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PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW

Second edition

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General principles and rules

Introduction

This chapter describes the general principles and rules of international environmental law as reflected in treaties, binding acts of international organisations, state practice, and soft law commitments. These principles are general in the sense that they are potentially applicable to all members of the international community across the range of activities which they carry out or authorise and in respect of the protection of all aspects of the environment. From the large body of international agreements and other acts, it is possible to discern general rules and principles which have broad, if not necessarily universal, support and are frequently endorsed in practice. These are:

1. the obligation reflected in Principle 21 of the Stockholm Declaration and Principle 2 of the Rio Declaration, namely, that states have sovereignty over their natural resources and the responsibility not to cause transboundary environmental damage;
2. thé principle of preventive action;
3. the principle of co-operation;
4. the principle of sustainable development;
5. the precautionary principle;
6. the polluter-pays principle; and
7. the principle of common but differentiated responsibility.

In the absence of judicial authority and in view of the conflicting interpretations under state practice, it is frequently difficult to establish the parameters or the precise international legal status of each general principle or rule. The application of each principle in relation to a particular activity or incident, and its consequences, must be considered on the facts and circumstances of each case, having regard to several factors including: the source of the principle; its textual content and language; the particular activity at issue; the environmental and other consequences of the activity; and the circumstances in which it occurs (including the actors and the geographical region). Some general principles or rules reflect customary law, others may reflect emerging legal obligations, and yet others might have a less developed legal status. In each

case, however, the principle or rule has broad support and is reflected in extensive state practice through repetitive use or reference in an international legal context.

Of these general principles and rules, Principle 21/Principle 2 and the cooperation principle are sufficiently well established to provide the basis for an international cause of action; that is to say, to reflect an international customary legal obligation the violation of which would give rise to a free-standing legal remedy. The same may now be said generally in respect of the precautionary principle in the European context, and perhaps also more globally in respect of particular activities or subject areas. The status and effect of the other principles is less clear, although they may bind as treaty obligations or, in particular contexts, as customary obligations. Whether they give rise to actionable obligations of a general nature is open to question. Finally, the principles and rules described in this chapter should be distinguished from the general principles described in chapter 4,[1] as well as the substantive rules establishing environmental standards (i.e. air and water quality, conservation of biodiversity) and rules establishing techniques for implementing those standards (i.e. environmental impact assessment, participation in decision-making, access to information, economic instruments).

Principles and rules

References to principles and rules of general application have long been found in the preambular sections of treaties and other international acts, and in the jurisprudence of international courts and tribunals. More recently, however, principles of general or specific application have been incorporated into the operative part of some treaties. Article 3 of the 1992 Climate Change Convention lists 'Principles' intended to guide the parties '[i]n their actions to achieve the objective of the Convention and to implement its provisions'. Article 3 of the 1992 Biodiversity Convention introduces the text of Principle 21 of the Stockholm Declaration as the sole 'Principle'. The EC Treaty, as amended in 1986, 1992 and 1997, sets forth principles and rules of general application in Article 174(2) (formerly Article 130r). Other treaties follow a similar approach.[2]

What consequences flow from the characterisation of a legal obligation as a legal principle or a legal rule? This question has hardly been addressed in detail by international courts and tribunals, and apparently not at all in the context of environmental principles. The Umpire in the *Gentini* case, in 1903 adopted

[1] See chapter 4, pp. 150–2 above.

[2] See e.g. 1992 OSPAR Convention, Art. 2 (General obligations); 1992 Baltic Convention, Art. 3 (Fundamental principles and obligations); 1992 Watercourses Convention, Art. 2 (General provisions); 1992 Industrial Accidents Convention, Art. 3 (General provisions).

the following distinction, which may provide some guidance about the legal effect of principles and their relationship to rules:

> A 'rule' . . . 'is essentially practical and, moreover, binding . . . [T]here are rules of art as there are rules of government' while principle 'expresses a general truth, which guides our action, serves as a theoretical basis for the various acts of our life, and the application of which to reality produces a given consequence'.[3]

In this sense, positive rules of law may be treated as the 'practical formulation of the principles', and the 'application of the principle to the infinitely varying circumstances of practical life aims at bringing about substantive justice in every case'.[4] This view suggests that principles and rules

> point to particular decisions about legal obligations in particular circumstances, but they differ in the character of the direction they give. Rules are applicable in an all-or-nothing fashion . . . [A principle] states a reason that argues in one direction, but does not necessitate a particular decision. . . . All that is meant, when we say that a particular principle is a principle of our law, is that the principle is one which officials must take into account, if it is relevant, as a consideration inclining in one way or another.[5]

This distinction finds some support in the practice of international courts[6] and allows the conclusion that principles 'embody legal standards, but the standards they contain are more general than commitments and do not specify particular actions', unlike rules.[7] The fact that legal principles, like rules, can have international legal consequences has focused attention on their content while being elaborated in recent treaties. The negotiations of the 1992 Climate Change Convention reflected differing views on the need to adopt a section on 'Principles' at all: generally, developing countries supported the inclusion of principles, whereas developed countries opposed them. The US and some other 'common law' delegations were concerned that the requirements included in Article 3 might be subject to the Convention's dispute settlement provisions or create specific commitments beyond those set out in Article 4 and elsewhere. Although the US failed in their efforts to have the whole of Article 3 deleted, or for the text to be amended to make clear that Article 3

[3] *Gentini* case (*Italy* v. *Venezuela*) *M.C.C.* (1903), J. H. Ralston and W. T. S. Doyle, *Venezuelan Arbitrations of 1903 etc.* (1904), 720, 725, cited in B. Cheng, *General Principles of Law as Applied by International Courts and Tribunals* (1953), 376.

[4] *Ibid.*, 376. [5] R. Dworkin, *Taking Rights Seriously* (1977), 24, 26.

[6] Case C-2/90, *EC Commission* v. *Belgium* [1993] 1 CMLR 365, where the ECJ relied on the principle that environmental damage should as a priority be rectified at the source (EC Treaty, Art. 130r(2)) and the principles of self-sufficiency and proximity (in the Basel Convention) to help it justify a conclusion: *ibid.*, paras. 34–5; see chapter 19, p. 990, n. 235 below.

[7] D. Bodansky, 'The United Nations Framework Convention on Climate Change: A Commentary', 18 *Yale Journal of International Law* 451 at 501 (1993).

could not be subject to the dispute settlement provisions, the US amendments were accepted to limit the application of principles to informing obligations under the Convention. A similar concern to limit the scope of application of a principle was reflected by the UK declaration made upon signature of the 1992 Biodiversity Convention, declaring the understanding that 'Article 3 of the Convention . . . sets out a guiding principle to be taken into account in the implementation of the Convention', implying that no legal consequences arose outside the Convention, and that within the Convention Article 3 did not give rise to a rule in the sense proposed by the Umpire in the *Gentini* case or by Professor Dworkin. It is far from clear, however, that the plain meaning of Article 3 supports the UK's understanding, particularly when the text is compared to Article 3 of the Climate Change Convention, and in particular the introductory 'chapeau' which seeks to limit the effect of the principles identified thereunder.

The international community has not adopted a binding international instrument of global application which purports to set out the general rights and obligations of the international community on environmental matters. No equivalent to the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights or the International Covenant on Economic, Social and Cultural Rights has yet been adopted, and none appears imminent. Any effort to identify general principles and rules of international environmental law must necessarily be based on a considered assessment of state practice, including the adoption and implementation of treaties and other international legal acts, as well as the growing number of decisions of international courts and tribunals.[8] The efforts of governmental and non-governmental lawyers in assessing the evidence which supports the existence of principles and rules has provided some guidance, and has influenced subsequent international law-making. The 1978 UNEP Draft Principles and the 1986 WCED Legal Principles have supplemented the 1972 Stockholm Declaration and influenced the 1992 Rio Declaration, which continues to reflect 'to the extent any international instrument can do so, the current consensus of values and priorities in environment and development'.[9] Since UNCED, further guidance may be obtained from the International Law Commission's Draft Articles on Prevention of Transboundary Harm from Hazardous Activities (2001), and the International Law Association's New Delhi Declaration of Principles of International Law Relating to Sustainable Development (2002).[10]

[8] On sources of state practice, see chapter 4, pp. 123–52 above (especially, pp. 143–7).

[9] I. Porras, 'The Rio Declaration: A New Basis for International Co-operation', 1 RECIEL 245 (1992).

[10] Rather less assistance is to be derived from the Institut de Droit Internationale's Resolution on the Environment (1997), www.idi-iil/.org/idiE/resolutions/E1997_str_02_en.pdf; see

Sovereignty over natural resources and the responsibility not to cause damage to the environment of other states or to areas beyond national jurisdiction

B. Bramsen, 'Transnational Pollution and International Law', 42 *Nordisk tidsskrift for International Ret* 153 (1972); L. K. Caldwell, 'Concepts in Development of International Environmental Policies', 13 Natural Resources Journal 190 (1973); M. S. McDougal and J. Schneider, 'The Protection of the Environment and World Public Order: Some Recent Developments', 45 *Mississippi Law Journal* 1085 (1974); G. Handl, 'Territorial Sovereignty and the Problem of Transnational Pollution', 69 AJIL 50 (1975); A. Adede, 'United Nations Efforts Toward the Development of an Environmental Code of Conduct for States Concerning Harmonious Utilisation of Shared Natural Resources', 43 *Albany Law Review* 448 (1979); OECD, *Legal Aspects of Transfrontier Pollution* (1977). A. L. Springer, *The International Law of Pollution: Protecting the Global Environment in a World of Sovereign States* (1983); 'Corpus of Principles and Rules Relative to the Protection of the Environment Against Transfrontier Pollution Established by the French Speaking Section' in Centre for Studies and Research in International Law and International Relations, Hague Academy of International Law, *La Pollution Transfrontière et le Droit International* (1985), 27; World Commission on Environment and Development, *Our Common Future* (1987); R. D. Munro and J. Lammers, *Environmental Protection and Sustainable Development: Legal Principles and Recommendations* (1987); Shimizu, 'Legal Principles and Recommendations on Environmental Protection and Sustainable Development', 14 *Nippon Seikyo Kenkyusho-Kiyo* 13 (1990); F. Perrez, 'The Relationship Between Permanent Sovereignty and the Obligation Not to Cause Transboundary Environmental Damage', 26 *Environmental Law* 1187 (1996); N. Schrijver, *Sovereignty Over Natural Resources* (1997); F. Perrez, *Co-operative Sovereignty: From Independence to Interdependence in International Environmental Law* (2000).

The rules of international environmental law have developed within the context of two fundamental objectives pulling in opposing directions: that states have sovereign rights over their natural resources; and that states must not cause damage to the environment. These objectives are set out in Principle 21 of the Stockholm Declaration, which provides that:

> 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 policies, and the

P. Sands, 'The New "Architecture of International Environmental Law" (or "The Law Professor and the Strange Case of the Missing Green Glasses")' RBDI 512 (1997). See also the IUCN Covenant on Environment and Development (2000).

> 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.

Principle 21 remains the cornerstone of international environmental law; twenty years after its adoption, states negotiating the Rio Declaration were unable to improve significantly upon, develop, scale back or otherwise alter the language in adopting Principle 2. At UNCED, two words were added to recognise that states have the right to pursue 'their own environmental *and developmental* policies'. Principle 21 and Principle 2 each comprise two elements which cannot be separated without fundamentally changing their sense and effect: the sovereign right of states to exploit their own natural resources; and the responsibility, or obligation, not to cause damage to the environment of other states or of areas beyond the limits of national jurisdiction. Taken together (state practice since 1972 has assiduously avoided their de-coupling), they establish the basic obligation underlying international environmental law and the source of its further elaboration in rules of greater specificity. That Principle 21 reflects customary law is now confirmed by the ICJ's 1996 Advisory Opinion on *The Legality of the Threat or Use of Nuclear Weapons*.

Sovereign rights over natural resources

The principle of state sovereignty allows states within limits established by international law to conduct or authorise such activities as they choose within their territories, including activities which may have adverse effects on their own environment. This fundamental principle underlies the first part of Principle 21/Principle 2. The extension of the sovereignty principle into environmental affairs pre-dates the Stockholm Declaration and is rooted in the principle of permanent sovereignty over natural resources as formulated in various resolutions of the UN General Assembly regularly adopted after 1952.[11] These resolutions were closely related to arrangements between states and foreign private companies for the exploitation of natural resources, particularly oil and minerals, in developing countries. They addressed the need to balance the rights of the sovereign state over its resources with the desire of foreign companies to ensure legal certainty in the stability of its investment.[12] A landmark resolution was adopted by the UN General Assembly in 1962, when it resolved that the 'rights of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development of the well-being of the people of the state concerned'.[13] The resolution reflects the right to permanent sovereignty over national resources as an international

[11] See e.g. UNGA Res. 523 (VI) (1950); Res. 626 (VII) (1952); Res. 837 (IX) (1954); Res. 1314 (XIII) (1958); Res. 1515 (XV) (1960).
[12] See chapter 19 below. [13] UNGA Res. 1803 (XVII) (1962).

legal right, and has been accepted by some international tribunals as reflecting customary international law.[14]

By the 1970s, limits to the application of the principle of state sovereignty over natural resources were emerging as the international community recognised a need to co-operate to protect the environment. In 1972, before the Stockholm Conference, the UN General Assembly declared that 'each country has the right to formulate, in accordance with its own particular situation and in full enjoyment of its national sovereignty, its own national policies on the human environment'.[15] The relationship between permanent sovereignty over natural resources and responsibilities for the environment was formally recognised by Principle 21.

The importance placed by states on the principle of permanent sovereignty over natural resources is also reflected by its frequent invocation, in various forms, in international environmental agreements and during their negotiation. The 1933 London Convention affirmed that all animal trophies were 'the property of the Government of the territory concerned'.[16] The 1971 Ramsar Convention emphasised that the inclusion of national wetland sites in its List of Wetlands did 'not prejudice the exclusive sovereign rights of . . . the party in whose territory the wetland is situated'.[17] The 1983 International Tropical Timber Agreement recalled 'the sovereignty of producing members over their natural resources'.[18] Recent treaties also refer to the sovereign rights of states over natural resources in their territory: the Preamble to the 1989 Basel Convention recognised that 'all states have the sovereign right to ban the entry or disposal of foreign hazardous wastes and other wastes in their territory'. The Preamble to the 1992 Climate Change Convention reaffirmed 'the principle of sovereignty of states in international co-operation to address climate change'. The 1992 Biodiversity Convention more specifically reaffirmed that states have 'sovereign rights . . . over their natural resources', and that 'the authority to determine access to genetic resources rests with the national governments and is subject to national legislation'.[19]

Sovereignty and extra-territoriality

The sovereign right to exploit natural resources includes the right to be free from external interference over their exploitation. This aspect of Principle 21/Principle 2 is brought into question in disputes over the extra-territorial application of environmental laws of one state to activities taking place in areas beyond its

[14] *Texaco Overseas Petroleum Co. and California Asiatic Oil Co.* v. *Libya*, 53 ILR 389 (1977), para. 87; *Kuwait* v. *American Independent Oil Co.*, 21 ILM 976 (1982).
[15] UNGA Res. 2849 (XXVI) (1971). [16] Art. 9(6). [17] Art. 2(3).
[18] Art. 1. See now 1994 International Tropical Timber Agreement, Art. 1.
[19] Art. 15(1). Cf. the 1983 FAO Undertaking on Plant Genetic Resources and the 1989 Agreed Interpretation, recognising that plant genetic resources are a 'common heritage of mankind': chapter 11, p. 551 below.

national jurisdiction, either within the jurisdiction of another state or in activities beyond national jurisdiction. In 1893, the arbitral tribunal in the *Fur Seals Arbitration* rejected a claim by the US to be entitled to protect fur seals in areas beyond the three-mile limit of the territorial sea and the right to interfere in the internal affairs of other states to secure the enjoyment of their share in the 'common property of mankind'.[20] Nearly one hundred years later, the US banned the import of yellow-fin tuna caught by Mexican vessels, in Mexico's exclusive economic zone and on the high seas, with purse-seine nets the compliance of which with US environmental protection standards could not be proved. This 'extra-jurisdictional' application of US environmental standards was rejected by a GATT panel as being contrary to the GATT, holding that a country 'can effectively control the production or consumption of an exhaustible natural resource only to the extent that the production or consumption is under its jurisdiction' and that to allow the 'extra-jurisdictional' application of its environmental law would allow the US to 'unilaterally determine the conservation policies' of Mexico.[21] More recently, however, the WTO's Appellate Body has taken a broader approach, and recognised the existence of a 'sufficient nexus' between migratory and endangered populations of sea-turtles located in Asian waters and the United States to allow the latter to claim an interest in their conservation.[22] The traditional and absolute prohibition on extra-territorial (or extra-jurisdictional) application of national environmental laws recognised by the earlier decisions is consistent with the principle of absolute sovereignty over natural resources. Those decisions do not rest easily, however, with a more modern conception of an ecologically interdependent world in which limits are placed on the exercise of sovereignty or sovereign rights, an approach with which the Appellate Body seemed sympathetic.

In the absence of generally accepted international standards of environmental protection and conservation, states with strict national environmental standards may seek to extend their application to activities carried out in areas beyond their territory, particularly where they believe that such activities cause significant environmental damage to shared resources (such as migratory species, transboundary watercourses, or air quality and the climate system) or affect vital economic interests. For 'shared natural resources' such as the high seas and atmosphere it will often be difficult, if not impossible, to draw a clear line between natural resources over which a state does and does not have sovereignty or exercise sovereign rights. In such circumstances, it is unlikely that the principle of territorial sovereignty, or permanent sovereignty over natural

[20] Chapter 11, pp. 561–6 below. [21] Chapter 19, p. 956 below.

