

PART I

The legal and institutional framework

The environment and international society: issues, concepts and definitions

Given that the land – and the sea – and the air-spaces of planet Earth are shared, and are not naturally distributed among the states of the world, and given that world transforming activities, especially economic activities, can have effects directly or cumulatively, on large parts of the world environment, how can international law reconcile the inherent and fundamental interdependence of the world environment? How could legal control of activities adversely affecting the world environment be instituted, given that such activities may be fundamental to the economies of particular states?¹

The environmental challenge

[It is now widely recognised that the planet faces a diverse and growing range of environmental challenges which can only be addressed through international co-operation. Acid rain, ozone depletion, climate change, loss of biodiversity, toxic and hazardous products and wastes, pollution of rivers and depletion of freshwater resources are some of the issues which international law is being called upon to address. Since the mid-1980s, the early international legal developments which addressed aspects of the conservation of natural resources have crystallised into an important and growing part of public international law. The conditions which have contributed to the emergence of international environmental law are easily identified: environmental issues are accompanied by a recognition that ecological interdependence does not respect national boundaries and that issues previously considered to be matters of domestic concern have international implications. The implications, which may be bilateral, sub-regional, regional or global, can frequently only be addressed by international law and regulation.

The growth of international environmental issues is reflected in the large body of principles and rules of international environmental law which apply bilaterally, regionally and globally, and reflects international interdependence

¹ P. Allott, *Eunomia: A New Order for a New World* (1990), para. 17.52.

in a 'globalising' world.² Progress in developing international legal control of activities has been gradual, piecemeal and often reactive to particular incidents or the availability of new scientific evidence. It was not until the late nineteenth century that communities and states began to recognise the transboundary consequences of activities which affected shared rivers or which led to the destruction of wildlife, such as fur seals, in areas beyond national jurisdiction. In the 1930s, the transboundary consequences of air pollution were acknowledged in the litigation leading to the award of the arbitral tribunal in the *Trail Smelter* case. In the 1950s, the international community legislated on international oil pollution in the oceans. By the 1970s, the regional consequences of pollution and the destruction of flora and fauna were obvious, and by the late 1980s global environmental threats were part of the international community's agenda as scientific evidence identified the potential consequences of ozone depletion, climate change and loss of biodiversity. Local issues were recognised to have transboundary, then regional, and ultimately global consequences. In 1996, the International Court of Justice recognised, for the first time, that there existed rules of general international environmental law, and that a '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'.³ Since then, specific treaty rules have become more complex and technical, environmental issues have been increasingly integrated into other subject areas (including trade, investment, intellectual property, human rights, and armed conflict), and international environmental jurisprudence has become less exceptional as the case law of international courts and tribunals expands.

The 1992 UN Conference on Environment and Development (UNCED) provided an opportunity for the international community to prioritise environmental issues and consolidate a vast and unwieldy patchwork of international legal commitments. The treaties and other international acts adopted before, at and since UNCED reflect the growing range of economic activities which are a legitimate concern of the international community and properly subject to international legal regulation. UNCED agreed environmental priorities which were essentially divided into two categories: those relating to the protection of various environmental media, and those relating to the regulation of particular activities or products. The first category identified the following priorities for the protection and conservation of particular environmental media:

- protection of the atmosphere, in particular by combating climate change, ozone depletion and ground-level and transboundary air pollution;
- protection of land resources;
- halting deforestation;

² P. Sands, 'Turtles and Torturers: The Transformation of International Law', 33 NYUJILP 527-58 (2001).

³ (1996) ICJ Reports 226 at 242.

- conservation of biological diversity;
- protection of freshwater resources; and
- protection of oceans and seas (including coastal areas) and marine living resources.

The second category of major issues identified the products and by-products of human technological and industrial innovation which are considered to be particularly harmful to the environment, and which therefore require international regulation. These include:

- biotechnology;
- toxic chemicals, including their international trade;
- agricultural practices;
- hazardous wastes, including their international trade;
- solid wastes and sewage-related issues; and
- radioactive wastes.

For both categories, the international legal issues are complex, and cannot be considered or addressed properly without taking account of political, cultural, economic and scientific concerns. What level of environmental protection should those standards seek to establish? Should the standards be set on a uniform basis or should they be differentiated to take account of political, economic and ecological circumstances? What regulatory and other techniques exist to apply those standards? How are the standards to be enforced domestically and internationally? What happens if a dispute arises over non-compliance?

In addressing these questions, it is clear that the environment represents a complex system of interconnections, that to understand the evolution and character of a particular environment it is necessary to consider a broad range of apparently unrelated factors, and that these factors should be understood as interacting with each other in a number of ways which do not permit them to be treated as discrete.⁴ The interdependence of environmental issues poses legal challenges: how to develop and apply a comprehensive and effective set of legal requirements aimed at preventing environmental damage by addressing the sources without taking measures which will cause harm elsewhere? Current efforts to develop environmentally-sound energy policies reflect the full extent of this challenge, and require international law-making to respond to environmental complexity.

The basis for decision-making: science, economics and other values

International environmental law is influenced by a range of non-legal factors. The likelihood of achieving an agreement increases with: greater scientific consensus about the cause and seriousness of a problem; increased public concern;

⁴ A. Goudie, *The Nature of the Environment* (3rd edn, 1993), 367-8.

a perception on the part of the negotiating states that other partners are doing their 'fair' share to address the problem; an increase in short-term political benefits; and the existence of previous, related multilateral agreements.⁵ Factors which lessen the likelihood of reaching agreement include the upward costs of environmental controls and the increases in the number of states negotiating a treaty or other instrument. Other relevant considerations include the existence of appropriate international fora for the negotiation of the agreement and the nature of arrangements for dealing with non-compliance. Of all these factors, two have been particularly influential: the impact of science, and the economic costs. Since the first edition of this book, greater attention has also been given to other values, representing neither scientific nor economic considerations.

Science

The strong concern of states to ensure that their economic interests are taken into account in the development and application of international environmental law has been matched by an equally firm view that environmental regulations should only be adopted where there is compelling scientific evidence that action is required to prevent environmental damage. This has brought diplomats and international lawyers together with the scientific community in ways not often seen in other areas of international law. The ease with which an international lawyer is able to present a cogent case for international legislation will often turn upon the ability to show that the lack of action by the international community is likely to result in significant adverse effects. Within the past decade the task may have been made substantially less onerous by the broad acceptance and application of the precautionary principle, which provides a basis for action to be taken even in the face of significant scientific uncertainty. The 1985 Vienna Convention (and its 1987 Montreal Protocol), the 1992 Climate Change Convention (and its 1997 Kyoto Protocol), the 1995 Straddling Stocks Agreement and the 2000 Cartagena Protocol on Biosafety may be cited as examples of the numerous international environmental treaties establishing obligations in the face of scientific uncertainty and in the absence of an international consensus on the existence of environmental harm.⁶ To these may be added a series of international judicial decisions informed by 'prudence and caution'.⁷

Since the first edition of this book was published in 1995, the place of science in international environmental decision-making has been the subject of vigorous debate, largely focusing around competing claims concerning the lawfulness of restrictions on the use of, and international trade in, modified

⁵ R. Hahn and K. Richards, 'The Internationalisation of Environmental Regulation', 30 *Harvard International Law Journal* 421 at 433-40 (1989).

⁶ See chapter 6, pp. 266-79 below on the precautionary principle.

⁷ ITLOS. See chapter 10, pp. 469-77 and chapter 11, pp. 580-3 below.

foodstuffs, including genetically modified organisms. Disputes under various World Trade Organization (WTO) agreements (relating to beef hormones⁸ and asbestos⁹) and the negotiations leading to the adoption of the Cartagena Protocol on Biosafety¹⁰ have provided opportunities for an 'airing of states' views as to the degree of scientific evidence and certainty that is required to justify restrictions (as well as the economic and other implications of such decisions, and the extent to which non-scientific and non-economic considerations may be applied in decision-making, on which see below).¹¹ As to science, in large part the issues have been driven by differences of perspective between the United States and the European Union, with the former strongly in favour of decision-making which is based on 'hard science' and strictly limiting the circumstances in which restrictions may be permitted in the face of uncertainty as to consequences. The extent of the difference – and its implications for the legal order more generally – are reflected in views expressed by one official of the US State Department:

the increasing efforts from within the EU . . . could weaken the scientific basis for regulatory decisions that affect trade. This trend poses a challenge not only to US interests but also to the rules-based, global trading system that we have spent the past 50 years building.¹²

The contrary position – adopted by the European Union – would allow decision-makers a greater 'margin of appreciation' in the face of scientific uncertainty, and is reflected in its arguments to the WTO Appellate Body in the *Beef Hormones* case, and in its Communication on the use of the precautionary principle.¹³ The tension in the two approaches has not been resolved at the level of international legislation, and will fall to international adjudicators to determine on a case-by-case basis. The approaches of the International Court of Justice (in the *Gabcikovo-Nagymaros* case), the International Tribunal for the Law of the Sea (in the *Southern Bluefin Tuna* and *MOX* cases), the WTO Appellate Body (in the *Beef Hormones* case) and the European Patent Office (in the *Plant Genetic Systems* case) merit attention and comparison, indicating

⁸ See chapter 18, pp. 979–81 below.

⁹ See chapter 18, pp. 973–7 below.

¹⁰ See chapter 11, pp. 521–3 below.

¹¹ For an excellent overview, see 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).

¹² Quoted in M. Geistfeld, 'Reconciling Cost-Benefit Analysis with the Principle that Safety Matters More than Money', 76 *New York University Law Review* 114 at 176 (2001). The same article quotes an editorial in the *Wall Street Journal* (on 10 February 2000): 'The precautionary "principle" is an environmentalist neologism, invoked to trump scientific evidence and move directly to banning things they don't like – biotech, wireless technology, hydrocarbon emissions.'

¹³ Respectively at chapter 18, pp. 979–81; and chapter 6, pp. 266–79.

a reluctance to move away from traditional approaches, but tempered with a growing recognition as to some appropriate role for precautionary measures.¹⁴ Of particular note, in this regard, is the recognition of a greater rôle for early 'risk assessment', beyond traditional use of environmental impact assessment.¹⁵

Economics

The progress of international environmental law reflects the close relationship between environmental protection and economic development. Over the short term, laws adopted to protect the environment can impose potentially significant economic costs. Moreover, certain developed countries will be well placed to benefit from the adoption of stringent environmental standards, including the advantages gained from the sale of environmentally sound technology, while others will be concerned about the threat to their economic competitiveness which results from the failure of other countries to adopt similar stringent standards and may, some argue, relax their environmental standards.¹⁶

Most environmental treaties do not provide for financial resources to be made available to compensate for the additional costs of protective measures, partly because, it must be said, at the time of their negotiation their economic consequences were not fully considered. The Convention on the International Trade in Endangered Species (CITES), for example, did not provide compensation to African states for the loss of revenue resulting from the 1989 ban on international trade in ivory. This may have limited the desire of many developing countries to support similar measures subsequently. There is also concern that the move towards harmonisation might lead to a lowering of environmental standards to ensure that economic costs can be borne, as reflected in efforts to introduce a principle of 'cost-effectiveness' to guide decision-making under some environmental agreements.¹⁷ Accordingly, some treaties, such as the EC Treaty (as amended since 1992), required certain EC secondary legislation to include a safeguard clause which allows member states to adopt provisional measures for 'non-economic environmental reasons'.¹⁸

¹⁴ Respectively at chapter 10, pp. 469–77; chapter 11, pp. 580–1; chapter 6, p. 276; chapter 19, pp. 979–81; and chapter 20, p. 1048.

¹⁵ See e.g. 2000 Biosafety Protocol, chapter 12, pp. 653–8; 1998 Chemicals Convention, chapter 12, pp. 635–6.

¹⁶ See D. Esty, 'Revitalizing Environmental Federalism', 95 *Michigan Law Review* 570 (1996). For a compelling alternative view, see R. Revesz, 'Rehabilitating Interstate Competition: Rethinking the "Race to the Bottom" Rationale for Federal Environmental Regulation', 67 *New York University Environmental Law Review* 1210 (1992) and R. Revesz, 'The Race to the Bottom and Federal Environmental Regulation: A Response to Critics', 82 *Minnesota Law Review* 535 (1997). In the context of the NAFTA rules on direct foreign investment, and the failed OECD negotiation for a Multilateral Agreement on Investment, see chapter 20, pp. 1058–64.

¹⁷ 1992 Climate Change Convention, Art. 3.

¹⁸ Chapter 15, pp. 734–54.

It is hardly surprising, therefore, that in recent years environmental concerns have become interconnected with economic considerations. Aside from the question of the potential use of economic instruments to achieve environmental objectives,¹⁹ two issues have become particularly acute in recent negotiations. Developing countries have sought to make their acceptance of environmental obligations dependent upon the provision of financial assistance, and some developed countries, in order to prevent the competitive economic advantages which might flow from non-compliance, have striven to ensure that environmental treaties establish effective institutions to verify and ensure that the contracting parties comply with their environmental obligations.

These two features have resulted in environmental treaties breaking new ground in the development of international legal techniques. Some environmental treaties, such as the 1987 Montreal Protocol, the 1992 Climate Change Convention, the 1992 Biodiversity Convention and the 2001 POPs Convention, now provide for 'compensatory' finance to be made available to developing countries to enable them to meet certain 'incremental costs' of implementing their obligations, and provide for subsidiary bodies to verify compliance and implementation. This linkage has in turn led to the creation of specialised funding arrangements within existing institutions, in particular the World Bank and the regional development banks, such as the Global Environment Facility (GEF).²⁰

The integration of environmental protection and economic development could make international environmental law less marginal. On the other hand, the integration of environmental concerns into international economic arrangements may merely serve to subsume environmental considerations and perpetuate an approach to international economic practices and arrangements which may encourage certain environmental problems. This concern refers to the integration of environment and development which has led to the emergence of the concept of sustainable development, now reflected in many international instruments²¹ and the decisions of some international courts.²²

Other social objectives

Science and economics are not the only factors which influence international environmental decision-making, or international adjudication of decisions premised on environmental arguments. Within the past five years, there has been increasing recognition of a place for social and other values as legitimate factors influencing environmental decision-making. This is reflected, initially,

¹⁹ Chapter 4, pp. 158–67.

²⁰ Chapter 20, pp. 1032–4.

²¹ Chapter 6, pp. 252–66.

²² E.g. the ICJ in the *Case Concerning the Gabčíkovo-Nagymaros Project* (1997) ICJ Reports 7, at para. 140 (chapter 10, pp. 469–77); the WTO Appellate Body, in the *Shrimp/Turtle* case, chapter 19, pp. 965–73.

in the EC rules which emerged in 1992 to permit (on a temporary basis) exceptional measures based on non-economic considerations (see above), which were relied upon (in Directive 90/220) by some EC member states to justify temporary bans on the placing on the market of genetically modified maize and oil rapeseed products.²³ More recently, however, it has been taken up in other contexts. The 2000 Biosafety Protocol allows parties, in reaching decisions under the Protocol, to

take into account, consistent with their international obligations, socio-economic considerations arising from the impact of living modified organisms on the conservation and sustainable use of biological diversity, especially with regard to the value of biological diversity to indigenous and local communities.²⁴

In a similar vein, in its decision in the *Asbestos* case, also in 2000, the WTO Appellate Body confirmed that an importing state was entitled to take into account (among other factors) consumer tastes and habits in respect of a particular product in order to determine whether it was 'like' another product.²⁵ This recognises, apparently for the first time, that the characteristics of a product go beyond economic and physical (scientific) considerations.

Sustainable development

The concept of sustainable development may be found expressly or implicitly in many environmental treaties and other instruments in the period prior to the publication of the Brundtland Report in 1987.²⁶ Nevertheless, the Brundtland Report is commonly viewed as the point at which sustainable development became a broad global policy objective and set the international community on the path which led to UNCED and the body of rules referred to as 'international law in the field of sustainable development',²⁷ but distinguished from international environmental law.²⁸ Is there any difference between international law in the field of sustainable development and international environmental law?

The Brundtland Report defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Two key concepts are contained within this definition: the concept of needs, in particular the essential needs of the present generation, and the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present

²³ Chapter 12, pp. 658–62.

²⁴ Art. 26(1); see R. H. Khawa, 'Socio-Economic Considerations', in C. Bail, R. Falkner and H. Marquard, *The Cartagena Protocol on Biosafety* (2002), 361.

²⁵ Chapter 19, pp. 973–7. ²⁶ Chapter 6, pp. 260–1, notes 166–82.

²⁷ Rio Declaration, Principle 27; Agenda 21, Chapter 39, para. 39.1.

²⁸ UNGA Res. 44/228 (1989), para. 15(e); Agenda 21, paras. 39.1(a) and 39.2.

and future needs.²⁹ The Brundtland Report identified critical objectives for environment and development policies reflected in the concept of sustainable development:

- reviving growth and changing its quality;
- meeting essential needs for jobs, food, energy, water and sanitation;
- ensuring a sustainable level of population;
- conserving and enhancing the resource base;
- reorienting technology and managing risk; and
- merging environment and economics in decision-making.³⁰

The forty chapters of Agenda 21 elaborate upon these issues. Taken together they constitute the framework for international law in the field of sustainable development, now confirmed as an international legal term by the ICJ in the *Gabcikovo-Nagymaros* case and as having practical legal consequences by the WTO Appellate Body in the *Shrimp/Turtle* case.³¹ Agenda 21 has been confirmed and, to a limited extent, taken a step further by the Plan of Implementation adopted by the World Summit on Sustainable Development, in September 2002. Only fourteen chapters of Agenda 21 address issues which are primarily 'environmental', and they provide the subject matter of this book. The international law of sustainable development is therefore broader than international environmental law; apart from environmental issues, it includes the social and economic dimension of development, the participatory role of major groups, and financial and other means of implementation.³² International environmental law is part of the international law of sustainable development, but is narrower in scope. And, as will be seen in subsequent chapters, the integration of environmental considerations with other social objectives has led to the development of a human rights/environment jurisprudence³³ and the integration of environment into matters such as armed conflict and criminal law (reflected, in a limited way, in the Statute of the International Criminal Court).³⁴

The international legal order

Environmental issues pose challenges for the traditional international legal order, in at least three ways. They pose challenges, first, for the legislative, administrative and adjudicative functions of international law; secondly, for the manner in which international legal arrangements are currently organised (i.e.

²⁹ WCED, *Our Common Future* (1987), 43. ³⁰ *Ibid.*, 49–65.

³¹ Chapter 6, pp. 252–66. See generally P. Sands, 'International Courts and the Application of the Concept of "Sustainable Development"', 3 *Max Planck Yearbook of United Nations Law* 389–407 (1999).

