Judicial handbook on Environmental Law

Dinah Shelton and

Alexandre Kiss

Introduction by Hon. Judge Christopher G. Weeramantry

United Nations Environment Programme

ISBN: 92-807-2555-6

Job No: DPD/0641/NA

This publication can be ordered from UNEP's online bookshop at: www.earthprint.com or by mail from Earth Print Limited Orders Dpt.

P.O. Box 119 Stevenage
Hertfordshire SG14TP
United Kingdom
Tel.: +44 14 38748111
Fax: +44 14 38748844
E-mail: orders@earthprint.com

For further information, please contact:

Environmental Law Branch
Division of Policy Development and Law
United Nations Environment Programme
P.O. Box 30552 Nairobi, Kenya
Tel.: +254 - 20 - 623365
Fax: +254 - 20 – 624324
E-mail: dpdl@unep.org
Web: www.unep.org/dpdl/law
Printed at the Publishing Section of the United Nations Office at Nairobi on environmentally friendly chlorine-free paper.

MESSAGE

Deterioration of the Earth's environment increasingly threatens the natural resource base and processes upon which all life on Earth depends. *UNEP's Global Environment Outlook Year Book 2003* highlights the scope and variety of the problems. Over one billion people currently lack safe drinking water and sanitation, making water-borne diseases one of the leading causes of death, especially among children in poor countries. Two-thirds of the world's population now lives in areas of water shortages where, increasingly, desertification threatens the food supply. UN Habitat 2003 reported that more than 180 million people in Africa live in fragile areas where they compete for water and land. In marine waters, nearly three-quarters of all commercial fish stocks are being harvested faster than they can reproduce (FAO, 2002). More than 500,000 people in Asia die every year from diseases related to air pollution (WHO, 2003). Species are becoming extinct at an unprecedented rate, taking with them potential yet unknown sources of medicines, nutrition and other benefits. Munich Re, the world's largest reinsurance company, predicted in 2003 that the global economic loss due to extreme weather events would reach US$30 billion annually by 2050. In sum, humans are rapidly exceeding the carrying capacity of the environment.

Without strong and multifaceted action by every person, the biosphere may become unable to sustain human life. At the least, coming generations will suffer deprivation and hardship unless current patterns of production, consumption and waste management are dramatically altered. Sustainable development needs to become the watchword and policy of all public agencies and officials and the responsibility of every person.

This handbook is intended to enable national judges in all types of tribunals in both civil law and common law jurisdictions to identify environmental issues coming before them and to be aware of the range of options available to them in interpreting and applying the law. It seeks to provide judges with a practical guide to basic environmental issues that are likely to arise in litigation. It includes information on international and comparative environmental law and references to relevant cases. Judges in each particular country will supplement this overview with more detailed information drawn from national experiences, laws and traditions.

The publication of the Judicial handbook on Environmental Law by UNEP is a response to the request made by the chief justices and other senior judges from some 100 countries who participated in eleven regional judges Symposiums on environmental law convened by UNEP during the period 1995-2002. The request was reiterated in the conclusions and recommendations that were submitted to the World Summit on Sustainable Development by the 2002 Global Judges Symposium held in Johannesburg.

The publication was developed through judicial consultative meetings that were convened by UNEP in Rome (June 2003), London (August 2003) and New York (June 2004).

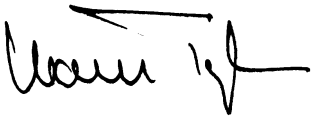
At the request of UNEP, the distinguished jurist and former Vice-President of the International Court of Justice, Judge Christopher G. Weeramantry, prepared an outline of the proposed publication, which was placed before the Commonwealth Magistrates and Judges Association Triennial Conference held in Malawi in August 2003. There it was discussed and approved as a sound basis for the preparation of the Judicial Handbook. The work on the preparation of the Handbook proceeded thereafter on this basis.

At the London judicial consultative meeting, two distinguished Professors of Environmental Law, Dinah Shelton and Alexandre Kiss, were requested to prepare the draft of the publication for judicial review by a team of eminent judges from developed and developing countries. The draft was revised and finalized by the Judicial Editorial Board at the New York consultative meeting held on 2-4 June, 2004, with the able research and editorial assistance of Melinda Mannheim.

It must be appreciated that the specific character of environmental problems will necessarily differ from one country to another and that environmental legislation and case law will thus also differ from jurisdiction to jurisdiction. Moreover, because of cultural variation and differences in socio-economic conditions, judges will at times bring different perspectives to the particular environmental problem before them. While this is so, judges may nonetheless find valuable instruction on how related matters have been addressed and managed in other jurisdictions.

The handbook is organized in two major sections. Part A, entitled "General Framework," reviews some of the fundamental principles and approaches inherent in most environmental legal regimes and focuses on the role of the courts in furthering the rule of law in the environmental arena. Part B, entitled, "Principal Areas of Environmental Law," offers a more detailed look at the features of the protection programmes that have developed around specific environmental and natural resource concerns (e.g., air, water, waste, endangered species, etc.), and is intended to serve as an initial reference for judges who encounter a particular kind of environmental case.

In short, the handbook attempts to identify a common core of law and policy most relevant to the world's judiciary, in the hope that judges might be better equipped to discharge their key role in breathing life into those environmental requirements upon which the world's collective heritage depends.



Klaus Toepfer
Executive Director

FOREWORD

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ASEAN	Association of Southeast Asian Nations
BACONGO	Belize Alliance of Conservation Non-Government Organisations
BAT	Best available techniques (or Technology)
CBD	Convention on Biological Diversity
CERES	Coalition for Environmentally Responsible Economies
CITES	Convention on International Trade in Endangered Species
DoE	Department of Environment
EC	European Community
ECHR	European Court of Human Rights
ECJ	European Court of Justice
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EPL	Environmental Protection License
EU	European Union
FAO	United Nations Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
GMM	Genetically modified microorganisms
GMO	Genetically modified organisms
IBAMA	Brazilian Institute for the Environment and Renewable Resources
ICC	International Criminal Court
ICJ	International Court of Justice
ILO	International Labour Organization
IUCN	World Conservation Union
LGERA	Land and Environment Court Reports (NSW, Australia)
L.L.	Luc Lavrysen, Milieurechtspraak, (Mechelen, Kluwer, 2002)
LMO	Living modified organisms
MARPOL	International Convention for the Prevention of Pollution from Ships
MOU	Memoranda of Understanding
NAFTA	North American Free Trade Agreement
NEAC	National Environmental Appraisal Committee (Belize)
NGO	Non-governmental organization
NGS	National Greenhouse Strategy (Australia)
OECD	Organization for Economic Cooperation and Development
PIC	Prior informed consent
REDE	Revue europeen de droit de l'environnement
RJE	Revue juridique de l'environnement
SEA	Strategic environmental essessment
SEE	Strategic environmental evaluation
SPS	sanitary and phytosanitary
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Science and Culture Organization
US	United States
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
CO2	carbon dioxide
SO2	Sulfur dioxide

TABLE OF CASES

informed exercise of judicial discretion among the numerous leeways of judicial choice that open up before the judge in this comparatively undeveloped field.

Particularly in developing countries, many environmental cases may not fall within a settled legislative provision or judicial decision but in the gray area not specifically covered by black letter law. Yet they may still be within the reach of existing principles that can be applied or extended to them. Even in countries where environmental legislation has been enacted in some detail, it is beyond the competence of the legislature to anticipate every factual situation giving rise to environmental considerations, and consequently it is the judiciary that would have to handle such situations when they arise for the first time. All these factors leave a significant area for the appropriate exercise of judicial discretion. The judges are thus positioned, along with other institutions such as legislatures and environmental agencies, at the cutting edge of the development of environmental law and in the forefront of its adaptation to a diverse array of community needs and challenges.

The panorama of considerations presenting themselves in environmental litigation ranges as far afield as justice between generations, the relationship between humans and other living occupants of the planet and the duty of preservation of the life-sustaining capacity of the earth – considerations far different in quality and reach from those ordinarily surfacing in day-to-day litigation. This handbook aims at lending a hand to the judges in their journey through this unexplored and unfamiliar terrain.

The ways in which the judges will handle the new situations coming before them will influence and shape the development of the relevant aspect of environmental law for the foreseeable future.

Another reason why a handbook of this sort could be useful is that environmental cases are daily being decided in jurisdictions across the world, and judges in any particular jurisdiction could profit from knowledge of the work of their colleagues in the identical field elsewhere.

This handbook will attempt to present to judges, in an easily accessible form, an illustrative selection of decisions by judiciaries from all parts of the world. The selection of cases has been on a representative basis so as to reflect developments in all regions as well as countries whose economies are at different levels of development. The industrialized world as well as the developing world can both profit from the knowledge gained from each other's experiences in the environmental sphere.

Where citations are made to the decisions of other courts an attempt has been made to make these available through a UNEP compendium of more important cases and to direct judges to other sources and other cases that they may wish to pursue.

JUDGES AS EDUCATORS

The handbook cannot of course offer a substitute for such consideration. It is nonetheless designed to offer some utility in all jurisdictions, in the hope that it might leave judges everywhere better positioned to advance the rule of law in the environmental context.

have played a role in ensuring that externalities of this kind are internalized. Some countries also incorporate notions of cost-benefit balancing or cost-effectiveness into their legal standards via statute or regulations.

(g) **Retroactive effect** - Judges may face the issue of retroactive effect of environmental statutes and regulations. Law is presumed to be prospective only, but environmental law that seeks to address ongoing harm to the environment may need to apply to pre-existing activities and operations if it is to be effective. In such circumstances, legislators may expressly direct retroactive application of the law or, as appropriate, judges may infer the need for retroactivity in order to give effect to the statutory objective. Retroactive operation of the law may sometimes be premised on the "polluter pays" principle (discussed Chapter 3), on the basis that, res, l1 ahe bcondiion oesumltd forombcondut taguaby daw ful t sa enarlier]TJT*0.0071

WHAT IS ENVIRONMENTAL LAW?

1.1 INTRODUCTION

Over the past several decades, growing public awareness of threats to the environment, informed by warnings of scientists, has led to demands that law protect the natural surroundings on which human well-being depends. Under growing pressure from national and international public opinion, governments began to demonstrate concern over the general state of the environment during the 1960s and introduced legislation to combat pollution of inland waters, ocean, and air, and to safeguard certain cities or areas. Simultaneously, they established special administrative organs, ministries or environmental agencies, to preserve more effectively the quality of life of their citizens. Developments in international environmental law paralleled this evolution within states, reflecting a growing consensus to accord priority to resolving environmental problems. Today, national and international environmental law is complex and vast, comprising thousands of rules that aim to protect the earth's living and non-living elements and its ecological processes.

Environmental problems stem from two main categories of human activities:

1) Use of resources at unsustainable levels, and

1.2 MEANING OF "ENVIRONMENT"

A legal definition of the environment helps delineate the scope of the subject, determine the application of legal rules, and establish the extent of liability when harm occurs. The word *en i nmen* is derived from an ancient French word *en i nne ,* meaning to encircle. By broadly applying to surroundings, environment can include the aggregate of natural, social and cultural conditions that influence the life of an individual or community. Thus, environmental problems can be deemed to include such problems as traffic congestion, crime, and noise. Geographically, *en i nmen* can refer to a limited area or encompass the entire planet, including the atmosphere and stratosphere.

Given the potential breadth of the field, in some circumstances law and policy will respond to environmental deterioration produced by natural events, such as volcanic eruptions, as well as those caused by human intervention. Even though law cannot affect the natural processes causing environmental changes, it can and does regulate human behaviour, including behaviour in response to natural disasters. Overall, broad definitions and the fact that all human activities have an impact on the environment make it difficult to establish the limits of environmental law as an independent legal field; indeed they imply the integration of environmental protection into all areas of law and policy.

Box 1 Defining "Environment"

'Environment': a complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the quality of life, human health, the cultural and historical heritage and the landscape.
Sec. 1(1) Environmental Protection Act (Supp.)(1991), Bulgaria.

'Environment': that part of nature which is or could be influenced by human activity.

Art. 5(1)(1), Environmental Protection Act of June 1993, Slovenia.