[22] *Shrimp/Turtle* case, para. 133 (the decision is difficult to square with the Appellate Body's claim that it was not 'pass[ing] upon the question of whether there is an implied jurisdictional limitation in Article XX(g), and, if so, the nature or extent of that limitation'). See further chapter 19, pp. 961–73 below.

resources, can provide much assistance in allocating rights and responsibilities of states over environmental policy.

The permissibility of the extra-territorial application of national laws remains an open question in international law. The PCIJ has stated that 'the first and foremost restriction imposed by international law upon a state is that – failing the existence of a permissive rule to the contrary – it may not exercise its power in any form in the territory of another state outside its territory except by virtue of a permissive rule derived from international custom or from a convention'.[23] However, in the same case the PCIJ went on to state that 'international law as it stands at present' does not contain 'a general prohibition to states to extend the application of their laws and the jurisdiction of their courts to persons, property and acts outside their territory' and that the territoriality of criminal law was 'not an absolute principle of international law and by no means coincides with territorial sovereignty'.[24] Subsequent state practice, as well as decisions of international tribunals, has not determined precisely the circumstances in which a state may take measures over activities outside its territory in relation to the conservation of shared resources. In the *Fisheries Jurisdiction* case, Spain challenged the application and enforcement by Canada of its fisheries conservation legislation in areas beyond its exclusive economic zone, but the ICJ declined jurisdiction, and the case did not reach the merits phase.[25] The right of states to exercise jurisdiction, either by legislation or adjudication, over activities in other states, or in areas beyond national jurisdiction, which are harmful to the environment at the global, regional or local level, could be justified on several grounds. First, corporations carrying on activities abroad might be subject to the environmental laws of their state of registration or incorporation, by application of the 'nationality' principle of jurisdiction. International law does not, according to Oppenheim, prevent a state from exercising jurisdiction within its own territory over its nationals (including corporations) who reside in a foreign state, although the power to enforce such laws depends upon the nationals being in the territorial jurisdiction or having assets therein against which judgment can be enforced.[26] The application of the 'nationality' principle is likely to cause difficulty, however, since the foreigner abroad might be subject to the concurrent jurisdiction of the home state of registration or incorporation and the host state in which it carries out its activities, with the home state having more stringent rules of environmental

[23] *Lotus* case (*France* v. *Turkey*), PCIJ Ser. A, No. 10, 19–20 [24] *Ibid.*

[25] Chapter 5, p. 201 above; chapter 11, pp. 567–8 below.

[26] Oppenheim, vol. I, Part 1, 462. In application of this approach, see *Dow Chemical Co.* v. *Alfaro*, 768 SW 2d 674 at 681 (Texas 1990), where a Texan court held that Costa Rican farm workers were entitled to bring a claim for injuries caused by a pesticide manufactured in the United States and exported to Costa Rica. On enforcement jurisdiction generally, see chapter 5, pp. 182–91 below.

protection.[27] This will lead to jurisdictional disputes where some states use lower standards of environmental protection perhaps to gain economic advantage and attract foreign investment, and other states apply the nationality principle and require their companies to apply national environmental protection rules wherever they carry out their activities. In such circumstances, it has been suggested that the home state must not require compliance with its laws at the expense of its duty to respect the territorial sovereignty of the host state. When faced with such a conflict a court would be likely to balance the public policy of the home state, the interests of the host state, and the damage to international comity if it gave precedence to the laws of the home state, and only accord priority to those laws 'where the balance of interest clearly lies in that direction'.[28] The factors applied by a court will also need to be applied by reference to the environment which is being affected or damaged. It would be difficult to justify a home state's taking measures where only the environment of the host state was being damaged. But if the damage was being caused to the environment of the home state or to areas beyond national jurisdiction (global commons) then the home state might have a stronger basis for asserting jurisdiction extra-territorially.

This latter situation creates a second possible basis for allowing the extra-territorial application of national laws: where activities carried out in one state have, or are likely to have, 'effects' in another state, recourse might be had to the 'objective' application of the territorial principle, otherwise known as the 'effects' doctrine. However, the application of the 'effects' principle is said to have 'doubtful consistency' with international law: the justification for assertions of jurisdiction on the basis of an alleged 'effects' principle of jurisdiction has not been generally accepted, and the matter is still one of controversy.[29]

The extra-territorial application of national environmental laws has been particularly controversial in relation to trade issues. Principle 12 of the Rio Declaration declares that unilateral actions addressing environmental challenges 'outside the jurisdiction of the importing country should be avoided' and that 'environmental measures should, as far as possible, be based on an international consensus'. The Rio Declaration and Agenda 21 do not, however, prohibit *per se* all unilateral environmental measures, an approach which now appears to have been endorsed by the WTO Appellate Body, subject to certain conditions being satisfied. The same approach has been taken in the WSSD Plan of Implementation.[30] The challenge for the international community in

[27] On this point, see the OECD Guidelines on Multinationals, chapter 3, p. 105, n. 224 above.

[28] Oppenheim, vol. I, Part 1, 464–6, citing, *inter alia*, *Timberlane Lumber Co.* v. *Bank of America*, 66 ILR, 270 (1976–7); *Laker Airways* v. *Pan American World Airways* 23 ILM 748 at 751 (1984).

[29] Oppenheim, vol. I, Part 1, 475. That said, the decision in *Shrimp Turtles* may be seen to be connected to the application of the 'effects' doctrine: see n. 22 above.

[30] Para. 95 (restating the language of the Rio Declaration and Agenda 21).

coming years will be to determine the circumstances in which, in the absence of international consensus on agreed environmental standards, a state will be permitted, under the general rules of international law and specific WTO rules, to adopt unilateral environmental measures and apply them extra-territorially.[31]

Responsibility not to cause environmental damage

The second element of Principle 21/Principle 2 reflects the view of states that they are subject to environmental limits in the exercise of their rights under the principle of permanent sovereignty over natural resources. In the form presented by Principle 21/Principle 2, the responsibility not to cause damage to the environment of other states or of areas beyond national jurisdiction has been accepted as an obligation by all states;[32] without prejudice to its applications on a case-by-case basis, following the ICJ's 1996 Advisory Opinion on *The Legality of the Threat or Use of Nuclear Weapons* there can be no question but that Principle 21 reflects a rule of customary international law, placing international legal constraints on the rights of states in respect of activities carried out within their territory or under their jurisdiction.

Saying that Principle 21/Principle 2 reflect customary international law is not, however, decisive, and will be of only partial assistance in support of an international claim. In the context of activity which causes pollution and environmental degradation, Principle 21/Principle 2 indicate the need to address other questions: what is environmental damage? What environmental damage is prohibited (any damage, or just damage which is serious or significant)? What is the standard of care applicable to the obligation (absolute, strict or fault)? What are the consequences of a violation (including appropriate reparation)? And what is the extent of any liability (including measure of damages)? These and related questions are considered in chapter 18 below.

The responsibility of states not to cause environmental damage in areas outside their jurisdiction pre-dates the Stockholm Conference, and is related to the obligation of all states 'to protect within the territory the rights of other states, in particular their right to integrity and inviolability in peace and war'.[33] This obligation was subsequently relied upon, and elaborated, by the arbitral tribunal in the much-cited *Trail Smelter* case, which stated that:

[31] On the trade/environment issue, see chapter 19, pp. 940–1009 below; Agenda 21, para. 39.3(d) includes a number of factors applicable to trade-related environmental measures which may also provide guidance on the permissibility of other extra-territorial environmental measures: see chapter 19, p. 1008 below.

[32] For an excellent account of the negotiating history of Principle 21, which tends to support this view, see L. Sohn, 'The Stockholm Declaration on the Human Environment', 14 *Harvard International Law Journal* 423 at 485–93 (1972).

[33] PCA, *Palmas* Case, 2 HCR (1928) 84 at 93.

> Under the principles of international law . . . no state has the right to use or permit the use of territory in such a manner as to cause injury by fumes in or to the territory of another of the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.[34]

Most writers accepted this formulation as a rule of customary international law and it was cited, with apparent approval, by Judge de Castro in his dissent in the *Nuclear Tests* case.[35] In that case, Australia had asked the ICJ to adjudge and declare that the carrying out of further atmospheric nuclear tests was inconsistent with applicable rules of international law and would be unlawful 'in so far as it involves the modification of the physical conditions of and over Australian territory [and] pollution of the atmosphere and of the resources of the seas'.[36] The Rapporteur to the ILA Committee on Legal Aspects of the Environment concluded from an examination that state practice was founded upon the rule in the *Trail Smelter* case.[37]

In fact, consistent state practice is not readily discernible. As will be seen in chapter 18, there are relatively few claims which have been brought by states relying upon the rule reflected in Principle 21/Principle 2, and one is left to rely upon state practice as evidenced in particular by participation in and support for treaties and other international acts, as well as their statements as to what they consider to be the extent of their obligations. Following the Chernobyl accident in 1986, a discussion under the auspices of the IAEA threw some light on the views of states, although the record on this discussion alone cannot be considered as representing a comprehensive view.[38] The general rule relied upon in the *Trail Smelter* case derives from an extension of the principle of good-neighbourliness. Although the UN Charter does not expressly address environmental issues, Article 74 of the Charter reflects the agreement of the UN members that 'their policy in their metropolitan areas must be based on the general principle of good neighbourliness' and must take account of 'the interests and well-being of the rest of the world, in social, economic and commercial matters'. The principle of good-neighbourliness underlies the *dicta* of the ICJ that the principle of sovereignty embodies 'the obligation of every

[34] *United States* v. *Canada*, 3 RIAA 1907 (1941); citing Eagleton, *Responsibility of States* (1928), 80; see chapter 7, p. 318 below; and chapter 18, pp. 885–6 below.

[35] *Australia* v. *France* (1974) ICJ Reports 253 at 389. He stated: 'If it is admitted as a general rule that there is a right to demand prohibition of the emission by neighbouring properties of noxious fumes, the consequences must be drawn, by an obvious analogy, that the Applicant is entitled to ask the Court to uphold its claim that France should put an end to the deposit of radio-active fall-out on its territory.'

[36] ICJ Pleadings, *Nuclear Tests* cases, vol. I, 27. see further chapter 8, pp. 319–21 below.

[37] International Law Association, Report of the Committee on Legal Aspects of the Environment, 60th Conference Report, 157 at 163.

[38] Chapter 18, pp. 887–9 below.

state not to allow its territory to be used for acts contrary to the rights of other states'.[39] In the *Lac Lanoux Arbitration*, involving the proposed diversion of an international river by an upstream state, the arbitral tribunal affirmed that a state has an obligation not to exercise its rights to the extent of ignoring the rights of another:

> France [the upstream state] is entitled to exercise her rights; she cannot ignore the Spanish interests. Spain [the downstream state] is entitled to demand that her rights be respected and that her interests be taken into consideration.[40]

The thread was further developed in 1961 when the UN General Assembly declared, specifically in relation to radioactive fallout, that:

> The fundamental principles of international law impose a responsibility on all states concerning actions which might have harmful biological consequences for the existing and future generations of peoples of other states, by increasing the levels of radioactive fallout.[41]

By 1972, shortly before the Stockholm Conference, the General Assembly was able to direct that the Conference must 'respect fully the exercise of permanent sovereignty over natural resources, as well as the right of each country to exploit its own resources in accordance with its own priorities and needs and in such a manner as to avoid producing harmful effects on other countries'.[42]

The development of the second element of Principle 21/Principle 2 can also be traced to earlier environmental treaties. The 1951 International Plant Protection Convention expressed the need to prevent the spread of plant pests and diseases across national boundaries.[43] The 1963 Nuclear Test Ban Treaty prohibits nuclear tests if the explosion would cause radioactive debris 'to be present outside the territorial limits of the state under whose jurisdiction or control such explosion is conducted';[44] and the 1968 African Conservation Convention requires consultation and co-operation between parties where development plans are 'likely to affect the natural resources of any other state'.[45] Under the 1972 World Heritage Convention, the parties agreed that they would not take deliberate measures which could directly or indirectly damage heritage which is 'situated on the territory' of other parties.[46]

Principle 21 thus developed earlier state practice. It has been affirmed in many General Assembly resolutions and acts of other international organisations. Shortly after the Stockholm Conference, Principle 21, with Principle 22, was expressly stated by UN General Assembly Resolution 2996 to lay down the 'basic rules' governing the international responsibility of states in regard to the

[39] *Corfu Channel* case (*UK* v. *Albania*) (1949) ICJ Reports 4 at 22.
[40] *Spain* v. *France*, 12 RIAA 285. [41] UNGA Res. 1629 (XVI) (1961).
[42] UNGA Res. 2849 (XXVI) (1972), para. 4(a). [43] Preamble.
[44] Art. I(1)(b). [45] Art. XVI(1)(b). [46] Art. 6(3).

environment. It was also the basis of Article 30 of the Charter of Economic Rights and Duties of States, which provides that:

> All states have 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.[47]

It is endorsed by the 1975 Final Act of the Helsinki Conference on Security and Co-operation in Europe,[48] Principle 3 of the 1978 UNEP Draft Principles, which requires states to ensure that 'activities within their jurisdiction or control do not cause damage to the natural systems located within other states or in areas beyond the limits of national jurisdiction', and the 1982 World Charter for Nature, which declares the need to 'safeguard and conserve nature in areas beyond national jurisdiction'.[49] Perhaps more compelling is the reference to Principle 21 in treaties. It has long been referred to,[50] or wholly incorporated,[51] in the preamble to several treaties, and was fully reproduced in the operational part of a treaty, for the first time, as Article 3 of the 1992 Biodiversity Convention without express limitation to matters within the scope of the Convention.[52] Principle 2 of the Rio Declaration is incorporated into the Preamble to the 1992 Climate Change Convention.

Similar language to the second element of Principle 21 also appears in treaties. The 1978 Amazonian Treaty fudges the issue of the legal status of Principle 21, declaring that 'the exclusive use and utilisation of natural resources within their respective territories is a right inherent in the sovereignty of each state and that the exercise of this right shall not be subject to any restrictions other than those arising from International Law'.[53] The 1981 Lima Convention goes a little further by requiring activities to be conducted so that 'they do not cause damage by pollution to others or to their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not, as far as possible, spread beyond the areas where [they] exercise sovereignty and jurisdiction'.[54] The 1982 UNCLOS transforms the 'responsibility' into a 'duty', although it is unclear what was intended by the change. Under Article 193 of UNCLOS, states have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment. UNCLOS shifts the emphasis from a negative obligation to prevent harm to a positive commitment to preserve and protect the environment. To that end, however, Article 194(2) does provide that states:

[47] UNGA Res. 3281 (XXVII) (1974). [48] 14 ILM 1292 (1975); 1 August 1975.
[49] Para. 21(e). [50] 1992 Baltic Convention.
[51] 1972 London Convention; 1979 LRTAP Convention; 1985 Vienna Convention.
[52] Cf. UK Declaration, chapter 4, p. 135, n. 50 above.
[53] Art. IV. [54] Art. 3(5); 1983 Quito LBS Protocol, Art. XL.

> shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other states and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with [the] Convention.[55]

The 1985 ASEAN Convention goes further, by recognising the second element of Principle 21 as a 'generally accepted principle of international law'.[56]

Against this background, the time was plainly ripe for confirmation of the customary status of the obligation not to cause transboundary environmental harm. France's 1995 announcement of its resumption of underground nuclear tests provided the unlikely catalyst. In its Order rejecting New Zealand's request, the ICJ stated, somewhat cryptically, that its Order was 'without prejudice to obligations of States to respect and protect the natural environment, obligations to which both New Zealand and France have in the present instance reaffirmed their commitment'.[57] A review of the pleadings indicates that New Zealand's affirmation that Principle 21/Principle 2 reflected a 'well established proposition of customary international law' was not opposed by France.[58] It was also endorsed by Judge Weeramantry in his dissenting opinion.[59]

Within two months of the ICJ's Order, oral arguments opened at the ICJ in the *Legality of the Threat or Use of Nuclear Weapons* Advisory Opinion proceedings. Several states argued that Principle 21/Principle 2 reflected customary law, and none challenged that view (although some argued that they did not consider the principles to be of relevance to the case).[60] In its Advisory Opinion, the ICJ stated that:

> The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.[61]

It is interesting that the ICJ did not merely restate the language of Principle 21 and Principle 2, and it is unclear whether the ICJ intended to effect substantive

[55] 1986 South Pacific Natural Resources Convention, Art. 4(6).
[56] Art. 20. [57] (1995) ICJ Reports 288, para. 64.
[58] New Zealand Request, para. 98, also CR/95/20, 10–12; and CR/95/20, 91. See also *Yearbook of International Environmental Law* 531 at 533 (1995); and P. Sands, 'Pleadings and the Pursuit of International Law: Nuclear Tests II (New Zealand v. France)', in A. Anghie and G. Sturgess (eds.), *Legal Visions of the 21st Century: Essays in Honour of Judge Weeramantry* (1998), 601.
[59] (1995) ICJ Reports 347. See also Judges Koroma (*ibid.*, 378) and Ad Hoc Judge Palmer (*ibid.*, 408, para. 80).
[60] For a summary of the arguments, see *Yearbook of International Environmental Law* 542 (1995). On war and the environment, see chapter 7, pp. 307–15 below.
[61] (1996) ICJ Reports 241, para. 29.

changes by its reformulation. That does not, however, appear to have been the intention, since (arguably) the formulation adopted by the ICJ may be broader than that of Principle 21/Principle 2.[62]

Conclusion

The support given to the rule reflected in Principle 21 (and now Principle 2) by states, by the ICJ and by other international actors over the past three decades indicates the central role now played by the rule. The rule has been developed through the adoption of environmental agreements which establish specific and more detailed obligations giving effect to the basic objectives, as well as national environmental laws. The scope and application of the rule, in particular to the difficult question of what constitutes 'environmental harm' (or damage) for the purposes of triggering liability and allowing international claims to be brought, are considered in chapter 17 below. At the very least, Principle 21 and Principle 2 confirm that the rights of states over their natural resources in the exercise of permanent sovereignty are not unlimited,[63] and are subject to significant constraints of an environmental character. Beyond that, the rule may provide a legal basis for bringing claims under customary law asserting liability for environmental damage. The specific application of the rule will turn on the facts and circumstances of each particular case or situation.