³² Sections I, III and IV of Agenda 21. ³³ Chapter 7, pp. 291–307.

³⁴ Chapter 18, pp. 894–6.

along territorial lines); and, thirdly, for the various actors who are considered to be members of the international community and participants in the various processes and practices of the international legal order.³⁵ The ability of the international legal order to address these three aspects, in the context of environmental issues, will determine whether international law is up to the task of taking on these new global challenges, or whether it will become 'the faithful friend of a family overtaken by time'.³⁶ It remains to be seen whether a diminishing conception of sovereignty in the face of a more assertive international judiciary, together with a more inclusive, accessible and diverse international legal order, leads to any greater protection of the environment.³⁷

✓ *The functions of international law*

International law and institutions serve as the principal framework for international co-operation and collaboration between members of the international community in their efforts to protect the local, regional and global environment. At each level, the task becomes progressively more complex as new actors and interests are drawn into the legal process: whereas just two states negotiated the nineteenth-century fishery conservation conventions, more than 150 states negotiated the 1992 Climate Change Convention and the 2000 Biosafety Protocol.

In both cases, however, the principles and rules of public international law and international organisations serve similar functions: to provide a framework within which the various members of the international community may co-operate, establish norms of behaviour and resolve their differences. The proper functions of international law are legislative, administrative and adjudicative functions. The legislative function, which is considered in chapter 4, provides for the creation of legal principles and rules which impose binding obligations requiring states and other members of the international community to conform to certain norms of behaviour. These obligations place limits upon the activities which may be conducted or permitted because of their actual or potential impact upon the environment. The impact might be felt within the borders of a state, or across the boundaries of two or more states, or in areas beyond the jurisdiction and control of any state.

The administrative function of international law allocates tasks to various actors to ensure that the standards imposed by the principles and rules

³⁵ For a more complete exploration of these issues, see P. Sands, *Vers une transformation du droit international? Institutionnaliser le doute* (Editions A. Pedone, Paris, 2000).

³⁶ Allott, *Eunomia*, para. 16.3.

³⁷ P. Sands, 'Turtles and Torturers: The Transformation of International Law', 33 NYUJILP 527 at 558 (2001).

of international environmental law are applied. The adjudicative function of international law aims to provide mechanisms or fora to prevent and peacefully settle differences or disputes which arise between members of the international community involving the use of natural resources or the conduct of activities which will impact upon the environment. As will be seen, since the mid-1990s the adjudicative function has assumed increasing importance in interpreting and applying – and even developing – the rules of international law in the field of the environment.

Sovereignty and territory

The international legal order regulates the activities of an international community comprising states, international organisations and non-state actors. States have the primary role in the international legal order, as both international law-makers and holders of international rights and obligations. Under international law states are sovereign and have equal rights and duties as members of the international community, notwithstanding differences of an economic, social, political or other nature.³⁸ The doctrine of the sovereignty and equality of states has three principal corollaries, namely, that states have:

- (1) a jurisdiction, *prima facie* exclusive, over a territory and a permanent population living there; (2) a duty of non-intervention in the area of exclusive jurisdiction of other states; and (3) the dependence of obligations arising from customary law and treaties on the consent of obligor.³⁹

The sovereignty and exclusive jurisdiction of the 200 or so states over their territory means, in principle, that they alone have the competence to develop policies and laws in respect of the natural resources and the environment of their territory, which comprises:

1. the land within its boundaries, including the subsoil;
2. internal waters, such as lakes, rivers and canals;⁴⁰
3. the territorial sea, which is adjacent to the coast, including its seabed, subsoil and the resources thereof;⁴¹ and
4. the airspace above its land, internal waters and territorial sea,⁴² up to the point at which the legal regime of outer space begins.⁴³

³⁸ Declaration on Principles of International Law Concerning Friendly Relations and Co-operation Among States in Accordance with the Charter of the United Nations, UNGA Res. 2625 (XXV) (1970).

³⁹ I. Brownlie, *Principles of Public International Law* (1990, 4th edn), 287.

⁴⁰ 1982 UNCLOS, Art. 8.

⁴¹ 1982 UNCLOS, Art. 2. On archipelagic waters as national territory, see 1982 UNCLOS, Art. 48.

⁴² Oppenheim, vol. 1, 650–61.

⁴³ Oppenheim, vol. 1, 826–45.

Additionally, states have limited sovereign rights and jurisdiction over other areas, including: a contiguous zone adjacent to the territorial seas;⁴⁴ the resources of the continental shelf, its seabed and subsoil;⁴⁵ certain fishing zones;⁴⁶ and the 'exclusive economic zone'.⁴⁷ It follows that certain areas fall outside the territory of any state, and in respect of these no state has exclusive jurisdiction. These areas, which are sometimes referred to as the 'global commons', include the high seas and its seabed and subsoil, outer space, and, according to a majority of states, the Antarctic. The atmosphere is also sometimes considered to be a part of the global commons. This apparently straightforward international legal order worked satisfactorily as an organising structure until technological developments permeated national boundaries. This structure does not, however, co-exist comfortably with an environmental order which consists of a biosphere of interdependent ecosystems which do not respect artificial national territorial boundaries. Many natural resources and their environmental components are ecologically shared. The use by one state of natural resources within its territory will invariably have consequences for the use of natural resources and their environmental components in another state.⁴⁸ This is evident where a river runs through two or more countries, or where living resources migrate between two or more sovereign territories. What has only recently become clear is that apparently innocent activities in one country, such as the release of chlorofluorocarbons or (possibly) genetically modified organisms, can have significant effects upon the environment of other states or in areas beyond national jurisdiction. Ecological interdependence poses a fundamental problem for international law, and explains why international co-operation and the development of international environmental standards are increasingly indispensable: the challenge for international law in the world of sovereign states is to reconcile the fundamental independence of each state with the inherent and fundamental interdependence of the environment.

An additional but related question arises as a result of existing territorial arrangements which leave certain areas outside any state's territory: how can international law ensure the protection of areas beyond national jurisdiction? While it is clear that under international law each state may have environmental obligations to its citizens and to other states which may be harmed by its activities, it is less clear whether such an obligation is owed to the international community as a whole.⁴⁹

⁴⁴ 1982 UNCLOS, Art. 33.

⁴⁵ 1982 UNCLOS, Arts. 76 and 77.

⁴⁶ *Fisheries Jurisdiction Cases* (1974) ICJ Reports 3, at para. 52.

⁴⁷ 1982 UNCLOS, Arts. 55 and 56; chapter 5, pp. 178-9; and chapter 11, pp. 570-2.

⁴⁸ On 'shared natural resources', see chapter 2, p. 43, n. 113, and accompanying text.

⁴⁹ On the enforcement of international rights owed to the international community as a whole, see chapter 5, pp. 184-91.

International actors

A second salient issue concerns the membership of the international community and the participation of actors in the development and application of the principles and rules of international environmental law. In the environmental field it is clear that international law is gradually moving away from an approach which treats international society as comprising a community of states, and is increasingly encompassing the persons (both legal and natural) within and among those states. This is reflected in developments both in relation to law-making and law enforcement. This feature is similar to that which applies in the field of international human rights law, where non-state actors and international organisations also have an expanded role. This reality is reflected in many international legal instruments. The Rio Declaration and Agenda 21 recognise and call for the further development of the role of international organisations and non-state actors in virtually all aspects of the international legal process which relate to environment and development.⁵⁰ The 1998 Aarhus Convention provides clear rules on the rights of participation of non-state actors, in relation to access to information and justice, and the right to participate in environmental decision-making.⁵¹ Although the Convention's requirements are intended to apply at the national level, there is no reason why this rationale should not equally apply at the international level, including in the EU context.

[The environment and international law: defining terms]

International environmental law comprises those substantive, procedural and institutional rules of international law which have as their primary objective the protection of the environment. Dictionaries define 'environment' as 'the objects or the region surrounding anything'.⁵² Accordingly, the term encompasses both the features and the products of the natural world and those of human civilisation. On this definition, the environment is broader than, but includes, 'nature', which is concerned only with features of the world itself.⁵³ 'Ecology', on the other hand, is a science related to the environment and to nature which is concerned with animals and plants, and is 'that branch of biology which deals with the relations of living organisms to their surroundings, their habits and modes of life'.⁵⁴ The 'ecosystem' is 'a unit of ecology . . . which includes the plants and animals occurring together plus that part of their environment over which they have an influence'.⁵⁵

The legal definition of the 'environment' and related concepts is important at two levels. At a general level, it defines the scope of the legal subject and the competence of, say, international organisations. Thus, the failure of the

⁵⁰ Chapter 3, pp. 72–120. ⁵¹ Chapter 5, pp. 209–10.

⁵² *Compact Oxford English Dictionary* (1991, 2nd edn), 523.

⁵³ *Ibid.*, 1151. ⁵⁴ *Ibid.*, 494. ⁵⁵ *Ibid.*

1946 International Whaling Convention to define the term 'whale' has led to protracted disputes over whether the International Whaling Commission has competence over dolphins;⁵⁶ and the text of CITES was unclear as to whether its provisions applied to artificially propagated plants grown under controlled conditions in a 'non-natural environment'.⁵⁷ More specifically, the definition of the 'environment' assumes particular significance in relation to efforts to establish rules governing liability for damage to the environment.⁵⁸

Legal definitions of the 'environment' reflect scientific categorisations and groupings, as well as political acts which incorporate cultural and economic considerations. A scientific approach will divide environmental issues into 'compartments'. These include the atmosphere, atmospheric deposition, soils and sediments, water quality, biology and humans.⁵⁹ Scientific definitions are transformed by the political process into the legal definitions found in treaties; although 'environment' does not have a generally accepted usage as a term of art under international law, recent agreements have consistently identified the various media included in the term.

The approaches to defining the 'environment' do nevertheless vary. Early treaties tended to refer to 'flora and fauna' rather than the environment,⁶⁰ thus restricting the scope of their application. Article XX(b) and (g) of the General Agreement on Tariffs and Trade (GATT) refers not to the environment but to 'human, animal or plant life or health' and to the 'conservation of exhaustible natural resources', and these terms are considered by some to have limited the scope of permissible exceptions to the rules of free trade, particularly in the context of the narrow construction given to the terms used by GATT Dispute Settlement Panels.⁶¹ Although the 1972 Stockholm Declaration does not include a definition of the environment, Principle 2 refers to the natural resources of the earth as including 'air, water, land, flora and fauna and . . . natural ecosystems'. The Stockholm Declaration also recognises, as the Preamble makes clear, that the environment of natural resources should be distinguished from the man-made environment, which includes in particular the living and working environment. The 1982 World Charter for Nature similarly does not define the 'environment', but addresses the need to respect nature through principles

⁵⁶ Chapter 11, p. 592. ⁵⁷ CITES Conf. Res. 8.17 (1992).

⁵⁸ The definition of 'environment' and 'environmental resources' is also important for economists. In 1974, the Norwegian Department of Natural Resources developed and introduced a system of natural resource accounting and budgeting which divided resources into two categories: material resources and environmental resources. Material resources included minerals (minerals, hydrocarbons, stone, gravel and sand), biological resources (in the air, water, on land and in the ground) and inflowing resources (solar radiation, hydrological cycle, wind, ocean currents). Environmental resources are air, water, soil and space. See D. Pearce *et al.* (eds.), *Blueprint for a Green Economy* (1989).

⁵⁹ UNEP, *Environmental Data Report* (1992), 3.

⁶⁰ Chapter 2, pp. 25-6. ⁶¹ Chapter 19, pp. 948-9.

which are applicable to all life forms, habitats, all areas of the earth, ecosystems and organisms, and land, marine and atmospheric resources.

Those treaties which do refer to the environment and seek to include some form of working definition tend to adopt broad definitions. Under the 1974 Nordic Convention, 'environmentally harmful activities' are those which result in discharges 'into water courses, lakes or the sea, and the use of land, the sea bed, buildings or installations'.⁶² Under the 1977 ENMOD Convention, 'environmental modification' refers to changing the 'dynamics, composition or structure of the earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space'.⁶³ As used in the 1979 LRTAP Convention, the environment includes 'agriculture, forestry, materials, aquatic and other natural ecosystems and visibility'.⁶⁴ Under the 1991 Espoo Convention and the 1992 Watercourses Convention, the 'environment', which is defined in terms of impacts, includes 'human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors'.⁶⁵ In similar terms, the 1991 Antarctic Environment Protocol protects the climate and weather patterns; air and water quality; atmospheric, terrestrial (including aquatic), glacial or marine environments; fauna and flora; and areas of biological, scientific, historic, aesthetic or wilderness significance.⁶⁶ Under EC law, the environment comprises 'the relationship of human beings with water, air, land and all biological forms'.⁶⁷ EC Council Directive 85/337 (as amended by Directive 97/11), on environmental impact assessment, includes in the scope of information to be provided the likely effect of projects on human beings, fauna and flora, soil, water, air, climate and the landscape, and material assets and cultural heritage.⁶⁸ The 1990 EC Directive on freedom of access to information on the environment includes information on the state of 'water, air, soil, fauna, flora, land and natural sites',⁶⁹ and the 2000 Directive on eco-labelling establishes an 'Indicative Environmental Matrix' which requires pollution and contamination in eleven environmental fields to be taken into account (air, water, soil, waste, energy savings, natural resources consumption, global warming prevention, ozone layer protection, environmental safety, noise, and biodiversity) when deciding whether to grant an eco-label to a particular product.⁷⁰ Other agreements which use the term 'environment' do not define it. The 1982 United Nations Convention on the Law of the Sea does not define 'marine environment', although it appears to

⁶² Art. 1. ⁶³ Art. II. ⁶⁴ Art. 7(d).

⁶⁵ 1991 Espoo Convention, Art. 1(vii); and 1997 Watercourses Convention, Art. 1(2).

⁶⁶ Art. 3(2). ⁶⁷ Directive 79/117, Art. 2(10). See chapter 14.

⁶⁸ 583, Art. 3. See chapter 16, pp. 807-11. The same reference is used by the 1992 Industrial Accidents Convention, Art. 1(c).

⁶⁹ Art. 2(a). See chapter 17, pp. 853-6.

⁷⁰ Chapter 17, p. 861. The original 1992 Directive provided for eight fields.

include ecosystems, habitats, threatened or endangered species and other forms of marine life, and atmospheric pollution.⁷¹

More specific international legal terms are being used and are subject to carefully negotiated definition. Recent examples include definitions of biological resources,⁷² the climate system,⁷³ and the ozone layer.⁷⁴ Other terms frequently used in international agreements relating to environmental matters and for which specific legal definitions have been established include 'pollution',⁷⁵ 'conservation',⁷⁶ 'damage',⁷⁷ 'adverse effects',⁷⁸ and 'sustainable use' or 'management'.⁷⁹

Further reading⁸⁰

International environmental law: texts, articles and history

An extensive literature on international environmental law developed in the mid-1980s, although the first treatises appeared only in 1989 (Alexandre Kiss) and 1992 (Patricia Birnie and Alan Boyle), followed in 1994 by the first edition of this book. Earlier works addressed specific aspects of international environmental protection and the conservation of natural resources, and little of the early literature addressed economic aspects.

- E. D. Brown, 'The Conventional Law of the Environment', 13 *Natural Resources Journal* 203 (1973)
- L. B. Sohn, 'The Stockholm Declaration on the Human Environment', 14 *Harvard International Law Journal* 423 (1973)
- Academie de Droit International de la Haye, Colloque, *The Protection of the Environment and International Law* (1973)
- J. Barros and D. M. Johnston, *The International Law of Pollution* (1974)

⁷¹ Art. 194(3)(a) and (5). Cf. the 1992 OSPAR Convention, which appears to distinguish between the 'marine environment' and the 'flora and fauna which it supports': Preamble.

⁷² '[G]enetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity': 1992 Biodiversity Convention, Art. 2; see also the definition of biological diversity, chapter 11, p. 516, n. 91.

⁷³ '[T]he totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions': 1992 Climate Change Convention, Art. 1(3).

⁷⁴ '[T]he layer of atmospheric ozone above the planetary boundary layer': 1985 Vienna Convention, Art. 1(1).

⁷⁵ Chapter 8, p. 325; chapter 9, pp. 398, 406 and chapter 18, p. 876.

⁷⁶ Chapter 6, p. 260; chapter 11, p. 518.

⁷⁷ Chapter 18, p. 876.

⁷⁸ Chapter 18, p. 877.

⁷⁹ Chapter 6, p. 324; chapter 9, p. 400; and chapter 11, p. 519.

⁸⁰ There exists an extensive literature on general and specialised aspects of international environmental law. The list which follows is intended to be indicative only, and any omissions should not be taken to indicate a qualitative judgment on that work.