'Environment' includes
- natural resources both biotic and abiotic, such as air, water, soil, fauna and flora and the interactions between the same factors;
- property which forms part of the cultural heritage;
- the characteristics aspects of landscape.

Art. 2(1), *C n en i n n Ci il Liabili f Damage Re l ing f m Ac i i ie Dange he En i nmen* (Lugano, June 21, 1993)

1.3 FOUNDATIONS OF ENVIRONMENTAL PROTECTION

Law emerges from the cultural traditions and moral and religious values of each society. These traditions and values continue to impact the development of legal norms. In the context of environmental protection, cultures, religions and legal systems throughout the world contain elements that respect and seek to conserve the natural bases of life, maintaining concepts that can enhance and enrich the development of modern environmental law.

1.3.1 Religious traditions

Beliefs supportive of environmental protection can be found in religious traditions from around the World representatives of Baha'ism, Buddhism, Christianity, Daoism, Hinduism, Islam, Jainism, Judaism, Shintoism, Sikhism, and Zoroastrianism who belong to the Alliance of Religions and Conservation, a non-governmental organization, have found common ground in religious traditions for stewardship of the earth.

Ancient Buddhist chronicles, dating to the third century B.C. record a sermon on Buddhism in which the son of the Emperor Asoka of India stated that, "the birds of the air and the beasts have as equal a right to live and

- Antiquities laws may prohibit looting or unauthorized excavation of protected archaeological or natural sites.
- Regulation of agricultural activities may involve issues of the quality and quantity of water use, as well as limiting recourse to pesticides and fertilizers.
- Public health laws can regulate spraying toxics to eliminate disease vectors such as mosquitoes or raise questions about the safety of vaccines.
- Land use regulation and public trust doctrines may be used for environmental protection.
- Coastal zone management, fisheries and forestry law seek to conserve the resources they regulate.
- Mining and energy laws may regulate the emissions of greenhouse gases and other air pollutants.
- Regulation of industrial activities may establish restrictions on emissions and effluent from industrial operations.

Some environmental cases appear at first glance as consumer protection suits against the manufacturers or sellers of hazardous products. Other cases involve efforts to obtain information about environmental conditions or present actions against government officials and agencies that allegedly have failed to enforce the law. These many topics related to environmental law are regulated by various sources of national law.

a) Constitutional law

On the national level, many constitutions now contain provisions establishing environmental rights, or set forth governmental duties to protect the environment and the state's natural resources. More than 100 constitutions refer to a right to a clean and healthy environment, impose a duty on the state to prevent environmental harm, or mention the protection of the environment or natural resources. At the same time, references to constitutional environmental rights raise difficult questions of justiciability, remedies, and the scope and content of such rights. It remains to be seen what role constitutional environmental rights might play alongside common law, statutory, and regulatory means for protection of the environment.

Among states of Latin America, Argentina deems the right to environment a subjective right entitling any person to initiate an action for environmental protection. In *I a Ma ga i a . C e S.A.,* Camara Civil y Comercial de la Plata, Ruling of 10 May 1993 (available at www.eldial.com), the court said:

The igh li e in a heal h and balanced en i nmen i a f ndamen al a ib e f e le. An agg e i n he en i nmen end bec ming a h ea life i elf and he ch l gical and h ical in eg i f he e n.

Even where the right to a healthy environment is not expressly provided, other constitutional rights are being interpreted and enforced by courts in an environmental context. The Supreme Court of India was one of the first courts to develop the concept of the right to a healthy environment as part of the right to life guaranteed by the constitution. See *Bandh a M k i M cha . Uni n f India,* 3 SCC 161 (1984) and *Cha an Lal Sah . Uni n f India,* AIR 1990 SC 1480 (1991). In a subsequent case, the Court observed that the "right to life guaranteed by article 21 includes the right of enjoyment of pollution-free water and air for full enjoyment of life." *S bha h K ma . S a e f Biha ,* AIR 1991 SC 420, 1991 (1) SCC 598.

In Costa Rica, the Supreme Court similarly has stated that the rights to health and to the environment are necessary to ensure that the right to life is fully enjoyed. *P e iden e de la ciedad Ma lene S.A. . M nici alidad de Tiba ,* Sala Constitucional de la corte Supreme de justicia. Decision No. 6918/94 of 25 Nov. 1994.

In Bangladesh, the Supreme Court has interpreted the right to life to include the protection and preservation of the environment and ecological balance free from pollution of air and water. See: *D . M hi ddin Fa e . Banglade h, e e en ed b he Sec e a , Mini f I iga i n, Wa e Re ce and Fl d C n l and O he ; D . M hi ddin Fa e . Sec e a , Mini f C mm nica i n, G e nmen f he Pe le' Re blic f Banglade h and 12 O he .*

b) Environmental legislation

Most environmental cases probably appear before judges as part of an effort to enforce statutory or administrative law or as an appeal from administrative decisions, such as denial of a permit or an order to halt emissions.

Legislative texts often establish general environmental policy, supplemented by specific laws and administrative regulations. Broad or framework environmental statutes have been adopted in many different countries: e.g.,

- Law on the Protection of the Environment (Russia, 2001);
- National Environmental Act of Sri Lanka;

achieve those goals. Countries may use permit systems to elaborate the application of broad standards to specific facilities.

Increasingly, as governments are elaborating their legislative and regulatory treatment of key sectors and pollution sources, they are also moving towards a more comprehensive approach to environmental protection that seeks to integrate pollution prevention and control, i.e. protection against pollution of all natural systems necessary to support the biosphere. The focus of "integrated pollution prevention and control" is on eliminating or at least reducing the input of each polluting substance, noting its origin and geographic target. Integrated pollution prevention and control aspires to a "cradle to grave" approach that considers the whole life cycle of substances and products, anticipates the effects of substances and activities on all environmental media, minimizes the quantity and harmfulness of waste, uses a single method such as risk assessment for estimating and comparing environmental problems, and involves complementary use of objectives and limits.

c) Administrative regulations

Legislation on environmental matters often delegates to administrative agencies regulatory powers, including rule-making, standard-setting and enforcement, to achieve the legislative mandate. In order to achieve environmental protection, many administrative agencies and officers have new powers to obtain information and a wide range of civil enforcement options from orders to injunctions. In many instances citizens have been granted the right to initiate lawsuits to obtain information about the environment or participate in decision-making, as well as enforce environmental laws and regulations, including suits against government officials who fail to perform their duties properly. As a consequence, courts and judges increasingly exercise oversight of administrative agencies.

In permit or licensing proceedings, the court is typically asked to determine whether an administrative agency or governing body's licensing decision was consistent with the legal requirements. Frequently, in assessing the consistency of agency action with legal requirements, courts will confine their review to the administrative record of decision – that body of information and facts that was before the agency at the time the decision was made. A court may need to reject an administrative decision by an administrative agency or governing body if it determines that the law has been applied in an arbitrary manner or one that infringes basic rights. In the case of *J e h D. Ke and O he . he Ci C ncil f Da E Salaam*, the City Council argued that the Court had no power to interfere with the Council's statutory authority to collect and dump garbage and therefore could not enjoin the Council's use of residential areas as dumping grounds, despite danger to the life and health of local residents. The Court held that while the judiciary cannot interfere with statutory authority, judges are even more required not to condone abusive applications of such authority.

Box 2 Judicial Review of Administrative Decisions

In the cases of *Ramiah and A a d . Mini e f he En i nmen and Q ali f Life* (4/95 and 5/95, Environment Appeal Tribunal, judgment March 7, 1997), the court in Mauritius heard challenges from the denial of a license to subdivide property and construct housing. The licensing board rejected the applications because of the risk of flooding and the character of the site as a sensitive wetland. The tribunal found that the board had not acted in a uniform manner in granting or denying licenses. The tribunal heard experts, made a site visit, assessed all evidence and overturned the denial, imposing its own conditions to ensure protection of the wetland.

d) Criminalizing environmental misconduct

Increasingly, environmental misconduct is treated as a crime. This has led to an expansion of some basic concepts of criminal liability, sometimes lowering the threshold at which liability is imposed (e.g. from wilful and/or knowing to grossly negligent or negligent violation of the law) or extending responsibility to corporate entities and their officers. See e.g. *U. P. P ll i n C n l B a d . M/ M di Di ille and O he* , AIR 1988 SC 1128 (India); *R. . Ba a Ind ie Limi ed and O he* (1992) 70 CCC (3rd) 395 (Canada).

Indeed, corporations and corporate officials are increasingly prosecuted for environmental crimes. The reason for the large increase in prosecution of corporate officials was growing recognition during the 1980s that the imposition of criminal sanctions against such officials is one of the most effective ways of deterring corporate violations of environmental law. Responsible corporate officials are expected to effectively manage and control the affairs of their organization and in most jurisdictions may be held liable for criminal acts of the company. Increasingly, individuals having a substantial share of the responsibility for a corporation's business enterprise causing a violation are being held criminally liable. The rationale is that a company can only act through individuals who make and carry out the policy. The decision of just who is sufficiently responsible to be held accountable is determined on a case-by-case basis.

In some instances public nuisance actions also may be covered under criminal laws. See *Ra lam M nici ali . Va dhichand* AIR 1980 SC 1622 (India). Public nuisance involves misconduct that interferes with a public right, such as the right to a clean river, and may involve such actions as emissions that result in foul odors or change in water clarity.

While enforcement actions and criminal prosecutions are most commonly brought by public authorities, many jurisdictions now allow citizen complaints to be filed.

The pursuit of sustainable development means that environmental misconduct generally has impacts well beyond the specific individuals involved in the litigation. The consequences of environmental harm are often widespread geographically and temporally, covering neighborhoods or entire regions, with harmful effects that can extend to multiple generations or even be irreversible. Assessing the seriousness of environmental

Since environmental law has partly developed from property law, claims will frequently involve actions by one property owner that impact another person's property or require balancing laws and rights when private land use touches upon the protection of endangered or threatened species. But modern environmental law has moved well beyond property concepts however. Individuals may seek redress for non-property injury or even to enforce public rights or interests in clean air, water and soil. Environmental issues may even arise in bankruptcy cases, where responsible parties may seek to file bankruptcy to avoid cleaning up the pollution they have caused. Such cases are likely to require the judge to determine the interplay of bankruptcy laws and relevant environmental statutes.

A good amount of civil litigation to prevent or remedy environmental harm takes the form of private actions based on tort/delict. Such cases commonly include claims for compensation for damage. Causes of action may include private nuisance, negligence, strict liability, fraud, battery or trespass. Traditional common law doctrines such as nuisance and public trust may be particularly important in jurisdictions that are based on the common law. In these jurisdictions, legal precedent will be an important source of law and decisions from

In general, the theory of monism and dualism is most relevant to customary (or law not created through written international agreement) international law and even then in limited fashion. Some legal systems require that customary international law be transposed into national law through legislation or executive order before it becomes the law of the land. Other legal systems view international law as automatically part of the legal order and enforceable by judges without legislative action. The constitutions of Italy, Germany and the Netherlands all have constitutional provisions expressly stipulating that rules of general (or customary) international law are part of the municipal law of the state and enjoy precedence over domestic legislation. Most common law countries consider customary international law to be part of the common law and automatically binding as national law, following Blackstone ("the law of nations, wherever any problem arises which is properly the object of its jurisdiction, is here adopted in its full extent by the common law and is held to be part of the law of the land").

The position of treaties in national law varies even more; some constitutions specify that ratified treaties are automatically the law of the land and must be applied by judges in cases where an issue concerning them arises. Other states, like the United Kingdom, require that a treaty be incorporated by legislation before the judiciary may apply the agreement. English courts have consistently held that a treaty concluded by the UK does not become part of the municipal law except and insofar as it is made so by parliament. Yet a third group of states, like the United States, distinguishes self-executing treaties which judges may apply from non-self-executing treaties that require legislative action before judges may enforce them.

