispensable. As to "possible risks to the environment" the Division found that:

[N]o release is intended into the general environment. Therefore the risk of an uncontrolled release is practically limited to intentional misuse or blatant ignorance on the part of the laboratory personnel carrying out the tests. The mere fact that such uncontrollable acts are conceivable cannot be a major determinant for deciding whether a patent should be granted or not. Exclusion of patentability cannot be justified merely because a technology is dangerous.¹⁰⁸

The decision was an important one in that it accepted the potential use of environmental arguments, although the Examining Division has limited the scope of their use. The Examining Division was at pains to point out, however, that the decision applied solely to the case at hand and that other cases were conceivable for which a different conclusion might be reached.

VII. ENERGY POLICY AND THE CLIMATE CHANGE CONVENTION

The U.S. response to the Biodiversity Convention was nothing, however, compared to its negotiating position in the elaboration of the 1992 United Nations Framework Convention on Climate Change. The United States was absolutely opposed to targets and timetables which could establish binding limitations by the Convention on the use by the United States of fossil fuels in order to reduce emissions of carbon dioxide. Discretely assisted by the United Kingdom, the United States forced the removal of clear targets and timetables from the Convention. A similar approach lay behind efforts to water down the provisions in Agenda 21 relating to energy use.

The U.S. concern was largely motivated by considerations relating to economic performance and lifestyle, although lack of full scientific certainty about climate change and its effects introduced "environmental" arguments. The U.S. position on this issue is of crucial importance. A coordinated and effective OECD approach to cutting fossil fuel use is unlikely to proceed without the United States, and without changes in OECD policy and practice

108. *Id.* at 592-93.

it is extremely unlikely that developing countries will accept any limitations on or changes in their fossil fuel use.

With the change in the U.S. Administration, however, there is some evidence that the United States position on Climate Change would evolve to allow the terms of the Convention to be amended—or a new protocol adopted—limiting fossil fuel use by OECD (developed) countries. In April of 1993 President Clinton announced a U.S. target to stabilize emissions of CO₂ and the greenhouse gases at 1990 levels, and in September of 1993 a U.S. action plan was unveiled to meet this target. The new position tended to indicate a greater flexibility on previously contentious positions.¹⁰⁹

This may break an important log jam and release the overwhelming international support for a more concrete response to climate change than that established by Article 4(2)(a) and (b) of the Convention. It would also lead to significant changes in domestic U.S. policy in the fields of transport and energy, largely as a result of international pressures on the United States to reduce its consumption of fossil fuels. The significant consequences of accepting targets and timetables on emissions of carbon dioxide are now being felt in the United Kingdom, as the government struggles to devise an energy policy which will maintain the coal and natural gas industries without shutting down any nuclear plants and limit carbon dioxide emissions to 1990 levels by the year 2000.

The United States will find itself under increasing international pressure to reduce total and per capita fossil fuel use and resulting atmospheric emissions. These pressures will derive, in part, from an increasingly precautionary approach, the integration of environmental considerations into economic and other development issues, and the historic and current responsibility of the United States and other OECD countries for the threat of climate change. As pressure translates into binding international legal commitments, domestic policy reforms will follow.

VIII. CONCLUSION

This paper has identified a range of international developments which have occurred in recent years on environmental matters. Without purporting

109. *Clinton Asks Help on Pollution Goal: President Appeals to Business and Industry to Help Curb Global Warming*, N.Y. TIMES, Oct. 20, 1993, at A20.

to be comprehensive, they illustrate some of the concerns and considerations of other members of the international community in devising new regulatory responses to national, regional and global environmental challenges. In an increasingly interdependent world these developments will eventually impact upon attitudes and policy and law reform in the United States.

In many respects the United States is rightly considered to have the most highly developed rules of environmental protection of any nation, and is widely recognized as having played the primary role in establishing and developing that branch of international law now known as international environmental law. Despite that impressive body of legislation the United States remains, by many counts, the world's largest polluter. Its original leadership role in international environmental affairs has been replaced by a defensive approach to international environmental regulation which will increasingly be challenged by OECD partners and EC friends concerned that, in the context of its historic responsibility for natural resource depletion, the United States must shoulder its burden of the common responsibility. In the meantime developing countries will be waiting for a signal that domestic environmental reforms by OECD countries on critical environmental issues have been undertaken before committing themselves to their own reforms.

The models for domestic law reform now abound. The United States could follow the EC and amend its Constitution to adopt environmental protection as a fundamental constitutional norm, and establish a range of constitutional principles such as the precautionary approach. The United States could integrate environmental costs more fully into natural resource pricing through taxes and other market mechanisms. It could adopt a new approach by regulating entire production processes rather than the protection of particular environmental resources. And it could, indeed may be required to, rethink the place of private property rights in the face of collective environmental challenges.