Principle of preventive action

Closely related to the Principle 21 obligation is the obligation requiring the prevention of damage to the environment, and otherwise to reduce, limit or control activities which might cause or risk such damage. This obligation, sometimes referred to as the 'principle of preventive action' or the 'preventive principle', is distinguishable from Principle 21/Principle 2 in two ways. First, the latter arise from the application of respect for the principle of sovereignty, whereas the preventive principle seeks to minimise environmental damage as an objective in itself. This difference of underlying rationale relates to the second distinction: under the preventive principle, a state may be under an obligation to prevent damage to the environment within its own jurisdiction,[64] including by means of appropriate regulatory, administrative and other measures.

[62] The word 'respect' could be seen as encompassing consequences where no 'harm' has arisen.

[63] See the ILC's 2001 draft Articles on Prevention of Transboundary Harm from Hazardous Activities, preamble. See also Art. 4 (Prevention).

[64] See Judge N. Singh, 'Foreword', in R. D. Munro and J. G. Lammers (eds.), *Environmental Protection and Sustainable Development: Legal Principles and Recommendations* (1986), xi–xii; in this regard, see also the principle of sustainable development, pp. 252–6 below; and chapter 5, p. 184 above.

The preventive principle requires action to be taken at an early stage and, if possible, before damage has actually occurred.[65] The principle is reflected in state practice in regard to a broad range of environmental objectives. Broadly stated, it prohibits activity which causes or may cause damage to the environment in violation of the standards established under the rules of international law. It has been described as being of 'overriding importance in every effective environmental policy, since it allows action to be taken to protect the environment at an earlier stage. It is no longer primarily a question of repairing damage after it has occurred.'[66] The preventive principle is supported by an extensive body of domestic environmental protection legislation which establishes authorisation procedures, as well as the adoption of international and national commitments on environmental standards, access to environmental information, and the need to carry out environmental impact assessments in relation to the conduct of certain proposed activities. The preventive principle may, therefore, take a number of forms, including the use of penalties and the application of liability rules.

The preventive approach has been endorsed, directly or indirectly, by the 1972 Stockholm Declaration,[67] the 1978 UNEP Draft Principles[68] and the 1982 World Charter for Nature. Principle 11 of the 1992 Rio Declaration requires states to enact 'effective environmental legislation'.[69] More significantly for its development as an international legal principle is the fact that the principle has been relied upon or endorsed in a large number of treaties dealing with particular environmental media or activities.[70] The preventive principle has also been specifically incorporated into treaties of more general application, including those in the field of international economic law, such as the EC Treaty,[71] the 1989 Lomé Convention[72] and the 2001 Treaty establishing the East African Community.[73]

The preventive principle is implicitly supported in relation to transboundary resources by the awards in the *Trail Smelter* case and the *Lac Lanoux Arbitration.*

[65] In the *Gabcikovo-Nagymaros* case, the ICJ noted that it was 'mindful that, in the field of environmental protection, vigilance and prevention are required on account of the often irreversible character of damage to the environment and of the limitations inherent in the very mechanism of reparation of this type of damage': (1997) ICJ Reports 7 at 78, para. 140.

[66] L. Krämer, *EEC Treaty and Environmental Protection* (1990), 61.

[67] Principles 6, 7, 15, 18 and 24. [68] Principle 1.

[69] Other relevant provisions include Principle 14 (calling on states to prevent the relocation and transfer to other states of hazardous activities or substances) and Principle 15 (precautionary approach).

[70] 1991 Alpine Convention, Art. 2(c).

[71] Formerly Art. 130r(2) ('preventive action should be taken'), replaced by Art. 174(2).

[72] Art. 35 (parties agree to a 'preventive approach aimed at avoiding harmful effects on the environment as a result of any programme or operation') (the provision is not repeated in the successor 2000 Cotonou Agreement, at Art. 32).

[73] Art. 111.

It was supported in the pleadings of Australia in the *Nuclear Tests* case and in the claim by Nauru that Australia had breached its legal obligation to administer the territory of Nauru in such a way as to not bring about changes in the territory which would cause irreparable damage to, or substantially prejudice, Nauru's legal interests in respect of that territory.[74] The principle of prevention may also be discerned in Hungary's Original Application to the ICJ in the case concerning the Gabcikovo-Nagymaros Project. The preventive approach is endorsed by the large number of international environmental treaties, aiming to prevent *inter alia*:

- the extinction of species of flora and fauna;[75]
- the spread of occupational disease, including radioactive contamination of workers;[76]
- the introduction and spread of pests and diseases;[77]
- pollution of the seas by oil,[78] radioactive waste,[79] hazardous waste and substances,[80] from land-based sources,[81] or from any source;[82]
- river pollution;[83]
- radioactive pollution of the atmosphere;[84]
- hostile environmental modification;[85]
- adverse effects of activities that prevent the migration of species;[86]
- air pollution;[87]
- modification of the ozone layer;[88]
- degradation of the natural environment;[89]
- all pollution;[90]
- significant adverse environmental impacts;[91]
- transboundary impacts generally;[92]
- dangerous anthropogenic interference with the climate system;[93]

[74] *Case Concerning Certain Phosphate Lands in Nauru (Nauru v. Australia)* (1992) ICJ Reports 240 at 244.
[75] 1933 London Convention, Art. 12(2), and Protocol, para. 1.
[76] 1949 Agreement for the Establishment of a General Fisheries Council for the Mediterranean, Art. IV(h); 1960 Ionising Radiation Convention, Art. 3(1).
[77] 1951 Plant Protection Convention, Art. 1(1).
[78] 1954 Oil Pollution Prevention Convention, Preamble; 1969 CLC, Art. 1(7).
[79] 1958 High Seas Convention, Art. 25.
[80] 1972 Oslo Convention, Art. 1; 1972 London Convention, Art. 1; MARPOL 73/78, Art. 1(1).
[81] 1974 Paris LBS Convention, Art. 1.
[82] 1982 UNCLOS, Art. 194(1). [83] 1958 Danube Fishing Convention, Art. 7.
[84] 1963 Test Ban Treaty, Art. 1(1). [85] 1977 ENMOD Convention, Art. 1(1).
[86] 1979 Bonn Convention, Art. III(4)(b). [87] 1979 LRTAP Convention, Art. 2.
[88] 1985 Vienna Convention, Art. 2(2)(b); 1987 Montreal Protocol, Preamble.
[89] 1985 ASEAN Convention, Art. 11. [90] 1986 Noumea Convention, Art. 5(1).
[91] 1991 Espoo Convention, Preamble and Art. 2(1).
[92] 1992 UNECE Transboundary Waters Convention, Art. 2(1) and (2).
[93] 1992 Climate Change Convention, Art. 2.

- loss of fisheries[94] and other biodiversity,[95] including as a result of the release of genetically modified organisms;[96] and
- damage to health and the environment from chemicals[97] and persistent organic pollutants.[98]

Taken together, this extensive body of international commitments provides compelling evidence of: the wide support for the principle of preventive action; the different environmental media for which general preventive measures are required; the types of activities which should be regulated; and the basis upon which states should carry out their commitment to enact effective national environmental legislation pursuant to the general requirement of Principle 11 of the Rio Declaration.

Co-operation

The principle of 'good-neighbourliness' enunciated in Article 74 of the UN Charter in relation to social, economic and commercial matters has been translated into the development and application of rules promoting international environmental co-operation. This is traditionally considered by reference to the application of the maxim *sic utere tuo et alienum non laedas*. The principle is reflected in many treaties and other international acts, and is supported also by state practice, particularly in relation to hazardous activities and emergencies.[99] Principle 24 of the Stockholm Declaration reflects a general political commitment to international co-operation in matters concerning the protection of the environment, and Principle 27 of the Rio Declaration states rather more succinctly that 'States and people shall co-operate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development'. The importance attached to the principle of co-operation, and its practical significance, is reflected in many international instruments, such as the Preamble to the 1992 Industrial Accident Convention, which underlined (in support of the Convention's specific commitments) 'the principles of international law and custom, in particular the principles of

[94] 1995 Straddling Stocks Agreement; see also ITLOS, *Southern Bluefin Tuna* cases, chapter 11, pp. 580–1 below.
[95] 1992 Biodiversity Convention, Preamble and Art. 1.
[96] 2000 Biosafety Protocol, Art. 1.
[97] 1998 Chemicals Convention, Art. 1. [98] 2001 POPs Convention, Art. 1.
[99] The maxim was invoked, for example, as a 'fundamental rule' by Hungary in its Original Application in the *Gabcikovo-Nagymaros Project* case, para. 32 (citing in support of the maxim the *Corfu Channel* case (1949), the *Trail Smelter* case (1941), the Stockholm Declaration (1972), the World Charter for Nature (1982), the ILC Draft Articles on International Liability (1990) and the Rio Declaration (1992)).

good-neighbourliness, reciprocity, non-discrimination and good faith', and the procedural rules reflected in the 1997 Watercourses Convention.[100]

The obligation to co-operate is affirmed in virtually all international environmental agreements of bilateral and regional application,[101] and global instruments.[102] It also underscores the ICJ's reminder of the need to establish suitable common regimes.[103] The obligation may be in general terms, relating to the implementation of the treaty's objectives[104] or relating to specific commitments under a treaty.[105] The general obligation to co-operate has also been translated into more specific commitments through techniques designed to ensure information sharing and participation in decision-making. These specific commitments, which are considered in more detail in subsequent chapters, include: rules on environmental impact assessment (see chapter 16); rules ensuring that neighbouring states receive necessary information (requiring information exchange, consultation and notification) (see chapter 17); the provision of emergency information (see chapter 12); and transboundary enforcement of environmental standards (see chapter 5). The extent to which these commitments are interrelated is reflected in Principle 7 of the 1978 UNEP Draft Principles, which states that:

> Exchange of information, notification, consultation and other forms of co-operation regarding shared natural resources are carried out on the basis of the principle of good faith and in the spirit of good neighbourliness.

A similar commitment is expressed in Article 4 of the ILC's draft Articles on Prevention of Transboundary Harm (2001). State practice supporting good-neighbourliness and international co-operation is reflected in decisions and awards of international courts and tribunals discussed in subsequent chapters, including the *Lac Lanoux* case.[106] The nature and extent of the obligation to co-operate is being invoked in international disputes. It was a central issue in the dispute between Hungary and Slovakia in the *Gabcikovo-Nagymaros Project* case, at least as originally formulated by Hungary (claiming that Czechoslovakia and then Slovakia had not co-operated in good faith in the implementation

[100] Chapter 10, pp. 482–5 below.

[101] Early examples include the 1933 London Convention, Art. 12(2); 1940 Western Hemisphere Convention, Art. VI; 1991 Alpine Convention, Art. 2(1).

[102] 1982 UNCLOS, Arts. 123 and 197; 1985 Vienna Convention, Art. 2(2); 1992 Biodiversity Convention, Art. 5.

[103] See *Case Concerning the Kasiliki/Sedudu Island (Botswana/Namibia)* (1999) ICJ Reports 1045, para. 102.

[104] 1968 African Conservation Convention, Art. XVI(1); 1992 Biodiversity Convention, Art. 5.

[105] 1989 Lomé Convention, Art. 14 (co-operation 'shall [assume] special importance [in relation] to environmental protection and the preservation and restoration of natural equilibria in the ACP States'); 1992 Climate Change Convention, Art. 4(1)(e) (co-operation on preparation for adaptation to the impacts of climate change).

[106] See p. 243 above.

of principles affecting transboundary resources, including the obligation to negotiate in good faith and in a spirit of co-operation, to prevent disputes, to provide timely notification of plans to carry out or permit activities which may entail a transboundary interference or a significant risk thereof and to engage in good faith consultations to arrive at an equitable resolution of the situation).[107] The ICJ did not address in any detail what the obligation to co-operate entailed, beyond recalling what it had said earlier in the *North Sea Continental Shelf* cases, as well as the principle of good faith which obliged the parties to apply their 1977 treaty 'in a reasonable way and in such a manner that its purpose can be realized'.[108]

The requirements of the obligation to co-operate are at the heart of the *MOX* case. In its application instituting arbitration proceedings under the 1982 UNCLOS, Ireland claimed that the United Kingdom had failed to co-operate as required by Articles 123 and 197 of UNCLOS, for example by failing to reply to communications and requests for information in a timely manner or at all, by withholding environmental information requested by Ireland, and by refusing to prepare a supplementary environmental statement.[109] In its Provisional Measures Order, the ITLOS affirmed that:

> the duty to co-operate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law and that rights arise therefrom which the Tribunal may consider appropriate to preserve under article 290 of the Convention.

The Tribunal ordered the parties to co-operate and, for that purpose, to enter into consultations forthwith to '(a) exchange further information with regard to possible consequences for the Irish Sea arising out of the commissioning of the MOX plant; (b) monitor risks or the effects of the operation of the MOX plant for the Irish Sea; (c) devise, as appropriate, measures to prevent pollution of the marine environment which might result from the operation of the MOX plant'.[110]

[107] Chapter 10, pp. 469–77 below; Hungary's Original Application, 22 October 1992, paras. 27, 29 and 30.

[108] (1997) ICJ Reports 78–9, paras. 141–2. In the *North Sea Continental Shelf* cases, the ICJ said: '[The Parties] are under an obligation so to conduct themselves that the negotiations are meaningful, which will not be the case when either of them insists upon its own position without contemplating any modification of it': (1969) ICJ Reports 47 para. 85.

[109] Application, 25 October 2001, para. 33.

[110] Provisional Measures Order, 3 December 2001, para. 83. At the time of writing, the case on the merits – including the issue of co-operation – is pending before the Annex VII arbitration tribunal. The ITLOS order was affirmed by the Annex VII Tribunal by its Order of 24 June 2003, with a recommendation to establish further arrangements to address the Tribunals concern that 'co-operation and consultation may not always have been as timely or effective as it could have been': paras. 66–7.

Sustainable development

W. Clark and R. Munn (eds.), *Sustainable Development of the Biosphere* (1986); B. Conable, 'Development and the Environment: A Global Balance', 5 *American University Journal of International Law and Policy* 217 (1990); P. S. Elder, 'Sustainability', 36 *McGill Law Journal* 831 (1991); R. Lipschutz, 'Wasn't the Future Wonderful? Resources, Environment, and the Emerging Myth of Global Sustainable Development', 2 *Colorado Journal of International Environmental Law and Policy* 35 (1991); R. D. Munro and M. Holdgate (eds.), *Caring for the Earth: A Strategy for Sustainable Development* (1991); P. Sands, 'International Law in the Field of Sustainable Development', 65 BYIL 303 (1994); W. Lang (ed.), *Sustainable Development and International Law* (1995); United Nations, Department for Policy Co-ordination and Sustainable Development, *Report of the Expert Group Meeting on Identification of Principles of International Law for Sustainable Development* (UN, 26–28 September 1995); A. Boyle and D. Freestone (eds.), *International Law and Sustainable Development* (1999); EC Commission, *The Law of Sustainable Development: General Principles* (2000).

Introduction

The general principle that states should ensure the development and use of their natural resources in a manner which is sustainable emerged in the run-up to UNCED. Although the ideas underlying the concept of sustainable development have a long history in international legal instruments, and the term itself began to appear in treaties in the 1980s, the general 'principle of sustainable development' appears to have been first referred to in a treaty in the Preamble to the 1992 EEA Agreement.[111] The term now appears with great regularity in international instruments of an environmental, economic and social character and has been invoked by various international courts and tribunals, and is now established as an international legal concept.[112]

The term 'sustainable development' is generally considered to have been coined by the 1987 Brundtland Report, which defined it as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. It contains within it two concepts:

[111] See also the Preamble to the EC Fifth Environmental Action Programme, referring to the call in the June 1990 EC Declaration of Heads of State and Government for an action programme to be elaborated 'on the basis of the principles of sustainable development, preventive and precautionary action and shared responsibility': see chapter 15, p. 747 below.

[112] See generally the International Law Association's New Delhi Declaration of Principles of International Law Relating to Sustainable Development (2002).

1. the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
2. the idea of limitations imposed, by the state of technology and social organisation, on the environment's ability to meet present and future needs.[113]

State practice, however, suggests that the idea of 'sustainability' has been a feature in international legal relations since at least 1893, when the United States asserted a right to ensure the legitimate and proper use of seals and to protect them, for the benefit of mankind, from wanton destruction.[114] Since then, many treaties and other international instruments, as well as decisions of international courts, have supported, directly or indirectly, the concept of sustainable development and the principle that states have the responsibility to ensure the sustainable use of natural resources. Its application has been recognised in relation to all parts of the world.[115]

Four recurring elements appear to comprise the legal elements of the concept of 'sustainable development', as reflected in international agreements:

1. the need to preserve natural resources for the benefit of future generations (the principle of intergenerational equity);
2. the aim of exploiting natural resources in a manner which is 'sustainable', or 'prudent', or 'rational', or 'wise' or 'appropriate' (the principle of sustainable use);
3. the 'equitable' use of natural resources, which implies that use by one state must take account of the needs of other states (the principle of equitable use, or intragenerational equity); and
4. the need to ensure that environmental considerations are integrated into economic and other development plans, programmes and projects, and that development needs are taken into account in applying environmental objectives (the principle of integration).

[113] Report of the World Commission on Environment and Development (the Brundtland Report), *Our Common Future* (1987), 43.

[114] *Pacific Fur Seals Arbitration*, chapter 10, pp. 561–6 below. Although the arbitral tribunal rejected the argument, it did adopt regulations for the conduct of sealing which incorporated some of the elements of what is now recognised as a 'sustainable' approach to the use of natural resources.