When international law has been incorporated and made binding, it may rank at the level of constitutional law or be superior, equal or inferior to legislation, according to the hierarchy of legal sources, generally stipulated ?s latTeaty concluded by the dcrosint by the h judgnormsses wto t non-rnational law are

Sources of international law

The sources of international law that may become domestic law through incorporation generally include those listed in Article 38 of the Statute of the International Court of Justice. The Statute refers to
(a) international conventions,
(b) international custom,
(c) general principles of law, and,
(d) judicial decisions and doctrine, as subsidiary persuasive sources.

a) Convention or Treaty

International environmental law has developed a vast array of treaties – some say more than 1000 – to address nearly all aspects of environmental protection. A treaty may be concluded between two states (bilateral) or be widely adopted and accepted (multilateral). As the definition of a treaty indicates (see Box 7), the name given to an international instrument (e.g. treaty, convention, protocol, agreement) does not affect its legal status so long as the states involved in its adoption intend for it to be legally binding.

Some of the most important global treaties are the 1946 *In e na i nal Whaling C n en i n, 1971 Ram a C n en i n, 1972 W ld He i age C n en i n, 1982 Uni ed Na i n C n en i n n he La f he Sea, 1985*

c) General principles of law

The third source listed in the ICJ Statute identifies general principles of law as a source from which international law may arise. General principles of law are not the same as customary international law. Custom consists of rules arising out of inter-state practice over time, while general principles of law are those principles that are common to the major legal systems of the world, if not to all of them. They thus are a matter of comparative law, not international law, in origin. The proliferation of national norms concerning the environment permits identification of some common principles and rules.

Many environmental norms have spread through the inter-penetration and mutual influence of legal rules at

e) Non-binding international instruments

International practice indicates that instruments that are not treaties and thus not formally binding nonetheless can serve several important roles in the development of environmental law. First, states can avoid serious domestic legal or political obstacles by adopting common rules of conduct in non-binding form. The negotiating period for such instruments generally is shorter and they can take instant effect. Second, non-legally binding instruments may be more appropriate to the substance under consideration than formal agreements. Examples are action plans outlining desirable approaches or orientations, rather than commitments that may be difficult to negotiate and fulfil when contracting parties are at different stages of development. Fourth, the negotiation of non-binding instruments more easily allows the participation of non-state actors in the process of creating and complying with environmental rules. Finally, resolutions and similar non-binding instruments may be used where there is uncertainty about the scope of the problem or the appropriate solution. The result is a growing volume of political commitments undertaken internationally and nationally in the environmental field that may provide some guidance about the direction of the law.

BASIC PRINCIPLES OF ENVIRONMENTAL PROTECTION

2.1 INTRODUCTION

There are a number of principles that are at the core of most environmental protection systems, whether at the international or national level. Familiarity with these principles can offer insight into the purpose and thrust of the various legal mechanisms that have been built upon them. The principles are best understood in the context of the modern ecological era.

The present ecological era began at the end of the 1960s, after post-World War II reconstruction led to unprecedented global economic development. This development was unequal, accentuating differences in wealth between countries of the Northern and Southern hemispheres as well as within countries. It also required unprecedented use of exhaustible natural resources such as clean water, air, flora and fauna, and minerals. As it became clear that limited resources would ultimately become incapable of satisfying the various needs of industrial and developing countries, public opinion increasingly demanded action to protect the quantity and quality of the components of the environment.

Ecological catastrophes such as the 1967 "black tides" off the coasts of France, England and Belgium, caused by the grounding of the oil tanker *T e Can n,* and realization that the environment increasingly was threatened, incited governments to take action. In some circumstances, action was taken by individual states to address state-specific problems. In other circumstances, efforts focused on international cooperation, as a means of addressed shared concerns. These international collaborations bear particular attention because they both illustrate and articulate some of the key principles that undergird both national and international environmental law.

A pivotal moment in the development of environmental law came in 1972 when the United Nations General Assembly convoked a world conference on the human environment in Stockholm. This development gave rise to intense and diverse activity, particularly within inter-governmental organizations whose mandate could extend to environmental problems. Numerous national and international non-governmental environmental

that in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it. Agenda 21 is the program of action to achieve sustainable development.

In the aftermath of Rio, virtually every major international convention concerning multilateral cooperation includes environmental protection as one of the goals of the states parties. Areas of international law that developed during earlier periods evolved in new directions because of insistence that they take into account environmental considerations. The result has been an infusion of environmental principles and norms into nearly every branch of international law. At the same time, in the decade after the Rio Conference, environmental concerns encountered increasing competition on the international agenda from economic globalization, an emphasis on free trade, and the development crises of poor countries. In addition, mounting evidence could be seen of the disastrous environmental consequences of armed conflict.

Between August 26 and September 4, 2002 the representatives of more than 190 countries met in Johannesburg, South Africa, in order to "reaffirm commitment to the Rio Principles, the full implementation of Agenda 21 and the Programme for the Further Implementation of Agenda 21." At the end of the conference

reducing liability. Governments may engage in strategies or programs to educate the regulated community and encourage it to implement pollution prevention techniques, in addition to their efforts to promote and enforce compliance with mandatory regulations.

Case law discussing the concept of prevention includes: Greenpeace *A alia L d. . Redbank P e C m an P . L d. and Single n C ncil* 86 LGERA 143 (1994 Australia); *Lea ch . Na i nal Pa k and Wildlife Se ice and Sh alha en Ci C ncil* 81 LGERA 270 (1993, Australia); *Vell e Ci i en Welfa e F m . Uni n f India* AIR 1996 SC 2715; *Shela Zia . WAPDA* Vol. XLVI All Pakistan Legal Decisions 693. Pollution prevention is also a core concept in a variety of environmental projects and regulatory actions, such as the Great Lakes Action Plan for the Great Lakes in the United States.

2.3 PRECAUTION

While there is no single agreed formulation or "principle" of precaution that is used in all contexts, and precaution has not acquired generally accepted status as a legal principle in its own right or as customary international law, there is a basic concept of precaution that animates much of modern environmental

negative effects of the electromagnetic field to be created by the project. The court explicitly stated that it was applying the precautionary principle embodied in the law and several international environmental instruments. *A ciaci n C dinad a de U a i , C n mid e C n ib en e . ENRE-EDESUR,* Federal Appellate Tribunal of La Plata (2003).

The European Court of Justice has likewise been influenced by the concept, particularly in respect to environmental risks that pose dangers to human health. The Court held that the European Commission had not committed manifest error when banning the export of beef during the so-called "mad cow" crisis. Case C 180/96, *Uni ed Kingd m . C mmi i n,* [1996] ECR I-3903, para. 83; Case T-76/96 R, *Na i nal Fa me ' Uni n* (NFU) [1996] ECR II-815, para. 88. The ECJ said in the NFU case:

A he ime hen he c n e ed deci i n a ad ed, he e a g ea nce ain a he i k ed b li e animal , b ine mea and de i ed d c . Whe e he e i nce ain a he e i ence e en f i k

(NChai n he ee b e b idie ee lf d ing l (i .)

Chapter 3

ENVIRONMENTAL RIGHTS

3.1 INTRODUCTION

Increasingly, environmental protection generally, and the particular role of the courts in implementing such protection, is being given shape by the creation or recognition of various enforceable rights. A growing number of international, constitutional and statutory provisions set forth rights that are relevant to and invoked for environmental protection. In some instances, the provisions guarantee procedures that are designed to provide transparency and democratic governance by allowing interested persons to have information about and input into decisions that affect their environment or redress when that environment is harmed. Such rights are also viewed as instrumental in achieving sound environmental decision-making. Principle 10 of the Rio Declaration on Environment and Development reflects this notion:

En i nmen al i e a e be handled i h he a ici a i n f all c nce ned ci i en , a he ele an le el. A he na i nal le el, each indi id al hall ha e a ia e acce inf ma i n c nce ning he en i nmen ha i held b blic a h i ie , incl ding inf ma i n n ha a d ma e ial and ac i i ie in hei c mm ni ie , and he ni a ici a e in deci i n-making ce e . S a e hall facili a e and enc age blic a a ene and a ici a i n b making inf ma i n idel a ailable. Effec i e acce j dicial and admini a i e ceeding , incl ding ed e and emed , hall be ided.

Constitutions provisions may also guarantee a right to an environment of a specified quality, such as safe, healthy, ecologically sound, or clean. The proliferation of such provisions has resulted in an increasing number of cases where judges are asked to enforce the stated rights. This chapter reviews some of the national and international laws concerning environmental rights and includes some illustrative judicial decisions.

3.2 RIGHT TO INFORMATION

Access to environmental information is a prerequisite to effective public participation in decision-making and to monitoring governmental and private sector activities. It also can assist enterprises in planning for and utilizing the best available techniques and technology. The nature of environmental deterioration, which often arises only long after a project is completed and can be difficult, if not impossible, to reverse, compels early and complete data to make informed choices. Transboundary impacts also produce significant demands for information across borders. Where national law includes a Freedom of Information Act, issues of access to environmental information can arise in court. Furthermore, during litigation a judge may demand production of information by parties or from state authorities.

3.2.1 National law

The right to information is recognized as a right in most domestic jurisdictions either by constitutional provision or by freedom of information legislation that covers most information held by public authorities, including environmental information. laws requiring Environmental Impact Assessment (EIAs) have this feature by implication, since EIAs generally must be made available to the public for comment. Laws recognizing citizens' suits also have provisions enabling citizens to obtain necessary information.

Case law has also affirmed the right to information generally and for environmental matters in particular. See *B mba En i nmen Ac i n G Sha m H K Chainani Indian Inhabi an , Sa e P ne Ci i en' C mmi ee . P ne Can nmen B a d,* High Court of Bombay, Writ Petition No. 2733 of 1986, where the court upheld the right of social action groups to obtain information. The court held that the right to information flows from the right of free speech and expression guaranteed by the Constitution. Interested persons have often petitioned the courts for orders for the release of information and documents. See *Van H en & O he . Mini e f En i nmen al Affai & T i m & O he* 1996 (1) SA 283 where the court ordered respondents to release documents on proposed steel mill, so trustees of a protected wetland could safeguard the property.

Some countries have gone as far as to institute Pollutant Release and Transfer Registries, which specify toxic emissions and discharges which facilities are required to publicly disclose.

3.2.2 International law

Human rights texts generally contain a right to freedom of information or a corresponding state duty to inform. The right to information is included in the *Uni e al Decla a i n f H man Righ* (Art. 19), *he In e na i nal C enan n Ci il and P li ical Righ (A . 19(2)),* the *In e -Ame ican Decla a i n f he Righ and D ie f Man (A . 10),* he *Ame ican C n en i n n H man Righ (A . 13),* and the *Af ican Cha e n he Righ and D ie f Pe le (A . 9).*

In applying article 10 of the European Convention, the European Court of Human Rights has held that a state may not extend defamation laws to restrict dissemination of environmental information of public interest. *Blade T m and S en aa . N a* (ECHR, May 20, 1999); *Th ma . L emb g* (ECHR, March 29, 2001). In the first case, the editor and publisher of a newspaper were sued and found to have committed defamation by publishing a series of articles that accused seal hunters of illegal and cruel hunting methods. The European Court said that most careful scrutiny is called for when the measures taken or sanctions imposed on journalists by the national authority are capable of discouraging the participation of the press in debates over matters of legitimate public concern. It found that the crew members' undoubted interest in protecting their reputation was insufficient to outweigh the vital public interest in ensuring an informed public debate over a matter of local and national as well as international interest. Thus, the reasons for imposing liability relied on by Norway, although relevant, were not sufficient to show that the interference with freedom of speech was "necessary in a democratic society." Accordingly, the Court held that there had been a violation of Article 10 of the Convention. The *Th ma* case involved a journalist's accusations of self-dealing by officials engaged in reforestation projects in Luxembourg. Numerous forest wardens and engineers sued for defamation and the journalist was fined a nominal amount. The European Court again found the action incompatible with the requirements of freedom of expression, in part because the subject was one of public concern, but also because the Court noted that public officials must accept a greater amount of scrutiny and criticism than private persons.

Informational rights are widely found in environmental treaties. Broad guarantees of public information are found in regional agreements, including the 1992 *Hel inki C n en i n n he P ec i n and U e f T an b nda Wa e c e and In e na i nal Lake* (Art. 16), the 1992 *E C n en i n n En i nmen al Im ac A e men in a T an b nda C n e* (Art. 3[8]), and the 1992 *Pa i C n en i n n he N h-Ea A lan ic* (Art. 9). The last mentioned requires the contracting parties to ensure that their competent authorities are required to make available relevant information to any natural or legal person, in response to any reasonable request, without the person having to prove an interest, without unreasonable charges and within two months of the request.