- L. A. Teclaff and A. E. Utton (eds.), *International Environmental Law* (1974)
- R. A. Falk, 'The Global Environment and International Law: Challenge and Response', 23 *Kansas Law Review* 385 (1975)
- A. L. Springer, 'Towards a Meaningful Concept of Pollution in International Law', 26 *International and Comparative Law Quarterly* 531 (1977)
- J. Schneider, *World Public Order of the Environment: Towards an Ecological Law and Organisation* (1979)
- R. M. M'Gonigle and M. W. Zacher, *Pollution, Politics and International Law: Tankers at Sea* (1979)
- R. S. Bock, *International Protection of the Environment* (1983)
- A. L. Springer, *The International Law of Pollution: Protecting the Global Environment in a World of Sovereign States* (1983)
- R. J. Dupuy, *The Future International Law of the Environment* (1985)
- S. Lyster, *International Wildlife Law: An Analysis of International Treaties Concerned with the Conservation of Wildlife* (1985)
- UN World Commission on Environment and Development, R. D. Munro and J. G. Lammers (eds.), *Environmental Protection and Sustainable Development: Legal Principles and Recommendations* (1987)
- W. Lang, *Internationaler Umweltschutz* (1989)
- P. Sands, 'The Environment, Community and International Law', 30 *Harvard International Law Journal* 393 (1989)
- M. Bothe and L. Gundling, *Neuere Tendenzen des Umweltrechts im Internationalen Vergleich* (1990)
- M. Lachs, 'The Challenge of the Environment', 39 *International and Comparative Law Quarterly* 663 (1990)
- P. Sand, *Lessons Learned in Global Environmental Governance* (1990)
- C. De Casadevante Romani, *La Protection del Medio Ambiente en Derecho Internacional Derecho Comunitario Europeo y Derecho Espanol* (1991)
- O. Schachter, 'The Emergence of International Environmental Law', 44 *Journal of International Affairs* 457 (1991)
- W. Lang, H. Neuhold and K. Zemanek (eds.), *Environmental Protection and International Law* (1991)
- D. B. Magraw (ed.), *International Law and Pollution* (1991)
- J. L. Mathieu, *La protection internationale de l'environnement* (1992)
- P. Sand (ed.), *The Effectiveness of International Environmental Agreements—A Survey of Existing Legal Instruments* (1992)
- R. Sands (ed.), *Greening International Law* (1993)
- C. Stone, *The Gnat is Older than Man: Global Environment and Human Agenda* (1993)
- E. Brown Weiss (ed.), *Environmental Change and International Law* (1993)
- A. Kiss, *Droit international de l'environnement* (1994, 2nd edn)
- A. Kiss and F. Burhenne-Guilmin (eds.), *A Law for the Environment: Essays in Honour of Wolfgang E. Burhenne* (1994)

- S. Murase, 'Perspectives from International Economic Law on Transnational Environmental Issues', 253 *Recueil des Cours* 283 (1995)
- P. Dupuy, 'Ou en est le droit international de l'environnement à la fin du siècle?', *RGDIP* 873 (1997)
- A. Boyle and D. Freestone, *International Law and Sustainable Development* (1999)
- A. Kiss and D. Shelton, *International Environmental Law* (1999, 2nd edn)
- J. Juste Ruiz, *Derecho Internacional del Medio Ambiente* (1999)
- A. Gillespie, *International Environmental Law, Ethics and Policy* (2001)
- D. Hunter, J. Salzman and D. Zaelke (eds.), *International Environmental Law and Policy (Casebook)* (2001, 2nd edn)
- P. Birnie and A. Boyle, *International Law and the Environment* (2002, 2nd edn)
- M. Fitzmaurice, 'International Protection of the Environment', 293 *RdC* 9 (2001)
- T. Kuokkanen, *International Law and the Environment: Variations on a Theme* (2002)

Sources of international environmental law

Primary materials

Beyond the general sources of international law (see the works cited in chapter 4, p. 123 *et seq.* below) a specialised literature now addresses the primary sources of international environmental law. The Internet is now the leading source of treaties, acts of international organisations (including conferences of the parties), case law of international courts and tribunals, and other primary materials (see below). Apart from the useful collections of selected materials, the works edited by Burhenne and by Rüster and Simma provide comprehensive sources of information on treaties and other international acts. Certain primary sources nevertheless remain obscure: early bilateral agreements are frequently only available directly from the countries or organisations involved in their promulgation.

- W. E. Burhenne (ed.), *International Environmental Law: Multilateral Treaties* (looseleaf, 1974-)
- B. Rüster and B. Simma (eds.), *International Protection of the Environment: Treaties and Related Documents* (vols. I-XXXI, 1975-1983)
- B. Rüster and B. Simma, *International Protection of the Environment: Treaties and Related Documents* (looseleaf, 1990-)
- UNEP, *Selected Multilateral Treaties in the Field of the Environment* (vol. 1, A. C. Kiss (ed.), 1983; vol. 2, I. Rummel-Bulska and S. Osafo (eds.), 1991)
- H. Hohmann (ed.), *Basic Documents of International Environmental Law* (1992)
- T. Scovazzi and T. Treves (eds.), *World Treaties for the Protection of the Environment* (1992)
- E. Brown Weiss, P. C. Szasz and D. B. Magraw, *International Environmental Law - Basic Instruments and References* (1992)
- A. O. Adede, *International Environmental Law Digest: Instruments for International Responses to Problems of Environment and Development* (1993)

- W. E. Burhenne (ed.), *International Environmental Soft Law: Collection of Relevant Instruments* (1993)
- P. Sands, R. Tarasofsky and M. Weiss, *Documents in International Environmental Law* (1994, 2 vols.)
- P. Sands and R. Tarasofsky, *Documents in EC Environmental Law* (1994)
- P. Birnie and A. Boyle, *Basic Documents on International Law and the Environment* (1995)
- L. Boisson de Chazournes, R. Desgagné and C. Romano (eds.), *Protection internationale de l'environnement: recueil d'instruments juridiques* (1998)
- C. Dommen and P. Cullet, *Droit international de l'environnement: textes de bases et références* (1998)
- D. Hunter, J. Salzman and D. Zaelke (eds.), *International Environmental Law and Policy: Treaty Supplement* (2001)
- P. Sands and P. Galizzi, *Basic Documents in International Environmental Law* (2003)

International environmental jurisprudence

- C. Robb (ed.), *International Environmental Law Reports 1: Early Decisions* (1999)
- C. Robb (ed.), *International Environmental Law Reports 2: Trade and Environment* (2001)
- C. Robb (ed.), *International Environmental Law Reports 3: Human Rights and Environment* (2001)

Journals

The following academic and practitioners' journals provide sources of information on important international legal developments, and articles on specific aspects of international environmental law. The *Yearbook of International Environmental Law* is an especially useful source for annual developments, including materials on municipal practice (including the implementation of international legal obligations).

International law generally

- American Journal of International Law*
- European Journal of International Law*
- International and Comparative Law Quarterly*
- International Legal Materials*
- Revue General de Droit International Public*

International environmental law

- Colorado Journal of International Environmental Law and Policy*
- Ecology Law Quarterly*
- Environmental Law and Policy*
- Georgetown International Environment Law Review*

International Environment Reporter

International Journal of Marine and Coastal Law

Journal of Environmental Law

Journal of Environment and Natural Resources Law

Natural Resources Journal

New York University Environmental Law Journal

Review of European Community and International Environmental Law

Yearbook of International Environmental Law

International environmental negotiations

Earth Negotiations Bulletin (available at: <http://www.iisd.ca/linkages/>)

International environmental co-operation and policy

- R. Carson, *Silent Spring* (1963)
- J. E. Harf and B. Trout, *The Politics of Global Resources: Population, Food, Energy, and Environment* (1971)
- B. Ward and R. Dubos, *Only One Earth: The Care and Maintenance of a Small Planet* (1972)
- R. Falk, *This Endangered Planet: Prospects and Proposals for Human Survival* (1971)
- W. T. Blackstone (ed.), *Philosophy and the Environmental Crisis* (1974)
- J. Busterud, 'International Environmental Relations', 7 *Natural Resources Law* 325 (1974)
- J. Passmore, *Man's Responsibility for Nature: Ecological Problems and Western Traditions* (1980)
- D. Kay and H. Jacobson (eds.), *Environmental Protection: The International Dimension* (1982)
- M. Nicholson, *The New Environmental Age* (1987)
- UN World Commission on Environment and Development, *Our Common Future* (1987)
- J. E. Carrol (ed.), *International Environmental Diplomacy: The Management and Resolution of Transfrontier Environmental Problems* (1987)
- J. McCormick, *Reclaiming Paradise: The Global Environmental Movement* (1989)
- R. F. Mash, *The Rights of Nature: A History of Environmental Ethics* (1989)
- L. K. Caldwell, *International Environmental Policy: Emergence and Dimensions* (1990, 2nd edn)
- L. Starke, *Signs of Hope: Working Towards Our Common Future* (1990)
- H. Cleveland, *The Global Commons: Policy for the Planet* (1990)
- B. Commoner, *Making Peace with the Planet* (1990)
- J. R. Engel and J. G. Engel, *Ethics of Environment and Development: Global Challenge and International Response* (1990)
- J. MacNeill, P. Winsemius and T. Yakushiji, *Beyond Interdependence: The Meshing of the World's Economy and the Earth's Ecology* (1991)

- IUCN, UNEP and WWF, *Caring for the Earth* (1991)
- A. Hurrell and B. Kingsbury, *The International Politics of the Environment, Actors, Interests and Institutions* (1992)
- S. Johnson (ed.), *The Earth Summit: The United Nations Conference on Environment and Development (UNCED)* (1993)
- L. Susskind, *Environmental Diplomacy* (1994)
- J. Atik, 'Science and International Regulatory Convergence', 17 *Northwestern Journal of International Law and Business* 336 (1996-7)
- UNDP, *Human Development Report 2001* (2001)
- World Bank, *World Development Report 2003: Sustainable Development in a Dynamic World* (2002)

Science and the state of the environment

- G. H. Dury, *An Introduction to Environmental Systems* (1981)
- L. K. Caldwell, *Between Two Worlds: Science, the Environmental Movement, and Policy Choice* (1990)
- B. L. Turner, W. C. Clark, R. Kates et al., *The Earth as Transformed by Human Action: Global and Regional Changes Over the Past 300 Years* (1990)
- UNEP, *State of the Environment: 1972-1992* (1992)
- WCMC, *Global Biodiversity 1992: The Status of the Earth's Living Resources* (1992)
- WHO, *World Health Statistics Annual 1997-9* (2000)
- S. Andresen et al. (eds.), *Science and Politics in International Environmental Regimes* (2000)
- A. Goudie, *The Human Impact on the Natural Environment* (2000, 5th edn)
- A. Goudie, *The Nature of the Environment* (2001, 4th edn)
- D. Botkin, *Environmental Science: Earth as a Living Planet* (2002)
- UNEP, *Global Environment Outlook 3 (GEO 3)* (2002)
- L. Brown et al. (eds.), *State of the World 2002* (2002) (published annually by the Worldwatch Institute)
- WRI, *World Resources 2002-2004: A Guide to the Global Environment* (2003) (published bi-annually)

For a more sceptical view, see B. Lomborg, *The Skeptical Environmentalist* (2001).

Environmental economics and development

- C. Howe, *Natural Resource Economics* (1979)
- P. Bartelmus, *Environment and Development* (1986)
- R. Goodland and G. Ledec, 'Neo-classical Economics and Principles of Sustainable Development', 38 *Ecological Modelling* 36 (1987)
- M. Redclift, *Sustainable Development* (1987)
- R. K. Turner (ed.), *Sustainable Environmental Management* (1988)
- D. W. Pearce, A. Markandya and E. Barbier, *Blueprint for a Green Economy* (1989)

- O. R. Young, 'The Politics of International Regime Formation: Managing Natural Resources and the Environment', 43 *International Organization* 349 (1989)
- O. R. Young, *International Co-operation: Building Regimes for Natural Resources and the Environment* (1989)
- W. M. Adams, *Green Development: Environment and Sustainability in the Third World* (1990)
- D. W. Pearce, E. Barbier and A. Markandya, *Sustainable Development: Economics and Environment in the Third World* (1990)
- D. Pearce (ed.), *Blueprint 2: The Greening of the World Economy* (1991)
- R. Eckersley, *Environmentalism and Political Theory* (1992)
- D. Pearce (ed.), *Blueprint 3: Measuring Sustainable Development* (1994)
- D. Pearce and E. Barbier (eds.), *Blueprint 4: Capturing Global Developmental Value* (1995)
- D. Pearce and E. Barbier, *Blueprint for a Sustainable Economy* (2000)
- T. Tietenberg, *Environmental and Natural Resource Economics* (2000, 3rd edn)
- P. Rao, *International Environmental Law and Economics* (2001)

Websites

Every international organisation and most international environmental agreements have their own sites on the Internet. These are indicated in the text at appropriate sections.

There is no single website which provides one-stop shopping for international environmental law. Of particular use, however, is www.google.com, which provides easy access to international environmental agreements, decisions and other acts of international organisations, and municipal and international court decisions. It also provides some guidance to literature sources.

History

See literature cited in Chapter 1, 'Further reading', pp. 18 et seq. See also: R. Carson, *Silent Spring* (1963); G. Hardin, 'The Tragedy of the Commons', 162 *Science* 3859 (1968); B. Ward and R. Dubos, *Only One Earth* (1972); and M. Nicholson, *The New Environmental Age* (1987).

Introduction

Modern international environmental law can be traced directly to international legal developments which took place in the second half of the nineteenth century. Thus, although the current form and structure of the subject has become recognisable only since the mid-1980s, a proper understanding of modern principles and rules requires a historic sense of earlier scientific, political and legal developments. International environmental law has evolved over at least four distinct periods, reflecting developments in scientific knowledge, the application of new technologies and an understanding of their impacts, changes in political consciousness and the changing structure of the international legal order and institutions.¹

The first period began with bilateral fisheries treaties in the nineteenth century, and concluded with the creation of the new international organisations in 1945. During this period, peoples and nations began to understand that the process of industrialisation and development required limitations on the exploitation of certain natural resources (flora and fauna) and the adoption of appropriate legal instruments. The second period commenced with the creation of the UN and culminated with the UN Conference on the Human Environment, held in Stockholm in June 1972. Over this period, a range of international organisations with competence in environmental matters was created, and legal instruments were adopted, at both the regional and global level, which addressed particular sources of pollution and the conservation of general and particular environmental resources, such as oil pollution, nuclear testing, wetlands, the marine environment and its living resources, the quality

¹ For another approach, identifying traditional, modern and post-modern eras, see T. Kuokkanen, *International Law and the Environment: Variations on a Theme* (2002).

of freshwaters, and the dumping of waste at sea. The third period ran from the 1972 Stockholm Conference and concluded with the UN Conference on Environment and Development (UNCED) in June 1992. During this period, the UN tried to put in place a system for co-ordinating responses to international environmental issues, regional and global conventions were adopted, and for the first time the production, consumption and international trade in certain products was banned at the global level. The fourth period was set in motion by UNCED, and may be characterised as the period of integration: when environmental concerns should, as a matter of international law and policy, be integrated into all activities. This has also been the period in which increased attention has been paid to compliance with international environmental obligations, with the result that there has been a marked increase in international jurisprudence.

In tracing the development of the subject, general tendencies and themes may be discerned. First, the development of principles and rules of international environmental law – through treaties, other international acts and custom – has tended to react to events or incidents or the availability of scientific evidence, rather than anticipate general or particular environmental threats and put in place an anticipatory legal framework. Secondly, developments in science and technology have played a significant catalytic role: without the availability of scientific evidence, new rules of law are unlikely to be put in place. Thirdly, as is reflected throughout this book, the principles and rules of international law have developed as a result of a complex interplay between governments, non-state actors and international organisations. The extent to which a particular area is subject to legal rules will depend upon pressure being imposed by non-state actors, the existence of appropriate institutional fora in which rules can be developed, and sufficient will on the part of states to transform scientific evidence and political pressures into legal obligations. And, fourthly, it is only very recently – within the past decade – that issues of international environmental law have become a regular subject of international adjudication, and that international courts have begun to contribute to the definition and application of the subject.

From early fisheries conventions to the creation of the United Nations

Early attempts to develop international environmental rules focused on the conservation of wildlife (fisheries, birds and seals) and, to a limited extent, on the protection of rivers and seas. International legal developments followed the research efforts of scientists in the late eighteenth and nineteenth centuries, including: the work of Count Buffon which contrasted the appearance of inhabited life with uninhabited life; the studies by Fabre and Surrall of flooding, siltation, erosion and the division of watercourses brought about by

deforestation in the Alps; and the conclusions of de Saussure and von Humboldt that deforestation had lowered water levels of lakes in the Alps and in Venezuela.² By the mid-eighteenth century, the relationship between deforestation and the drying-up of water basins was widely observed. In the island of Ascension,

there was an excellent spring situated at the foot of the mountain originally covered with wood; the spring became scanty and dried up after the trees which covered the mountain had been felled. The loss of the spring was rightly ascribed to the cutting down of the timber. The mountain was therefore planted anew. A few years afterwards the spring reappeared by degrees, and by and by flowed with its former abundance.³

Concern for flora and fauna coincided with industrialisation and the use of mineral resources. This led to the adoption of early environmental legislation at the national level.

The adoption of treaties was *ad hoc*, sporadic and limited in scope. Bilateral fisheries conventions were adopted in the mid-nineteenth century to halt over-exploitation. Examples include a convention to conserve oysters by prohibiting fishing outside certain dates,⁴ and instruments to protect fisheries, usually in rivers or lakes or in or around territorial waters, from over-exploitation.⁵ The first whaling convention was adopted in 1931.⁶

✓ Migratory birds also required international co-operation to ensure their conservation. In 1872, Switzerland proposed an international regulatory commission for the protection of birds. This led to consideration of the matter by the non-governmental International Ornithological Congress and the creation in 1884 of an International Ornithological Committee, which formulated a treaty proposal,⁷ and the adoption in 1902 of the Convention to Protect Birds Useful to Agriculture.⁸ The Convention relied upon regulatory techniques still used today, such as the grant of absolute protection to certain birds, a prohibition on their killing or the destruction or taking of their nests, eggs or breeding places, and the use of certain methods of capture or destruction. The 1902 Birds Convention allowed exceptions, such as scientific research and repopulation, which continue to be reflected in more modern instruments, such as the 1979 Berne

² A. Goudie, *The Human Impact: Man's Role in Environmental Change* (1981), 2.

³ J. B. Boussingault, *Rural Economy* (1845, 2nd edn), cited in Goudie, *The Human Impact*, 3.

⁴ Convention Between France and Great Britain Relative to Fisheries, Art. XI, Paris, 11 November 1867, 21 IPE 1.

⁵ North Sea Fisheries (Overfishing Convention), 1882, UN Doc. ST/LEG/SER.B/6, 1957, 695; Convention Concernant l'Exploitation et la Conservation des Pêcheries dans la Partie-Frontière du Danube, Belgrade, 15 January 1902. For other examples, see 9 IPE 4319-792.

⁶ Convention for the Regulation of Whaling, Geneva, 24 September 1931, 155 LNTS 351.

⁷ L. K. Caldwell, *International Environmental Policy* (1990, 2nd edn), 32.

⁸ Paris, 19 March 1902.

Convention and the 1992 Biodiversity Convention⁹ saw the adoption of the first bilateral treaty for the protection of migratory birds.⁹ The founding in 1922 of the International Committee (later Council) for Bird Protection (later Preservation) (ICBP) reflected the recognition that substantive rules needed to be accompanied by new institutional arrangements. The ICBP was created to strengthen links between American and European bird protection groups, and its aim of encouraging 'transnational co-ordination rather than international integration' reflected a reluctance to go too far in impinging upon the sovereignty of states.¹⁰

The first treaty aimed at the protection of wildlife in a particular region was the 1900 Convention Destinée à Assurer la Conservation des Diverses Espèces Animales Vivant à l'Etat Sauvage en Afrique qui sont Utiles à l'Homme ou Inoffensive.¹¹ It sought to ensure the conservation of wildlife in the African colonies of European states, including the use of trade restrictions on the export of certain skins and furs,¹² reflecting a desire to combine regulatory techniques with economic incentives.¹³ The 1900 Convention was replaced by the 1933 Convention on the Preservation of Fauna and Flora in their Natural State,¹⁴ which was itself superseded by a new instrument in 1968 following the attainment of independence by these former colonial territories of Africa.¹⁵ Like other early conventions, the 1933 Convention did not create any institutional arrangements for administering its provisions, monitoring compliance or ensuring implementation. During this first period, the only other region to adopt a treaty for the protection of wildlife was the Americas.¹⁶

It was not only fisheries and wildlife that attracted the attentions of the international legislators. The 1909 Water Boundaries Treaty between the United States and Canada was the first to commit its parties to preventing pollution,¹⁷ and under the auspices of its International Joint Commission a draft Treaty on Pollution Prevention was drawn up in 1920, but not adopted. Another draft instrument prepared in this period, also not adopted, sought to prevent oil pollution of the seas.¹⁸ Treaties were adopted to limit the spread of phylloxera¹⁹

⁹ Convention Between the United States and Great Britain for the Protection of Migratory Birds in the United States and Canada, Washington, 7 December 1916, 4 IPE 1638.