[115] See e.g. Declaration on Establishment of the Arctic Council, 35 ILM 1382 (1996); Yaoundé Declaration on the Conservation and Sustainable Management of Forests, 38 ILM 783 (1999); Agreements on Co-operation for the Sustainable Development of the Mekong River Basin, 34 ILM 864 (1995); Revised Protocol on Shared Watercourses in the Southern African Development Community, 40 ILM 321 (2001); Partnership for Prosperity and Security in the Caribbean, 36 ILM 792 (1997); OECD Guidelines for Multinational Enterprises, Part V, 40 ILM 237 (2001); South East Europe Compact for Reform, Investment, Integrity and Growth, 39 ILM 962 (2000).

These four elements are closely related and often used in combination (and frequently interchangeably), which suggests that they do not yet have a well-established, or agreed, legal definition or status. The 1989 Lomé Convention indicated how some of the elements of the concept of sustainable development can be brought together in a single legal text. Article 33 of the Convention provides that:

> In the framework of this Convention, the protection and the enhancement of the environment and natural resources, the halting of the deterioration of land and forests, the restoration of ecological balances, the preservation of natural resources and their rational exploitation are basic objectives that the [states parties] concerned shall strive to achieve with Community support with a view to bringing an immediate improvement in the living conditions of their populations and to safeguarding those of future generations.

Without referring directly to 'sustainable development', the text introduced into a legal framework the elements identified by the Brundtland Report.[116] There can be little doubt that the concept of 'sustainable development' has entered the corpus of international customary law, requiring different streams of international law to be treated in an integrated manner.[117] In the *Gabcikovo-Nagymaros* case, the ICJ invoked the concept in relation to the future regime to be established by the parties. The ICJ said:

> Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind – for present and future generations – of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed [and], set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities, but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development. For the purposes of the present case, this means that the Parties together should look afresh at the effects on the environment of the operation of the Gabcikovo power plant. In particular they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms on both sides of the river.[118]

[116] See also 2002 Cotonou Agreement, Art. 32 ('1. Co-operation on environmental protection and sustainable utilisation and management of natural resources shall aim at: (a) mainstreaming environmental sustainability in to all aspects of development co-operation and support programmes and projects implemented by the various actors').

[117] See more generally P. Sands, 'International Courts and the Application of the Concept of "Sustainable Development"', 3 *Yearbook of UN Law* 389 (1999); P. Sands, 'Treaty, Custom and the Cross-Fertilisation of International Law', 1 *Yale Human Rights and Development Law Journal* 1 (1998), at http://diana.law.yale.edu/yhrdlj/vol01iss01/sands_philippe-article.htm.

By invoking the concept of sustainable development, the ICJ indicates that the term has a legal function and both a procedural/temporal aspect (obliging the parties to 'look afresh' at the environmental consequences of the operation of the plant) and a substantive aspect (the obligation of result to ensure that a 'satisfactory volume of water' be released from the by-pass canal into the main river and its original side arms). The ICJ does not provide further detail as to the practical consequences, although some assistance may be obtained from the Separate Opinion of Judge Weeramantry, who joined in the majority judgment and whose hand may have guided the drafting of paragraph 140 quoted above.[119]

In the *Shrimp/Turtle* case, the WTO Appellate Body noted that the Preamble to the WTO Agreement explicitly acknowledges 'the objective of sustainable development', and characterises it as a concept which 'has been generally accepted as integrating economic and social development and environmental protection'.[120] The concept appears to have informed the conclusion that sea turtles are an 'exhaustible natural resource' (within the meaning of Article XX(g) of the GATT) and that they have a sufficient nexus with the United States to justify the latter state's conservation measures, at least in principle. The

[118] (1997) ICJ Reports 78, para. 140. The concept was invoked by both parties. Slovakia stated that: 'It is clear from both the letter and the spirit of these principles that the overarching policy of the international community is that environmental concerns are not directed to frustrate efforts to achieve social and economic development, but that development should proceed in a way that is environmentally sustainable. Slovakia submits that these have been, and are today, the very policies on which the Gabcikovo-Nagymaros Project is based' (Counter-Memorial, para. 9.56). In reply, Hungary took an opposite view to support its argument that the Project is unlawful: 'Well-established . . . operational concepts like "sustainable development" . . . help define, in particular cases, the basis upon which to assess the legality of actions such as the unilateral diversion of the Danube by Czechoslovakia and its continuation by Slovakia' (Hungarian Reply, para. 3.51).

[119] (1997) ICJ Reports 92 ('It is thus the correct formulation of the right to development that that right does not exist in the absolute sense, but is relative always to its tolerance by the environment. The right to development as thus refined is clearly part of modern international law. It is compendiously referred to as sustainable development.')

[120] 38 ILM 121 (1999), para. 129, at n. 107 and the accompanying text. The view is supported by reference to numerous international conventions: para. 130, citing Art. 56(1)(a) of the 1982 UNCLOS. See also the Opinion of Advocate General Léger in Case C-371/98, *R. v. Secretary of State for the Environment, Transport and the Regions, ex parte First Corporate Shipping Ltd.* [2000] ECR I-9235, who notes that sustainable development 'emphasises the necessary balance between various interests which sometimes clash, but which must be reconciled' (relying upon the Preamble to the 1992 Habitats Directive, which refers to sustainable development: (discussed in D. McGillivray and J. Holder, 'Locating EC Environmental Law', 20 *Yearbook of European Law* 139 at 151 (2001)).

Appellate Body also invokes 'sustainable development' in assessing whether those measures have been applied in a discriminatory fashion – as it concludes they have – and in this regard refers to 'sustainable development' in the preamble to the WTO Agreement as adding:

> color, texture and shading to our interpretation of the agreements annexed to the WTO Agreement, in this case the GATT 1994. We have already observed that Article XX(g) of the GATT 1994 is appropriately read with the perspective embodied in the above preamble.[121]

Future generations

E. Brown Weiss, *In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity* (1989); A. D'Amato, 'Do We Owe a Duty to Future Generations to Preserve the Global Environment?', 84 AJIL 190 (1990); E. Brown Weiss, 'Our Rights and Obligations to Future Generations for the Environment', 84 AJIL 198 (1990); L. Gundling, 'Our Responsibility to Future Generations,' 84 AJIL 207 (1990); G. Supanich, 'The Legal Basis of Intergenerational Responsibility: An Alternative View – The Sense of Intergenerational Identity', 3 *Yearbook of International Environmental Law* 94 (1992); R. Westin, 'Intergenerational Equity and Third World Mining', 13 *University of Pennsylvania Journal of International Business Law* 181 (1992); E. Agius and S. Busuttil, *Future Generations and International Law* (1998).

The idea that as 'members of the present generation, we hold the earth in trust for future generations'[122] is well known to international law, having been relied upon as early as 1893 by the United States in the *Pacific Fur Seals Arbitration.* It is also expressly or implicitly referred to in many of the early environmental treaties, including the 1946 International Whaling Convention,[123] the 1968 African Conservation Convention[124] and the 1972 World Heritage Convention.[125] Other, more recent treaties have sought to preserve particular natural resources and other environmental assets for the benefit of present and future generations. These include wild flora and fauna;[126] the marine environment;[127]

[121] *Ibid.*, para. 153

[122] E. Brown Weiss, 'Our Rights and Obligations to Future Generations for the Environment', 84 AJIL 198 at 199 (1990).

[123] The Preamble recognises the 'interest of the nations of the world in safeguarding for future generations the great nature resources represented by the whale stocks'.

[124] The Preamble provides that natural resources should be conserved, utilised and developed 'by establishing and maintaining their rational utilisation for the present and future welfare of mankind'.

[125] Under Art. 4, the parties agree to protect, conserve, present and transmit cultural and natural heritage to 'future generations'.

[126] 1973 CITES, Preamble.

[127] 1978 Kuwait Convention, Preamble; 1983 Cartagena de Indias Protocol, Preamble; 1982 Jeddah Convention, Art. 1(1).

essential renewable natural resources;[128] the environment generally;[129] the resources of the earth;[130] natural heritage;[131] natural resources;[132] water resources;[133] biological diversity;[134] and the climate system.[135]

International declarations often make reference to intergenerational equity as an important aspect of the concept of sustainable development. According to Principle 1 of the 1972 Stockholm Declaration, man bears 'a solemn responsibility to protect and improve the environment for present and future generations', and UN General Assembly Resolution 35/8, adopted in 1980, affirmed that the responsibility to present and future generations is a historic one for the 'preservation of nature'. The Rio Declaration associates intergenerational equity with the right to development, providing in Principle 4 that the 'right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations'.

In its Advisory Opinion on *The Legality of the Threat or Use of Nuclear Weapons*, the ICJ recognized that 'the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn'.[136] The purpose of the ICJ's reliance on the concept is not immediately apparent, and it is sometimes said that the undertakings in favour of future generations have limited practical legal consequences. They are considered by some to be closely associated with the civil and political aspects of the relationship between environmental protection and human rights protection.[137] According to this view, the rights of future generations might be used to enhance the legal standing of members of the present generation to bring claims, in cases relying upon substantive rules of environmental treaties where doubt exists as to whether a particular treaty creates rights and obligations enforceable by individuals.[138]

Sustainable use of natural resources

A second approach, reflected in treaties adopting a 'sustainable' approach, is to focus on the adoption of standards governing the rate of use or exploitation of specific natural resources rather than on their preservation for future generations. Particularly for marine living resources, a standard approach has emerged requiring exploitation to be conducted at levels which are 'sustainable'

[128] 1976 South Pacific Nature Convention, Preamble.

[129] 1977 ENMOD Convention, Preamble.

[130] 1979 Bonn Convention, Preamble.

[131] 1985 Nairobi Convention, Preamble.

[132] 1985 ASEAN Convention, Preamble.

[133] 1992 Transboundary Waters Convention, Art. 2(5)(c).

[134] 1992 Biodiversity Convention, Preamble.

[135] 1992 Climate Change Convention, Art. 3(1).

[136] (1996) ICJ Reports, 226. See also *Gabcikovo-Nagymaros* case (1997) ICJ Reports 7, para. 53.

[137] See chapter 7, pp. 305–17 below.

[138] See chapter 5, pp. 195–8 above, on the standing issue.

or 'optimal'.[139] The failure of the 1946 International Whaling Convention to prevent the depletion of many whale species can be measured by reference to its stated objective of achieving 'the optimum level of whale stocks' and confining whaling operations 'to those species best able to sustain exploitation in order to give an interval for recovery to certain species of whales now depleted in numbers'.[140] Similar commitments to limit catches or productivity to 'maximum sustained' levels have been agreed for other marine species, such as tuna,[141] North Pacific fish,[142] Pacific fur seals,[143] and living resources in the EEZ.[144] Other treaties limit catches to 'optimum sustainable yields', or subject them to a required standard of 'optimum utilisation'; this applies, for example, in relation to Antarctic seals,[145] high seas fisheries,[146] and some highly migratory species.[147]

Sustainable use is a concept also applicable to non-marine resources. The 1968 African Nature Convention provides that the utilisation of all natural resources 'must aim at satisfying the needs of man according to the carrying capacity of the environment',[148] and the 1983 International Tropical Timber Agreement encouraged 'sustainable utilisation and conservation of tropical forests and their genetic resources'.[149] The 1985 ASEAN Agreement was one of the first treaties to require parties to adopt a standard of 'sustainable utilisation of harvested natural resources ... with a view to attaining the goal of sustainable development'.[150] Further support for sustainable use or management as a legal term may be found in the 1987 Zambezi Action Plan Agreement,[151] the 1992 Climate Change Convention,[152] the 1992 Biodiversity Convention[153] and its 2000 Biosafety Protocol,[154] and the 1992 OSPAR Convention.[155] The fact that

[139] 1995 Straddling Stocks Agreement, Art. 2 [140] Preamble; see also Art. V(2).
[141] 1949 Tuna Convention, Preamble; 1966 Atlantic Tuna Convention, Art. IV(2)(b).
[142] 1952 North Pacific Fisheries Convention, Preamble and Art. IV(1)(b)(ii).
[143] 1976 Pacific Fur Seals Convention, Preamble and Arts. II(1)(a), V(2)(d) and XI.
[144] 1982 UNCLOS, Art. 61(3). See also 1995 Straddling Stocks Agreement.
[145] 1972 Antarctic Seals Convention, Preamble.
[146] 1958 High Seas Fishing and Conservation Convention, which defines conservation as 'the aggregate of the measures rendering possible the optimum sustainable yield from those resources so as to secure a maximum supply of food and other marine products' (Art. 2).
[147] 1982 UNCLOS, Art. 64(1). [148] Preamble. [149] Art. 1(h).
[150] Art. 1(1); see also Art. 9 on the protection of air quality, and Art. 12(1) in respect of land use, which is to be based 'as far as possible on the ecological capacity of the land'.
[151] Preamble. [152] Art. 3(4).
[153] Preamble and Arts. 1, 8, 11, 12, 16, 17 and 18. The Convention defines 'sustainable use' as 'the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations': Art. 2.
[154] Art. 1.
[155] Preamble. The Convention defines 'sustainable management' as the 'management of human activities in such a manner that the marine ecosystem will continue to sustain the legitimate uses of the sea and will continue to meet the needs of present and future generations': Art. 1.

so many species and natural resources are in fact not sustainably managed illustrates the difficulty in translating the concept of sustainable development into a practical conservation tool.

The term also now appears frequently in instruments relating to international economic law and policy. Under its Articles of Agreement, the European Bank for Reconstruction and Development must 'promote in the full range of its activities environmentally sound and sustainable development'.[156] Under the 1989 Lomé Convention, the development of the sixty-six ACP countries as supported by the EC and its member states was to 'be based on a sustainable balance between its economic objectives, the rational management of the environment and the enhancement of natural and human resources'.[157] The 1992 Maastricht Treaty, which made changes to the EC Treaty, introduced new objectives for the EC, including the promotion of 'sustainable and non-inflationary growth respecting the environment'.[158] The Preamble to the 1994 WTO Agreement commits parties to 'the optimal use of the world's resources in accordance with the objective of sustainable development'.[159]

Other acts of the international community have also relied upon the concept of 'sustainable development', or the spirit which underlies it, without specifying what, precisely, it means. Although the 1972 Stockholm Declaration did not endorse 'sustainable development', it did call for the non-exhaustion of renewable natural resources and the maintenance and improvement of 'the capacity of the earth to produce vital renewable resources'.[160] The 1982 World Charter for Nature stated that resources which are utilised are to be managed so as to 'achieve and maintain optimum sustainable productivity', and provided that living resources must not be utilised 'in excess of their natural capacity for regeneration'.[161] The 1992 Rio Declaration goes further than most instruments by expressly defining the content of the concept of sustainable development, and actively calls for the 'further development of international law in the field of sustainable development', which suggests that international law in this field already existed.[162] Apart from the environmental component of 'sustainable development', the Rio Declaration links environmental issues to matters which might previously be more properly considered as belonging to the realm of economic and development law. These issues, increasingly considered for their environmental implications, include the eradication of poverty, the special responsibility of developed countries, the reduction and elimination of unsustainable patterns of production and consumption, the promotion

[156] Art. 2(1)(vii).
[157] Art. 4. See now Art. 32 of the 2000 Cotonou Agreement: see n. 72 above and the accompanying text.
[158] 1992 Maastricht Treaty, Art. G(2); see chapter 15, pp. 745–6 below.
[159] On the *Shrimp/Turtle* case, see p. 238 above.
[160] Principles 3 and 5. [161] Paras. 4 and 10(a). [162] Principle 27.

of appropriate population policies, and a supportive and open international economic system.[163]

Treaties and other international acts have also supported the development of the concept of 'sustainable use' through the use of terms which are closely related; international legal instruments have aimed for conservation measures and programmes which are 'rational', or 'wise', or 'sound', or 'appropriate', or a combination of the above. In some instruments, the preferred objective is the 'conservation' of natural resources, which has been subsequently defined by reference to one or more of the terms identified above. Moreover, the term 'conservation' itself includes elements similar to 'sustainable development'. The Legal Experts Group of the World Commission on Environment and Development defined 'conservation' in terms which recall the principle of sustainable development as:

> [the] management of human use of a natural resource or the environment in such a manner that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations. It embraces preservation, maintenance, sustainable utilisation, restoration and enhancement of a natural resource or the environment.[164]

'Rational', 'wise', 'sound' and 'appropriate' use are usually used without definition and often interchangeably, and accordingly the meaning of each term will depend upon its application in each instrument. Although attempts at definition have been made, no generally accepted definitions exist, and it is unlikely that distinguishable legal definitions could be agreed. The use of various terms in a single instrument is illustrated by the 1982 UNCLOS: it requires conservation at 'maximum sustainable yield' for the living resources of the territorial and high seas, the 'optimum utilisation' of the living resources found in the EEZ, and the 'rational management' of the resources in the 'Area' in accordance with 'sound principles of conservation'.[165]

'Rational' utilisation and management are the governing standard for migratory birds,[166] fisheries,[167] salmon,[168] all natural resources,[169] seals[170]

[163] Principles 5, 7, 8 and 12. [164] 1986 WCED Legal Principles, para. (i).
[165] Preamble and Arts. 61(3), 62(1), 119(1)(a) and 150(b).
[166] 1940 Western Hemisphere Convention, Art. VII.
[167] 1958 Danube Fishing Convention, Preamble and Art. VIII; 1959 North-East Atlantic Fisheries Convention, Preamble and Art. V(1)(b); 1959 Black Sea Fishing Convention, Preamble and Arts. 1 and 7; 1969 Southeast Atlantic Fisheries Convention, Preamble; 1973 Baltic Fishing Convention, Arts. I and X(h); 1978 Northwest Atlantic Fisheries Convention, Art. II(1).
[168] 1982 North Atlantic Salmon Convention, Preamble.
[169] 1968 African Conservation Convention, Art. II; 1978 Amazonian Treaty, Arts. I and VII.
[170] 1972 Antarctic Seals Convention, Art. 3(1); 1976 North Pacific Fur Seals Convention, Art. II(2)(g).

and hydro resources.[171] They are the required standard called for by Principles 13 and 14 of the Stockholm Declaration, and the 1980 CCAMLR defines 'conservation' objectives as including 'rational use',[172] as does the 1982 Jeddah Regional Seas Convention.[173]

'Proper' utilisation and management has been adopted as a governing standard for fisheries[174] and forests.[175] 'Wise use' has been endorsed for flora and fauna,[176] wetlands[177] and natural resources generally.[178] Other standards introduced by international agreements include: 'judicious exploitation';[179] 'sound environmental management';[180] 'appropriate environmental management';[181] and 'ecologically sound and rational' use of natural resources.[182]

The significance of these terms is that each recognises limits placed by international law on the rate of use or manner of exploitation of natural resources, including those which are shared or are in areas beyond national jurisdiction. These standards cannot have an absolute meaning. Rather, their interpretation is, or should be, implemented by states acting co-operatively, or by decisions of international organisations, or, ultimately, by international judicial bodies in the event that a dispute arises.