The provisions of the Rotterdam *C n en i n n he P i Inf med C n en P ced e f Ce ain Ha a d Chemical and Pe ici* TD .4 0W C 2 IT an b nda de hej dn f he R aneg-ilable ele an inf ma e edH R l f nd innd c ied e.01 T T iciale f he C ma i n e .

The *Clima e Change C n en i n,* Art. 41(i), obliges Parties to promote public awareness and to "encourage the widest participation in this process including that of non-governmental organizations". The *De e ifica i n C n en i n*

State practice is divided over the issue of the justiciability of the right to a safe and healthy environment. Some courts have allowed lawsuits to enforce the right, while others have not. These cases are discussed in section 2.4.1. Courts are also divided over whether environmental rights may be implied in constitutional protections when there is no explicit mention of the environment. Some states, such as India, have liberally found and enforced environmental rights as part of the rights to life and health. Others have rejected the notion that a right to environment can be implied. Compare *Tanne . A mc S eel C .,* 340 F.Supp. 532 (SD Tex. 1972) (no judicially cognizable federal constitutional right to a healthful environment) with *D . M hi ddin Fa e . Banglade h, e e en ed b he Sec e a , Mini f I iga i n, Wa e Re ce and Fl d C n l and O he*

Chapter 4

COMMON LEGAL MECHANISMS OF ENVIRONMENTAL PROTECTION

4.1 INTRODUCTION

The role of the courts in upholding the rule of law in the environmental arena is very much informed by the

4.2.2 Use of biological resources

Hunting and collecting restrictions are used to prohibit non-selective means of killing or capturing specimens

4.5 PRIOR INFORMED CONSENT

Prior informed consent (PIC) is a procedural mechanism utilized in advance of activities in order to avoid potential conflict and reduce the risks of environmental or social harm. Internationally, prior informed consent requires obtaining and disseminating the decisions of importing countries on whether they wish to receive shipments of restricted or banned products after they have been fully informed about the hazards posed by the products. In most instances, the products to which the procedure applies are those that pose serious risks to health or the environment. In national law, judicially enforceable PIC procedures may apply to foreign products seeking entry into the country or mediate access to a state's biological resources, in order to obtain disclosure of potential benefits arising from the entry or access. Some national laws require the prior informed consent of indigenous and local communities before their resources can be accessed.

The FAO incorporated the principle in its *In e na i nal C de f C nd c n he Di ib i n and U e f Pe icide* (1985). Three global environmental agreements rely on a form of prior informed consent: the *C n en i n n T an b nda M emen f Ha a d Wa e* (Basel, March 22, 1989), the *1998 R e dam C n en i n n P i Inf med C n en P ced e f Ce ain Ha a d Chemical and Pe icide in In e na i nal T ade* (Rotterdam, Sept. 10, 1998) and the *Bi afe P c l* (Montreal, Jan. 29, 2000) to the 1992 *C n en i n n Bi l gical Di e i* (CBD). The CBD itself calls for access to genetic resources on agreed terms and requires that such access be subject to the prior informed consent of the provider country of such resources. (Art. 15(5)). *UNCLOS* suggests a similar procedure for scientific research within a state's exclusive

When courts undertake review of authorizations based upon EIAs, they generally do so in the light of the purposes for which EIAs are done. An appellate court in France expressed these objectives and the consequences of failing to fulfil them as follows:

An EIA ha a i bjec i e , fi gi e he ibili he blic ef ll make kn n i b e a i n n he jec in a blic in , i , hen all he admini a i e a h i e l e al a e he effec f he jec n he en i nmen , a ell a he effec i ene f he ed mea e elimina e ed ce hem ide c m en a i n f hem. The EIA h ld n c n ain ine ac ne , mi i n ga ce ible i ia e he ced e , hich ld e l in he illegali f he deci i n f a h i a i n.

Cour administrative d'appel de Nancy, 4 Nov. 1993, *S.A.Uni n f ancai e de e le ,* R.J.E. 1994/1. p. 72.

Many questions arise and must be considered in establishing or judicially reviewing an environmental impact assessment procedure:

- What range of impacts must be discussed? Threats to the health of living organisms and to environmental media (air, water, soil) are usually included. The EIA procedure may also require assessment of social and cultural impacts, broadly defining the "environment" that must be assessed.
- What severity of impacts must be discussed? The law can demand assessment of everything from the "worst case scenario" or "all possible environmental consequences" to "reasonably foreseeable" impacts or "probable adverse effects".
- What degree of certainty is required? Environmental impacts may be predicted by "credible scientific evidence", may be "known" or may be "not unreasonably speculative".
- How should magnitude and probability of harm (risk) be evaluated? Consider, for example, whether in normal circumstances a pesticide known to cause 10 extra cancers a year is safer than a pesticide that has a five percent chance of causing one hundred extra cancers annually and a 95 (a fivey als:lity .)Tj-1.8132ssrich specul
  iIdlifde andOethes,

species acts as set forth in the legislation without requiring compensation. A well-known example in the U.S. was the injunction granted halting construction of a large dam after $100 million had been expended because it was discovered that completion of the project would entirely destroy the habitat of an endangered species. See: *TVA . Hill,* 437 U.S. 153 (1978). The court found that the plain intent of the legislature in enacting the statute was to halt and reverse the trend toward species extinction, whatever the cost. Despite controversy, the legislation was not substantially amended following the decision, suggesting the court correctly interpreted legislative intent. Instead, amendments were enacted, such as the requirement of a biological assessment, to promote early planning by landowners. Thus, endangered species legislation emphasizes the community will to conserve biological diversity.

Security of property is guaranteed by most constitutions and by international human rights agreements. This does not mean, however, that all property infringement for environmental reasons amount to a compensable taking of property. The European Court of Human Rights has upheld restrictions on land use against claims that they amount to a taking, if the regulations are for an environmental purpose, proclaimed by law, and proportionate to the aim to be achieved. See *Cha man . The Uni ed Kingd m* (ECHR, judgment of 18 January 2001) (upholding refusal to allow the applicant to place a caravan on her land, in a green belt zone); *Ca e f Pial l and O he . G eece,* (ECHR, judgment of 15 February 2001) (planning restrictions prevented applicants from building a shopping center on their land. The Court accepted that the impugned measures aimed at environmental protection, but held that the applicants were entitled to compensation and that their property rights had been violated).

Chapter 5

LITIGATION

5.1 INTRODUCTION

It is through litigation that courts enjoy their unique role in upholding the environmental rule of law. Environmental litigation can take many forms, including civil actions based on tort, contract or property law, criminal prosecutions, public interest litigation, or enforcement of constitutional rights. Particularly complex issues may arise when cases involve transboundary environmental harm. This chapter looks at some of the common problems that arise in the different types of environmental litigation, including issues of jurisdiction, case management, and evidence and causation.

5.2 JURISDICTION

Questions of *l c andi,* subject matter jurisdiction and exhaustion of administrative remedies may arise in environmental litigation. The lengthy period that can occur before harm appears after pollutants enter the environment also make it likely that some cases will present issues of statutes of limitations or laches.

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Traditional *l c andi* rules require a party bringing suit to have a sufficient interest or personal stake in the outcome of a case to distinguish the individual from other persons or the public at large. The plaintiff must have experienced a distinct injury traceable to the alleged conduct of the defendant. Individuals and groups have generally been able to meet the requirement if they show an injury to their aesthetic, conservational or recreational interests. See, e.g., *SCRAP . U.S.*, 412 U.S. 669 (1973). In France, the administrative tribunal of Rouen held that an association for the promotion of tourism and the protection of nature could present evidence of a sufficient interest, given its object as defined in its statutes, to contest an authorization for a waste treatment plant. The court also found that labor unions, notably those concerned with chemical industries whose interest was to maintain the authorization, also had the right to be heard. Tribunal administratif de Rouen, 8 june 1993,

that furthermore, the Governor and state agency had acted in their official capacities with proprietary interests in the land, air and water of the state. This the court held to be sufficiently concrete to give them standing.

Where numerous individuals are harmed, as is often the case with environmental damage, many jurisdictions allow class actions to be filed by one or more members of the group or class of persons who have suffered a similar injury or have a similar cause of action. The class action is essentially a procedural device to quickly and efficiently dispose of cases where there are a large number of aggrieved persons. It helps ensure consistency in judgments and awards of compensation, as well as prevents proliferation of separate and individual actions. Petitioners file on behalf of themselves and others of their class, representing the others and subsequently others are asked to join in. Often public notices are put out asking interested persons to join the case. To be maintainable, class actions usually must be permitted under the procedural rules of the country, as in the U.S. and in India. Class actions may also be permitted, even recommended by courts, as a means to enforce the Constitutional right to a healthy environment when the specific facts threaten to violate the rights of an undermined number of people. See

c) Public interest litigation

Public interest litigation differs from conventional litigation where the parties seek to resolve a dispute that is peculiar to them and there is no impact on the general public except in so far as it clarifies the law on that point. Public interest litigation, on the contrary, generally involves disputes over the rights of the public or a segment of it and the grievance is often against the state in respect of administrative or executive action. Redress may be limited to a declaration of the law on the point or an injunction, because compensation is not usually the main objective. Public interest litigation is initiated usually by public interest groups and individuals. Some laws support public interest litigation by broadly allowing actions to abate any "imminent or substantial endangerment to health or environment." These laws most often apply to issues involving hazardous wastes.

Judicial powers in some states, e.g., India and Pakistan, extend to allowing letters and petitions to the court to be converted into public interest litigation. A letter from the Karachi Administration Women's Welfare Society, for example, complaining of water for household use being polluted by sewage, was converted by the Supreme Court into Human Rights Case No. 9-K/1992.

Where a constitution includes a right to a clean and healthy environment, courts have often allowed public interest litigation. In *An ni H a h Ki O . Na i nal C mmi i n f he En i nmen* (March 19, 1997) the Supreme Court of Chile granted standing to citizens not directly affected because it found that the constitutional right to a healthy environment does not impose a requirement that the affected people themselves present the action. See also *The En i nmen al Ac i n Ne k L d . The A ne Gene al and he Na i nal En i nmen Managemen A h i* (High Court of Uganda at Kampala, Misc. App. 39/2001)

5.3 PRE-TRIAL ISSUES

5.3.1 Dispute settlement generally

Many legal systems are based on a preference for negotiation, compromise and settlement of disputes. Even

The benefits of ADR can nonetheless be significant. ADR is generally viewed as increasing efficiency in terms of the time and resources needed to resolve disputes. It also frequently reduces the time to reach a final outcome, which in environmental cases can serve to help minimize or contain environmental damage. Finally, ADR encourages constructive approaches to problem-solving and reconciliation around mutually beneficial solutions. It also places the solution process in the hands of the parties themselves, giving them a sense of vested ownership in the outcome.

Additional advantages in using ADR exist for environmental cases. Certain ADR methods such as consensus-

The very term “scientific” implies a grounding in the methods and procedures of science. Knowledge connotes

Chapter 6

REMEDIES AND ENFORCEMENT

6.1 INTRODUCTION

Courts approach the issue of remedies by applying specified remedies where mandated and invoking inherent powers where not. In either case, actions that are brought based upon harm to the environment require the creation of appropriate remedies. In a sense, it is in the fashioning of remedies that judges work

While remedies are very much case-specific, and turn on the nature of the violation and the prayer for relief in the case, courts tend to give priority to the following kinds of remedies in environmental cases:

1. Injunctive relief to halt the harmful activity;
2. Damages to compensate for harm suffered;
3. Orders of restitution or remediation;
4. Sanctions to punish the wrongdoer and to deter future violations;, and
5. Awards of costs and fees.

Each element of this remedial hierarchy will be discussed in turn.

6.2 INJUNCTIONS

Wherever possible, prevention of harm should be the court's primary objective, especially where there is a constitutional or legislative obligation to protect the environment. The principle of prevention will most

In general, property damages have been recovered for:

- loss of value,
- lost profits,
- other economic loss such as rental value, costs of cleanup, repair or remediation to the property.