¹⁰ C. McCormick, *Reclaiming Paradise* (1989), 23.

¹¹ London, 19 May 1900, 4 IPE 1607. ¹² Art. II.

¹³ On trade and environmental law, see chapter 19, pp. 940–1009 below.

¹⁴ London, 8 November 1933, 172 LNTS 242.

¹⁵ See 1968 African Nature Convention; see chapter 11, pp. 524–6 below.

¹⁶ 1940 Western Hemisphere Convention; see chapter 11, pp. 527–9 below.

¹⁷ 11 IPE 5704.

¹⁸ Final Act and Draft Convention of the Preliminary Conference on Oil Pollution of Navigable Waters, Washington, June 1926, 19 IPE 9585; Draft Convention and Draft Final Act on Pollution of the Sea by Oil, 21–25 October 1935, 19 IPE 9597.

¹⁹ International Phylloxera Convention, with a Final Protocol, Berne, 23 June 1882, 4 IPE 1571.

The regulations reflected earlier treaty provisions,²⁹ and provided a basis for a convention prohibiting pelagic sealing in the North Pacific Ocean and the importation of sealskins.³⁰ The episode provided early evidence of the potential for disputes over valuable natural resources lying beyond the national jurisdiction of any state, as well as evidence of the role international law might play in resolving disputes and establishing a framework for the conduct of activities.

The second arbitral award of this period is the better known. The *Trail Smelter* case arose out of a dispute between the United States and Canada over the emission of sulphur fumes from a smelter situated in Canada which caused damage in the state of Washington.³¹ The Tribunal applied the principle that under international law 'no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.'³² The award of the Tribunal and its finding on the state of international law on air pollution in the 1930s has come to represent a crystallising moment for international environmental law which has influenced subsequent developments in a manner which undoubtedly exceeds its true value as an authoritative legal determination.

These two arbitral awards, together with the treaties and organisations which were brought into being, established early foundations. Institutional arrangements to address environmental matters were limited, and international rules were sparse in terms of both the subject matter they addressed and the regions they covered. However, there was a growing awareness that the exploitation of natural resources could not occur on an unlimited basis, that industrialisation and technological developments brought with them pollution and associated problems, and that international measures were needed to address these matters.

From the creation of the United Nations to Stockholm: 1945–1972

The second phase in the development of international environmental law began with the creation of the UN and its specialised agencies in 1945.³³ It was a period characterised by two features: international organisations at the regional and

²⁹ Agreement Between the Government of the United States of America and the Government of Her Britannic Majesty for a Modus Vivendi in Relation to Fur Seal Fisheries in the Bering Sea, Washington, 15 June 1891, 8 IPE 3655; Convention Between the Government of the United States of America and the Government of Her Britannic Majesty for the Renewal of the Existing Modus Vivendi in the Bering Sea, Washington, 18 April 1892, 4 IPE 3656.

³⁰ Convention Between the United States of America, the United Kingdom of Great Britain and Northern Ireland, and Russia, for the Preservation and Protection of Fur Seals, Washington, 7 July 1911, 8 IPE 3682, Arts. I–III.

³¹ 3 RIAA 1905 (1941); see chapter 8, pp. 318–19 below.

³² 35 AJIL 716 (1941); 9 ILR 317.

³³ On the structure of the UN, see chapter 3, pp. 78–83 below.

global level began to address environmental issues; and the range of environmental concerns addressed by international regulatory activity broadened to include a focus on the causes of pollution resulting from certain ultra-hazardous activities. A third feature was the limited recognition of the relationship between economic development and environmental protection.

Despite attempts by certain individuals to push conservation onto the international agenda following the Second World War, the UN Charter did not include provisions on environmental protection or the conservation of natural resources.³⁴ Nevertheless, the UN's purposes include the achievement of international co-operation in solving international problems of an economic, social, cultural or humanitarian character, and this has provided the basis for the subsequent environmental activities of the UN.³⁵ No environment or nature conservation body was established among the specialised agencies. However, the constituent instruments of the Food and Agriculture Organization (FAO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) included provisions with an environmental or conservationist aspect, and the instrument establishing the General Agreement on Tariffs and Trade (GATT) permits certain measures relating to 'the conservation of exhaustible natural resources' as exceptions to the rules establishing free trade obligations.³⁶

In October 1948, governments and non-governmental actors established the first major international organisation to address environmental issues. A conference convened with the assistance of UNESCO, which was attended by representatives of eighteen governments, seven international organisations and 107 national organisations, established the International Union for the Protection of Nature (IUPN), to promote the preservation of wildlife and the natural environment, public knowledge, education, scientific research and legislation.³⁷ The IUCN is a unique organisation whose members are governments and non-governmental actors, and which has played an important role in developing treaties to protect wildlife and conserve natural resources.

UNCCUR

The seeds of intergovernmental environmental action were sown in 1947 by the UN, with the Economic and Social Council (ECOSOC) resolution convening the 1949 United Nations Conference on the Conservation and Utilisation of Resources (UNCCUR). The origins of this resolution have been traced to the

³⁴ For reasons, see McCormick, *Reclaiming Paradise*, 25-7.

³⁵ UN Charter, San Francisco, 26 June 1945, in force 24 October 1945, 1 UNTS xvi, Art. 1(3); see chapter 3, pp. 78-83 below.

³⁶ See respectively chapter 3, pp. 95-7, and chapter 19, pp. 944-9 below.

³⁷ 1977 Statutes, 18 IPE 8960; on the creation of the IUCN, see McCormick, *Reclaiming Paradise*, 31-6. In 1956, the IUPN was renamed the International Union for the Conservation of Nature and Natural Resources (IUCN).

initiative of Presidents Franklin D. Roosevelt and Harry S. Truman.³⁸ The resolution reflected an awareness of the need for international action to establish a balanced approach to the management and conservation of natural resources. The resolution emphasised the importance of the world's natural resources and their importance to the reconstruction of devastated areas; it also recognised the need for the 'continuous development and widespread application of the techniques of resource conservation and utilisation'.³⁹ The resolution determined the competence of the UN over environmental matters and ultimately resulted in the 1972 Stockholm Conference and the 1992 UNCED, as well as other UN action on the environment.

UNCCUR provided a modest start. It had a limited scope, having been convened to exchange information on 'techniques in this field, their economic costs and benefits, and their interrelations' and being devoted to the exchange of ideas and experience.⁴⁰ It had no mandate to adopt any recommendations. Held from 17 August to 6 September 1949 in New York State, it was attended by over 1,000 individuals from more than fifty countries, some 500 having been selected by the UN Secretary General upon the nomination of governments, non-governmental organisations and the Preparatory Committee. UNCCUR addressed six issues: minerals, fuels and energy, water, forests, land, and wildlife and fish. The main topics addressed included:

- the world resource situation;
- a world review of critical shortages;
- the interdependence of resources;
- the use and conservation of resources;
- the development of new resources by applied technology;
- education for conservation;
- resource techniques for less developed countries; and
- the integrated development of river basins.⁴¹

If UNCCUR's accomplishments were limited, the topics were similar to those addressed at UNCED nearly half a century later. Even at this early stage, the relationship between conservation and development was a central theme, with discussions focusing on the relationship between conservation and use, on the need to develop standards to ensure conservation and on the relationship between conservation and development.⁴²

Following the 1949 UNCCUR, environmental action by the UN and its specialised agencies addressed issues relating to the conservation of flora and fauna. In 1954, the General Assembly convened a major Conference on the

³⁸ Caldwell, *International Environmental Policy*, 42.

³⁹ ECOSOC Resolution 32 (IV) (1947), Preamble. ⁴⁰ *Ibid.*

⁴¹ *Yearbook of the UN* (1948-9), 481-2. See also UNCCUR Proceedings, vol. 1: Plenary Meetings (E/Conf.7/7).

⁴² *Ibid.*

Conservation of the Living Resources of the Sea,⁴³ which led to the conservation rules adopted in the 1958 Geneva Conventions. The major new development was the attention given by the General Assembly to the effects of atmospheric nuclear tests and oil pollution. The fact that these subjects were debated, and resolutions adopted, signalled a shift in emphasis, away from the protection of flora and fauna and towards international action addressing products and processes associated with industrial and military activity. With hindsight, it is easy to see how significant these developments were, although at the time it was probably not foreseeable that the implications of intergovernmental environmental action would be far-reaching. In 1955, the General Assembly adopted the first of a number of resolutions on the use of atomic energy and the effects of atomic radiation,⁴⁴ which led to the adoption of the Test Ban Treaty in 1963,⁴⁵ and provided the political context for Australia and New Zealand to bring actions before the International Court of Justice (ICJ) calling on France to stop all atmospheric nuclear tests.⁴⁶

In 1954, under the auspices of the International Maritime Organization (IMO), the first global convention for the prevention of oil pollution was adopted (building on the text of the earlier drafts of 1926 and 1935),⁴⁷ to be followed fifteen years later by treaties permitting intervention to combat the effects of oil pollution,⁴⁸ establishing rules of civil liability for oil pollution damage⁴⁹ and creating an oil pollution compensation fund.⁵⁰ These were adopted in response to specific incidents resulting in large-scale oil pollution which caused damage to the marine environment and to people and property. Other global conventions were the 1958 High Seas Fishing and Conservation Convention which established innovative provisions on conservation of marine living resources,⁵¹ and the 1958 Convention on the High Seas which committed contracting parties to preventing oil pollution and the dumping of radioactive wastes.⁵² The 1971 Ramsar Convention was the first environment treaty to establish rules addressing the conservation of a particular type of ecosystem.⁵³

At this time, notable regional developments were occurring to prohibit or regulate activities previously beyond the scope of international law. The 1959 Antarctic Treaty committed parties to peaceful activities in that region, and

⁴³ See UNGA Res. 900 (IX) (1954). The Conference Report is at 8 IPE 3696.

⁴⁴ See e.g. UNGA Res. 912 (X) (1955); Res. 913 (X) (1955); Res. 1147 (XII) (1957); Res. 1252 (XIII) (1958); Res. 1379 (XIV) (1959); Res. 1402 (XIV) (1959); Res. 1649 (XVI) (1961).

⁴⁵ See chapter 8, pp. 319–21; and chapter 11, p. 649 below.

⁴⁶ See chapter 8, pp. 319–21 below (and New Zealand's subsequent application in 1995, at chapter 8 below).

⁴⁷ 1954 International Convention for the Prevention of Pollution of the Sea by Oil, London, 12 May 1954, in force 26 July 1958, 327 UNTS 3.

⁴⁸ See chapter 9, pp. 452–3 below. ⁴⁹ See chapter 18, pp. 913–15 below.

⁵⁰ See chapter 18, pp. 915–18 below. ⁵¹ See chapter 11, pp. 566–7 below.

⁵² See chapter 9, p. 393 below. ⁵³ See chapter 11, pp. 543–5 below.

prohibited nuclear explosions or the disposal of radioactive waste.⁵⁴ The United Nations Economic Commission for Europe (UNECE) promulgated harmonising regulations on emissions from motor vehicles,⁵⁵ and the Committee of Ministers of the Council of Europe adopted the first international act dealing with general aspects of air pollution.⁵⁶ In 1967, the European Community (EC) adopted its first environmental act, on the packaging and labelling of dangerous goods, despite the absence of express environmental provisions in the 1957 Treaty of Rome.⁵⁷ In relation to wildlife conservation, the 1968 African Nature Convention went beyond the limited approach to conservation of fauna and flora by aiming at the 'conservation, utilisation and development of soil, water, flora and fauna resources in accordance with scientific principles and with due regard to the best interests of the people'.⁵⁸ In early 1972, shortly before the Stockholm Conference, the Oslo Dumping Convention became the first treaty to prohibit the dumping of a wide range of hazardous substances at sea.⁵⁹ During this period, treaties sought to protect the quality of rivers⁶⁰ and, under the auspices of the International Labor Organization (ILO), the quality of the working environment.⁶¹

Other developments were noteworthy. In 1949, the International Court of Justice (ICJ) confirmed 'every state's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other states', a *dictum* which was to contribute significantly to the emergence of Principle 21 of the Stockholm Conference.⁶² In 1957, in the *Lac Lanoux Arbitration*, the Tribunal affirmed principles concerning limitations on the right of states in their use of shared rivers and informing the meaning of co-operation in international law.⁶³ However, the substantive commitments adopted in these treaties were not accompanied by the adoption of guiding principles of general application. What was looming, however, was the broader issue of the relationship between environment and development, which had been identified by the 1949 UNCCUR; in 1962, the General Assembly adopted a resolution on the relationship between economic development and environmental protection.⁶⁴

By 1972, there was, therefore, an emerging body of international environmental rules at the regional and global levels, and international organisations were addressing international environmental issues. Limitations on the right of states to treat their natural resources as they wished were being established.

⁵⁴ See chapter 14, pp. 712–13 below. ⁵⁵ See chapter 8, pp. 324–5 below.

⁵⁶ Resolution (66) 23 Air Pollution (1966), 15 IPE 7521.

⁵⁷ Chapter 12 below; on the EC see generally chapter 14 below.

⁵⁸ Chapter 11, pp. 524–6 below. ⁵⁹ Chapter 9, pp. 423–5 below.

⁶⁰ Protocol Concerning the Constitution of an International Commission for the Protection of the Mosel Against Pollution, Paris, 20 December 1961, in force July 1962, 940 UNTS 211; Agreement Concerning the International Commission for the Protection of the Rhine Against Pollution, Berne, 29 April 1963, 914 UNTS 3.

⁶¹ Chapter 3, p. 98 below; and chapter 12, pp. 638–41 below. ⁶² (1949) ICJ Reports 4.

⁶³ Chapter 10, pp. 463–4 below. ⁶⁴ UNGA Res. 1831 (XVII) (1962).

Nevertheless, these treaty and institutional developments were developing in a piecemeal fashion, and the lack of co-ordination hampered efforts to develop a coherent international environmental strategy. Moreover, no international organisation had overall responsibility for co-ordinating international environmental policy and law, and few had a specific environmental mandate. International procedures for ensuring the implementation of, and compliance with, international environmental standards were virtually non-existent. The regulatory techniques available for addressing a growing range of issues were limited, and no rules had yet been developed on procedural obligations, such as environmental impact assessment or the dissemination of and access to environmental information. The 1972 Stockholm Conference must be seen in this context.

The 1972 Stockholm Conference can be traced to an Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Resources of the Biosphere convened by UNESCO in 1968 (the 1968 Biosphere Conference). The Conference considered the impact of human activities on the biosphere, including the effects of air and water pollution, overgrazing, deforestation and the drainage of wetlands, and adopted twenty recommendations reflecting themes adopted at the 1972 Stockholm Conference.⁶⁵ The scale of the task facing the international community was reflected in the final report of the 1968 Biosphere Conference:

Until this point in history the nations of the world have lacked considered, comprehensive policies for managing the environment. Although changes have been taking place for a long time, they seem to have reached a threshold recently that has made the public aware of them. This awareness is leading to concern, to the recognition that to a large degree, man now has the capability and the responsibility to determine and guide the future of his environment, and to the beginnings of national and international corrective action . . . It has become clear, however, that earnest and bold departures from the past will have to be taken nationally and internationally if significant progress is to be made.⁶⁶

The 1972 United Nations Conference on the Human Environment

Report of the UN Conference on the Human Environment, Stockholm, 5–16 June 1972, UN Doc. A/CONF.48/14/Rev.1; W. Kennett, 'The Stockholm Conference on the Human Environment', 48 *International Affairs* 33 (1972); A. C. Kiss and J. D. Sciault, 'La Conférence des Nations Unies sur l'Environnement', AFDI 603 (1972);

⁶⁵ See *Yearbook of the UN* (1968), 958; UNESCO, *Use and Conservation of the Biosphere: Proceedings of the Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Resources of the Biosphere* (1970); and McCormick, *Reclaiming Paradise*, 88–90.

⁶⁶ Cited in Caldwell, *International Environmental Policy*, 45.

A. C. Kiss and J. D. Sciault, 'Post Stockholm: Influencing National Environmental Law and Practice Through International Law and Policy', 66 *Proceedings of the American Society of International Law* 1 (1972); L. Sohn, 'The Stockholm Declaration on the Human Environment', 14 *Harvard International Law Journal* 423 (1973); A. Kiss, 'Dix Ans Après Stockholm, Une Decennie de Droit International de l'Environnement', 28 *AFDI* 784 (1982); A. Kiss, 'Ten Years After Stockholm: International Environmental Law', 77 *Proceedings of the American Society of International Law* 411 (1983).

The Stockholm Conference was convened in December 1968 by the United Nations General Assembly.⁶⁷ This followed the adoption in July 1968 of a resolution, first proposed by Sweden, noting 'the continuing and accelerating impairment of the quality of the human environment', and recommending that the General Assembly consider the desirability of convening a UN Conference.⁶⁸ The Conference was held in Stockholm on 5–16 June 1972, under the chairmanship of Maurice Strong, a Canadian, and was attended by 114 states and a large number of international institutions and non-governmental observers. The Conference adopted three non-binding instruments: a resolution on institutional and financial arrangements, a Declaration containing twenty-six Principles, and an Action Plan containing 109 recommendations.⁶⁹ The Conference did not adopt any binding obligations and formal decisions had to await the twenty-seventh session of the UN General Assembly the following autumn. The Conference was generally considered to have been successful, largely because the preparatory process had allowed agreement to be reached on most issues prior to the Conference.⁷⁰ According to one commentator, 'Stockholm enlarged and facilitated means toward international action previously limited by inadequate perception of environmental issues and by restrictive concepts of national sovereignty... There were significant elements of innovation in (1) the redefinition of international issues, (2) the rationale for co-operation, (3) the approach to international responsibility, and (4) the conceptualisation of international organisational relationships.'⁷¹ Although the infusion of new international law was not dramatic, trends underway before Stockholm relating to marine pollution, transboundary air and water pollution, and the protection

⁶⁷ UNGA Res. 2398 (XXIII) (1968).