Equitable use of natural resources

G. Handl, 'The Principle of Equitable Use as Applied to Internationally Shared Natural Resources: Its Role in Resolving Potential International Disputes Over Transfrontier Pollution', 14 RBDI 40 (1977–8); L. F. E. Goldie, 'Reconciling

[171] 1978 Amazonian Treaty, Art. V.
[172] Art. II(1) and (2). 'Principles of conservation' are defined as (a) the 'prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment', and (b) the 'maintenance of ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to levels' above (a), and the 'prevention of changes or minimisation of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades . . . with the aim of making possible the sustained conservation of Antarctic marine living resources': Art. II(3).
[173] Art. 1(1), including reference to present and future generations, optimum benefit, and conservation, protection, maintenance, sustainable and renewable utilisation, and enhancement of the environment.
[174] 1949 Agreement for the General Fisheries Council for Mediterranean, Preamble and Art. IV(a).
[175] 1959 Agreement for the Latin American Forest Institute, Art. III(1)(a).
[176] 1968 African Conservation Convention, Art. VII(1); 1972 Stockholm Declaration, Principle 4; 1976 South Pacific Nature Convention, Art. V(1).
[177] 1971 Ramsar Wetlands Convention, Arts. 2(6) and 6(2)(d).
[178] 1979 Bonn Convention, Preamble. [179] 1963 Niger Basin Act, Preamble.
[180] 1981 Abidjan Convention, Arts. 4(1) and 14(3); 1983 Cartagena de Indias Convention, Art. 4(1); 1985 Nairobi Convention, Art. 4(1).
[181] 1981 Lima Convention, Art. 3(1).
[182] 1992 UNECE Transboundary Waters Convention, Art. 2(2)(b).

Values of Distributive Equity and Management Efficiency in the International Commons', in P. M. Dupuy (ed.), *The Settlement of Disputes on the New Natural Resources* (1983), 335; L. F. E. Goldie, 'Equity and the International Management of Transboundary Resources', 25 *Natural Resources Journal* 665 (1985); J. Lammers, '"Balancing the Equities" in International Environmental Law', in R. J. Dupuy (ed.), *L'Avenir du droit International de l'environnement* (1985), 153; P. Thacher, 'Equity under Change', 81 *Proceedings of the American Society of International Law* 133 (1987); B. Cheng-Kang, 'Equity, Special Considerations and the Third World', 1 *Colorado Journal of International Environmental Law and Policy* 57 (1990).

Equity and equitable principles are terms which are frequently relied upon in international environmental texts. In the absence of detailed rules, equity can provide a conveniently flexible means of leaving the extent of rights and obligations to be decided at a subsequent date, which may explain its frequent usage at UNCED. In many respects, UNCED was about equity: how to allocate future responsibilities for environmental protection between states which are at different levels of economic development, which have contributed in different degrees to particular problems, and which have different environmental and developmental needs and priorities. This is reflected in each UNCED instrument, which reflects efforts to apply equity to particular issues. Principle 3 of the Rio Declaration invokes the 'right of development' as a means of 'equitably' meeting the developmental and environmental needs of future generations. Under the Climate Change Convention, all the parties undertake to be guided on 'the basis of equity' in their actions to achieve the objective of the Convention, and Annex 1 parties agree to take into account the need for 'equitable and appropriate contributions' by each of them to the global effort regarding the achievement of the objective of the Convention.[183] The objectives of the 1992 Biodiversity Convention include the 'fair and equitable' sharing of the benefits arising out of the use of genetic resources.[184]

The application of equity in international environmental affairs pre-dates UNCED, having been associated with the protection of the environment for the benefit of future generations (intergenerational equity);[185] the principle of common but differentiated responsibility which takes into account the needs and capabilities of different countries and their historic contribution to particular problems;[186] and the allocation of shared natural resources,[187] shared fisheries stocks,[188] or shared freshwater resources.[189] Equity has also been relied upon in relation to the participation of states in environmental organisations,[190]

[183] Arts. 3(1) and 4(2)(a).
[184] Arts. 1 and 15(7). See chapter 20, pp. 1051–2 below. [185] See pp. 256–7 above.
[186] See pp. 285–9 below. [187] See the 1978 UNEP Draft Principles, Principle 1.
[188] *Icelandic Fisheries* case, chapter 11, pp. 567–8 below. [189] Chapter 10, pp. 461–3 below.
[190] 1992 Oil Pollution Fund Convention, Art. 22(2)(a) (equitable geographic distribution of membership on Executive Committee); 1972 World Heritage Convention, Art 8(2) ('equitable representation of the different regions and cultures of the world' on the World Heritage Committee); 1982 UNCLOS, Art. 161(1)(e) (equitable geographic distribution of membership of the Council of the International Seabed Authority).
[191] 1973 Baltic Sea Fishing Convention, Art. 1. [192] 1978 Amazonian Treaty, Preamble.
[193] (1997) ICJ Reports 7 at 56; chapter 10, pp. 469–77 below.
[194] See e.g. its application by the ICJ in the *Gabcikovo-Nagymaros* case, p. 254 above. See generally chapters 16 and 17 below.
[195] Chapter 20, pp. 1022–9 below. [196] See pp. 287–9 below.

financial and other contributions to activities,[191] and the equitable distribution of the benefits of development.[192]

It is, however, in relation to the allocation of shared natural resources that equity is likely to play an important role in coming years, as underscored by the ICJ's ruling in the *Gabcikovo-Nagymaros* case that Czechoslovakia had violated international law by unilaterally assuming control of a shared resource and depriving Hungary of its right to an equitable and reasonable share of the natural resources of the Danube.[193] The Preamble to the 1987 Montreal Protocol reflects the aim of controlling 'equitably total global emissions of substances that deplete the ozone layer', an aim usually translated into specific obligations through the process of intergovernmental negotiations (as reflected in the 1990 and 1992 Adjustments and Amendments to the 1987 Montreal Protocol). The 1992 Climate Change Convention requires the equitable allocation of emission rights, and the Biodiversity Convention requires the determination of what constitutes an equitable sharing of the benefits arising out of the use of genetic resources. In each of these cases, the factors to be taken into account in establishing specific rights and obligations must be determined in the circumstances of each instrument, including its provisions, the context of its negotiation and adoption, and subsequent practice by the organs it establishes and by parties.

Integration of environment and development

A fourth element of 'sustainable development' is the commitment to integrate environmental considerations into economic and other development, and to take into account the needs of economic and other social development in crafting, applying and interpreting environmental obligations. In many ways, this element is the most important and the most legalistic: its formal application requires the collection and dissemination of environmental information, and the conduct of environmental impact assessments.[194] The integration approach may also serve as the basis for allowing, or requiring, 'green conditionality' in bilateral and multilateral development assistance,[195] and the adoption of differentiated legal commitments on the basis of the historic responsibility of states (including the resulting economic benefits) and their capacity to respond to environmental requirements.[196]

For many years, the international regulation of environmental issues has taken place in international fora, such as UNEP and the conferences of the parties to environmental treaties, which are not directly connected to international economic organisations, particularly the World Bank and the GATT. One consequence has been a divergence in approaches. This is a constitutional problem, which appears also in the organisation of national governments. The constituent instruments which originally created the UN and its specialised agencies, and in particular the GATT, the World Bank, the multilateral development banks, and regional economic integration organisations such as the European Community, did not address environmental protection requirements or the need to ensure that development was environmentally sustainable. Environmental concerns had historically been addressed on the margins of international economic concerns, and it is only since UNCED that the relationship between environmental protection and economic development has been more fully recognised by the international community. The UNCED process and the instruments reflect the need to integrate environment and development, and it is unlikely that the two objectives could now be easily separated.

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.' An integrated approach to environment and development has significant practical consequences, most notably that environmental considerations will increasingly be a feature of international economic policy and law (and that lawyers working in the area of environmental protection will need to familiarise themselves with economic law and concepts). This is borne out by the changes which have taken place since the late 1980s. Examples include: the various amendments to the EC Treaty to include and then develop specific language on the environment;[197] the establishment of an Environment Department at the World Bank and the adoption of environmental assessment and related requirements; the convergence of trade with environment at the GATT and then the WTO; the elaboration of language on sustainable development in the Articles of Agreement of the EBRD and the WTO; and the development of environmental jurisprudence in competition, subsidy, foreign investment and intellectual property law.[198]

The integration of environment and development began prior to the 1972 Stockholm Conference. Linkage between conservation and development was made at the first UN Conference on conservation and utilisation of resources in

[197] See EC Commission Report, 'Integrating Environmental Concerns and Sustainable Development into Community Policies', SEC (1999) 1941 final.

[198] See further chapter 19, pp. 1010–15 below; chapter 20, pp. 1043–53 below; and chapter 21, pp. 1056–61 below.

1949.[199] In 1971, the General Assembly expressed its conviction that 'development plans should be compatible with a sound ecology and that adequate environmental conditions can best be ensured by the promotion of development, both at the national and international levels'.[200] Principle 13 of the Stockholm Declaration called on states to adopt 'an integrated and co-ordinated approach to their development planning so as to ensure that their development is compatible with the need to protect and improve the human environment'. The 1982 World Charter for Nature provided that the conservation of nature was to be taken into account in the planning and implementation of economic and social development activities and that due account was to be taken of the long-term capacity of natural systems in formulating plans for economic development.[201]

Numerous regional treaties support an approach which integrates environment and development. Examples include: the 1974 Paris Convention, which calls for an 'integrated planning policy consistent with the requirement of environmental protection';[202] the 1978 Kuwait Convention, which supports an 'integrated management approach . . . which will allow the achievement of environmental and development goals in a harmonious manner';[203] the 1978 Amazonian Treaty, which affirms the need to 'maintain a balance between economic growth and conservation of the environment';[204] the 1985 ASEAN Convention, which seeks to ensure that 'conservation and management of natural resources are treated as an integral part of development planning at all stages and at all levels';[205] and the 1989 Fourth Lomé Convention, which provided that the development of 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'.[206] The global treaties at UNCED – and those adopted subsequently – include similar provisions.[207]

The integration of environment and development has re-opened debate over the 'right to development', after efforts to establish a New International Economic Order in the mid-1970s met with opposition from some of the larger industrialised countries. Principle 3 of the Rio Declaration implicitly accepts the 'right to development', although the United States declared that it did not, by joining consensus on the Rio Declaration, change its long-standing opposition to the 'so-called "right to development"'; for the United States, development 'is not a right . . . [it] is a goal we all hold', and the US disassociated itself from any

[199] Chapter 2, p. 31 above. [200] UNGA Res. 2849 (XXVI) (1971).
[201] Paras. 7 and 8. [202] Art. 6(2)(d). [203] Preamble.
[204] Preamble. [205] Art. 2(1). [206] Arts. 4 and 34.
[207] 1992 Biodiversity Convention, Art. 6(b); 1992 Climate Change Convention, Preamble; 2000 Cotonou Agreement, Art. 32 (requiring the 'mainstreaming' of environmental sustainability throughout development co-operation).

interpretation of Principle 3 that accepted a 'right to development'.[208] Developing countries have, in this context, been careful to introduce language into treaties to safeguard their future development and limit the extent to which international environmental regulation might limit such development. Both UNCED treaties include language to the effect that the overriding priority needs of developing countries are the achievement of economic growth and the eradication of poverty,[209] an objective given more concrete expression by making the effective implementation by developing countries of their commitments dependent upon the effective implementation by developed countries of their financial obligations.[210] Despite the US language, Principle 3 of the Rio Declaration, with which Principle 4 must be read to be fully understood, is part of the bargain struck between developed and developing countries, which is also evident in the convoluted language of Article 3(4) of the Climate Change Convention. This provides that the parties 'have a right to and should, promote sustainable development', which reflects a compromise text between those states which sought an express recognition of a 'right to development' and those states which sought to dilute such a right by recognising only a 'right to promote sustainable development'.

Conclusion

International law recognises a principle (or concept) of 'sustainable development'. The term needs to be taken in the context of its historic evolution as reflecting a range of procedural and substantive commitments and obligations. These are primarily, but not exclusively, recognition of:

- the need to take into consideration the needs of present and future generations;
- the acceptance, on environmental protection grounds, of limits placed upon the use and exploitation of natural resources;
- the role of equitable principles in the allocation of rights and obligations;
- the need to integrate all aspects of environment and development; and
- the need to interpret and apply rules of international law in an integrated and systemic manner.

Precautionary principle

L. Gundling, 'The Status in International Law of the Principle of Precautionary Action', 5 *International Journal of Estuarine and Coastal Law* 23 (1990); D. Bodansky, 'Scientific Uncertainty and the Precautionary Principle', 33 *Environment*

[208] UNCED Report, vol. II, 17; UN Doc. A/CONF.151/26/Rev.1 (vol. II) (1993).

[209] 1992 Climate Change Convention, Preamble; 1992 Biodiversity Convention, Preamble.

[210] 1992 Climate Change Convention, Art. 4(7); 1992 Biodiversity Convention, Art. 20(4); see further chapter 20, pp. 1032–4 below.

4 (1991); J. Cameron and J. Abouchar, 'The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment', 14 BCICLR 1 (1991); D. Freestone, 'The Precautionary Principle', in R. Churchill and D. Freestone (eds.), *International Law and Global Climate Change* (1991), 21; C. Boyden Gray and D. Rivkin, 'A "No Regrets" Environmental Policy', 83 *Foreign Policy* 47 (1991); R. Rehbinder, *Das Vorsorgeprinzip in Internationalen Rechtsvergleich* (1991); E. Hey, 'The Precautionary Concept in Environmental Policy and Law: Institutionalising Caution', 4 *Georgetown International Environmental Law Review* 303 (1992); H. Hohmann, *Precautionary Legal Duties and Principles of Modern International Environmental Law* (1994); T. O'Riordan and J. Cameron (eds.), *Interpreting the Precautionary Principle* (1994); D. Freestone and E. Hey, *The Precautionary Principle and International Law* (1995); A. Fabra, 'The LOSC and the Implementation of the Precautionary Principle', 10 *Yearbook of International Environmental Law* 15 (1999); D. Freestone, 'Caution or Precaution: "A Rose by Any Other Name . . ."?' 10 *Yearbook of International Environmental Law* 25 (1999); N. de Sadeleer, 'Réfléxions sur le statut juridique du principe de précaution', in E. Zaccai and J.-N. Missa, *Le principe de précaution* (2000); A. Trouwborst, *Evolution and Status of the Precautionary Principle in International Law* (2002); N. de Sadeleer, *Environmental Principles in an Age of Risk* (2003); S. Marr, *The Precautionary Principle in the Law of the Sea – Modern Decision-Making in International Law* (2003).

Whereas the preventive principle can be traced back to international environmental treaties and other international acts since at least the 1930s, the precautionary principle only began to appear in international legal instruments in the mid-1980s, although prior to then it had featured as a principle in domestic legal systems, most notably that of West Germany.[211] The precautionary principle aims to provide guidance in the development and application of international environmental law where there is scientific uncertainty. It continues to generate disagreement as to its meaning and effect, as reflected in particular in the views of states and international judicial practice. On the one hand, some consider that it provides the basis for early international legal action to address highly threatening environmental issues such as ozone depletion and climate change.[212] On the other hand, its opponents have decried the potential which

[211] K. von Moltke, 'The Vorsorgeprinzip in West German Environmental Policy', in Twelfth Report (Royal Commission on Environmental Pollution, UK, HMSO, CM 310, 1988), 57.

[212] See e.g. the support for the precautionary principle by low-lying AOSIS countries in the climate change negotiations, which is put as follows: 'For us the precautionary principle is much more than a semantic or theoretical exercise. It is an ecological and moral imperative. We trust the world understands our concerns by now. We do not have the luxury of waiting for conclusive proof, as some have suggested in the past. The proof, we fear, will kill us.' Ambassador Robert van Lierop, Permanent Representative of Vanuatu to the UN and Co-Chairman of Working Group 1 of the INC/FCCC, Statement to the Plenary Session of the INC/FCCC, 5 February 1991, at 3.

the principle has for over-regulation and limiting human activity. The core of the principle, which is still evolving, is reflected in Principle 15 of the Rio Declaration, which provides that:

> 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.[213]

Principle 15 also provides that 'the precautionary approach shall be widely applied by states according to their capabilities'.

The precautionary principle (or precautionary approach, as the US and some others prefer to call it) has been adopted in many international environmental treaties since 1989. Although its precise formulation is not identical in each instrument, the language of Principle 15 of the Rio Declaration now attracts broad support. The principle finds its roots in the more traditional environmental agreements which call on parties to such agreements, and the institutions they create, to act and to adopt decisions which are based upon 'scientific findings' or methods,[214] or 'in the light of knowledge available at the time'.[215] These standards suggest that action shall only be taken where there is scientific evidence that significant environmental damage is occurring, and that in the absence of such evidence no action would be required. Examples of a traditional approach include the 1974 Paris Convention, which allows parties to take additional measures 'if scientific evidence has established that a serious hazard may be created in the maritime area by that substance and if urgent action is necessary':[216] this requires the party wishing to adopt measures to 'prove' a case for action based upon the existence of sufficient scientific evidence, which may be difficult to obtain.