Personal injury damages have been assessed for:

- injury,
- disease,
- increased risk of disease,
- emotional distress,
- fear of contracting disease, and
- medical monitoring for early detection.

Perhaps the most difficult area, and one on which courts differ, concerns whether or not a present claim can be presented for suffering based upon exposure to a carcinogenic substance or ingestion of a toxic substance prior to the onset of physical symptoms. One court has imposed a requirement that the plaintiff show exposure to a toxin and more than a 50 percent probability of developing cancer in order to prevail on an anticipatory claim of this kind. Other courts have said that plaintiffs must show more than a generalized fear, or that the fear must be rationally based. Where the risk is h2erhaps threa,tectihigh,ent f

violations. Again, at a minimum all economic benefits realized by a violator from noncompliance should be recovered. Penalties should also be large enough to deter further noncompliance, ensure fair and equitable treatment throughout the regulated community, and promote swift resolution of environmental problems and enforcement actions. While it may be tempting to excuse violations of record-keeping or similar requirements absent some clear environmental consequence, statutory or regulatory demands that enterprises maintain records of their operations, their emissions, and their compliance with applicable statutes are essential to the effectiveness of environmental law. Information is powerful knowledge and directly facilitates the government's ability to combat polluters and despoilers of the environment, the very targets of the law. The penalties for non-compliance should be appropriate to ensure that those involved recognize the importance of cooperating with environmental officials to obtain the necessary to data to monitor activities that may harm health and the environment.

Civil penalties are less common than criminal sanctions as a general rule, but are a useful tool where available. Usually they are based upon statutory authority. Civil penalties may be imposed alone or, more frequently, in connection with remedial measures to ensure non-repetition of the violation. In *Uni ed S a e . Icicle Seaf d , Inc.,* (D. Alaska, June 27, 2003), a seafood company settled a Clean Water Act complaint in federal court by agreeing to pay an $85,000 civil fine and improve its waste handling practices to prevent the build-up of wastes, in part by rendering waste parts into fish meal, substantially reducing the amount of waste discharged. A Norwegian shipping line agreed to pay more than $2 million in civil sanctions in connection with a fuel oil spill off the coast of South Carolina in January 1999. The company agreed to pay $1.9 million to a wildlife restoration fund, a $95,207 penalty to the Department of the Interior, and a $28,847 penalty to the South Carolina Department of Natural Resources. Other economic sanctions were imposed in a related criminal proceeding, and these amounts were also ordered paid to environmental trusts and conservation funds. *Uni ed S a e . Billab ng II An .,* (D.S.C. July 1, 2003).

Increasingly, courts are imposing serious criminal fines for environmental wrongdoing. For example, the Canadian case *R.V. Ti ide Canada Inc.* (Quebec Court, 1993) indicates how motive, damage, and intent play a role in penalties. The company deliberately chose to violate authorizations and continue operating despite having no authorization. Criminal charges were brought against the company and its directors. The directors entered into a plea bargain. The company was assessed the highest Canadian penalty for pollution to that date. It had to pay Can$1 million as a fine and Can$3 million into a special account

b) Community service for the environment

It may be appropriate to require clean up of a site, or the drafting and implementation of an environmental compliance plan, or performance of community service as alternatives or additions to fines or imprisonment. In

Box 15 Environmental Crimes and Punishment
Legislative Examples from the United States

1. **The River and Harbor Act** of 1899 - protects the navigable waters of the United States from unauthorized obstructions and refuse. A violation of the act is a misdemeanor punishable by up to one year incarceration.
2. **The Clean Air Act** (1963) - is directed to controlling pollutants through the creation of National Ambient Air Quality Standards, National Uniform Emission Standards for Hazardous Air Pollutants, New Source Performance Standards, Acid Deposition Regulations, and Stratospheric Ozone Protection standards set by the Environmental Protection Agency. A knowing violation of the act is punishable by up to five years in prison.
3. **The Endangered Species Act** (1973) - protects the natural habitats of endangered and threatened species by prohibiting their import, export, transportation and sale. A knowing violation of the act is punishable by up to one year incarceration.
4. **The Safe Drinking Water Act** (1974) - regulates the level of harmful contaminants in public drinking water systems, as well as the underground injection of contaminants into groundwater supplying those systems. A wilful violation of the act is punishable by up to three years in prison.
5. **The Resource Conservation and Recovery Act** (1976) - sets standards for the treatment, storage, transportation, and disposal of hundreds of different types of hazardous solid waste. A "knowing" violation of these regulations, proven by evidence that the offender was aware of the potential for harm and that he lacked a permit, is punishable by five years imprisonment. Where a person was knowingly placed in danger of serious injury, the offense is punishable by 15 years in prison.
6. **The Toxic Substances Control Act** (1976) - was designed to slow down the production of toxic substances, and prevent those produced from presenting an unreasonable risk of injury to one's health or to the environment. A knowing or wilful violation of this act is punishable by up to one year imprisonment.
7. **The Clean Water Act** (1977) - prohibits and/or regulates the discharge of various pollutants into U.S. waters. A violation of the act is punishable by up to 15 years imprisonment,

7 depe**The Clean Air Act** toxicm4on o4ireasonaqimhable by up to 15 in15.067welu3realyon o2ery Acioducon S

d) Some guidelines for assessing sanctions in environmental cases

The criteria considered by courts in assessing sanctions in environmental cases typically include the following:

- **Seriousness of the offence.** The potential for harm to the environment and the regulatory scheme, the extent of the damage caused, and the blameworthiness of the defendant should all be considered in assessing penalties. Specific factors for evaluating the seriousness of the offense include the amount by which any emissions exceeded the applicable standard, the toxicity of the pollutant, the sensitivity of the surrounding environment, and the length of time of the violation. In general, how much did the conduct diverge from the required behavior? Whether the defendant has a history of violations or has made a good faith effort to comply is also relevant.

- **Ability to pay.** The penalty should reflect the means available to the defendant. For example, a fine appropriate for an individual or a small company will have little impact on a large enterprise. The latter should suffer a penalty appropriate and substantial enough to have a real economic impact and be greater than the cost of complying with the legal requirements. At the same time, a fine that is too large can take away the financial resources necessary to ensure future compliance or remediate existing contamination. Nonetheless, closure of a company is generally considered an appropriate penalty for repeated, serious offenses.
- **Economic gain.**

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PART B

PRINCIPAL AREAS OF ENVIRONMENTAL LAW

Chapter 7

National water law frequently uses the techniques of environmental impact assessment, licensing, and prohibitions. The German water legislation provides an example. The Federal Water Act of July 27, 1957, as amended, incorporates provisions on environmental impact assessment, requires that preventable damage be avoided and inputs of waste water kept to a minimum and stipulates that the use of water bodies requires an official permit or license. The introduction and discharge of substances into surface or groundwater constitutes a use of water. A license for wastewater discharges may only be issued if the hazardous load of the waste water is kept at the levels set forth in the Act and as low as best available

even combine the two characteristics, as with the Danube, the Rhine and the Rio Grande. Water regulation thus must adapt itself to multiple situations, resulting in a variety of regulatory schemes, both at the national and international levels, often influenced by economic and political factors. See France, Tribunal administratif de Strasbourg, July 27, 1983, *La ince de la H llande e en i nale . E a f an ai ,* R.J.E., 1983/4, 343.

Early international cooperation concerning rivers and lakes mainly concerned utilization of the watercourses for specific purposes, such as navigation or irrigation, or management of certain risks such as flood. At first, particular water pollution problems were addressed when harmful activities originated in neighboring countries, applying general precedents and norms of transfrontier pollution. Later, the development of international environmental law led to the adoption of rules and principles to govern the conduct of states in respect to the conservation and harmonious utilization of natural resources shared by two or more states.

The 1997 *UN C n en i n n he La f he N n-Na iga i nal U e f In e na i nal Wa e c e* – which has not entered into force -- made an important contribution in this regard by defining a watercourse as a *em f face a e and g nd a e c n i ing b i e f hei h ical ela i n hi a ni a h le and n mall fl ing in a c mm n e min .*

The Council of Europe, an intergovernmental organization of which 45 European states are members, adopted on October 17, 2001 a *E ean Cha e n Wa e Re ce* stating the main principles that should govern the use and management of such resources. The principles are based on existing and generally accepted norms of diverse origin: international instruments like Chapter 18 of *Agenda 21,* adopted by the 1992 Rio Conference on Environment and Development, and rules and principles included in different international conventions and agreements. The European Water Charter also reflects basic principles expressed in the legislation of different countries. It can be considered as the synthesis of norms governing the use of water resources and the rights and duties of individuals and public authorities in this field. European Charter on Water Resources, Recommendation REC (2001) 14 of the Committee of Ministers. On the legal weight of non-mandatory recommendations adopted by international bodies, see: France, Tribunal administratif de Strasbourg, June 11, 1987, *Land de Sa e e a e . Mini e de l'Ind ie,* R.J.E., 1987/4, p.491.

Under the Charter, freshwater resources are to be utilized in keeping with the objectives of sustainable

area were potential sources of contamination which could adversely affect human health. The Court held that the Council had failed to take reasonable steps to minimize contamination of the lake and entered judgment for the plaintiff for $30,000.

While judicial consideration of water issues will primarily derive from national laws, regulations and common law decisions, a range of international treaties and declarations address water issues. For

as the Baltic, the Mediterranean and the Black Sea, which do not have the same enormous intermixing of waters from which other seas benefit. They are less able to absorb and diffuse pollution, although these seas have among the highest known densities of maritime traffic and also suffer from exceptionally concentrated population levels along their shores, with all the attendant pollution. The problem of maritime pollution frequently requires measures be taken on the national, regional and the global level, with local variation being resolved through appropriate specific regulations at the same time that universal norms are formulated.

The polluting acts that affect the marine environment vary greatly. Some are intentional, for example the dumping of wastes and the cleaning of oil tanker hulls on the high seas followed by discharge of the residue of oils into the ocean waters. Pollution also can be accidental, resulting from tanker grounding or loss of containers of toxic or dangerous products. Regulatory techniques must take into account these differences. International environmental law places its emphasis on prevention. Numerous standards prohibit certain deliberate or intentional acts or strictly regulate them. To minimize accidental environmental harm, other legal principles must be applied, such as strict rules governing the construction

MARPOL also reaffirms the police powers of the port state where a ship is found; its authorities can inspect the ship not only to verify its documentation, but also to determine whether the ship discharged harmful substances in violation of the Convention.

b) Dumping of wastes

Dumping means any deliberate disposal of wastes or other matter from vessels, aircraft, platforms or man-made structures at sea. It does not include the disposal of wastes or other matter arising from the normal operations of vessels, aircraft, platforms, or other man-made structures at sea or placement of matter for a purpose other than disposal. UNCLOS provides that states shall adopt laws and regulations to prevent reduce and control pollution of the marine environment by dumping. In particular, no dumping shall take place without the permission of the competent authorities of the state.

International law concerning dumping of wastes at sea was already in place well before the adoption of UNCLOS. *A C n en i n n he P e en i n f Ma ine P ll i n b D m ing f Wa e* and other Matter was adopted Dec. 29, 1972. The fundamental principles of the Convention are the prohibition of dumping of certain wastes (substances listed in Annex I of the Convention), the requirement of a specific permit prior to dumping others (Annex II) and the demand for a general permit for the rest.

The 1996 Protocol to the Convention forbids the incineration of toxic wastes at sea. Each state must designate one or several authorities competent to issue the required permits in respect of matter intended for dumping and loaded in its territory or flying its flag if the loading occurs in the territory of a state not

coasts are the most densely populated areas of the country. This proportion is considerably increased in summer, particularly on the Mediterranean coast, while the environment of this semi-enclosed sea is particularly fragile. Most basic industries are also located in this area.

The Coastal Law, which mainly concerns the land area, combines coastal planning principles and water quality protection. To ensure efficient protection of the seas, the administration has the power to prohibit, in specific areas, certain industrial processes which can give off waste that risks more than acceptable levels of pollution. Dumping permits can be issued, but they also can be modified when the circumstances change that give rise to their approval. A tax is charged on the dumping of pollutants and is put towards operations for cleaning and improving the quality of waters. Monitoring and control of both illegal and authorized dumping is in principle the responsibility of the Spanish regional government administrations. Unauthorized dumping of sewage in the sea may be sanctioned either under the administrative code or the penal code. The Coastal Law categorizes the unauthorized dumping of sewage as a serious offense. The Coastal Law also imposes an obligation on the polluter to replace and restore things to their previous state, and when this is not possible, those responsible for the violation must pay the compensation set by the administration in accordance with the Law.