⁶⁸ ECOSOC Res. 1346 (XLV) (1968). Two months earlier, ECOSOC had taken note of a report by the World Health Organisation (WHO) on environmental pollution and its control, and a report by UNESCO and FAO on the conservation and rational utilisation of the environment: ECOSOC Res. 1310 (XLIV) (1968).

⁶⁹ *Report of the UN Conference on the Human Environment*, UN Doc. A/CONF.48/14 at 2–65, and Corr.1 (1972); 11 *ILM* 1416 (1972). For an excellent account of the Conference and the Declaration, see Louis B. Sohn, 'The Stockholm Declaration on the Human Environment', 14 *Harvard International Law Journal* 423 (1973).

⁷⁰ *Ibid.*, 424. ⁷¹ Caldwell, *International Environmental Policy*, 55 and 60.

of endangered species were reinforced by the Stockholm resolutions.⁷² From a legal perspective, the significant developments were the recommendations for the creation of new institutions and the establishment of co-ordinating mechanisms among existing institutions (the Action Plan), the definition of a framework for future actions to be taken by the international community (the Recommendations), and the adoption of a set of general guiding principles (the Principles).

The recommendation on institutional and financial arrangements proposed that action be taken by the UN General Assembly to establish four institutional arrangements: an intergovernmental Governing Council for Environmental Programmes to provide policy guidance for the direction and co-ordination of environmental programmes; an Environment Secretariat headed by an Executive Director; an Environment Fund to provide financing for environmental programmes; and an inter-agency Environmental Co-ordinating Board to ensure co-operation and co-ordination among all bodies concerned in the implementation of environmental programmes in the United Nations system. The Action Plan comprised 109 recommendations. These were generally accepted by consensus, and reflected an agenda which identified six main subject areas:

1. planning and management of human settlements for environmental quality;
2. environmental aspects of natural resources management;
3. identification and control of pollutants and nuisances of broad international significance;
4. educational, informational, social and cultural aspects of environmental issues;
5. development and environment; and
6. international organisational implications of action proposals.⁷³

The Action Plan included proposals on environmental assessment (by the establishment of Earthwatch, which was to include a Global Environmental Monitoring System (GEMS) and an International Referral System (subsequently INFOTERRA)); on natural resources management; and on supporting measures related to training and education and the provision of information. Consensus was virtually complete, although some reservations were made. The United States would not accept the principle of additionality, according to which an increase in its foreign aid budget would be required to cover costs imposed by environmental protection measures on development projects (Recommendation 109),⁷⁴ and Japan refused to observe the recommendation calling for a ten-year moratorium on commercial whaling (Recommendation 33).⁷⁵

⁷² *Ibid.*, 60. ⁷³ *Ibid.*, 61.

⁷⁴ This principle was, in effect, accepted at UNCED in 1992 and in the Climate Change and Biodiversity Conventions.

⁷⁵ Caldwell, *International Environmental Policy*, 62.

The Declaration of Principles for the Preservation and Enhancement of the Human Environment was based on a draft Declaration prepared by the Preparatory Committee. It was intended to provide 'a common outlook and... common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment'.⁷⁶ The twenty-six Principles reflected a compromise between those states which believed it should stimulate public awareness of, and concern for, environmental issues, and those states which wanted the Declaration to provide specific guidelines for future governmental and intergovernmental action.

From a legal perspective, the most relevant provisions are Principles 24, 21, 22 and 23. Principle 24 called for international co-operation 'to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all states'. Principle 21 affirmed the responsibility of states to ensure that activities within their jurisdiction or control do not cause damage in another state or beyond national jurisdiction, such as in outer space or on the high seas. This responsibility is said to extend also to activities under a state's 'control', such as those carried out by its nationals or by or on ships or aircraft registered in its territory.⁷⁷

Principle 22 required states to co-operate in developing international environmental law. This is a substantially weakened version of an earlier proposal, which would have required states to pay compensation for all environmental damage caused by activities carried on within their territory. The earlier proposal failed because of concerns that it implied acceptance of a no-fault or 'strict' standard of liability for environmental harm. Certain states made clear their view that liability to pay compensation would only exist where there had been negligence attributable to the state concerned.⁷⁸ Principle 23 foresaw a limited role for international regulation and suggested that certain standards would 'have to be determined nationally' on the basis of the value systems applying in each country and their social costs, and in accordance with the need for different environmental standards in different countries. The Stockholm Principles are weak on techniques for implementing environmental standards, such as environmental impact assessment, access to environmental information and the availability of administrative and judicial remedies. Principle 24 simply calls for international organisations to play a co-ordinated, efficient and dynamic role.

The other Stockholm Principles were couched in non-legal language. Principle 1 linked environmental protection to human rights norms, stating that man

⁷⁶ UN Doc. A/CONF.48/PC.17.

⁷⁷ For the background to Principle 21 and its subsequent development, see chapter 6, pp. 235-6 below.

⁷⁸ UN Doc. A/CONF.48/PC.12, Annex 1, at 15 (1971).

has 'the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations'.⁷⁹ Other Principles can be grouped into themes. Principles 2, 3 and 5 set forth general guidelines for the natural resources of the earth to be safeguarded for the benefit of present and future generations, and for the maintenance, restoration and improvement of vital renewable resources and the non-exhaustion of non-renewable resources. Principles 4, 6 and 7 identified specific environmental threats, recalling the special responsibility of man to safeguard and wisely manage the heritage of wildlife and habitat, halt the discharge of toxic and other substances and heat which cause serious or irreversible damage to the ecosystem, and prevent pollution of the seas or harm to living resources and marine life. Principles 8–15 addressed issues which reflected the relationship between development and the environment: they recognised the relationship between economic and social development and environmental quality; they called for 'accelerated development' through the transfer of financial and technological assistance and stable and adequate prices for commodities and raw materials; and they supported an integrated and co-ordinated approach to rational development planning which is compatible with protecting and improving the human environment. Principles 16–20 recognised the need for appropriate demographic policies; supported the development of national institutions to manage environmental resources; called for the application of science and technology; and encouraged education and scientific research and development.⁸⁰

The draft Declaration prepared by the Preparatory Committee had included a third important legal principle, originally entitled 'Principle 20', which would have provided that:

relevant information must be supplied by states on activities or developments within their jurisdiction or under their control whenever they believe, or have reason to believe, that such information is needed to avoid the risk of significant adverse effects on the environment in areas beyond their national jurisdiction.⁸¹

This Principle was not agreed at the Conference following the objections of a number of developing states, which maintained that the obligation to consult might be abused by developed states to impede development projects. As will be seen, this requirement is now recognised by the International Law Commission, and by many conventions, as a basic requirement.

⁷⁹ See chapter 7, p. 293 below.

⁸⁰ When the Stockholm Declaration was adopted, fewer than six states had national authorities specifically responsible for the environment. Today, few states do not have such a body.

⁸¹ UN Doc. A/CONF.48/4, Annex, para. 20, at 4 (1972).

Stockholm follow-up

The Report of the Stockholm Conference was considered by the UN General Assembly at its twenty-seventh session, which adopted eleven resolutions. Resolution 2994 (XXVII) noted with satisfaction the Conference Report.⁸² Resolution 2995 (XXVII) was a partial revival of the Preparatory Committee's original 'Principle 20', providing that technical information on proposed works should be supplied to other states where there is a risk of significant transboundary environmental harm, but that this information should be received in good faith and not used to delay or impede development of natural resources.⁸³ Resolution 2996 (XXVII) affirmed that Resolution 2995 was not to be construed as limiting Principles 21 and 22 of the Stockholm Declaration,⁸⁴ and Resolutions 2997 to 3004 addressed institutional and financial arrangements for international environmental co-operation, including the creation of the United Nations Environment Programme.⁸⁵

From Stockholm to Rio: 1972–1992

The Stockholm Conference set the scene for international activities at the regional and global level, and influenced legal and institutional developments up to and beyond UNCED. Developments in this period are of two types: those directly related to Stockholm and follow-up actions; and those indirectly related thereto. The period was marked by: a proliferation of international environmental organisations (including those established by treaty) and greater efforts by existing institutions to address environmental issues; the development of new sources of international environmental obligations from acts of such organisations; new environmental norms established by treaty; the development of new techniques for implementing environmental standards, including environmental impact assessment and access to information; and the formal integration of environment and development, particularly in relation to international trade and development assistance.

Post-Stockholm: treaties and other international acts

The creation of the United Nations Environment Programme (UNEP) and the adoption of Principle 21 were the most significant achievements of the Stockholm Conference. UNEP has been responsible for the establishment and implementation of the Regional Seas Programme, including some thirty regional treaties,⁸⁶ as well as important global treaties addressing ozone depletion, trade in hazardous waste and biodiversity.⁸⁷ In the period immediately after

⁸² *Yearbook of the UN* (1972), 330.

⁸³ *Ibid.*, 330–1.

⁸⁴ *Ibid.*, 331.

⁸⁵ *Ibid.*, 331–7. On UNEP, see chapter 3, pp. 83–5 below.

⁸⁶ Chapter 9, pp. 399–400 below.

⁸⁷ Chapter 3, pp. 83–5 below.

Stockholm, several other treaties of potentially global application were adopted outside UNEP but within the UN system, to address the dumping of waste at sea,⁸⁸ pollution from ships,⁸⁹ the trade in endangered species⁹⁰ and the protection of world cultural heritage.⁹¹ The most important, viewed over time, is likely to be the United Nations Convention on the Law of the Sea (UNCLOS) which established a comprehensive framework for the establishment of global rules on the protection of the marine environment and marine living resources, including detailed and important institutional arrangements and provisions on environmental assessment, technology transfer, liability and dispute settlement.⁹² Many of the techniques subsequently adopted in other environmental treaties may be traced directly to UNCLOS.

The Stockholm Conference was followed by important regional developments, including the adoption of EC environmental protection rules,⁹³ and the creation of an Environment Committee at the OECD.⁹⁴ Other notable regional developments included: multilateral treaties dedicated to the protection of all migratory species;⁹⁵ the protection of habitats;⁹⁶ the prevention of transboundary air pollution;⁹⁷ the regulation and prohibition of commercial mineral activities in the Antarctic,⁹⁸ and rules on environmental co-operation and behaviour in a compact on development assistance between developed and developing countries.⁹⁹

Towards the end of this period, UN economic and financial organisations began to be faced with the practical implications which national and international environmental law might have for their respective activities. In 1971, the General Agreement on Tariffs and Trade (GATT) had established a Group on Environmental Measures and International Trade (which did not meet until 1991), and as an organisation found itself increasingly faced with environmental issues, including the question of the circumstances in which unilateral trade restrictions adopted in the name of environmental protection could be justified under GATT rules.¹⁰⁰ In the face of increasing public and governmental pressure, the World Bank and the regional development

⁸⁸ 1972 London Convention; see chapter 9, pp. 416–20 below.

⁸⁹ MARPOL 73/78; see chapter 9, pp. 440–5 below.

⁹⁰ 1973 CITES; see chapter 11, pp. 505–15 below.

⁹¹ 1972 World Heritage Convention; see chapter 11, pp. 611–15 below.

⁹² See chapter 5; chapter 10; chapter 17 below; and chapter 19 below.

⁹³ Chapter 15, pp. 732–98 below. ⁹⁴ Chapter 3, p. 103 below.

⁹⁵ 1979 Bonn Convention; see chapter 11, pp. 607–11 below.

⁹⁶ 1979 Berne Convention; see chapter 11, pp. 532–5 below.

⁹⁷ 1979 LRTAP Convention and Protocols; see chapter 8, pp. 324–6 below.

⁹⁸ 1988 CRAMRA and 1991 Environmental Protocol to the 1959 Antarctic Treaty; see chapter 14, pp. 716–21 below.

⁹⁹ 1989 Lomé Convention; see chapter 20, p. 1022 below.

¹⁰⁰ Chapter 19, pp. 946–85 below. The same issue had arisen in the regional context of the EC as early as 1980: see chapter 19, pp. 985–97 below.

banks were called upon to integrate environmental considerations into their loan-making processes. This led to the establishment of an Environment Department in the World Bank and the adoption of limited environmental impact assessment requirements by most multilateral development banks.¹⁰¹ Amongst the most significant reflection of the changing times was the integration of environmental obligations into the 1990 Articles establishing the European Bank for Reconstruction and Development.¹⁰² In 1991, the World Bank, UNEP and the United Nations Development Programme established the Global Environmental Facility to provide financial resources to support projects which benefited the global commons. At the same time, the GATT decided to re-activate its long-dormant Group on Environmental Measures and International Trade.

Prior to UNCED, treaties were adopted in areas not previously subject to international regulation. Under the auspices of the UNECE, treaties addressed environmental impact assessment,¹⁰³ the transboundary impacts of industrial accidents,¹⁰⁴ and the protection and use of international watercourses.¹⁰⁵ The International Law Commission (ILC) completed a first reading of its draft Articles on the law of non-navigational uses of international watercourses, while the UN Security Council declared that ecological issues could constitute threats to international peace and security. The UN General Assembly adopted a resolution prohibiting the use of driftnets, the first time that body had adopted a normative rule seeking to establish a worldwide standard.

This was also the period in which the impact of acts of international organisations began to be felt. Many organisations had the power to adopt binding or non-binding decisions, resolutions, recommendations or other acts, and these organisations served as fora in which new international environmental legislation could be proposed, adopted and implemented. There are several examples of such acts which are noteworthy for their consequences on industrial and other economic activity, but three in particular reflect the scale of the changes which had occurred. These were: the moratorium on commercial whaling adopted by resolution of the International Whaling Commission in 1982;¹⁰⁶ the 1983 moratorium on commercial whaling adopted by resolution of the Consultative Meeting of the parties to the 1972 London Convention;¹⁰⁷ and the decision by the 1989 conference of the parties to the 1973 CITES which placed African elephant ivory on Appendix 1 to the Convention and banned the international trade in ivory.¹⁰⁸ Each of these acts followed public pressure and politico-legal strategies adopted at the national and international levels

¹⁰¹ Chapter 20, pp. 1025–7 below. ¹⁰² Chapter 20, pp. 1028–9 below.

¹⁰³ 1991 Espoo Convention; see chapter 16, pp. 814–17 below.

¹⁰⁴ 1992 Industrial Accidents Convention; see chapter 12, pp. 623–5 below.

¹⁰⁵ 1992 Watercourses Convention; see chapter 10, pp. 466–8 below.

¹⁰⁶ Chapter 11, pp. 592–5 below. ¹⁰⁷ Chapter 9, pp. 416–22 below.

¹⁰⁸ Chapter 11, pp. 505–14 below.

over several years. Despite strong efforts to reverse these acts, they remained effective in 2002, although their economic impact, and their effect on the activities of indigenous peoples, focused attention on the broader economic and social implications of adopting international environmental regulations.

Several non-binding instruments were adopted under the auspices of inter-governmental and non-governmental organisations. Three such instruments have played an influential role: the 1978 UNEP draft Principles, the 1981 Montevideo Programme, and the 1982 World Charter for Nature. Non-governmental efforts lay behind two other initiatives whose impact has been substantial: the collaboration between IUCN, UNEP and the Worldwide Fund for Nature (WWF) which led to the 1980 World Conservation Strategy; and the 1991 document entitled 'Caring for the Earth: A Strategy for Sustainable Living'.

- 1978 UNEP draft Principles

One of the first acts to be adopted by UNEP in the field of international law led to the 1978 draft 'Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilisation of Natural Resources Shared by Two or More States' (the UNEP draft Principles).¹⁰⁹ The draft Principles resulted from the efforts of an Intergovernmental Working Group established by the UNEP Governing Council in 1976,¹¹⁰ pursuant to a request by the UN General Assembly.¹¹¹ The Working Group agreed to limit the effort to the preparation of principles and guidelines which would not be taken as creating legally binding obligations. This is reflected in the Explanatory Note to the Principles, which states that 'the language used throughout does not seek to prejudice whether or to what extent the conduct envisaged in the principles is already prescribed by existing principles of general international law'. The UNEP draft Principles were annexed to the final report of the Working Group which was adopted by the UNEP Governing Council in May 1978 but never submitted to the General Assembly for its consideration.¹¹²

The UNEP draft Principles comprise fifteen principles to govern the use of 'shared natural resources', a concept which is not defined but which is understood from the Report of the UNEP Executive Director to mean something other than the 'global commons'.¹¹³ The fifteen Principles include language

¹⁰⁹ 17 ILM 1097 (1978); see also A. O. Adede, 'Utilisation of Shared Natural Resources: Towards a Code of Conduct', 5 *Environmental Policy and Law* 66 at 67-8 (1979).

¹¹⁰ UNEP Governing Council Decision 44 (III) (1975).

¹¹¹ UNGA Res. 3129 (XXVIII) (1973).

¹¹² UNEP Governing Council Decision 6/14 (1978).

¹¹³ Co-operation in the Field of the Environment Concerning National Resources Shared by Two or More States, Report of the Executive Director, UNEP/GC/44, 20 February 1975, which cites five illustrative examples: (1) an international water system, including both surface and ground water; (2) an air-shed or air mass above the territories of a limited number of states; (3) enclosed or semi-enclosed seas and adjacent coastal waters;

presciently similar to some of the provisions which were endorsed by the whole of the international community, fourteen years later at UNCED. Principles 1 and 2 recognise the duty of states to co-operate to control, prevent, reduce and eliminate adverse environmental effects, and requires them, to that end, to endeavour to conclude bilateral or multilateral agreements to secure specific regulation of their conduct. Principle 21 of the Stockholm Declaration, broadly followed by Principles 3 and 4, introduces a requirement that states 'make environmental assessments' before engaging in certain activities. Principles 5 and 6 relate to information exchange, consultation and notification, which are elements of the principle of good faith and good neighbourliness elaborated by Principle 7. The draft Principles include principles on scientific studies and assessments (Principle 8), emergency action (Principle 9) and the use of the 'services' of international organisations (Principle 10). The settlement of disputes and responsibility and liability are addressed by Principles 12 and 13, and Principles 13 and 14 elaborate upon the objectives of non-discrimination and the rights of persons in other jurisdictions who may be adversely affected by environmental damage to the equal right of access to administrative and judicial proceedings. Principle 15 provides that the UNEP draft Principles should be interpreted and applied 'to enhance and not to affect adversely development and the interests of all countries, and in particular the developing countries'.