The 1969 Intervention Convention was one of the earliest treaties to recognise the limitations of the traditional approach, concerning the environmental consequences of a failure to act. It allows proportionate measures to be taken to prevent, mitigate or eliminate grave and imminent danger to coastlines from threat of oil pollution, taking account of 'the extent and probability of imminent damage if those measures are not taken'.[217] Developments in the mid-1980s to address ozone depletion reflected growing support for precautionary action. The first treaty which refers to the term is the 1985 Vienna Convention, which reflected the parties' recognition of the 'precautionary measures' taken at the national and international levels.[218] By 1987, the parties to the Montreal

[213] WSSD Plan of Implementation, paras. 22 and 103.
[214] 1946 International Whaling Convention, Art. V(2); 1972 Antarctic Seals Convention, Annex, para. 7(b); 1972 World Heritage Convention, Preamble; 1972 London Convention, Art. XV(2); 1979 Bonn Convention, Arts. III(2) and XI(3) (action on the basis of 'reliable evidence, including the best scientific evidence available').
[215] 1960 Radiation Convention, Art. 3(1). [216] Art. 4(4).
[217] Arts. I and V(3)(a). [218] Preamble.

Protocol noted the 'precautionary measures' to control emission from certain CFCs which had already been taken at the national and regional (EEC) levels and stated their determination to 'protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it'.[219]

The precautionary approach has been relied upon in relation to measures to protect other environmental media, especially the marine environment. The Preamble to the 1984 Ministerial Declaration of the International Conference on the Protection of the North Sea reflected a consciousness that states 'must not wait for proof of harmful effects before taking action', since damage to the marine environment can be irreversible or remediable only at considerable expense and over a long period.[220] This introduces the idea that precautionary action may be justified on economic grounds. The Ministerial Declaration of the Second North Sea Conference (1987) accepted that 'in order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary'.[221] At the Third North Sea Conference (1990), Ministers pledged to continue to apply the precautionary principle.[222] The 1990 Bergen Ministerial Declaration on Sustainable Development in the ECE Region was the first international instrument to treat the principle as one of general application and linked to sustainable development. The Declaration provides that:

> In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent and attack 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.[223]

Central to this text is the element of anticipation, reflecting a need for effective environmental measures to be based upon actions which take a longer-term approach and which might predict changes in the basis of our scientific knowledge. Moreover, for the precautionary principle to apply, the threat of environmental damage must be 'serious' or 'irreversible', although there is not yet any limitation on grounds of cost-effectiveness as to the measures which should not be postponed. While the amendments to the Montreal Protocol were being prepared, the UNEP Governing Council recognised that 'waiting for scientific proof regarding the impact of pollutants discharged into the marine environment could result in irreversible damage to the marine environment and in human suffering', and recommended that all governments adopt the 'principle

[219] Preamble. [220] Bremen, 1 November 1984.
[221] London, 25 November 1987; also PARCOM Recommendation 89/1 (1989) (supporting the 'principle of precautionary action').
[222] The Hague, 8 March 1990. [223] Bergen, 16 May 1990, para. 7; IPE (I/B/16.05.90).

of precautionary action' as the basis of their policy with regard to the prevention and elimination of marine pollution.[224]

Since that time, numerous environmental treaties, including some which are of global application on environmental matters of broad concern and applicable to almost all human activities, have adopted the precautionary principle or its underlying rationale. Among the earliest was the 1991 Bamako Convention, which requires parties to strive to adopt and implement

> the preventive, precautionary approach to pollution which entails, *inter alia*, preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm. The parties shall co-operate with each other in taking the appropriate measures to implement the precautionary principle to pollution prevention through the application of clean production methods.[225]

This formulation is one of the most far-reaching. It links the preventive and precautionary approaches, does not require damage to be 'serious' or 'irreversible', and lowers the threshold at which scientific evidence might require action. The parties to the 1992 Watercourses Convention agreed to be guided by the precautionary principle

> by virtue of which action to avoid the potential transboundary impact of the release of hazardous substances shall not be postponed on the ground that scientific research has not fully proved a causal link between those substances, on the one hand, and the potential transboundary impact, on the other hand.[226]

This formulation limits the application of the principle to transboundary effects alone, although the level of environmental damage is raised above that required by the Bamako Convention to 'significant adverse effect'. The 1992 Biodiversity Convention does not specifically refer to the precautionary principle, although the Preamble 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 minimise such a threat'.[227] The level of environmental damage here is well below the 'serious' or 'irreversible' level required by the 1990 Bergen Declaration. The 2000 Biosafety Protocol relies extensively on the precautionary approach. The objective of the Protocol is, however, stated to be 'in accordance' with Principle 15 of the Rio Declaration, and, to that end, the Protocol affirms that 'lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects of a living modified organism on the conservation and sustainable use of biological diversity' shall

[224] Governing Council Decision 15/27 (1989). [225] Art. 4(3)(f).
[226] Art. 2(5)(a). See also the 1994 Danube Convention, Art. 2(4). [227] Preamble.

not prevent a party from prohibiting imports.[228] The reference to precaution in the 1992 Climate Change Convention was a controversial matter, and the text as finally adopted established limits on the application of the precautionary principle by requiring a threat of 'serious or irreversible damage' and by linking the commitment to an encouragement to take measures which are 'cost effective'.[229]

Beyond these two conventions, many others now commit their parties to apply the precautionary principle or approach. The 1992 OSPAR Convention links prevention and precaution: preventive measures are to be taken when there are 'reasonable grounds for concern . . . even when there is no conclusive evidence of a causal relationship between the inputs and the effects'.[230] The threshold here is quite low. The standard applied by the 1992 Baltic Sea Convention introduces yet another variation: preventive measures are to be taken 'when there is reason to assume' that harm might be caused 'even when there is no conclusive evidence of a causal relationship between inputs and their alleged effects'.[231] The 1995 Straddling Stocks Agreement commits coastal states and states fishing on the high seas to apply the precautionary approach widely, and sets out in detail the modalities for its application.[232] A growing number of other conventions – both regional and global – also give effect to a precautionary approach in relation to a range of different subject matters.[233] The 1992 Maastricht Treaty amended Article 130r(2) of the EC Treaty so that EC action on the environment 'shall be based on the precautionary principle', and the 1997 Amsterdam Treaty further amended the EC Treaty to apply the principle to Community policy on the environment (Article 174(2)). The European Commission has published a Communication on the precautionary principle which outlines the Commission's approach to the use of the principle, establishes guidelines for applying it, and aims to develop understanding on the assessment, appraisal and management of risk in the face of scientific uncertainty.[234] The Communication considers that the principle has been 'progressively consolidated in international environmental law, and so it has since become a full-fledged and general principle of international law'.[235] The

[228] Art. 10(6). See also Art. 11(8) and, in relation to risk assessment, Art. 15 and Annex 3.
[229] Art. 3(3). [230] Art. 2(2)(a). [231] Art. 3(2).
[232] Arts. 5(c) and 6 and Annex II (Guidelines for the Application of Precautionary Reference Points in Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks).
[233] E.g. 1973 CITES, Res. Conf. 9.24 (1994), chapter 11, pp. 505–15 below; 1994 Energy Charter Treaty, Art. 18; 1996 Protocol to the 1972 London Convention, Art. 3; 2000 Biosafety Protocol, Art. 1; 2001 POPs Convention ('Precaution underlies the concerns of all parties and is embedded within this convention', Preamble, also Art. 1); 2002 North-East Pacific Convention, Art. 5(6)(a).
[234] COM 2000 (1), 2 February 2000 (http://europa.eu.int/comm/dgs/ health_consumer/library/pub/pub07_en.pdf).
[235] *Ibid.*, 11.

principle has been applied by the ECJ[236] and by the EEA Court, which has ruled that, in cases relating to the effects on human health of certain products, and where there may be a great measure of scientific and practical uncertainty linked to the issue under consideration, the application of the precautionary principle is justified and 'presupposes, firstly, an identification of potentially negative health consequences arising, in the present case, from a proposed fortification, and, secondly, a comprehensive evaluation of the risk to health based on the most recent scientific information'. The Court went on:

> When the insufficiency, or the inconclusiveness, or the imprecise nature of the conclusions to be drawn from those considerations make it impossible to determine with certainty the risk or hazard, but the likelihood of considerable harm still persists were the negative eventuality to occur, the precautionary principle would justify the taking of restrictive measures.[237]

The precautionary principle or approach has now received widespread support by the international community in relation to a broad range of subject areas. What does the principle mean, and what status does it have in international law? There is no clear and uniform understanding of the meaning of the precautionary principle among states and other members of the international community. At the most general level, it means that states agree to act carefully and with foresight when taking decisions which concern activities that may have an adverse impact on the environment. A more focused interpretation provides 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 should not be used as a reason for postponing measures to prevent environmental degradation'. Under the Rio Declaration,

[236] See e.g. Case C-180/96, *United Kingdom* v. *EC Commission* [1998] ECR I-2265 ('the institutions may take protective measures without having to wait until the reality and seriousness of those risks become fully apparent', at paras. 99 and 100); see also Case T-70/99, *Alpharma Inc.* v. *Council of the European Union*, Order of 30 June 1999 (Interim Measures) [1999] ECR II-2027, the President of the Court of First Instance referring to the principle and affirming that 'requirements linked to the protection of public health should undoubtedly be given greater weight than economic considerations'). See also Case C-6/99, *Association Greenpeace France and Others* v. *Ministere de l'Agriculture et de la Peche and Others* [2000] ECR I-1651 (French edition) (in relation to Directive 90/220, observance of the precautionary principle is reflected in the notifier's obligation immediately to notify the competent authority of new information regarding the risks of the product to human health or the environment and the competent authority's obligation immediately to inform the Commission and the other member states about this information and, secondly, in the right of any member state, provisionally to restrict or prohibit the use and/or sale on its territory of a product which has received consent where it has justifiable reasons to consider that it constitutes a risk to human health or the environment: para. 44).

[237] Case E-3/00, *EFTA Surveillance Authority* v. *Norway* [2001] 2 CMLR 47.

the requirement is stated to be mandatory: lack of full scientific certainty 'shall not be used' to prevent action. What remains open is the level at which scientific evidence is sufficient to override arguments for postponing measures, or at which measures might even be required as a matter of international law.

A more fundamental change would be adopted by an interpretation of the precautionary principle, one increasingly widely held, which would shift the burden of proof. According to traditional approaches, the burden of proof currently lies with the person opposing an activity to prove that it does or is likely to cause environmental damage. A new approach, supported by the precautionary principle, would tend to shift the burden of proof and require the person who wishes to carry out an activity to prove that it will not cause harm to the environment. 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 national or international regulatory action where the scientific evidence suggests that lack of action may result in serious or irreversible harm to the environment, or where there are divergent views on the risks of action.

There is growing evidence to suggest that this interpretation is beginning to be supported by state practice, even if it still falls short of having sufficient support to allow it to be considered a rule of general application. Examples include the EC's 1991 Urban Waste Water Directive, which allows certain urban waste water discharges to be subjected to less stringent treatment than that generally required by the Directive providing that 'comprehensive studies indicate that such discharges will not adversely affect the environment'.[238] Under the 1992 OSPAR Convention, parties (France and the United Kingdom) which originally wanted to retain the option of dumping low- and intermediate-level radioactive wastes at sea were required to report to the OSPAR Commission on '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'.[239]

The practice of international courts and tribunals, and of states appearing before them, sheds some light on the meaning and effect of the precautionary principle. Before the ICJ the principle appears to have first been raised in New Zealand's 1995 request concerning French nuclear testing.[240] New Zealand relied extensively on the principle, which it described as 'a very widely accepted and operative principle of international law' and which shifted the burden onto France to prove that the proposed tests would not give rise to

[238] EC Directive 91/271, Art. 6(2); chapter 15, pp. 776–8 below.

[239] Annex II, Art. 3(3)(c).

[240] Chapter 8, pp. 319–21 below.

environmental damage.[241] Five 'intervening' states (Australia, Micronesia, the Marshall Islands, Samoa and the Solomon Islands) also invoked the principle. France responded that the status of the principle in international law was 'tout à fait incertain', but that in any event it had been complied with, and that evidentiary burdens were no different in the environmental field than any other area of international law.[242] The ICJ's order did not refer to these arguments, although Judge Weeramantry's dissent noted that the principle had 'evolved to meet [the] evidentiary difficulty caused by the fact [that] information required to prove a proposition' may be 'in the hands of the party causing or threatening the damage', and that it was 'gaining increasing support as part of the international law of the environment'.[243] In the *Gabcikovo-Nagymaros* case, Hungary and Slovakia also invoked the precautionary principle.[244] Again, the ICJ did not feel the need to address the principle, limiting itself to a passing reference to Hungary's claim that the principle justified the termination of the 1977 treaty and its recognition of the parties' agreement on the need to take environmental concerns seriously and to take the required precautionary measures.[245] Of particular note was the failure of the ICJ to refer to or apply the principle in its consideration of the conditions under which Hungary could invoke the concept of ecological necessity to preclude the wrongfulness of its suspension of works on the two barrages in 1989.[246] Having acknowledged without difficulty 'that the concerns expressed by Hungary for its natural environment in the region affected by the Gabcíkovo-Nagymaros Project related to an "essential interest" of that State', the ICJ nevertheless found that Hungary had not proved that 'a real, "grave" and "imminent" "peril" existed in 1989 and that the measures taken by Hungary were the only possible response to it.'[247] The ICJ found that there were serious uncertainties concerning future harm to freshwater supplies and biodiversity, but that these:

[241] New Zealand Request, para.105; see also ICJ CR/95/20, at 20–1 and 36–8.

[242] ICJ CR/95/20, at 71–2 and 75.

[243] (1995) ICJ Reports 342; see also Ad Hoc Judge Palmer ('the norm involved in the precautionary principle ha[d] developed rapidly and m[ight] now be a principle of customary international law relating to the environment': *ibid.*, 412). See also Judge Weeramantry's Dissenting Opinion in *The Legality of the Threat or Use of Nuclear Weapons* (1996) ICJ Reports 502.

[244] Chapter 10, pp. 463–4 below.

[245] (1997) ICJ Reports 62, para. 97, and 68, para. 113. See also chapter 10, pp. 463–4 below. But see the Separate Opinion of Judge Koroma, that the precautionary principle was incorporated in the 1977 treaty but 'had not been proved to have been violated to an extent sufficient to have warranted the unilateral termination of the Treaty': *ibid.*, 152.

[246] The ICJ found that a state of necessity was, on an exceptional basis, a ground recognised by customary international law for precluding the wrongfulness of an act not in conformity with an international obligation, and relied on the formulation of draft Article 33 of the ILC's draft Articles on State Responsibility: (1997) ICJ Reports 7 paras. 50–2.

[247] *Ibid.*, para. 54.

> could not, alone, establish the objective existence of a 'peril' in the sense of a component element of a state of necessity. The word 'peril' certainly evokes the idea of 'risk'; that is precisely what distinguishes 'peril' from material damage. But a state of necessity could not exist without a 'peril' duly established at the relevant point in time; the mere apprehension of a possible 'peril' could not suffice in that respect. It could moreover hardly be otherwise, when the 'peril' constituting the state of necessity has at the same time to be 'grave' and 'imminent'. 'Imminence' is synonymous with 'immediacy' or 'proximity' and goes far beyond the concept of 'possibility' . . . That does not exclude, in the view of the Court, that a 'peril' appearing in the long term might be held to be 'imminent' as soon as it is established, at the relevant point in time, that the realization of that peril, however far off it might be, is not thereby any less certain and inevitable.[248]

This is not precautionary language, premised as it is on the need to establish the certainty and inevitability of serious harm. However, it must be recognised that the ICJ was concerned here with the application of the law as it stood in 1989, when Hungary had wrongfully (in the view of the ICJ) suspended work on the project. At that time, the precautionary principle had not yet emerged and could not realistically be applied as general international law. It may be that the ICJ also had this in mind when it indicated later in the judgment that '[w]hat might have been a correct application of the law in 1989 or 1992, if the case had been before the Court then, could be a miscarriage of justice if prescribed in 1997'.[249]

The International Tribunal for the Law of the Sea has also been presented with arguments invoking precaution, and has shown itself to be notably more open to the application of the principle, albeit without express reliance. In 1999, in the *Southern Bluefin Tuna* cases, Australia and New Zealand requested the Tribunal to order 'that the parties act consistently with the precautionary principle in fishing for Southern Bluefin Tuna pending a final settlement of the dispute'.[250] Japan, the respondent state, did not address the question of the status or effect of the principle. In its Order the Tribunal expressed the view that the parties should 'act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stock of southern bluefin tuna' (para. 77), that there was 'scientific uncertainty regarding measures to be taken to conserve the stock of southern bluefin tuna' (para. 79), and that, although it could not conclusively assess the scientific evidence presented by the parties, measures should be taken as a matter of urgency to preserve the rights of the parties and to avert further deterioration of the southern bluefin tuna stock (para. 80). In ordering the parties to refrain from conducting experimental fishing programmes, the Tribunal was plainly

[248] *Ibid.* [249] *Ibid.*, para. 134. [250] Chapter 11, pp. 580–1 below.

taking a precautionary approach, as Judge Treves recognised in his Separate Opinion.[251]

In 2001, in the *MOX* case, Ireland claimed that the United Kingdom had failed to apply a precautionary approach to the protection of the Irish Sea in the exercise of its decision-making authority in relation to the direct and indirect consequences of the operation of the MOX plant and international movements of radioactive materials associated with the operation of the MOX plant.[252] The principle was invoked by Ireland at the provisional measures phase to support its claim that the United Kingdom had the burden of demonstrating that no harm would arise from discharges and other consequences of the operation of the MOX plant, and to inform the assessment by the Tribunal of the urgency of the measures it is required to take in respect of the operation of the MOX plant.[253] For its part, and while accepting that in assessing the level of risk in any given case considerations of prudence and caution may be relevant, the United Kingdom argued that in the absence of evidence showing a real risk of harm precaution could not warrant a restraint of the rights of the United Kingdom to operate the plant.[254] The Tribunal did not order the suspension of the operation of the plant, as Ireland had requested, but instead ordered the parties to co-operate and enter into consultations to exchange further information on possible consequences for the Irish Sea arising out of the commissioning of the MOX plant and to devise, as appropriate, measures to prevent pollution of the marine environment which might result from the operation of the MOX plant.[255] That Order, which has a certain precautionary character, was premised on considerations of 'prudence and caution'.[256]

[251] 'In the present case, it would seem to me that the requirement of urgency is satisfied only in the light of such precautionary approach. I regret that this is not stated explicitly in the Order': Separate Opinion of Judge Treves, para. 8. See also Separate Opinion of Judge Lang ('Nevertheless, it is not possible, on the basis of the materials available and arguments presented on this application for provisional measures, to determine whether, as the Applicants contend, customary international law recognizes a precautionary principle': at para. 15), and Ad Hoc Judge Shearer ('The Tribunal has not found it necessary to enter into a discussion of the precautionary principle/approach. However, I believe that the measures ordered by the Tribunal are rightly based upon considerations deriving from a precautionary approach.').