7.3.2 Protection of marine living resources

In recent years marine biodiversity has become increasingly threatened due to pollution from land-based and other sources, over-exploitation, the introduction of alien species, coastal development, and global climate change and ozone depletion. More than 44% percent of the world's commercial fish stocks are estimated to have reached their yield limit. The decreasing number of fish has led to conflicts between the approximately seventy coastal states and ten long-range fishing states competing for the resources. In fact, twenty countries account for 80% percent of the world marine catches, nearly all of which occurs in areas under national jurisdiction.

This reality has produced both international agreements and national implementing law. Here again, an understanding of the latter can be informed by familiarity with the former.

The *Uni ed Na i n C n en i n n he La f he Sea (UNCLOS)* contains important provisions relating to conservation of marine living resources. Its general rule affirms coastal state authority to ensure the conservation of biological resources in zones within its jurisdiction, i.e., the territorial sea, the exclusive economic zone (EEZ), and the continental shelf. The exclusive economic zone, because of its size and above all because of its objectives, is of primary importance in conservation of the marine living resources. In this region the coastal state has sovereign rights to explore and exploit, conserve and manage the natural resources, but it also has the duty to ensure, through proper conservation and management, that the maintenance of the living resources is not endangered by over-exploitation. An important innovation reflecting a broad ecological perspective is the requirement that the coastal state take into consideration the effects of its measures on species associated with or dependent upon harvested species, in order to maintain or restore these populations above levels at which their reproduction may become seriously threatened.

The extent of the zones under coastal state jurisdiction creates problems with respect to marine animals that traverse more than one nation's zones. The Convention designates five categories:

1) **Stocks of species that occur within the exclusive economic zones of several coastal states** or within the economic zone of one and an area adjacent to that zone, are regulated by conservation measures agreed upon by the concerned states either directly or through appropriate international organizations.

conservation by establishing appropriate regulatory measures for fishing in all waters to the outer limits of the exclusive economic zone. For fishing outside the exclusive economic zone, the states concerned consult in order to establish the terms and conditions of such fishing, giving due regard to the conservation requirements and the needs of the state of origin. In effect, the treaty discourages fishing for these species on the high seas. When the stocks of anadromous species migrate into or through the waters of a state other than the state of origin, both states shall cooperate with regard to conservation and management of the species.

5) ***Catadromous species,*** such as eels, reproduce in the sea and live in other environments. According to Art. 67, the coastal state in whose waters these species spend the greater part of their life cycle has responsibility for their management and shall ensure their ingress and egress. These species may not be harvested on the high seas and fishing for them within the exclusive economic zone is regulated by the general regulations governing the zone. Where such species migrate through the waters of more than one state, rational management must be assured by agreement between the states.

The Convention calls for coastal states to adopt rules that to ensure the conservation and management of the marine living resources in its exclusive economic zone can be enforced through boarding, inspection, arrest and judicial proceedings. However, the measures cannot include imprisonment or any other form of corporal punishment.(Art. 72.)

On the continental shelf, the Convention considers only the exploration and exploitation of natural resources and does not specifically address their conservation. "Natural resources" include living organisms belonging to sedentary species which are either immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or subsoil.

Conservation of marine living resources may be seen, therefore, as a general obligation, in particular as concerns the high seas. No territorial jurisdiction can be exercised on the high seas because of the freedoms that exist in this area, meaning states can only make national conservation measures applicable to their nationals. In general, measures must be designed, on the best scientific evidence available, to maintain or restore populations at levels which can produce the maximum sustainable yield, qualified by relevant environmental and economic factors. The interdependence of stocks must be taken into consideration in order not to threaten associated or dependent species. (Art. 119) Finally, Art. 120 affirms that measures taken to protect marine mammals in the exclusive economic zone may also apply to the high seas.

a) Fisheries

In 1999, scientists estimated that fish is the primary source of protein for close to 950 million people and is the source of employment for about one quarter of that number. Fish resources are a major component of international trade. In some developing countries fish represent up to 80 percent of the total exports. From 1950 to 1970, fisheries production increased by approximately 6% annually, trebling from 18 to 56 million tons. During the 1970s the rate of increase declined to about 2 percent and in the 1990s fell to zero. Declining catches have led to job losses and higher prices for fish.

A 1995 UN Agreement concerned primarily with stocks that are beyond the limits of national jurisdiction, looks principally to flag states for action, which is understandable given the focus on high seas activities. It requires states parties to ensure that flag ships do not engage in any activity that might undermine the effectiveness of conservation and management measures. States are not to authorize or license high seas fishing unless they can ensure compliance with applicable national, regional and international regulations. The Agreement foresees a system of boarding and inspections within the regional or sub-regional framework followed by sanctions imposed by the flag state. See: Agreement for the Implementation of the Provisions of the *United Nations Convention on the Law of the Sea* of 10 December 1982 relating to the

pelagic driftnets of up to 48 kilometers (30 miles), nets that were often referred to as “walls of death”

rational exploitation of the fur seals resource. The EEC has adopted a legal instrument specifically concerned with protecting baby seals. The massacre of young seals, in particular by Canadian hunters, was graphically exposed by photographs and provoked a strong movement of public opinion in Europe, demanding governments to act. As a result, the Council of the EEC adopted a resolution on January 5, 1983 followed by a Directive concerning the importation into member states of furs of young seals and derivative products. See, Directive 83/129/EEC, O.J. L. 91 (4/9/83).

It must be recalled that certain kinds of seals are protected by the general multilateral conventions concerned with endangered species, principally CITES and the Bern Convention. Similarly, as a migratory

registered owner of the ship and whose principal place of business was in Bermuda; Standard Oil Company, the owner of Amoco Transport Company, incorporated in Indiana, with its principal office in Illinois; Amoco International Oil Company, also owned by Standard Oil, incorporated in Delaware; Bugsier Reederei und Bergungs A.G., the German salvage tug company that sought to assist the Amoco Cadiz; and the American Bureau of Shipping, which approved the design of the supertanker.

Normally, the pollution victims would have been able to bring an action in French court for damages under an international liability convention, which France had ratified. However, their damages substantially exceeded the limits of 77 million francs that would have been due under the Liability Convention formula then in force. According to estimates prepared at the time, the cleanup alone cost some 450 million francs, the damage caused to fish and shellfish was 140 million, and the losses caused by the reduction in tourism were more than 400 million. In these circumstances the victims sought to escape the limits of the Liability Convention by taking the case to the United States courts because the United States is not a party to the Liability Convention. The complaint sought US$2.2 billion damages for environmental harm suffered due to the negligence of the companies in the construction, maintenance, and operations of the Amoco Cadiz.

In a judgment of April 18, 1984, the Court determined it had jurisdiction over the action and that United States law would apply. This ruling was sufficient to escape the limits of the Brussels Convention, which would have limited the liability of Amoco to under $20 million. If the Convention had been applied, the provisions of Art. 9, according to which no claim may be presented except before the tribunal of the state victim of the pollution, would likely have required dismissal of the action. Even if this were not the case, choice of French law including the Liability Convention would have bolstered Amoco's arguments for dismissal on grounds of *f m n n c n enien .*

On the merits, the court held liable Standard Oil and its two subsidiaries. Amoco International Oil Company, the American corporation responsible for the organization and administration of transportation for all of Standard Oil, was found negligent in its obligation to maintain the Amoco Cadiz in a state of navigability. In particular, there was a negligent breakdown in the steering mechanism of the tanker that was one of the immediate causes of the grounding of the tanker and the resulting damage. Moreover, the crew of the tanker was not sufficiently trained to maintain, utilize, inspect and repair the steering system, a supplementary cause of the grounding. Finally, the company using the Amoco Cadiz was negligent in leaving the ship without any backup steering system and without any other means of controlling the direction of the ship in case of failure. There was no limitation set on liability for any of the defendants.

Four years later the court examined in detail the question of damages, awarding the plaintiffs $85.2 million. The court's 435-page opinion, In *e Oil S ill b Am c Cadi ff he C a f F ance n Ma ch 16, 1978,* No. MDL376 (N.D.Ill. 1988), 1988 U.S.Dist. LEXIS 16832 addressed the claims made by France, the harmed cities and towns, individuals, farmers, fishermen and environmental protection groups, discussing several categories of damages:

- Cleanup operations by public employees. The court accepted the claim for costs of the cleanup to the extent that public employees, including elected officials and the military, took time from their regular duties or put in overtime to assist. Travel costs incurred in the cleanup were also reimbursed. The time of volunteers was not compensated because their efforts were donated, but the proven costs of transportation, food and lodging could be claimed.
- Gifts made by local communities in money or goods to volunteers or military officials were found to be inappropriate for inclusion in the damage claim, being in the nature of recognition of and gratitude for the services rendered.
- Costs of material and equipment purchased for the cleanup. The court allowed recovery, less the residual value of purchased items, provided the acquisition was reasonable and the equipment was, in fact, used during the cleanup and that a residual value could be proven. As for previously-owned equipment, depending on the evidence the claimants were found entitled to recover either the difference between the value of the equipment before its use commenced and the value thereafter, or a reasonable rental value for the equipment during the term of its use.
- Costs of using public buildings. The damage suffered by buildings during the cleanup operations was compensated and reimbursement was awarded for the extra costs arising from use of the buildings during the cleanup, such as increased water, power, and telephone usage.
- Coastline and harbor restoration. The expenses for these purposes were included.

Chapter 8

AIR

8.1 INTRODUCTION

The introduction of pollutants into the atmosphere creates multiple effects, because the air is essentially a place of transit: gases or particles remain there temporarily and manifest many of their impacts only after returning to the soil, plants, marine waters, lakes or rivers. Poisonous air also directly damages living creatures and objects. The two most serious known ecological catastrophes – Bhopal, India, and Chernobyl, Ukraine – produced most of their victims as a result of direct contact with polluting elements in the atmosphere. Pollutants often undergo modifications in their composition once they enter the atmosphere. Finally and significantly, air pollutants move quickly and cover greater distances than do pollutants in watercourses or the marine environment.

There are three major issues concerning air and the atmosphere that have been subject to legal regulation and may arise before judges: air pollution, depletion of the stratospheric ozone layer, and climate change.

8.2 AIR POLLUTION

Air pollution has been defined as the introduction by man, directly or indirectly, of substances or energy into the air, resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems and material property, and impair or interfere with amenities and other legitimate uses of the environment. This definition adapts the general concept of pollution, focusing on risk or harm resulting from changes in the environment.

Atmospheric pollution appears in multiple forms, some only recently understood. Domestic and international regulation has evolved as the impacts of each form of pollution have become known.

1) **Sulphuric gas** of industrial origin, in part converted into sulphate in the troposphere and stratospheric base, becomes sulphuric acid. In addition to its impact on fresh-waters, the acid is returned to the soil in rain, where it attacks the roots of trees.
2) **Other pollutants,** principally nitrous dioxide (NO2) and emissions from hydrocarbons (HC) combine with sulphuric gases. They are the source of ground-level ozone (O3) during sunny periods. Ozone harms the needles of conifers, particularly the membrane which supports photosynthesis. This is the source of serious damage to trees on western and southern hills and mountains at an altitude near 800 meters. Automobile gas emissions are another major source of pollution, which must be added to pollution caused by power stations and industries utilizing fossil fuels.
3) **Particulates,** such as ash and heavy metals, corrode buildings, monuments and other objects.
4) Most recently, the impact of **persistent organic pollutants** (POPs) in the atmosphere has become a major concern.