1981 Montevideo Programme

Three years later, an *ad hoc* meeting of senior government officials expert in environmental law was held in Montevideo under UNEP auspices, and the Programme for the Development and Periodic Review of Environmental Law (the Montevideo Programme) was prepared.¹¹⁴ The Programme was adopted by the UNEP Governing Council in May 1982 and influenced UNEP's legal activities in the period 1982-92, resulting in the development of regional and global treaties and 'soft law' instruments.¹¹⁵ The Montevideo Programme has also been integrated into the UN System-Wide Medium-Term Environment Programmes (1984-9 and 1990-5). In 1993 and again in 2001, the UNEP Governing Council adopted new Programmes.¹¹⁶

The original Montevideo Programme was divided into three parts. The first part proposed that guidelines, principles or agreements should be developed

- (4) migratory species which move between the waters or territories of several states; and
 (5) a special ecosystem spanning the frontiers between two or more states, such as a series of mountains, forests or areas of special nature conservation; *Ibid.*, 40-1. See chapter 1 above.

¹¹⁴ Report, UNEP/GC.10/5/Add.2, Annex, chapter II (1981); 8 *Environmental Policy and Law* 31 (1982).

¹¹⁵ Governing Council Decision 10/21, 31 May 1982. On UNEP-sponsored legal developments, see chapter 3, pp. 83-5 below.

¹¹⁶ See pp. 67-9 below.

to address: marine pollution from land-based sources; protection of the stratospheric ozone layer; and the transport, handling and disposal of toxic and dangerous wastes. The second part proposed that action should be taken to address eight priority subject areas:

- international co-operation in environmental emergencies;
- coastal zone management;
- soil conservation;
- transboundary air pollution;
- international trade in potentially harmful chemicals;
- the protection of rivers and other inland waters against pollution;
- legal and administrative measures for the prevention and redress of pollution damage; and
- environmental impact assessment.

The third programme area proposed work of a general nature to promote the development of environmental law, including research, writing and teaching of theoretical and practical aspects of environmental law and the dissemination of information.

1982 World Charter for Nature

Ten years after the Stockholm Conference, the UN General Assembly adopted the World Charter for Nature, which set forth 'principles of conservation by which all human conduct affecting nature is to be guided and judged'.¹¹⁷ The Charter, which is divided into three sections, is a non-binding instrument drafted in general language. The Charter differs from the Stockholm Declaration and the UNEP draft Principles in substance and form: it is an avowedly ecological instrument. Whereas the earlier instruments were anthropocentric and focused on the protection of nature for the benefit of mankind, the Charter emphasises the protection of nature as an end in itself. The explanation for this lies in part in its origins – the Twelfth General Assembly of the IUCN held in Zaire in 1975 – and in its subsequent elaboration by IUCN and an international group of independent experts. The Charter was strongly supported by developing countries, marking a change from the general reluctance which many of these countries had expressed at Stockholm ten years earlier for international environmental policy. The Charter is not binding, and has been characterised as 'an important symbolic expression of an intent among nations to achieve a more harmonious and sustainable relationship between humanity and the rest of the biosphere – between mankind and earth'.¹¹⁸ As a standard of ethical conduct, however, many of its provisions are now reflected in treaties.

¹¹⁷ UNGA Res. 37/7, 28 October 1982. The Charter was adopted by a vote of 111 in favour, eighteen abstentions and one vote against (United States); 23 ILM 455 (1983).

¹¹⁸ Caldwell, *International Environmental Policy*, 92.

Section I, entitled 'General Principles', contains aspirational language calling for the respect of nature and its essential processes: safeguarding habitats and ensuring the survival of all life forms; providing special protection for unique areas, ecosystems and habitats of endangered species; maintaining 'optimum sustainable productivity' of natural resources without endangering other ecosystems or species; and securing nature against degradation from warfare.¹¹⁹ Section II, entitled 'Functions', is more operational in character. It calls for the integration of nature into the planning and implementation of development activities, taking into account the long-term capacity of natural systems and the physical constraints, biological productivity and diversity and natural beauty of different areas.¹²⁰ The Charter includes 'rules' governing the use of natural resources which pre-date the concept of sustainable development first used in the 1985 ASEAN Agreement and endorsed by the Brundtland Report in 1987. Living resources should not be used in excess of their natural capacity for regeneration; the productivity of soils should be maintained; resources should be reused or recycled, and non-renewable resources should be used with restraint.¹²¹ The Charter includes language on environmental impact assessment and distinguishes between three activities in the light of such assessments: (1) activities which are likely to cause irreversible damage to nature (which should be avoided); (2) activities which are likely to pose a significant risk to nature (which should be preceded by an exhaustive examination); and (3) activities which may disturb nature (which should be preceded by an assessment of their consequences).¹²² The approach is now broadly reflected in international practice. The Charter supports an approach which combines the prevention of natural disasters, the avoidance of discharge of pollutants, and the rehabilitation of degraded areas.¹²³

Section III, entitled 'Implementation', includes elements of the approaches endorsed and applied by subsequent environmental treaties and instruments. These techniques include: the dissemination of knowledge of nature, particularly by ecological education; the formulation of conservation strategies and environmental assessments; public access to information for consultation and participation; the provision of funds and administrative structures; scientific research; and early detection of degradation.¹²⁴ Implementation includes: co-operation among and between the various actors in the international community (states, public authorities, international organisations, individuals, groups and corporations); the establishment of standards for products and manufacturing processes; the implementation of applicable international legal provisions, and measures to ensure that activities do not cause damage to natural systems within other states or in areas beyond the limits of national

¹¹⁹ Paras. 1-5.¹²⁰ Paras. 7-9.¹²¹ Para. 10.¹²² Para. 11.¹²³ Paras. 11(e), 12 and 13.¹²⁴ Paras. 15-19.

jurisdiction.¹²⁵ The Charter recognises the place of non-state actors, including their right and duties relating to participation in the formulation of decisions, access to means of redress when their environment suffers damage, and the responsibility to act in accordance with the provisions of the Charter.¹²⁶

1980 World Conservation Strategy/1991 'Caring for the Earth' Strategy

The 1980 World Conservation Strategy was prepared by IUCN, UNEP, WWF, UNESCO and FAO. The Strategy gave currency to the term 'sustainable development', and has led to the preparation of national and sub-national conservation strategies in most states. It has subsequently influenced international legal developments. The 1980 Strategy emphasised three objectives stressing the interdependence of conservation and development:

1. essential ecological processes and life-support systems must be maintained;
2. genetic diversity must be preserved; and
3. any use of species or ecosystems must be sustainable.

It identified six main obstacles to the fulfilment of these objectives:

1. the failure to recognise that living resource conservation is a process that cuts across all sectors;
2. the failure to integrate conservation with development;
3. a development process that is inadequate in environmental planning and management;
4. lack of capacity to conserve due to inadequate legislation and lack of enforcement;
5. lack of awareness of the benefit of conservation; and
6. the inability to deliver conservation-based development where it is most needed, including rural areas of developing countries.¹²⁷

In 1991, the 'Caring for the Earth' Strategy restated the thinking about conservation and development with two aims: securing a commitment to sustainable living; and translating its principles into practice.¹²⁸ The text defines Principles and Additional Actions for Sustainable Living, and proposes guidelines to allow adaptation of the Strategy to needs and capabilities and to implement it. The Strategy includes a commitment to national and international law as essential tools for achieving sustainability by the establishment of standards of social behaviour and the establishment of permanent policies. Specific recommendations include:

¹²⁵ Para. 21. ¹²⁶ Paras. 23–24.

¹²⁷ Caldwell, *International Environmental Policy*, 322–3.

¹²⁸ IUCN, UNEP and WWF, *Caring for the Earth: A Strategy for Sustainable Living* (1991).

1. establishing a constitutional commitment to the principles of a sustainable society;
2. establishing a comprehensive system for environmental law, and providing for its implementation and enforcement;
3. reviewing the adequacy of legal and administrative controls and of implementation and enforcement mechanisms;
4. making information on the environment more accessible; and
5. subjecting projects, programmes and policies to environmental impact assessment.¹²⁹

National legal measures specifically recommended include: the development of standards; the application of the precautionary principle and the use of best available technology; a liability system that provides for compensation not only for economic losses suffered by other users of the environmental resource in question but also for ecological and intangible losses, and the capacity to require the restoration of damaged ecosystems, or punitive damages where restoration is impossible. Also recommended were strict liability for accidents involving hazardous substances; granting citizens' groups standing in judicial and administrative procedures in order to contribute to enforcement of the law and remedies for environmental damage; and making agencies that are responsible for the implementation and enforcement of environmental law accountable for their actions.¹³⁰ The Strategy seeks the development of international law by strengthening existing international agreements, concluding new international agreements to achieve global sustainability, and preparing and adopting a Universal Declaration and Covenant on Sustainability.¹³¹

The Brundtland Report and the Report of the Legal Experts Group of the World Commission on Environment and Development (WCED), chaired by Norwegian Prime Minister Gro Harlem Brundtland, was established in 1983 by the UN General Assembly, and its report (the Brundtland Report) was published in 1987.¹³² The Commission was established as an independent body, linked to, but outside the control of, governments and the UN system. It had three objectives: to re-examine critical environment and development issues and formulate realistic proposals for dealing with them; to propose new forms of international co-operation on these issues that would influence policies and events in the direction of needed changes; and to raise levels of understanding and commitment to action of individuals, voluntary organisations, businesses, institutions and governments. Drawing on previous work such as the World Conservation Strategy, the Brundtland Report was a catalyst for UNCED and the five instruments there adopted. The Brundtland

¹²⁹ *Ibid.*, 66-73.

¹³⁰ *Ibid.*, 68-9.

¹³¹ *Ibid.*, 79-81.

¹³² *Our Common Future* (1987).

Report signalled changes in the way we look at the world. It provided support for expanding the role of sustainable development, proposed a UN programme on sustainable development, and identified the central legal and institutional issues.

Until recently, the planet was a large world in which human activities and their effects were neatly compartmentalised within nations, within sectors (energy, agriculture, trade) and within broad areas of concern (environmental, economic, social). These compartments have begun to dissolve. This applies in particular to the global 'crises' that have seized public concern, particularly over the last decade. These are not separate crises: an environmental crisis, a development crisis, an energy crisis. They are all one.¹³³

On policy matters the Commission focused attention on population, food security, the loss of species and genetic resources, energy, industry and human settlements, recognising that these are connected and cannot be treated in isolation from each other. On international co-operation and institutional reform the focus included: the role of the international economy; managing the global commons; the relationship between peace, security, development and the environment; and institutional and legal change. The Report made specific recommendations in respect of each of these matters that identify challenges for the development of international law, including the impact of national sovereignty and the management of the 'global commons'. The Brundtland Report identified six priority areas for legal and institutional change, and identified the existing legal order as part of the problem. First, governments, regional organisations, and international bodies and agencies were called upon to support development which would be economically and ecologically sustainable, to integrate the environment fully into their goals and activities, and to improve co-ordination and co-operation. Secondly, it sought a reinforcement of the roles and capacities of environmental protection and resource management agencies to deal with effects, including a strengthened UNEP as the principal source for environmental data, assessment and reporting and the principal advocate and agent for change and international co-operation. Thirdly, it called for an extension of the capacity of the international community to identify, assess and report on global risks of irreversible environmental damage, including a new international programme for co-operation among non-governmental organisations, scientific bodies and industry groups. Fourthly, it recognised the need to expand the rights, roles and participation in development planning, decision-making and project implementation of an informed public, non-governmental organisations, the scientific community, and industry.

¹³³ *Ibid.*, 4.

Fifthly, in recognising that 'international law is being rapidly out-distanced by the accelerating pace and expanding scale of impacts on the ecological basis of development', the Brundtland Report called on governments to fill gaps in national and international law related to the environment in order to find ways to recognise and protect the rights of present and future generations to an environment adequate for their health and well-being, to prepare under UN auspices a universal declaration on environmental protection and sustainable development and a subsequent convention, and to strengthen procedures for avoiding or resolving disputes on environment and resource management issues. Finally, the Report recognised the need to invest in pollution control by providing financial assistance through the World Bank, the IMF and other regional development banks. The Report also called for a UN Programme on Sustainable Development and an international conference to review progress and to promote follow-up arrangements. Each of these proposals received support from governments at UNCED.

An Experts Group on Environmental Law was established alongside UNCED. It proposed Legal Principles and Recommendations on Environmental Protection and Sustainable Development (1986 WCED Legal Principles),¹³⁴ set out in twenty-two Articles, which are intended to reflect the basic obligations of states based on an assessment of treaties, soft law instruments, and some state practice. The WCED Legal Principles fall into three categories, including 'general principles, rights and responsibilities', and 'principles, rights and obligations governing transboundary natural resources and environmental interference'. These are addressed below.

Environmental Perspective to the Year 2000 and Beyond

In 1987 the United Nations General Assembly adopted the 'Environmental Perspective to the Year 2000 and Beyond' as a framework to guide national action and international co-operation in policies and programmes aimed at achieving environmentally sound development.¹³⁵ The Perspective had been prepared by a UNEP intergovernmental preparatory committee pursuant to a request from the General Assembly,¹³⁶ and focused on the same six key sectoral issues as the Brundtland Commission: population; food and agriculture; energy; industry; health and human settlements; and international economic relations. The Perspective identified four further issues which it considered to be of global concern: oceans and seas; outer space; biological diversity; and security and the environment. For legislation and environmental law, the Perspective identified issues requiring attention:

¹³⁴ Reprinted in R. D. Munro and J. G. Lammers (eds.), *Environmental Protection and Sustainable Development* (1987), 7.

¹³⁵ Res. 42/186, 11 December 1987. ¹³⁶ UNGA Res. 38/161, 19 December 1983.

- the need to conclude conventions for hazards relating to chemicals, the treatment and international transport of hazardous wastes, industrial accidents, climate change, protection of the ozone layer, protection of the marine environment from pollution from land-based sources, and protection of biological diversity; and
- the establishment of legal regimes at international and national levels to improve the environmental management of rivers, lakes and forests.¹³⁷

The Perspective noted, in opaque language which reflected the lack of consensus over future directions, that the 'progressive emergence of general environmental norms and principles and the codification of existing agreements could lead to a global convention on the protection and enhancement of the environment'.¹³⁸ It also noted that the International Court of Justice, the Permanent Court of Arbitration and regional mechanisms should facilitate the peaceful settlement of environmental disputes.¹³⁹

Conclusions

By 1990, preparations for UNCED were under way and significant political and legal changes were in place. There was now a discrete area of law called international environmental law. At the global and regional level this included a large number of substantive rules limiting the rights of states to engage in activities which were harmful to the environment. International environmental law was no longer focused on the protection of wildlife. Standards had been adopted and applied for the protection of the marine environment and freshwater resources, the atmosphere and the ozone layer, and the disposal of hazardous and other wastes. New techniques for the implementation of those standards, such as environmental impact assessment and access to environmental information, were being developed and applied. Environmental protection was being addressed in the context of economic matters, such as trade and development lending. Developing countries had succeeded in establishing the principle that financial resources should be made available to help them meet the incremental costs of implementing their international environmental obligations. Differential standards were accepted in the 1985 SO₂ Protocol to the 1979 LRTAP Convention and the 1987 Montreal Protocol. New institutions had been created to address regional and global environmental issues, and existing institutions were beginning to integrate environmental considerations into their activities. Subsidiary bodies were being established to ensure innovative implementation and compliance techniques. Principle 21 was broadly considered to reflect a rule of customary international law, and new principles were emerging, such as the polluter-pays principle and the precautionary principle. Perhaps most significantly, in respect of the standards being adopted, and in respect of monitoring

¹³⁷ *Ibid.*, Annex, 38, paras. 100–2.

¹³⁸ *Ibid.*, para. 138.

¹³⁹ *Ibid.*, para. 103.

and implementation, new international actors, including non-governmental organisations from developed and developing countries, were participating in the international legal process.

UNCED

Report of the UN Conference on Environment and Development, Rio de Janeiro, 3–14 June 1992, UN Doc. A/CONF.151/26/Rev.1 (vols. I–III); A. Adede, 'International Environmental Law from Stockholm to Rio: an Overview of Past Lessons and Future Challenges', 22 Environmental Policy and Law 88 (1992); A. C. Kiss and S. Doumbe-Bille, 'La Conference des Nations Unies sur l'Environnement et le Developpement', AFDI 823 (1992); I. M. Porras, 'The Rio Declaration: A New Basis for International Co-operation', 1 RECIEL 245 (1992); G. Speth, 'A Post Rio Compact', 88 Foreign Policy 145 (1992); M. Pallemerts, 'International Environmental Law from Stockholm to Rio: Back to the Future?' 1 RECIEL 254 (1992); P. Sand, 'UNCED and the Development of International Environmental Law', 3 Yearbook of International Environmental Law 3 (1992); N. Robinson (ed.), International Protection of the Environment: Agenda 21 and the UNCED Proceedings (1992); D. Freestone, 'The Road from Rio: International Environmental Law after the Earth Summit', 6 JEL 193 (1994); H. Smets, 'The Polluter-Pays Principle in the Early 1990s', in L. Campiglio et al. (eds.), The Environment After Rio (1994), 131.

In December 1987, the UN General Assembly noted the Brundtland Report,¹⁴⁰ and the following year called for a UN conference on environment and development.¹⁴¹ In December 1989, General Assembly Resolution 44/228 convened a UN Conference on Environment and Development for June 1992 in Brazil. The purpose of the Conference was to elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of strengthened national and international efforts to promote sustainable and environmentally sound development in all countries.¹⁴²

UNCED was held in Rio de Janeiro, Brazil, on 3–14 June 1992, and was attended by 176 states, more than fifty intergovernmental organisations, and several thousand corporations and non-governmental organisations. UNCED adopted three non-binding instruments: the Rio Declaration on Environment and Development (the Rio Declaration); a Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forest (the UNCED Forest

¹⁴⁰ UNGA Res. 42/187 (1987).

¹⁴¹ UNGA Res. 43/196 (1988). See also UNEP Governing Council Decision 15/3 (1989); ECOSOC Res. 1989/87 (1989); Report of the Secretary General, UN Doc. A/44/256-E/1989/66 and Corr.1 and Add.1 and 2 (1989).

¹⁴² UNGA Res. 44/228, para. 3.