[252] Chapter 9, p. 436 below; see Ireland's Statement of Claim, 25 October 2001, para. 34 ('the precautionary principle is a rule of customary international law which is binding upon the United Kingdom and relevant to the assessment of the United Kingdom's actions by reference to [UNCLOS]').

[253] Order of 3 December 2001, para. 71.

[254] UK Response, 15 November 2001, para. 150.

[255] Order of 3 December 2001, para. 89(1).

[256] *Ibid.*, para. 84. Cf. the Separate Opinion of Ad Hoc Judge Szekely (the Tribunal 'should have been responsive, in the face of such uncertainty, to the Irish demands regarding the application of the precautionary principle (see paragraphs 96 to 101 of the Request, pp. 43–46). It is regrettable that it did not do so, since acting otherwise would have led to granting the provisional measure requested by Ireland regarding the suspension of the commissioning of the plant.').

The principle has also been addressed by the WTO Appellate Body.[257] In 1998, in the *Beef Hormones* case, the European Community invoked the principle to justify its claim that it was entitled to prohibit imports of beef produced in the United States and Canada with artificial hormones, where the impacts on human health were uncertain. The Community argued that the principle was already 'a general customary rule of international law or at least a general principle of law', that it applied to both the assessment and management of a risk, and that it informed the meaning and effect of Articles 5.1 and 5.2 of the WTO's Agreement on Sanitary and Phytosanitary Measures (the 'SPS Agreement').[258] The United States denied that the principle represented a principle of customary international law, and preferred to characterise it as an 'approach' the content of which may vary from context to context.[259] Canada referred to a precautionary approach as 'an emerging principle of international law, which may in the future crystallize into one of the "general principles of law recognized by civilized nations", within the meaning of Article 38(1)(c) of the ICJ Statute'.[260] The WTO Appellate Body agreed with the United States and Canada that the precautionary principle did not override Articles 5.1 and 5.2 of the SPS Agreement, although it considered that it was reflected in the preamble to and Articles 3.3 and 5.7 of the SPS Agreement, which did not exhaust the relevance of the principle.[261] Recognising that the status of the principle in international law was the subject of continued debate, and that it was regarded

[257] See generally T. Christoforou, 'Science, Law and Precaution in Dispute Resolution on Health and Environmental Protection: What Role for Scientific Experts?', in J. Bourrinet and S. Maljean-Dubois (eds.), *Le Commerce international des organismes génétiquement modifiés* (2002).

[258] Chapter 19, pp. 979–81 below; see Report of the Appellate Body, 16 January 1998, WT/DS48/AB/R, at para. 16.

[259] *Ibid.*, para. 43. The United States stated that the SPS Agreement recognised a precautionary approach (in its Article 5.7) so there was no need to invoke a 'precautionary principle' to be risk-averse.

[260] *Ibid.*, para. 60.

[261] *Ibid.*, para. 124 ('a panel charged with determining . . . whether "sufficient scientific evidence" exists to warrant the maintenance by a Member of a particular SPS measure may, of course, and should, bear in mind that responsible, representative governments commonly act from perspectives of prudence and precaution where risks of irreversible, e.g. life-terminating, damage to human health are concerned'). The Appellate Body went on to state that 'responsible and representative governments may act in good faith on the basis of what, at a given time, may be a divergent opinion coming from qualified and respected sources' (para. 194), a view endorsed in *EC – Asbestos* (Appellate Body Report, 12 March 2001, at para. 178), and adding '[i]n justifying a measure under Article XX(b) of the GATT 1994, a Member may also rely, in good faith, on scientific sources which, at that time, may represent a divergent, but qualified and respected, opinion. A Member is not obliged, in setting health policy, automatically to follow what, at a given time, may constitute a majority scientific opinion.'

by some as having crystallised into a general principle of customary international environmental law, the Appellate Body said:

> Whether it has been widely accepted by Members as a principle of general or customary international law appears less than clear. We consider, however, that it is unnecessary, and probably imprudent, for the Appellate Body in this appeal to take a position on this important, but abstract, question. We note that the Panel itself did not make any definitive finding with regard to the status of the precautionary principle in international law and that the precautionary principle, at least outside the field of international environmental law, still awaits authoritative formulation.[262]

The principle has also been raised before other courts, such as the European Court of Human Rights. In *Balmer-Schafroth* v. *Switzerland*, the applicants claimed that the failure of Switzerland to provide for administrative review of a decision extending the operation of a nuclear facility violated Article 6 of the European Convention on Human Rights.[263] The claim was rejected by the majority, because the connection between the government's decision and the applicants' right was too remote and tenuous. The Court ruled that they had failed to

> establish a direct link between the operating conditions of the power station . . . and their right to protection of their physical integrity, as they failed to show that the operation of Mühleberg power station exposed them personally to a danger that was not only serious but also specific and, above all, imminent. In the absence of such a finding, the effects on the population of the measures which the Federal Council could have ordered to be taken in the instant case therefore remained hypothetical. Consequently, neither the dangers nor the remedies were established with a degree of probability that made the outcome of the proceedings directly decisive.[264]

A dissenting opinion by seven judges, however, criticised this finding, on the grounds that it 'ignored the whole trend of international institutions and public international law towards protecting persons and heritage, as evident [*inter alia*] in . . . the development of the precautionary principle'.[265] At the national level, there have also been several decisions addressing the status of the precautionary

[262] *Ibid.*, para. 123. The Appellate Body noted that in the *Gabcikovo-Nagymaros* case, the ICJ had not identified the precautionary principle as a recently developed norm in the field of environmental protection, and had declined to declare that such principle could override the obligations of the 1977 Treaty: *ibid.*, n. 93.

[263] Judgment of 26 July 1987, *European Court of Human Rights Reports*-IV. Art. 6 of the Convention provides that: 'In the determination of his civil rights and obligations . . . everyone is entitled to a fair . . . hearing . . . by [a] . . . tribunal . . .'

[264] *Ibid.*, para. 40.

[265] Dissenting Opinion of Judge Pettiti, joined by Judges Golcukul, Walsh, Russo, Valticos, Lopes Rocha and Jambrek.

principle in international law. In *Vellore*, for example, the Indian Supreme Court ruled that the precautionary principle was an essential feature of 'sustainable development' and as such part of customary international law.[266] By contrast, a United States federal court appears more restrained in its approach, holding that the principle was not yet established in customary international law so as to give rise to a cause of action under the Alien Tort Claims Statute.[267]

The legal status of the precautionary principle is evolving. There is certainly sufficient evidence of state practice to support the conclusion that the principle, as elaborated in Principle 15 of the Rio Declaration and various international conventions, has now received sufficiently broad support to allow a strong argument to be made that it reflects a principle of customary law, and that within the context of the European Union it has now achieved customary status, without prejudice to the precise consequences of its application in any given case. Nevertheless, it must be recognised that international courts and tribunals have been reluctant to accept explicitly that the principle has a customary international law status, notwithstanding the preponderance of support in favour of that view, and diminishing opposition to it. The reluctance may be understandable, in view of its inherently commonsensical approach, even if the practical consequences of its application fall to be determined on a case-by-case basis.[268]

Polluter-pays principle

OECD, *The Polluter-Pays Principle* (1975); H. Smets, 'A Propos d'un ventuel principe pollueur-payeur en matière de pollution transfrontière', 8 *Environmental Policy and Law* 40 (1982); S. E. Gaines, 'The Polluter-Pays Principle: From Economic Equity to Environmental Ethos', 26 *Texas International Law Journal* 463 (1991); R. Romi, 'Le Principe pollueur-payeur, ses implications et ses applications', 8 *Droit de l'environnement* 46 (1991); H. J. Kim, 'Subsidy, Polluter-Pays Principle and Financial Assistance Among Countries', 34 JWTL 115 (2000).

The polluter-pays principle establishes the requirement that the costs of pollution should be borne by the person responsible for causing the pollution. The

[266] *Vellore Citizens' Welfare Forum* v. *Union of India and Others*, Writ Petition (C) No. 914 of 1991 (Kuldip Singh and Faizanuddin JJ), Judgment of 28 August 1996, paras. 10, 11 and 15. Cf. *Narmada Bachao Andolan* v. *Union of India and Others*, Supreme Court of India, Judgment of 18 October 2000 (www.narmada.org/sardar-sarovar/sc.ruling/majority.judgment.doc).

[267] *Beanal* v. *Freeport-Mcmoran*, 969 F Supp 362 at 384 (US District Court for Eastern District of Louisiana, 9 April 1997) ('the principle does not constitute [an] international tort for which there is universal consensus in the international community as to [its] binding status and [its] content'); affirmed 197 F 3d 161 (US Court of Appeals for the Fifth Circuit, 29 November 1999).

[268] In this sense, see Separate Opinion of Judge Treves, n. 251 above para. 9.

meaning of the principle, and its application to particular cases and situations, remains open to interpretation, particularly in relation to the nature and extent of the costs included and the circumstances in which the principle will, perhaps exceptionally, not apply. The principle has nevertheless attracted broad support, and is closely related to the rules governing civil and state liability for environmental damage (as described in chapter 18 below), the permissibility of certain forms of state subsidies, and the recent acknowledgment in various instruments by developed countries of the 'responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment', as well as the financial and other consequences that flow from this acknowledgment.[269] The practical implications of the polluter-pays principle are in its allocation of economic obligations in relation to environmentally damaging activities, particularly in relation to liability,[270] the use of economic instruments, and the application of rules relating to competition and subsidy.[271]

The polluter-pays principle has not received the same degree of support or attention accorded over the years to the principle of preventive action, or the attention more recently accorded to the precautionary principle, although its use is now being taken up in other regional agreements.[272] It is doubtful whether it has achieved the status of a generally applicable rule of customary international law, except perhaps in relation to states in the EC, the UNECE and the OECD. The strong objections of some countries to the further development of the polluter-pays principle, particularly for international relations, is evident from the compromise language adopted by Principle 16 of the Rio Declaration, which provides that:

> National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the costs of pollution, with due regard to the public interests and, without distorting international trade and investment.

This text, which falls short of the more specific language of EC, OECD and UNECE instruments, includes language which limits the extent of any obligation which might apply to states.[273] This derives, at least in part, from the view held by a number of states, both developed and developing, that the

[269] 1992 Rio Declaration, Principle 7.
[270] See Institut de Droit International, Resolution on Responsibility and Liability under International Law for Environmental Damage, Art. 13, 37 ILM 1473 (1998).
[271] See respectively chapters 18, pp. 904–38 below; chapter 4, pp. 158–67 above; and chapter 19, pp. 1010–17 below.
[272] See e.g. 2002 North-East Pacific Convention, Art. 5(6)(b).
[273] See WSSD Plan of Implementation, para. 14(b).

polluter-pays principle is applicable at the domestic level but does not govern relations or responsibilities between states at the international level.

The polluter-pays principle in treaty law can be traced back to some of the first instruments establishing minimum rules on civil liability for damage resulting from hazardous activities. The conventions on civil liability for nuclear damage, the 1960 Paris Convention and the 1963 IAEA Liability Convention,[274] were influenced by the desire to channel compensation from those responsible for the activity causing damage to the victims. Under the 1969 CLC, however, the shipowner is precluded from relying on the limitation of liability if the incident occurred as a result of his actual fault or privity.[275] Similarly, the Preamble to the 1971 Oil Fund Convention reflects the consideration that the economic consequences of oil pollution damage should be borne by the shipping industry and oil cargo interests.[276]

OECD

The first international instrument to refer expressly to the polluter-pays principle was the 1972 OECD Council Recommendation on Guiding Principles Concerning the International Economic Aspects of Environmental Policies, which endorsed the polluter-pays principle to allocate costs of pollution prevention and control measures to encourage rational use of environmental resources and avoid distortions in international trade and investment.[277] The Recommendation defined the principle in a limited sense to mean that the polluter should bear the expenses of carrying out the measures deemed necessary by public authorities to protect the environment:

> In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. Such measures should not be accompanied by subsidies that would create significant distortions in international trade and investment.[278]

The 1972 Recommendation does not, on the face of it, apply to the costs of environmental damage. In 1974, the OECD Council adopted a further Recommendation on the Implementation of the Polluter-Pays Principle which reaffirmed that the principle constituted a 'fundamental principle' for member countries, that aid given for new pollution control technologies and the

[274] Chapter 18, pp. 905–12 below.
[275] Art V(2), chapter 18, pp. 913–15 below; see also 1977 Civil Liability for Oil Pollution Convention, Art. 6(4).
[276] Chapter 18, pp. 915–22 below.
[277] OECD Council Recommendation C(72)128 (1972), 14 ILM 236 (1975).
[278] *Ibid.*, Annex, para. A.4. The Council further recommended that 'as a general rule, Member countries should not assist the polluters in bearing the costs of pollution control whether by means of subsidies, tax advantages or other measures'.

development of new pollution abatement equipment was not necessarily incompatible with the principle, and that member countries should strive for uniform observance of the principle.[279] The 1989 OECD Council Recommendation on the Application of the Polluter-Pays Principle to Accidental Pollution extends the principle to imply that the operator of a hazardous installation should bear the cost of reasonable measures to prevent and control accidental pollution from that installation which are introduced by public authorities in conformity with domestic law prior to the occurrence of an accident.[280] According to the Recommendation, however, this does not necessarily require that 'the costs of reasonable measures to control accidental pollution after an accident should be collected as expeditiously as possible from the legal or natural person who is at the origin of the accident'. Such a domestic legal requirement is merely 'consistent with', rather than implied by, the principle.[281] Examples of specific applications of the polluter-pays principle cited by the 1989 Recommendation include adjusting fees or taxes payable by hazardous installations to cover more fully the cost of certain exceptional measures taken by public authorities to prevent and control accidental pollution, and charging to the polluter the cost of reasonable pollution control measures decided on by public authorities following an accident to avoid the spread of environmental damage and limit the release of hazardous substances (by ceasing emissions at the plant), the pollution as such (by cleaning or decontamination), or its ecological effects (by rehabilitating the polluted environment).[282] The Recommendation also provides guidance on 'reasonable' measures: they depend on 'the circumstances under which they are implemented, the nature and extent of the measures, the threats and hazard existing when the decision is taken, the laws and regulations in force, and the interests which must be protected'.[283] The Recommendation cites certain exceptions to the principle, including the need for rapid implementation of stringent measures for accident prevention (provided this does not lead to significant distortions in international trade and investment), or if strict and prompt implementation of the principle would lead to severe socio-economic consequences.[284] The application of the principle does not affect the possibility under domestic law of requiring the operator to pay other costs

[279] C(74)223 (1974), paras. I(1), II(3) and III(1), 14 ILM 234 (1975).

[280] C(89)88 (Final), 28 ILM 1320 (1989); Appendix Guiding Principles Relating to Accidental Pollution, para. 4; these are measures taken to prevent accidents in specific installations and to limit their consequences for human health and the environment, including safety measures, emergency plans, carrying out clean-up operations and minimising ecological effects, but not including humanitarian measures or measures to compensate victims for economic consequences: para. 8.

[281] Para. 5.

[282] Paras. 10 and 11; pooling by operators of certain financial risks is considered to be 'consistent' with the Principle: para. 13.

[283] Para. 12. [284] Paras. 14 and 15.

connected with the public authorities' response to an accident, or compensation for future costs of the accident.[285]

European Community

The polluter-pays principle is also established under EC law. The EC adopted the principle in its first programme of action on the environment in 1973.[286] Two years later, the EC Council adopted a Recommendation regarding cost allocation and action by public authorities on environmental matters which recommended that the EC at Community level and the member states in their national environmental legislation must apply the polluter-pays principle, according to which

> natural or legal persons governed by public or private law who are responsible for pollution must pay the costs of such measures as are necessary to eliminate that pollution or to reduce it so as to comply with the standards or equivalent measures laid down by the public authorities.[287]

This formulation is broader than early OECD recommendations in respect of the costs which might be covered by the principle. The EC Council Recommendation, which is not legally binding, identifies standards and charges as the major instruments of action available to public authorities for the avoidance of pollution, allows certain exceptions to the principle, and says which acts will not be considered to be contrary to the principle.[288] In 1986, the EEC Treaty was amended to provide that EC action relating to the environment shall be based on the principle that 'the polluter should pay'.[289] In 1992, the EC member states and EFTA member countries agreed that action by the parties was to be based on the principle that 'the polluter should pay'.[290] A number of acts of EC secondary legislation also refer to, or incorporate, the principle,[291] and the ECJ

[285] Para. 16. [286] OJ C112, 20 December 1973, 1.