8.2.1 National law

Numerous sources emit pollution into the atmosphere, including heating plants, both industrial and domestic, industrial processes, waste incinerators, automobiles and other transport vehicles, and even animal farms. The amount of pollutants varies from one area to another, depending on the type and concentration of human activities and on the measures taken to reduce emissions. See Mauritius, Environmental Appeal Tribunal, Case No.2/94, *M emen S cial de Pe i Cam . Mini f En i nmen & Q ali f Life* and Case No 02/98, *M .Cad e Chinian Che . Mini e f L cal G e nmen and En i nmen .*

The legal norms applied by different states to combat air pollution vary considerably from one country to another, based on local conditions of geography, climate, industrialization, urbanization and other potential sources of harm. Emphasis can be placed on emission controls or on setting air quality standards, on improving particularly polluted zones or those that demand special protection, on priority accorded local pollution, or on medium- and long-distance impacts. The execution of international treaties can have a major influence on national legislation.

One of the most widely adopted legal techniques for combating pollution and nuisances consists in submitting all pollution-causing activities to prior authorization. Existing licensing regimes have played a great role in the prevention of air pollution. Licensing regulations typically list types of activities requiring a license, although variation exists in the criteria of classification, such as the size of the installation, the nature and the quality of the emissions and their effect on the environment, the feasibility of preventing pollution by using an alternative production process, and the likely risk of a major accident. See: Mauritius, Environmental Appeal Tribunal, Case No 02/98, *M. Cad e Chinien Che . Mini e f L cal*

limits because pollution levels rise with increased speed. The utilization of local forms of mass transit as well as access to and use of long-distance trains, are also important measures.
Often, differences in local conditions require that regulatory measures to combat air pollution be taken locally or regionally. These rules can differ considerably from one area to another. Legislative instruments may establish air quality regions or zones. Most often, special zoning laws are passed at the local level that affect the amount and location of polluting activity. The objective is always to adapt standards, as much as possible, to geographic realities. Two common factors are usual:

1) The most polluting activities are prohibited or limited in specified zones, such as protected nature sites and densely populated areas.
2) In particularly polluted zones, stricter emission standards or air-quality standards may be set. During periods of particularly severe pollution, local authorities have restricted automobile use and taken measures to protect those vulnerable to respiratory ailments.

Legal regulation of other environmental issues can have an impact on air quality Efforts to clean up water or soil, for example, including the tendency to incinerate wastes, instead of depositing them on the ground or dumping them into the sea or into inland waters, can aggravate air pollution. Similarly, the siting of

The Convention has been augmented by protocols regulating the emission of different polluting substances: sulphur, nitrogen oxides (NOx) from fixed or mobile sources, Volatile Organic Compounds (VOC), Persistent Organic Pollutants (POPs), heavy metals, and ground level ozone.

Another source of atmospheric pollution appeared in the closing years of the twentieth century, when forest fires devastated Brunei and Indonesia, producing a heavy haze that polluted the atmosphere and caused serious health problems not only in the originating countries but also in Malaysia, Myanmar, Singapore and Thailand. In 1997, in response to the problem, the Association of Southeast Asian Nations (ASEAN) adopted a Regional Haze Action Plan followed in 2002 by an Agreement on Transboundary Haze Pollution (Kuala Lumpur, June 10, 2003).

The Convention defines haze pollution as smoke resulting from land and/or forest fire which causes deleterious effects of such a nature as to endanger human health, harm living resources, ecosystems and material property, and impair or interfere with amenities and other legitimate uses of the environment. The Agreement aims at preventing and monitoring such pollution, which should be mitigated through concerted national efforts and intensified regional and international cooperation (Art. 2). To that effect, precautionary and preventive measures should be taken, when necessary by developing and implementing

parties is to take appropriate measures to protect human health and the environment against adverse effects resulting or likely to result from human activities that modify or are likely to modify the ozone layer (Article 2). According to Convention, the Conference of the parties may adopt protocols to the Convention. Two months after the conclusion of the *Vienna C n en i n*, a British Antarctic Survey team published their findings indicating a forty percent loss of stratospheric ozone over Antarctica. A subsequent meeting of the parties to the Vienna Convention adopted the Montreal Protocol on Substances that Deplete the Ozone Layer on September 16, 1987. The Protocol controls production and consumption of various ozone-depleting substances (ODS), such as chlorofluorocarbons (CFCs) and halons. The parties have increased reductions of these controlled substances, as well as added new substances, over the years that followed. The Protocol also restricts trade of controlled substances between states parties and non-parties.

8.3.2 National law

The discovery that widely-used chemical substances were destroying stratospheric ozone induced a number of countries in the early 1980s to ban the use of CFCs for aerosol sprays. National regulatory approaches to implement Montreal Protocol restrictions and protect the ozone layer may include a) outright bans on manufacture and trade in restricted chemicals; b) taxes imposed on chemicals subject to phase-out; c) management requirements, e.g., on air conditioner servicing for automobiles or homes for recapture and recycling of ozone destroying substances (ODSs).

As the phase-out and ultimate ban in CFCs and other ozone-depleting substances has spread throughout the world, the problem of black-market trafficking has emerged. Judges are thus increasingly sitting on prosecutions based on violation of national bans or other restrictions on trade in such substances. In the mid to late 1990's, as developed countries limited manufacture and approached phase-out of CFCs, CFCs could often be purchased cheaply in developing countries not yet subject to phase-out requirements, and sold at many times the cost in developed countries. The resulting profit margin helped to drive a large black market with involvement of organized crime. While enforcement efforts have begun to put a crimp in this illegal trade, as developing countries proceed with the phase-out of ODSs, there are already signs of black market trading of illegal CFCs in developing countries. Moreover, it is thought that a similar black market could emerge as the next generation of ozone-depleting chemicals, the HCFCs, become subject to phase-out schedules under the Montreal Protocol.

Evidentiary issues for cases involving violation of national bans or restrictions in the commerce of ODS include proving whether a restricted chemical is involved. Often, restricted or banned chemicals are identifiable based on the labelling of their container or canister. In other cases, laboratory analysis may be needed to prove that a restricted chemical is involved.

8.4 GLOBAL CLIMATE CHANGE

The third major problem of the atmosphere is climate change and concern that, directly or indirectly, human activity may be altering the composition of the global atmosphere in a manner that affects climate beyond natural climate variation over time. The potential adverse effects from this change have been characterized as changes in the physical environment or biota which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation or socio-economic systems or on human health and welfare. See *U.N. F ame k C n en i n n Clima e Change* (New York, May 9, 1992), Art. 1.

The global average temperature between 1866 and 1996 increased by more than one degree, and the years 1998, 2002 and 2003 had the highest average temperatures on record. The accumulation of gases such as carbon dioxide, nitrous ide, nis o84 Tw[JT0.0122 Tr asweg orwegnitrousstricteopnduced a

The trend towards increasing temperatures is projected to result in rising sea levels from the partial melting of polar ice caps and from the thermal expansion of sea water. The IPCC's 2001 assessment projected

The obligations of all parties are mainly contained in Articles 4 and 12: developing, periodically updating, publishing, and making available national inventories of anthropogenic emissions and sinks; formulating and implementing national and regional programs containing measures to mitigate climate change; promoting the application of processes that control emissions including transfer of technologies; promoting sustainable management of sinks and reservoirs of all greenhouse gases; elaborating integrated plans for coastal zone management ; and cooperation in research.

The treaty contemplates that its developed country parties should take the lead in combating climate change and its adverse effects. Annex I to the Convention lists thirty-six countries and the European Community as developed parties; they commit themselves to adopt national and regional policies and take corresponding measures to mitigate climate change by limiting their emissions of greenhouse gases and protecting and enhancing their greenhouse sinks and reservoirs. However, the Convention establishes no obligations concerning specific timetables and targets for limiting such emissions.

The Protocol to the UN Framework Convention adopted in Kyoto on December 11, 1997 specifies different goals and commitments for participating developed and developing countries concerning future emission of greenhouse gases. The main features of the Protocol are the reduction targets accepted by the industrialized countries, without corresponding obligations for developing countries; acknowledgment of the role of sinks of greenhouse gases (seas, forests) and their inclusion in the targets; the possible creation of “bubbles” and trading emissions to allow countries to satisfy together their obligation to reduce their aggregate emissions and to jointly implement the agreement with countries that only emit small amounts of greenhouse gases, in principle developing countries.

Chapter 9

SOIL

9.1 INTRODUCTION

Soil is the part of the Earth between its surface and its bedrock. It contains the nutrients necessary for maintenance of plant life and it acts to filter out pollutants before they reach subterranean water sources or enter the food chain. Soil also helps to avoid flooding by absorbing considerable amounts of water. Nearly all soil constitutes a habitat for flora and fauna and in this way contributes to biological diversity. In addition to its natural roles, soil is a primary resource for construction, physical support for structures and of historical evidence on the origins of plants, humans, animals and the Earth.

Soil naturally erodes and degrades, but it is increasingly threatened by excess demands on all the roles it plays. Overuse of soil depletes its nutrients and leads to erosion and desertification. The principal cause of erosion, in most cases an irreversible process, is incorrect management of forests and agricultural lands, principally through intensive and environmentally unsound cutting and farming methods. Erosion can also diminish the ability of soil to prevent and to absorb flooding. Contamination by heavy metals and organic toxic substances, including fertilizers and pesticides, is a particularly serious problem in many parts of the world. Waste, particularly industrial waste, has likewise become a major source of soil contamination. Finally, the surface space of soil is diminishing as it becomes covered by buildings, industrial facilities, and impermeable roads, airport runways, and other artificial surfaces.

9.2 NATIONAL LAW AND THE COURTS

There is little national law on structural soil protection; some indirect protection appears in forestry laws that are designed to avoid erosion and consequence flooding. A few cases have been decided. One example is from the Environment Appeal Tribunal of Mauritius, Case No. 03/01, *M . Jamaml deen D ll . Mini e f En i nmen* .

On soil pollution many states now have legislation requiring clean-up and remediation of polluted soil. The U.S. enacted its Resource Conservation and Recovery Act to regulate, among other things, the land disposal of solid and hazardous waste in 1976, and its so-called “Superfund” legislation to clean up polluted soils in 1980. The Netherlands was the first state in Europe to have specific legislation on soil protection, with clean up regulations dating from 1983, after the public became aware of toxic sites in the country. In 1987 the Soil Protection Act was adopted to protect the functions of the d “Supdqt01 6U Acs w

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Chapter 10

BIOLOGICAL DIVERSITY AND NATURE CONSERVATION

10.1 INTRODUCTION

Issues concerning biological diversity may come before judges in very different contexts. Criminal

destruction of habitats, overexploitation, overconsumption, pollution and the wide range of activities that directly impact the environment. Other unintended factors can be added, such as incidental taking of species and the introduction of foreign species into habitats.

Given the projected growth in human population and economic activity, the rate of loss of biodiversity -- which accelerated during the last two centuries -- is likely to continue to increase. Part of the problem is that biodiversity and essential ecological functions such as watershed protection, pollution control, soil conservation, photosynthesis and evolution tend to be undervalued. Still, these resources, and the diversity of systems that support them, are the essential foundation of sustainable development. Biological resources are renewable and with proper management can support human needs. No single nation acting alone, however, can ensure that biological resources are managed to provide sustainable supplies of products; rather, a commitment is required on the part of all states and actors.

10.2 PROTECTING BIODIVERSITY

10.2.1 National law

National and international law have approached the problems raised by the loss of biological diversity in similar ways. Historically, the starting point was legal restrictions enacted to protect forests and certain species of wild fauna and flora. Special authorizations could be delivered to allow cutting trees in a forest, or for hunting or fishing during specific seasons. Later, norms developed to protect the habitat of wild plants and animals. Finally, conservation of species and of their habitat merged into the broader conceptual framework that calls for safeguarding the genetic heritage of the planet, a new, immense problem extending beyond the dimensions of conservation in its usual sense. Progress towards identification, regulation, and management of processes that adversely affect biological diversity represents one aspect of a shift away from sectoral administration towards an integrated approach to protecting ecosystems. Thus, legislation in many countries today (e.g. Austria and Denmark) prohibits the release or introduction of non-native species, or requires special permission to introduce them.

In most countries today national legislation is largely modelled after international commitments. Parties to international conventions on biological diversity have adopted laws and regulations in order to implement the agreements and create adequate institutions in order to ensure compliance with their commitments.