Principles);¹⁴³ and Agenda 21. Two treaties were also opened for signature: the Convention on Biological Diversity,¹⁴⁴ and the UN Framework Convention on Climate Change.¹⁴⁵

UNCED was the culmination of three separate but related negotiating processes, one of which was the Preparatory Committee for UNCED (PrepComm) which met four times between August 1990 and May 1992. The other two were the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC/FCCC) which held five sessions between February 1991 and May 1992, and the Intergovernmental Negotiating Committee for a Convention on Biological Diversity (INC/CBD) which held five sessions between June 1991 and May 1992. It was also, however, an opportunity to take stock of developments which had taken place in regional and global organisations, in public and private initiatives, and in bilateral, regional and global treaties. It provided an opportunity for the international community to translate initiatives such as the Brundtland Report and the Strategy for Sustainable Living, as well as the many regional preparatory conferences which had taken place, into a coherent strategy of international environmental policy and law for the twenty-first century. UNCED's contribution to international law will emerge over time, and is likely to include the Commission on Sustainable Development, the endorsement of a new topic area known as the 'international law of sustainable development' (of which international environmental law forms a significant part),¹⁴⁶ a number of the Rio Declaration principles, and the framework established by Agenda 21. It has been suggested that UNCED's endorsement of sustainable development could undermine 'the autonomy of environmental law as a body of rules and standards designed to restrain and prevent the environmentally destructive effects of certain kinds of economic activity', and there might be some reason to fear that the Rio Conference constituted 'the beginning of the decline of international environmental law as an autonomous branch of international law'.¹⁴⁷ This has not been borne out by subsequent developments.

UNCED was concerned with the balance between environmental protection and economic development. Environmental concerns have been marginal in the broader scheme of international legal and institutional arrangements. For them to affect and influence behaviour in significant ways they must be integrated into economic and development activities, without their being overwhelmed by the more powerful rules of international economic co-operation.

¹⁴³ A/CONF.151/6/Rev.1, 13 June 1992. See chapter 11, pp. 548–51 below.

¹⁴⁴ Chapter 11, pp. 515–23 below. ¹⁴⁵ Chapter 8, pp. 359–68 below.

¹⁴⁶ Rio Declaration, Principle 27. Agenda 21, paras. 39.1 and 39.2.

¹⁴⁷ Marc Pallemerts, 'International Environmental Law from Stockholm to Rio: Back to the Future?', 1 RECIEL 254 at 264 (1992); and D. Wirth, 'The Rio Declaration on Environment and Development: Two Steps Forward and One Step Back, or Vice Versa', 29 *Georgetown Law Review* 599 (1995).

The Rio Declaration

The Rio Declaration represents a series of compromises between developed and developing countries and a balance between the objectives of environmental protection and economic development.¹⁴⁸ The text was completed at the Fourth PrepComm in April 1992 and was not reopened for negotiation at UNCED, despite threats from a number of countries to do so, and was 'endorsed' by the UN General Assembly in December 1992.¹⁴⁹ It comprises twenty-seven Principles which set out the basis upon which states and people are to co-operate and further develop 'international law in the field of sustainable development' (Principle 27). Although it is non-binding, some provisions reflect rules of customary law, others reflect emerging rules, and yet others provide guidance as to future legal developments. A number of the Principles have been referred to with regularity by national and international courts. The Rio Declaration provides a benchmark to measure future developments, and provides a basis for defining 'sustainable development' and its application. It attempts to achieve an acceptable balance between environment and development. The Rio Declaration lost its original title ('Earth Charter'), mainly at the insistence of developing countries, and it bears little resemblance to the Universal Declaration of Human Rights, or to the Universal Covenant which the Brundtland Report had called for.

Principle 1 of the Rio Declaration reflects a shift towards an anthropocentric approach to environmental and developmental issues, declaring that human beings are 'at the centre of concerns for sustainable development', and that they are 'entitled to a healthy and productive life in harmony with nature'; this falls short of recognising a 'right to a clean and healthy environment'. The Rio Declaration reaffirmed Principle 21 of the Stockholm Declaration with one addition. As amended, Principle 2 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 and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.

The addition of the words 'and developmental' (which is not reflected in Article 3 of the Biodiversity Convention or Principle 2(a) of the Forest Principles), in the context of a negotiation of a document adopted by consensus by 176 states, arguably reflects an 'instant' change in the rule of customary international law which is widely considered to be set forth in Principle 21. It has been

¹⁴⁸ 31 ILM 874 (1992). For an account of the negotiating history of the Rio Declaration, and an excellent interpretative guide, see Ileana Porras, 'The Rio Declaration: A New Basis for International Co-operation', 1 RECIEL 245 (1992).

¹⁴⁹ UNGA Res. 47/190 (1992), para. 2.

suggested that the addition of these two words reveals a 'skilfully masked step backwards' which by its stronger emphasis on development 'upsets the delicate balance struck in Stockholm between the sovereign use of natural resources and the duty of care for the environment'.¹⁵⁰ In fact, a careful reading suggests that the additional words merely affirm that states are entitled to pursue their own development policies. The introduction of these words may even expand the scope of the responsibility not to cause environmental damage to apply to national development policies as well as national environment policies. In practice, the modest amendment has not been identified as having been relied upon by states.¹⁵¹

The heart of the Rio Declaration is found in Principles 3 and 4, which should be read together to understand the political context in which they were negotiated and the trade-off they represent. Both Principles were initially controversial. Principle 3 provides that '[t]he right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations'. It represents something of a victory for developing countries and the Group of 77, being the first time that the 'right to development' has been affirmed in an international instrument adopted by consensus.¹⁵² The nature and extent of that right is left open, as is the question of whether such a right attaches to states, peoples or individuals. In return for Principle 3, the developed countries extracted Principle 4, which provides that '[i]n order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it'. This reflects a commitment to moving environmental considerations and objectives from the periphery of international relations to its economic core. In practical terms, Principle 4 can be read as permitting, or requiring, the attachment of environmental conditionalities to all development lending by states and multilateral development banks, and the integration of environmental considerations into all economic and other development.

The Rio Declaration recognises a principle of 'common but differentiated responsibility'. Principle 7 notes the different contributions of countries to regional and global environmental degradation, and provides that:

[i]n view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.¹⁵³

¹⁵⁰ Pallemaerts, 'International Environmental Law', 256.

¹⁵¹ See chapter 6, pp. 252–66 below.

¹⁵² Cf. the written statement by the United States, which 'does not, by joining consensus . . . change its longstanding opposition to the so-called "right to development": A/CONF.151/26/Rev.1 (vol. II), 17 (1992).

¹⁵³ See chapter 6, pp. 285–9 below.

This principle of 'common but differentiated responsibilities' crystallises the provisions in earlier instruments which encourage universal participation in agreements by providing incentives in the form of differentiated standards and 'grace periods', and the provision of financial incentives to subsidise at least some of the incremental costs incurred in fulfilling treaty obligations. The United States rejected an interpretation 'that would imply a recognition or acceptance by the United States of any international obligations or liabilities, or any diminutions in the responsibilities of developing countries'.¹⁵⁴

Principle 11 of the Rio Declaration commits all states to enact 'effective environmental legislation', although the standards, objectives and priorities 'should reflect the environmental and developmental context to which they apply'.¹⁵⁵ Principle 11 also recognises that standards applied by some countries 'may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries'.

The Rio Declaration develops general principles of the international law of sustainable development. The 'precautionary approach' is endorsed by Principle 15, and the polluter-pays principle is implicitly recognised in Principle 16. The Rio Declaration takes several steps beyond the Stockholm Declaration by supporting the development of 'procedural' techniques for implementing international standards (including the provision of, and access to, information relating to environmental matters, and recognising the need for participation of concerned citizens) supporting environmental impact assessments, and calling for notification, information exchange and consultation.

Other matters addressed by the Rio Declaration include: the relationship between environmental protection and free trade obligations; the development of national and international law regarding liability and compensation for the victims of pollution and other environmental damage; the need to eradicate poverty and decrease disparities in standards of living; and the reduction and elimination of 'unsustainable patterns of production and consumption'. It promotes 'appropriate demographic policies', endogenous capacity-building and scientific understanding, as well as the transfer of technologies. The Rio Declaration supports the full participation of women, youth and indigenous people and their communities, recognises that war is 'inherently destructive of sustainable development', that peace, development and environmental protection are 'interdependent and indivisible', and that there is a need for the peaceful resolution of environmental disputes.

As a package, the Rio Declaration includes provisions which are more specific than those adopted in the Stockholm Declaration. It provides a framework for the development of environmental law at the national and international level which will serve as an important point of reference to guide decision-making. Its

¹⁵⁴ A/CONE.151/26/Rev.1 (vol. II), 18 (1993).

¹⁵⁵ Principle 11.

contribution to the development of rules of customary law has become clearer over time, although many of its provisions were already found in treaties and other international acts and reflected in the domestic practice of many states.

Agenda 21

Agenda 21 is a non-binding blueprint and action plan for a global partnership for sustainable development.¹⁵⁶ It was conceived as a plan of action by and for the whole of the international community, designed to integrate environment and development concerns for 'the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future.'¹⁵⁷ Agenda 21 comprises forty chapters and hundreds of programme areas, the indicative cost of each having been estimated by the UNCED secretariat. The average annual cost of implementing the activities in Agenda 21 was estimated at US\$600 billion in the period 1993–2000.

Agenda 21 was negotiated over two years, and 'reflects a global consensus and political commitment at the highest level' towards the implementation of national strategies, plans, policies and processes to be supported and supplemented by international co-operation.¹⁵⁸ The implementation of Agenda 21 is the responsibility of governments, with key roles to be played by the UN system, other international, regional and sub-regional organisations, and with broad public participation and the active involvement of non-governmental organisations.¹⁵⁹ It constitutes an extensive series of programme areas setting out 'the basis for action, objectives, activities and means of implementation' which will be carried out

by the various actors according to the different situations, capacities and priorities of countries and regions in full respect of all the principles contained in the Rio Declaration on Environment and Development. It could evolve over time in the light of changing needs and circumstances. This process marks the beginning of a new global partnership for sustainable development.¹⁶⁰

What contribution has Agenda 21 made to international law? The tangible developments which flow directly from the text are limited. It recommended the creation of a Commission on Sustainable Development, and new

¹⁵⁶ UNCED Report, A/CONF.151/26/Rev.1 (vol. I) (1993).

¹⁵⁷ Chapter 1, para. 1.1. UNGA Res. 47/190 (1992) called upon 'all concerned' to implement the commitments and recommendations without specifically endorsing Agenda 21.

¹⁵⁸ Chapter 1, para. 1.2. For the draft negotiating texts, see N. Robinson *et al.* (eds.), *The United Nations Conference on Environment and Development, Agenda 21 and the UNCED Proceedings* (1992). Although it was adopted by consensus, written statements were submitted by the United States, Saudi Arabia, Argentina, Kuwait, Philippines, France and the delegation from Palestine: A/CONF.151/26/Rev.1 (vol. II), 18–22 (1993).

¹⁵⁹ *Ibid.* ¹⁶⁰ Chapter 1, para. 1.5.

co-ordinating mechanisms among UN and other bodies. It proposed a Convention on Drought and Desertification (which was adopted in 1994), but could not agree on a possible international agreement on forests (which remains an unachieved goal for some states). It proposed two intergovernmental follow-up conferences, on 'straddling stocks' of marine living resources (a convention was adopted in 1995) and on the sustainable development of small island states. It endorsed a partnership role for all members of the international community (states, international organisations, non-state actors) in the development and implementation of law and policy on environment and development. And it established programme areas of variable quality and likely effect to cover virtually all human activity. Its contribution to international law can be considered at three levels. First, as a consensus document negotiated by the international community over a period of two years, it provides the only agreed global framework for the development and application of international legal instruments, including 'soft law' instruments, and the activities of international organisations. Secondly, limited parts of Agenda 21 might be considered to reflect rules of 'instant' customary law.¹⁶¹ Thirdly, it reflected a consensus on principles, practices and rules which might contribute to the development of new rules of conventional and customary law.

Agenda 21 comprises a Preamble (Chapter 1) and four sections. Section I (Chapters 2-8) addresses 'Social and Economic Dimensions'. The seven chapters in this section provide for national and international action in relation to international co-operation, poverty, consumption patterns, population, human health, sustainable human settlement and the integration of environment and development in decision-making. Section II (Chapters 9-22) is concerned with 'Conservation and Management of Resources for Development'. Its fourteen chapters address substantive issues for the protection and sustainable use of natural resources in various sectors:

- protection of the atmosphere (Chapter 9);
- planning and management of land resources (Chapter 10);
- deforestation (Chapter 11);
- desertification and drought (Chapter 12);
- sustainable mountain development (Chapter 13);
- sustainable agriculture and rural development (Chapter 14);
- conservation of biological diversity (Chapter 15);
- management of biotechnology (Chapter 16);
- protection of oceans, seas, coastal areas, and the protection, use and development of their living resources (Chapter 17);
- protection of the quality and supply of freshwater resources (Chapter 18);
- management of toxic chemicals (Chapter 19);

¹⁶¹ See e.g. the provision limiting the storage or disposal of radioactive waste near the sea: Agenda 21, para. 22.5(c); see chapter 9, p. 455 and chapter 12, p. 619 below.

- management of hazardous wastes (Chapter 20);
- management of solid and sewage wastes (Chapter 21); and
- management of radioactive wastes (Chapter 22).

Section III (Chapters 23–32) provides for ‘Strengthening the Role of Major Groups’. The section recognises that ‘[o]ne of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making’, including new forms of participation.¹⁶² In a chapter devoted to each, it identifies key groups for the implementation of Agenda 21 and proposes their roles at the national and international levels: women; children and youth; indigenous people and their communities; non-governmental organisations; local authorities; workers and their trade unions; business and industry; the scientific and technological community; and farmers.¹⁶³ Finally, Section IV (Chapters 33–40) identifies ‘Means of Implementation’. The eight chapters in this section identify actions relating to financial resources and mechanisms (Chapter 33), technology transfer, co-operation and capacity-building (Chapter 34), science (Chapter 35), education, public awareness and training (Chapter 36), capacity-building in developing countries (Chapter 37), international institutional arrangements (Chapter 38), international legal instruments and mechanisms (Chapter 39), and information for decision-making (Chapter 40).

A comprehensive assessment of Agenda 21 lies beyond the scope of this chapter. The provisions of Section II, as well as those of Chapters 38, 39 and 40 on financial resources, technology transfer, institutions, legal instruments and mechanisms, and information and education may provide useful points of reference. Agenda 21 aims at developing the concept of the international law of sustainable development, and calls on competent intergovernmental and non-state actors to co-operate

to provide governments and legislators, upon request, with an integrated programme of environment and development law (sustainable development law) services, carefully adapted to the specific requirements of the recipient legal and administrative systems.¹⁶⁴

Institutions

Chapter 38 of Agenda 21 proposes a framework for institutional arrangements to implement Agenda 21, and calls for the establishment of a new commission to ensure effective follow-up of UNCED, to enhance international co-operation and to rationalise the intergovernmental decision-making capacity for the integration of environmental and development issues.¹⁶⁵ The underlying principles

¹⁶² Agenda 21, Preamble, paras. 23.1–23.2. ¹⁶³ *Ibid.*, Chapters 24–32.

¹⁶⁴ *Ibid.*, para. 8.19. ¹⁶⁵ *Ibid.*, para. 38.11; see chapter 3, pp. 75 and 87 below.

to guide institutional arrangements, in the context of reform and revitalisation of the UN system, are an 'action- and result-oriented approach' based on 'universality, democracy, transparency, cost-effectiveness and accountability'.¹⁶⁶ In fulfilling the task of integrating environment and development issues, institutional arrangements in the UN system are called upon: to ensure the implementation of Agenda 21; to adopt concrete programmes to strengthen co-operation and co-ordination; to strengthen institutional capabilities; to establish effective co-operation and exchange of information; to respond to continuing and emerging issues; and to ensure that any new institutional arrangements support revitalisation, clearly divide responsibilities, and avoid duplication.¹⁶⁷ Specific proposals are made for the UN and its organs and bodies, as well as UN specialised agencies, related organisations and other relevant intergovernmental organisations, and regional and sub-regional organisations.¹⁶⁸ Chapter 38 also identifies the need for partnership with non-governmental organisations and calls for their 'expanded role'.¹⁶⁹ The development of environmental law is addressed in two chapters: Chapter 8, Part B, deals with environmental law at the national level; and Chapter 39 deals with international law.

National law

Chapter 8 identifies limitations in legal and regulatory arrangements at the national level, and recognises that the enactment and enforcement of laws and regulations at the regional, national, state/provincial or local/municipal levels are 'essential for the implementation of most international agreements in the field of environment and development'.¹⁷⁰ The survey of existing agreements undertaken in UNCED preparations indicated problems of compliance with international agreements; according to Chapter 8, this was due, in part, to the fact that law-making in many countries appeared to be 'ad hoc and piecemeal, or . . . not endowed with the necessary institutional machinery and authority for enforcement and timely adjustment'.¹⁷¹ The basis for national legal and regulatory arrangements was summarised thus:

it is essential to develop and implement integrated, enforceable and effective laws and regulations that are based upon sound social, ecological, economic and scientific principles. It is equally critical to develop workable programmes to review and enforce compliance with the laws, regulations

¹⁶⁶ Agenda 21, para. 38.2. ¹⁶⁷ *Ibid.*, para. 38.8.

¹⁶⁸ *Ibid.*, paras. 38.9–38.35; see chapter 3, p. 75 below.

¹⁶⁹ Agenda 21, paras. 38.42–38.44; see chapter 3, pp. 112–20 below.

¹⁷⁰ Agenda 21, para. 8.14.

¹⁷¹ *Ibid.*, paras. 8.13 and 8.15; see P. Sand (ed.), *The Effectiveness of International Environmental Agreements: A Survey of Existing Legal Instruments* (1992).

and standards that are adopted. Technical support may be needed for many countries to accomplish these goals. Technical co-operation requirements in this field include legal information, advisory services, and specialised training and institutional capacity-building.¹⁷²

Chapter 8, Part B, in effect recognises that national legal and regulatory arrangements are international matters. Three specific objectives are proposed to address international aspects:

1. the dissemination of information on effective legal and regulatory innovations;
2. supporting country requests to modernise and strengthen the legal framework; and
3. encouraging the development and implementation of national, state, provincial and local programmes to assess and promote compliance and respond to non-compliance.¹⁷³

To give effect to these objectives, six activities are proposed:

1. governments and international organisations are called upon to assess their laws and regulations and institutional and administrative machinery;
2. judicial and administrative procedures should be established 'for legal redress and remedy of actions affecting environment and development that may be unlawful or infringe on rights under the law, and should provide access to individuals, groups and organisations with a recognised legal interest';
3. international organisations and non-governmental organisations should provide governments and legislators with an 'integrated programme of environment and development law (sustainable development law) services';
4. international and academic institutions should provide postgraduate programmes and in-service training facilities in environment and development law;
5. countries should develop strategies to maximise compliance with their laws and regulations, with assistance from international organisations and other countries (including: enforceable laws incorporating sanctions designed to punish violations, obtain redress and act as deterrence; mechanisms for promoting compliance; collecting data; and involving individuals and groups in the development and enforcement of laws); and
6. parties to international agreements should improve practice and procedures for collecting information on the legal and regulatory measures taken.¹⁷⁴

¹⁷² Agenda 21, para. 8.14.