[287] Council Recommendation 75/436/EURATOM, ECSC, EEC of 3 March 1975, Annex, para. 2; OJ L169, 29 June 1987, 1.

[288] Paras. 5–7.

[289] 1957 EEC Treaty (as amended) (formerly Art. 130r(2)); see also former Art. 130(s)(5) of the EEC Treaty as amended by the 1992 Maastricht Treaty, allowing for temporary derogations and/or financial support 'without prejudice to the principle that the polluter should pay'. See now Arts. 174(2) and 175(5) of the EC Treaty as amended by the 1997 Amsterdam Treaty.

[290] 1992 EEA Agreement, Art. 73(2).

[291] See e.g. Directive 75/442, Art. 15 (waste); Directive 94/67, Preamble (incineration of hazardous waste); Directive 2000/59, Preamble (port reception facilities for ship-generated waste and cargo residues); Directive 2000/60, Art. 9 (water framework); Decision 2850/2000, Preamble (co-operation in the field of accidental or deliberate marine pollution); the new regulations on Structural Funds, the revised Cohesion Fund and the pre-accession instrument (ISPA) include provisions to apply the principle to the

has occasionally considered its practical implications.[292] The principle has also been applied by the European Commission in relation to state aid.[293]

The polluter-pays principle, or variations thereof, as stated in the OECD and EC instruments, has also been referred to or adopted in other environmental treaties, including the 1985 ASEAN Convention,[294] the 1991 Alps Convention.[295] the 1992 UNECE Transboundary Waters Convention,[296] the 1992 OSPAR Convention,[297] the 1992 Baltic Sea Convention,[298] the 1994 Danube Convention,[299] the 1994 Energy Charter Treaty[300] and certain EC Directives.[301] The 1990 Oil Pollution Preparedness Convention and the 1992 Industrial Accidents Convention describe the polluter-pays principle as 'a general principle of international environmental law'.[302] The increased attention being paid to the polluter-pays principle results, in part, from the greater consideration being given to the relationship between environmental protection and economic development, as well as recent efforts to develop the use of economic instruments in environmental protection law and policy.[303] This is likely to lead to clarification and further definitions of the polluter-pays principle, particularly in relation to two issues.

operations of the funds (see Arts. 26 and 29(1)(c) of Council Regulation (EC) 1260/1999 laying down general provisions on the Structural Funds; Art. 7(1) of Council Regulation (EC) 1264/1999 amending Regulation (EC) 1164/94 establishing a Cohesion Fund; Art. 6(2)(c) of Council Regulation (EC) 1267/1999 establishing an Instrument for Structural Policies for Pre-Accession). See generally EC Commission, Application of the Polluter Pays Principle, 6 December 1999.

[292] See e.g. Case C-293/97, *R.* v. *Secretary of State for the Environment and Ministry of Agriculture, Fisheries and Food, ex parte H.A. Standley and Others and D.G.D. Metson and Others* [1999] ECR I-2603, paras. 51–2 (the polluter-pays principle reflects a principle of proportionality, and does not mean that farmers must take on burdens for the elimination of pollution to which they have not contributed).

[293] See European Commission, Community Guidelines on State Aid for Environmental Protection, 2001 OJ C37; chapter 20, p. 1029 below. For its application, see e.g. Commission Decision 1999/272, 1999 OJ L109 ('it is clearly not compatible with the "polluter pays" principle enshrined in Article 130r of the EC Treaty that a polluter should sell his contaminated land to one of his firms in order to avoid the clean-up costs, that the firm responsible for the contamination should file for bankruptcy and that the business activity should be carried on by the newly established firm').

[294] Art. 10(d). [295] Art. 2(1) (the parties respect the polluter-pays principle).

[296] Art. 2(5)(b) (the parties shall be guided by the polluter-pays principle 'by virtue of which costs of pollution prevention, control and reduction measures shall be borne by the polluter').

[297] Art. 2(2)(b) (the parties 'shall apply . . . the polluter-pays principle').

[298] Art. 3(4) (the parties 'shall apply the polluter-pays principle'). See also 1993 Lugano Convention, Preamble; 1994 Agreement on the Protection of the River Meuse, Art. 3(2)(d), 34 ILM 851 (1995); 1996 Protocol to the 1972 London Convention, Art. 3(2).

[299] Art. 2(4). [300] Art. 19(1).

[301] See e.g. Council Directive 1999/31/EC on the landfill of waste, Art. 10; chapter 13, p. 687 below.

[302] Preamble. [303] Chapter 4, pp. 158–67 above.

The first concerns the extent of the pollution control costs which should be paid by the polluter. Although it seems clear that the principle includes costs of measures required by public authorities to prevent and control pollution, it is less clear whether the costs of decontamination, clean-up and reinstatement would be included. State practice does not support the view that all the costs of pollution should be borne by the polluter, particularly in inter-state relations.[304] The second issue concerns exceptions to the principle, particularly in relation to rules governing the granting of subsidies. In this regard, consideration should be given to the practice of the EC and account taken of the potential role of the WTO in determining the impact of the polluter-pays principle on its subsidies rules.[305]

Principle of common but differentiated responsibility

C. Kiss, 'La Notion de patrimoine commun de l'humanité', 175 RdC 99 (1982); B. Larschan and B. C. Brennan, 'Common Heritage of Mankind Principle in International Law', 21 *Columbia Journal of Transnational Law* 305 (1983); D. Magraw, 'Legal Treatment of Developing Countries: Differential Contextual and Absolute Norms', 1 *Colorado Journal of International Environmental Law and Policy* 69 (1990); D. Attard, *Proceedings of the Meeting of the Group of Legal Experts to Examine the Concept of the Common Concern of Mankind in Relation to Global Environmental Issues* (UNEP, 1991); F. Biermann, 'Common Concern of Humankind: The Emergence of a New Concept of International Environmental Law', 34 *Archiv der Volkerrechts* 426 (1996); D. French, 'Developing States and International Environmental Law: The Importance of Differentiated Responsibilities', 49 ICLQ 35 (2000).

The principle of common but differentiated responsibility has developed from the application of equity in general international law, and 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 thus:

> States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, states have common but differentiated responsibilities. The developed countries

[304] See generally chapter 18, pp. 890–4 below; examples include the Chernobyl accident and the 1976 Rhine Chloride Convention, which allocates the costs of pollution abatement between the polluters (66 per cent) and the victim (34 per cent): see chapter 10, pp. 478–82 below.

[305] GATT Dispute Settlement Panel, *US – Chemicals Tax* case (1987), holding that GATT rules on tax adjustment allow contracting parties to apply the polluter-pays principle but do not require it: chapter 19, p. 953 below.

> 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.

Similar language exists in the 1992 Climate Change Convention, 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'.[306]

The principle of common but differentiated responsibility includes two elements. The first concerns the common responsibility of states for the protection of the environment, or parts of it, at the national, regional and global levels. The second concerns 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 prevent, reduce and control the threat. In practical terms, the application of the principle of common but differentiated responsibility has at least two consequences. First, it entitles, or may require, all concerned states to participate in international response measures aimed at addressing environmental problems. Secondly, it leads to environmental standards which impose differing obligations on states. Despite its recent emergence in the current formulation, the principle of common but differentiated responsibility finds its roots prior to UNCED and is supported by state practice at the regional and global levels.

Common responsibility

Common responsibility describes the shared obligations of two or more states towards the protection of a particular environmental resource, taking into account its relevant characteristics and nature, physical location, and historic usage associated with it. Natural resources can be the 'property' of a single state, or a 'shared natural resource', or subject to a common legal interest, or the property of no state. Common responsibility is likely to apply where the resource is not the property of, or under the exclusive jurisdiction of, a single state.

As early as 1949, tuna and other fish were 'of common concern' to the parties to the relevant treaties by reason of their continued exploitation by those parties.[307] Outer space and the moon, on the other hand, are the 'province of all mankind';[308] waterfowl are 'an international resource';[309] natural and cultural heritage is 'part of the world heritage of mankind as a whole';[310] the

[306] Art. 3(1). [307] 1949 Inter-American Tropical Tuna Convention, Preamble.
[308] 1967 Outer Space Treaty, Art. 1. [309] 1971 Wetlands Convention, Preamble.
[310] 1972 World Heritage Convention, Preamble.

conservation of wild animals is 'for the good of mankind';[311] the resources of the seabed, ocean floor and subsoil are 'the common heritage of mankind';[312] and plant genetic resources have been defined as 'a heritage of mankind'.[313] Recent state practice supports the emergence of the concept of 'common concern', as reflected in the 1992 Climate Change Convention, which acknowledges that 'change in the Earth's climate and its adverse effects are a common concern of humankind',[314] and the 1992 Biodiversity Convention, which affirms that 'biological diversity is a common concern of humankind'.[315]

While each of these formulations differs, and must be understood and applied in the context of the circumstances in which they were adopted, these attributions of 'commonality' do share common consequences. Although state practice is inconclusive as to the precise legal nature and consequence of each formulation, certain legal responsibilities are attributable to all states in respect of these environmental media and natural resources in accordance with the attribution by treaty (or custom) of a particular legal characteristic. The legal interest includes a legal responsibility to prevent damage to it. While the extent and legal nature of that responsibility will differ for each resource and instrument, the responsibility of each state to prevent harm to them, in particular by the adoption of national environmental standards and international environmental obligations, can also differ.

Differentiated responsibility

The differentiated responsibility of states for the protection of the environment is widely accepted in treaty and other practice of states. It translates into differentiated environmental standards set on the basis of a range of factors, including special needs and circumstances, future economic development of developing countries, and historic contributions to causing an environmental problem.

The 1972 Stockholm Declaration emphasised 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'.[316] The 1974 Charter of Economic Rights and Duties of States makes the same point in more precise terms: 'The environmental policies of all states

[311] 1979 Bonn Convention, Preamble.
[312] UNGA Res. 2749 (XXV) of 17 December 1970; 1982 UNCLOS, Preamble (and now the 1994 Agreement Relating to the Implementation of Part XI of UNCLOS).
[313] 1983 FAO Plant Genetics Undertaking, Art. 1; see chapter 11, p. 552 below.
[314] Preamble. See also UNGA Res. 43/53 (1988), 44/207 (1989) and 45/212 (1990), 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'.
[315] Preamble. [316] Principle 23.

should enhance and not adversely affect the present and future development potential of developing countries.'[317] In the Rio Declaration, the international community agreed that '[e]nvironmental standards. management objectives and priorities should reflect the environmental and developmental context to which they apply', and that 'the special situation of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority'.[318] The distinction is often made between the capacities of developing countries and their needs.

The differentiated approach is reflected in many treaties. Under the 1972 London Convention, the measures required are to be adopted by parties 'according to their scientific, technical and economic capabilities'.[319] Other treaties identify the need to take account of states' 'capabilities',[320] or their 'economic capacity' and the 'need for economic development';[321] or the 'means at their disposal and their capabilities'.[322] The principle of differentiated responsibility has also been applied to treaties and other legal instruments applying to developed countries. Examples include the 1988 EC Large Combustion Directive, which sets different levels of emission reductions for each member state;[323] the 1991 VOC Protocol, which allows parties to specify one of three different ways to achieve reduction;[324] and the EC Treaty (as amended by the Maastricht 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 . . .[325]

The special *needs* of developing countries are expressly recognised in other instruments.[326] Account is to be taken of their 'circumstances and particular requirements',[327] or of their 'specific needs and special circumstances',[328] 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'.[329]

In practical terms, differentiated responsibility results in different legal obligations. The different techniques available to apply it include 'grace' periods delaying implementation, and less stringent commitments. 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.[330] Under the 1992 Climate Change Convention, the principle of 'common but differentiated responsibilities' requires specific commitments only for developed country parties and other developed parties, and allows differentials in reporting requirements.[331] The 1997 Kyoto Protocol applies the principle of 'differentiated responsibility' to OECD countries, setting a range of different targets depending upon states' historic contribution and capabilities.[332] 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.[333]

Conclusions

This chapter illustrates the extent to which the practice of states, international organisations and other members of the international community has given rise to a body of discrete principles and rules which may be of general application. Their legal status, their meaning and the consequences of their application to the facts of a particular case or activity remain open. There are several reasons for this. First, they have emerged over a relatively short period of time, some only within the past fifteen years. Secondly, each has emerged in the context of sharp differences of view as to what they mean in practice, and what they should mean. And, thirdly, the extent to which state practice interprets and applies these principles and rules is still evolving, and requires further consideration by reference to what states do both at the national level and in their international affairs. Nevertheless, rational arguments can be made in favour of each having significant legal consequences, and, as has been seen in the chapter, states and international courts and tribunals have increasingly been prepared to rely upon some of these principles and rules to justify their actions and to enable them to reach conclusions in their application of substantive legal obligations to

[317] Art. 30; UNGA Res. 3201 (1974).
[318] Principles 11 and 6; see also the 1992 Climate Change Convention, Preamble.
[319] Art. 11.
[320] 1981 Abidjan Convention, Art. 4(1).
[321] 1982 UNCLOS, Art. 207.
[322] 1985 Vienna Convention, Art. 2(2).
[323] Chapter 8, pp. 336–9 below.
[324] Chapter 8, pp. 329–32 below.
[325] Article 175(5), and former Article130s(5).
[326] 1976 Barcelona Convention, Art. 11(3); 1982 UNCLOS, Preamble.
[327] 1985 Vienna Convention, Preamble.
[328] 1992 Climate Change Convention, Art. 3(2) (policies and measures 'should be appropriate for the specific conditions of each Party and should be integrated with national development programmes': Art. 3(4)). See now the 1997 Kyoto Protocol, chapter 8, pp. 368–81 below.
[329] 1992 Biodiversity Convention, Preamble and Art. 20(4); see also 1992 Climate Change Convention, Art. 4(7).
[330] Art. 5(1); see also e.g. 1990 Amendments, Art. 1P.
[331] Arts. 4 and 12; see further the 1997 Kyoto Protocol, chapter 8, pp. 368–81 below.
[332] Chapter 8, pp. 368–81 below.
[333] Chapter 20, pp. 1021–37 below.

particular sets of facts. In some cases, such application has had far-reaching consequences, for example in the *Southern Bluefin Tuna* cases at the provisional measures phase.

The principles and rules of general application which have been described in this chapter provide a framework to shape the future development of international environmental law. Each is important and has its own particular role. Two principles currently seem particularly relevant, and are likely to play a critical role in determining whether international environmental obligations play a marginal or a central role in international affairs. The first is that element of the principle of sustainable development which requires environmental protection to be treated as 'an integral part of the development process and cannot be considered in isolation from it'. If any single provision of the Rio Declaration can contribute to the normative development of international environmental law, this is likely to be it. On the one hand, it can be considered to require all development decisions throughout the range of human economic activity to be subjected to critical environmental scrutiny. If applied in this way, the principle of sustainable development could extend the use of the substantive international environmental norms which have been established over the past three decades to inform decision-making by all states and international organisations, and result in a further reappraisal of the activities of organisations such as the WTO which increasingly, in the interpretation and application of their rules, have regard to legal developments beyond their own legal systems. The *Shrimp/Turtle* case indicates the potential for this approach. On the other hand, this aspect of the principle of sustainable development also requires economic and other development considerations to be taken into account in developing and applying those international environmental norms, providing the underlying basis for the emergence of the principle of differentiated responsibility.

The second critical principle is the precautionary principle, and its impact over time should not be understated. It has already been relied upon, as has been seen in this chapter, to require a shift in the burden of proof in cases concerning the conduct of certain especially hazardous activities. The extent to which it is applied at the international level will serve as a barometer to measure future developments in international environmental law. Some international courts have now been willing to apply the precautionary principle, and others have been willing to do so with stealth. It is surely only a matter of time before other courts follow suit.

7

Human rights and armed conflict

International human rights

C. Stone, *Should Trees Have Standing? Towards Legal Rights for Natural Objects* (1974); M. Uibopuu, 'The Internationally Guaranteed Right of an Individual to a Clean Environment', 1 *Comparative Law Yearbook* 101 (1977); W. Gormley, *Human Rights and the Environment: The Need for International Co-operation* (1976); J. Bryden, 'Environmental Rights in Theory and Practice', 62 *Minnesota Law Review* 163 (1978); P. Kromarek (ed.), *Environnement et droits de l'homme* (1987); W. Gormley, 'The Legal Obligation of the International Community to Guarantee a Pure and Decent Environment: The Expansion of Human Rights Norms', 3 *Georgetown International Environmental Law Review* 85 (1991); G. Alfredsson and A. Ovsiouk, 'Human Rights and the Environment', 60 *Nordic Journal of International Law* 19 (1991); I. Hodkova, 'Is There a Right to a Healthy Environment in the International Legal Order?', 7 *Connecticut Journal of International Law* 65 (1991); D. Shelton, 'Human Rights, Environmental Rights, and the Right to the Environment', 28 *Stanford Journal of International Law* 103 (1991); D. Shelton, 'What Happened in Rio to Human Rights?', 3 *Yearbook of International Environmental Law* 75 (1992); Human Rights Watch and National Resources Defense Council, *Defending the Earth: Abuses of Human Rights and the Environment* (1992); Sierra Club Legal Defense Fund, *Human Rights and the Environment: The Legal Basis for a Human Right to the Environment* (1992); A. Trindade (ed.), *Human Rights, Sustainable Development and the Environment* (1992); R. Desgagne, 'Integrating Environmental Values into the European Convention on Human Rights', 89 AJIL 263 (1995); A. Boyle and M. Anderson (eds.), *Human Rights Approaches to Environmental Protection* (1996); Earthjustice Legal Defense Fund, *Human Rights and the Environment* (2001).

Introduction

As it develops, international environmental law raises many issues already familiar to international human rights lawyers. In the environmental context, questions related to the existence and application of minimum international standards and the proper role of individuals and other non-governmental