¹⁷³ *Ibid.*, para. 8.15.

¹⁷⁴ *Ibid.*, paras. 8.15–8.22.

International law

Chapter 39 addresses the further development of international law on sustainable development. Its provisions are limited compared to the specific proposals put forward in, *inter alia*, the Brundtland Report, the WCED Legal Principles, the Perspective 2000 Plan adopted by the UN General Assembly, and the WCN/UNEP/WWF document, *Caring for the Earth*. The UNCED Preparatory Committee had also examined areas for the further development of international environmental law, in light of the need to integrate environment and development and taking into account the needs and concerns of developing countries,¹⁷⁵ and had before it the conclusions of the 1990 Siena Forum on International Law of the Environment,¹⁷⁶ the Beijing Symposium on Developing Countries and International Environmental Law,¹⁷⁷ the Report of the Meeting of Experts for the Review of the Montevideo Programme,¹⁷⁸ and relevant comments by governments and international organisations in the context of the United Nations Decade of International Law.¹⁷⁹ The proposals in Chapter 39 are premised on: the need to clarify and strengthen the relationship between existing international agreements; the importance of participation from all countries; the need for technical assistance; the work of the International Law Commission; and the need for universality.¹⁸⁰ The overall objective is:

to evaluate and to promote the efficacy of that law and to promote the integration of environment and development policies through effective international agreements or instruments taking into account both universal principles and the particular and differentiated needs and concerns of all countries.¹⁸¹

Eight specific objectives are identified:

1. addressing the difficulties which prevent some states, in particular developing countries, from participating in or implementing international agreements;
2. setting priorities for future law-making at the global, regional or sub-regional level;
3. promoting the participation of all countries in the negotiation, implementation, review and governance of international agreements;

¹⁷⁵ Terms of Reference of Working Group III, Decision 2/3, A/46/48, vol. I, Annex I (1992).

¹⁷⁶ A/45/66 (1990).

¹⁷⁷ 12-14 August 1991, 2 *Yearbook of International Environmental Law* 304 (1991).

¹⁷⁸ UNEP/Env.Law/2/3 (1991).

¹⁷⁹ Report of the UN Secretary General, A/46/372 (1992). ¹⁸⁰ Agenda 21, para. 39.1.

¹⁸¹ *Ibid.*, para. 39.2. In this regard, and for reasons which appear to be related to a transcribing or editing error, the relevant law is identified as 'international environmental law' rather than the 'international law of sustainable development'.

4. gradually promoting international environmental standards;
5. ensuring effective, full and prompt implementation of legally binding instruments;
6. improving the effectiveness of administrative arrangements;
7. identifying and preventing conflicts; and
8. providing for the identification, avoidance and settlement of international disputes in the field of sustainable development.¹⁸²

To the extent that the international community has a blueprint for the development of the international law of sustainable development (including international environmental law), this is it. Chapter 39 is short on substance, and there was no agreement on the need for a binding instrument of general application, although it was agreed that it would be useful to examine 'the feasibility of elaborating general rights and obligations of states . . . in the field of sustainable development'.¹⁸³ Specific activities to be undertaken include: the review and assessment of the performance and effectiveness of agreements and priorities for future law-making on sustainable development; further consideration by the General Assembly of armed conflict and 'large-scale destruction of the environment that cannot be justified under international law'; and efforts to conclude a nuclear safety convention under the International Atomic Energy Agency (IAEA).¹⁸⁴ Chapter 39 also calls for the promotion and review of the effective, full and prompt implementation of international agreements (including by establishing efficient and practical reporting systems and enhancing the contribution of international bodies such as UNEP), and the provision of technical and financial assistance, particularly to developing countries, to ensure their effective participation.¹⁸⁵ The measures proposed to ensure the avoidance and settlement of disputes call for further study and consideration of existing techniques, and are disappointing in the context of the more specific proposals which were put forward.¹⁸⁶

Beyond UNCED: trends and directions

The UN General Assembly adopted five follow-up resolutions to UNCED. These established a negotiating committee to elaborate a convention on drought and desertification;¹⁸⁷ convened a global conference on the sustainable development

¹⁸² Agenda 21, para. 39.3.

¹⁸³ *Ibid.*, para. 39.5; by implication, the Rio Declaration is therefore something other than an elaboration of such rights and obligations.

¹⁸⁴ Agenda 21, paras. 39.5 and 39.6; see chapter 12, pp. 643–4 below.

¹⁸⁵ Agenda 21, paras. 39.7–39.8; on reporting, see chapter 17, pp. 832–8 below; on financial and technical support, see chapter 20, pp. 1021 et seq. below.

¹⁸⁶ Agenda 21, para. 39.9; on dispute settlement, see chapter 5, pp. 212–26 below.

¹⁸⁷ UNGA Res. 47/188 (1992); see chapter 11, pp. 557–8 below.

of small island states;¹⁸⁸ noted the report of UNCED, endorsed the Rio Declaration and the Forest Principles and called for effective follow-up action and the implementation of all commitments, agreements and recommendations;¹⁸⁹ established new institutional arrangements to follow up UNCED, including the Commission on Sustainable Development;¹⁹⁰ and convened a conference on straddling and highly migratory fish stocks.¹⁹¹

Since UNCED, a number of important new instruments have been adopted and the negotiation of others continues. There is no sign that the rate of legislative activity is dropping off. A treaty was signed to replace the 1972 Oslo Dumping Convention and the 1974 Paris LBS Convention, incorporating many of the principles (precaution, polluter-pays) and legal techniques (environmental impact assessment, access to information, economic instruments) which were endorsed at UNCED.¹⁹² In 1995, a global Agreement on Straddling Fish Stocks was adopted by parties to the 1982 UNCLOS.¹⁹³ The parties to the 1969 CLC and the 1971 Fund Convention adopted 1992 Protocols which introduced significant legal changes;¹⁹⁴ and the Council of Europe adopted a convention on civil liability for environmental damage which incorporates many of the recommendations on procedural matters referred to in the Rio Declaration, including access to information and national legal remedies.¹⁹⁵ The Kyoto Protocol to the 1992 Climate Change Convention was adopted in 1997,¹⁹⁶ and the Biosafety Protocol to the 1992 Biodiversity Convention was adopted in 2000.¹⁹⁷ Both instruments reflect new thinking in the approach to international regulation and the role of various actors, including the private sector. In 1998, under the auspices of the UNECE, states adopted the Aarhus Convention, the first treaty to address in a comprehensive fashion the rights of participation reflected in Principle 10 of the Rio Declaration.¹⁹⁸ Other treaties which have been adopted include an IAEA nuclear safety convention;¹⁹⁹ amendments to the 1960 and 1963 nuclear liability conventions;²⁰⁰ a convention on desertification and drought under the auspices of the General Assembly;²⁰¹ an International Labor Organization convention on the prevention of industrial disasters;²⁰² revisions to the 1985 SO₂ Protocol to the 1979 LRTAP Convention and the adoption of Protocols concerning other matters;²⁰³ a liability protocol to the 1989 Basel Convention;²⁰⁴ global conventions on chemicals and pesticides

¹⁸⁸ UNGA Res. 47/189 (1992). ¹⁸⁹ UNGA Res. 47/190 (1992).

¹⁹⁰ UNGA Res. 47/191 (1992); see chapter 3, pp. 74–6 below.

¹⁹¹ UNGA Res. 47/192 (1992); see chapter 11, p. 574 below.

¹⁹² 1992 OSPAR Convention; see chapter 9, pp. 409–12 below.

¹⁹³ Chapter 11, pp. 574–8 below. ¹⁹⁴ Chapter 18, pp. 913–18 below.

¹⁹⁵ 1993 Lugano Convention; see chapter 18, pp. 933–7 below, noting Principle 13 of the Rio Declaration.

¹⁹⁶ Chapter 8, pp. 368–81 below. ¹⁹⁷ Chapter 12, pp. 653–8 below.

¹⁹⁸ Chapter 5, pp. 209–10 below; and chapter 17, pp. 859–61 below.

¹⁹⁹ Chapter 12, pp. 644–5 below. ²⁰⁰ Chapter 18, pp. 905–12 below.

²⁰¹ Chapter 11, pp. 556–8 below. ²⁰² Chapter 12, pp. 623–5 below.

²⁰³ Chapter 8, pp. 324–36 below. ²⁰⁴ Chapter 18, pp. 924–6 below.

and on persistent organic pollutants,²⁰⁵ and a convention on liability for hazardous and noxious substances under the auspices of the International Maritime Organization.²⁰⁶ Important new treaties have also been adopted in relation to international watercourses, at the global, regional and bilateral levels.²⁰⁷

International organisations have continued to address a wide range of environmental issues. Recent developments include: the maintenance by the International Whaling Commission of its moratorium on commercial whaling,²⁰⁸ the maintenance of the prohibition on trade in African elephant ivory,²⁰⁹ further adjustments and amendments to the Montreal Protocol bringing forward the phaseout of certain substances and adopting a non-compliance procedure which provides for sanctions,²¹⁰ the adoption of the EC's Sixth Environmental Action Programme,²¹¹ and the OSPAR Commission Decisions on reprocessing activities.²¹² In the meantime, the International Law Commission has concluded its work on state responsibility,²¹³ and transformed its work on liability for injurious consequences arising out of acts not prohibited by international law.²¹⁴

The decade since UNCED has been notable for the significant increase in international litigation on international environmental issues, reflecting a willingness on the part of states to bring international claims and a growing receptiveness on the part of the courts to give effect to environmental considerations. The International Court of Justice has addressed the environment in three important cases, including the dispute between Hungary and Slovakia concerning the Gabčíkovo-Nagymaros project on the Danube River.²¹⁵ Important decisions have been handed down by other international courts and tribunals, including the WTO Appellate Body,²¹⁶ the International Tribunal for the Law of the Sea,²¹⁷ the European Court of Human Rights,²¹⁸ and international arbitral tribunals.²¹⁹ As increased attention is given to compliance with environmental obligations, states have also established new non-compliance mechanisms.²²⁰ There is also considerable evidence that national courts are increasingly willing to apply international environmental obligations.²²¹

²⁰⁵ Chapter 12, pp. 628–30 below. ²⁰⁶ Chapter 18, pp. 912–18 below.

²⁰⁷ Chapter 10, pp. 466–8 below. ²⁰⁸ Chapter 11, pp. 592–5 below.

²⁰⁹ Chapter 11, pp. 509–11 below; and chapter 5 below.

²¹⁰ Chapter 8, pp. 348–53 below; and chapter 5, pp. 198–9 below.

²¹¹ Chapter 15, pp. 750–3 below. ²¹² Chapter 9, pp. 411–12 below.

²¹³ Chapter 18, pp. 873–5 below. ²¹⁴ Chapter 18, pp. 828–9 below.

²¹⁵ See respectively chapter 10, pp. 469–77 below, and chapter 5, p. 173 below.

²¹⁶ Chapter 19, pp. 952–85 below. ²¹⁷ Chapter 11, pp. 578–83 below.

²¹⁸ Chapter 7, pp. 300–5 below.

²¹⁹ Chapter 5, p. 225 below; and chapter 17, p. 857 below.

²²⁰ Chapter 5, pp. 212–14 below.

²²¹ Chapter 11, pp. 205–10 below; see generally M. Anderson and P. Galizzi, *International Environmental Law in National Courts* (2002).

World Summit on Sustainable Development

To mark the tenth anniversary of UNCED, the World Summit on Sustainable Development (WSSD) was held in Johannesburg in September 2002.²²² The WSSD did not adopt any conventions or a statement of principles, and was generally focused on the eradication of poverty. The Johannesburg Declaration on Sustainable Development notes that the global environment continues to suffer, but proposes no specific actions beyond a general commitment to sustainable development.²²³ The WSSD Plan of Implementation is long on general commitments and aspiration, but short on specific actions to be taken.²²⁴ Such soft targets and timetables as are proposed are intended to build on post-UNCED achievements and expedite the realisation of UNCED's goals. Among the relatively more specific undertakings are commitments to:

- halve, by 2015, the proportion of the world's people whose income is less than US\$1 a day and the proportion of people who suffer from hunger;
- halve, by 2015, the proportion of people without access to safe drinking water;
- halve, by 2015, the proportion of people who do not have access to basic sanitation;
- encourage and promote the development of a ten-year framework of programmes to accelerate the shift towards sustainable consumption and production;
- diversify energy supply and substantially increase the global share of renewable energy sources in order to increase its contribution to total energy supply;
- establish domestic programmes for energy efficiency with the support of the international community, and accelerate the development and dissemination of energy-efficiency and energy-conservation technologies, including the promotion of research and development;
- aim, by 2020, to use and produce chemicals in ways that do not lead to significant adverse effects on human health and the environment;
- promote the ratification and implementation of relevant international instruments on chemicals and hazardous waste, including the 1998 Chemicals Convention so that it can enter into force by 2003 and the 2001 POPs Convention so that it can enter into force by 2004;
- encourage countries to implement the new globally harmonised system for the classification and labelling of chemicals as soon as possible, with a view to having the system fully operational by 2008;
- develop integrated water resources management and water efficiency plans by 2005;

²²² In 1997, a five-year review conference was held: see D. Osborn and T. Bigg, *Earth Summit II: Outcomes and Analysis* (1998); and chapter 2 below.

²²³ Available at http://www.un.org/jsummit/html/documents/summit_docs/1009wssd_pol_declaration.htm.

²²⁴ Available at http://www.un.org/jsummit/html/documents/summit_docs/2309_planfinal.htm.

- encourage the application by 2010 of the ecosystem approach for the sustainable development of the oceans;
- on an urgent basis and where possible by 2015, maintain or restore depleted fish stocks to levels that can produce the maximum sustainable yield;
- put into effect the FAO international plans of action for the management of fishing capacity by 2005, and to prevent, deter and eliminate illegal, unreported and unregulated fishing by 2004;
- establish by 2004 a regular process under the UN for the global reporting and assessment of the state of the marine environment;
- eliminate subsidies that contribute to illegal, unreported and unregulated fishing and to over-capacity;
- achieve, by 2010, a significant reduction in the current rate of loss of biological diversity;
- adopt new measures to strengthen institutional arrangements for sustainable development at international, regional and national levels;
- enhance the role of the Commission on Sustainable Development, including through reviewing and monitoring progress in the implementation of Agenda 21 and fostering the coherence of implementation, initiatives and partnerships.

A potentially more useful indicator of future international legal developments are reflected in the revisions to the Montevideo Programme. A first revision had been completed by government experts from eighty-one countries (with input from observers from one country, one national liberation movement and twelve international organisations, but no non-governmental organisations) in September 1992. This was endorsed by the UNEP Governing Council in May 1993.²²⁵ A second revision – the Programme for the Development and Periodic Review of Environmental Law for the First Decade of the Twenty-first Century – was completed by government experts from seventy countries (with input from observers, a national liberation movement and international organisations, but no non-governmental organisations) in October 2000. The Programme is divided into three parts. Part I addresses the effectiveness of environmental law, and focuses on:

- achieving effective implementation of, compliance with and enforcement of environmental law;
- strengthening the regulatory and institutional capacity of developing countries to develop and implement environmental law;
- strengthening measures to prevent environmental damage, and to mitigate such damage when it occurs;
- improving the effectiveness of measures and methods for avoiding and settling international environmental disputes;

²²⁵ UNEP/GC.17/5 (1993)

- strengthening and further developing international environmental law, building on the existing foundations;
- promoting appropriate harmonised approaches to the development and implementation of environmental law and promoting co-ordination between relevant institutions;
- improving decision-making in environmental matters through increased transparency, access to information and public participation;
- improving the development, content, effectiveness and awareness of environmental law through the use of new and existing information technology; and
- improving the effectiveness of environmental law through the application of innovative approaches.

Part II seeks to enhance conservation and management, in particular by:

- enhancing the conservation, protection, integrated management and sustainable use of freshwater resources, both ground and surface water;
- improving the management, conservation and sustainable use of coastal and marine resources and ecosystems;
- improving the conservation, rehabilitation and sustainable use of soils;
- enhancing the conservation and sustainable use of all types of forests;
- enhancing the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources;
- strengthening and expanding existing, and developing new, legal instruments to prevent, reduce and control environmental pollution, to minimise the generation of wastes and to achieve their safe disposal, and to achieve the environmentally sound and safe management of hazardous substances;
- improving the sustainability of ecosystems through adequate patterns of production and consumption; and
- improving the ability of the international community to prevent and respond to environmental emergencies arising from man-made and natural disasters.

Part III addresses the relationship between environmental issues and other fields, and focuses on three areas:

- securing environmental protection objectives in international trade, investment and financial laws and policies in order to achieve sustainable development;
- promoting the integration of the environmental dimension into traditional concepts of international and national security; and
- reducing the harmful effects of military activities on the environment and encouraging a positive role for the military sector in environmental protection.

The Programme was adopted by the UNEP Governing Council in February 2001, and will be reviewed in 2005.²²⁶

Conclusions

It is apparent that over the past decade the rules of international law have become increasingly complex and technical, as environmental considerations are increasingly addressed in economic and other social fields, in particular human rights. While UNCED and its follow-up (the World Summit on Sustainable Development) have not provided a clear sense of direction as to likely future developments, one feature emerges as international environmental law moves into its next phase: international environmental law is no longer exclusively concerned with the adoption of normative standards to guide behaviour, but increasingly addresses techniques of implementation which are practical, effective, equitable and acceptable to most members of the international community. Two consequences follow. First, the focus on implementation means that international environmental law will increasingly be concerned with procedural, constitutional and institutional issues: environmental impact assessment; access to and dissemination of environmental information; techniques of law-making and issues of international governance, including accountability and transparency in decision-making; the participation or representation of the different members of the international community in the international legal process; new compliance mechanisms (including appropriate national judicial and administrative remedies), and new techniques of regulation (including economic instruments). Secondly, as environmental issues are increasingly integrated into aspects of economic and development institutions and law (in particular trade, development lending and intellectual property), the field in which international environmental law has developed will continue to broaden, creating new challenges for the subject and for lawyers and others involved in its development and application.

²²⁶ UNEP/GC.21/22 (9 February 2001).