The role of domestic tribunals is important in the development of concepts related to wildlife protection. French courts and tribunals made valuable contributions in defining terms such as "protected species," "damage" to protected species, and to developing the legal status of migratory birds, hunting and of the duties of hunters. See: Conseil d'Etat, December 9, 1988, *En e i e de d agage e de a a blic ,* R.J.E., 1989/2, 187 ; Tribunal administratif de Grenoble, April 26, 1996, *A cia i n D.R.A.C., Na e e a e* , R.J.E., 1997/1, 114; Cour administrative de Lyon, February 1, 1994, M. Plan, R.J.E., 1994/2, 263 ; Cour d'appel de Toulouse, October 24, 1994, *Le ina e*, R.J.E., 1997/1, 47; Tribunal administratif d'Amiens, February 8, 1996,

equitably through a variety of actions. Anyone who commercializes a product that incorporates material accessed from the Multilateral System is obliged to pay an equitable share of the benefits into a multilateral mechanism for use as part of the funding strategy for benefit sharing. There is an exemption for those who make such products available without restriction to others for further research and breeding, although such individuals shall be encouraged to make a payment.

Another important aspect of the protection of biological diversity is the control of the introduction of alien species, which can destroy native ones. Various international and national laws require states to control strictly the introduction of non-native species. The *UN C n en i n n he La f he N n-Na iga i nal U e f In e na i nal Wa e c e* (New York May 21, 1997) provides that watercourse states shall take all measures necessary to prevent the introduction of species, alien or new, into an international watercourse which may have effects detrimental to the ecosystem of the watercourse resulting in significant harm to other watercourse states. Appropriate penalties for deliberate introduction are to be strictly enforced, due to the potentially disastrous consequences of alien species on an ecosystem.

On the general protection of biological diversity, the *E ean C n en i n n he C n e a i n f E ean Wildlife and Na al Habi a* (Bern, Sept. 19, 1979) illustrates some of the main approaches to nature conservation. It distinguishes the protection of species from that of habitats, a distinction reflecting international regulation and most national legislation. The general rules for species protection are different for wild flora and wild fauna. Wild flora species specified in an Appendix to the Convention

The protection of birds was among the earliest steps taken in the international protection of wild fauna. Indeed, the first major multilateral convention in the field of conservation was that of birds “useful to agriculture”, signed March 19, 1902. A new

10.4.1 National law

The *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) was adopted in Washington on March 3, 1973. It aims to ban trade in endangered species and to regulate trade in other commercially-exploited species to ensure sustainable trade and economic benefits for

parties to control trade. The export of a specimen of any species from a state that listed the species in Appendix III requires the prior grant and presentation of an export permit. Import of a specimen of an Appendix III species requires prior presentation of a certificate of origin and an export permit, if the specimen comes from a state that listed the species. Appendix III thus allows each state to obtain the aid of other states that are potential importers of the specimens that the exporting state seeks to protect and conserve. Canada listed the moose, signalling to other states that it is illegal to import a moose or products made from it without a permit issued by Canadian authorities.

CITES also contains a series of flexible provisions and authorizes exemptions for specimens of certain species that were raised in captivity as household pets or plants artificially propagated for commercial purposes. Exemptions are also granted for non-commercial loans, donations or exchanges of certain plants between scientists or scientific institutions, as well as for the movement of specimens which form part of a zoo, circus, menagerie or exhibition. However, conditions are imposed, principally relating to the humane treatment of the specimens.

10.5 HABITAT PROTECTION (INCLUDING WETLANDS)

The protection of habitats and ecosystems is a necessary complement to the protection of species. Legal measures to protect biological diversity cannot succeed unless coupled with measures to provide appropriate conditions for the survival of the species in the wild. Such measures may include regulating the introduction of noxious substances or structural changes in the habitats of the protected species, or through the creation of protected areas. Land-use regulations can play an important role in this regard.

Wetlands are particularly important; they play a vital role in the water cycle, helping to refill water tables and maintain water quality. They are highly productive ecosystems inhabited by large numbers of plant and animal species. Many marine species depend on coastal wetlands for their reproduction, growth, or nutrition during part or all of their life cycle. During recent decades state-sanctioned or even mandated drainage operations, as well as drought and landfill, have considerably reduced the extent of global wetlands.

10.5.1 National law

All areas typically protected under national legislation share some of the same characteristics: prohibiting or limiting human activities, or even denying human access to remain uninhabited and, as much as possible, undisturbed. In addition, certain activities may be regulated, regardless of the designation of the area where the activity is planned: for example, in some states construction of all ski lifts, buildings, parking lots and depots must have prior permits; garbage may be deposited only in designated places; and tents, trailers, or camping cars may only be placed in camping sites.

There are five common types of protected areas:
1) Nature reserves
2) National parks
3) Game reserves
4) Natural monuments
5) Wilderness reserves

a) Nature reserves

Nature reserves are generally subject to the strictest regulation. They are placed under state control and their boundaries may not be altered except by legislation. Within such reserves it is strictly forbidden to hunt, fish or exploit any of the resources or perform any act likely to harm or disturb the fauna and flora. It is likewise prohibited to alter the configuration of the soil or pollute the water. All human presence, including overflight, requires prior permission of the competent national authority.

b) National parks

National parks are the oldest form of protected area. They are areas set aside for the propagation, protection, conservation and management of vegetation and wild animals, as well as for the protection

of sites and landscape. National parks can include walking and recreation areas, such as those established under the Recreation Act of Finland. Fishing and hunting can be permitted in some cases. They are placed under state control and in most cases can have their boundaries changed.

c) Game preserves

Game preserves or sanctuaries are established for the conservation, management and propagation of wild animal life and the protection and management of its habitat. Hunting and capturing animals is regulated by the reserve authorities. Other human activities, including settlement, are controlled or prohibited. In France, local authorities may issue for orders for the preservation of areas that are the habitat of listed protected species of animals or plants (arrêtés de protection de biotope). These orders may prohibit or restrict any activity that is liable to affect the habitats concerned.

d) Natural monuments

Natural monuments are zones of particular scenic beauty of historical or cultural value. They may be trees, waterfalls, rock formations, or fossils, designated on both public and private land. Damaging a natural monument is generally prohibited but in the Netherlands private landowners may apply for a permit to conduct prohibited activities.

e) Wilderness reserves

Wilderness reserves are a relatively new designation for certain protected areas. A wilderness may be defined as a large roadless area of undisturbed vegetation where most human activities are prohibited, but which generally remains open for walking and camping, without having developed campsites. Hunting and fishing is permitted in some areas. Permits are usually required for entry or for overnight camping. In Finland, a law of 1991 designated land corresponding to 4.4 percent of the country as wilderness areas, most of it in Lapland. Mining and permanent roads are prohibited, as is the construction of buildings other than for traditional uses by indigenous persons. In Italy, mountains above the 1600-meter line are protected areas from quarrying, building and road construction

In Belgium, protected areas are legal persons and can be represented in litigation tending to their rehabilitation. Cour correctionnelle de Bruges (Belgique), September 16, 1998,

10.6 BIO-TECHNOLOGY AND LIVING MODIFIED ORGANISMS

Throughout history, farmers have used selective breeding to alter their livestock and crops for qualities sought by the farmers or consumers. They have also applied biological fermentation to produce new products and increase the period of conserving food. These techniques rely on genetic variation, including mutations, already present in species and populations of flora and fauna. All major crops and farm animals are the product of some degree of human intervention.

Genetic modification or biotechnology differs from the directed but natural processes of selective breeding. Genetic engineering isolates single genes from an organism and transfers one or more to another organism, across populations and across species or phyla. Animal genes may be inserted into plants and vice versa. Once inserted, the genes may be transmitted to subsequent generations.

Genetic engineering has reached the point where living organisms can be adapted and created in the laboratory. Many of these living modified organisms (LMOs) are not intended to stay in the laboratory, however. The introduction of herbicide resistance into virtually all major crops as a means of making it easier to control weeds is expanding. In addition, genetic engineering of micro-organisms has developed as an alternative strategy to improve pest control. Genetically altered corn and soybean seeds are already in use in different countries including the United States, Argentina, and Brazil. The use of biotechnology to raise crop yields has received the most publicity and been the most controversial, including efforts to broaden the germplasm basis from which new genetic combinations can be created and improving and speeding up the propagation of plants. The most widely used and commercially successful application of plant biotechnology is the rapid and large-scale multiplication of plants through clones produced in tissue culture. The technique is currently used to mass-produce ornamental, fruit, vegetable, medicinal plant and tree species. Many scientists see biotechnology as permitting them to pursue plant breeding efforts, with favorable impact on food supplies, the nutritional content of food, international trade in agricultural products, the environment and existing plant resources. The commercial nature of many of these potential benefits is a source of conflict, particularly between developed and developing countries who disagree over access to, control of, and benefits from primary and modified genetic resources.

Aware of possible benefits, a substantial number of scientists nonetheless urge caution in releasing genetically engineered organisms, because of the possibility that such organisms might have an unfavorable impact upon the environment and because considerable scientific uncertainty exists about the scope and degree of the environmental risks. There is fear that the LMOs, as living organisms, could evolve into destructive pathogens. Moreover, genetically altered genes may naturally transfer to wild-grown relatives, with unforeseeable consequences. Thus far, the major negative impact that has been identified and studied is the harm to monarch butterflies caused by the protein used in genetically altered corn to repel certain pests.

Particular concerns arise over the release of LMOs in or close to a center of genetic diversity of that crop. Mass production of identical plant materials may introduce greater danger of genetic destruction because all specimens may become equally vulnerable to a single disease or pest leaving no resistant varieties as alternative sources. The widespread use of cloned crops or artificial seeds to replace sexually reproducing crops may thus increase crop vulnerability. Finally, the release of genetically modified micro-organisms (bacteria and fungi) could pose particular problems. Very little is known about microbial communities; few have been named or studied. However, current research indicates that natural genetic transfer between different micro-organisms is relatively frequent, making it conceivable that engineered species could transfer throughout the microbial world in unpredictable ways.

10.6.1 National law

National and regional-level regulation of LMOs has increased in recent years. In the U.S., for example, LMOs are subject to an increasing number of pre-market and labelling guidelines and requirements administered by the Food and Drug Administration.

The European Community issued directives in 1990 creating lengthy series of control procedures both for laboratory research and for release of LMOs. Directive 90/219/EEC on Contained Use of Genetically Modified Microorganisms (GMM), was amended in 1998 to establish four classes of contained uses and the restrictions that apply to each. Directive 98/81/EC, O.J. L. 330 (12/12/98), amends and substantially revises Directive 90/212/EEC of April 23, 1990 on the Contained Use of Genetically Modified Microorganisms, O.J. L 117 (8/5/90). The directive requires an assessment of the risks to human health and the environment that the contained uses may incur, including the question of waste disposal. The precautionary principle has been incorporated by requiring that *he e he e i a d b a hich cla i a ia e f he ed c n ained e, he m e ingen ec i e mea e hall be a lied nle he e i fficien e idence acc ding he c m e en a h i ha le ingen mea e a e j ified.*

Notification is required for any relevant new information or modifications that could have significant consequences for the risks posed. Users must develop and make available to the public contingency plan for emergencies.

Directive 2001/18/EC, replacing Directive 90/220/EEC of April 23, 1990 (O.J. L 11, May 8, 1990), concerns the voluntary release of genetically modified organisms into the environment. Applicants for release must carry out an environmental risk assessment of the GMO being proposed for authorization. Environmental risk assessment means that "direct or indirect, immediate or delayed risks" shall be evaluated by the national authorities. Assessors may not discount any potential adverse effect on the basis that it is unlikely to occur. The authorization system has a ten year limit and renewal is only permitted if monitoring carried out during the period shows no negative results. Labelling of products is also required.

It is also notable that the 1993 Council of Europe *C n en i n n Ci il Re n ibili f Damage Re l ing f m he E e ci e f Ac i i ie Dange f he En i nmen* specifically covers damage caused by genetically modified organisms. GMOs are defined in the Convention as an organism in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural combination.

In terms of additional examples of efforts to ensure biological safety, Peru's Law No. 27104 on the prevention of risks derived from biotechnology requires anyone wanting to introduce into the national territory LMOs to be used for research, production, manipulation, transfer, conservation, commercialization, contained use and release, to submit a formal application to the competent authority. The application is to include all the information necessary for carrying out a risk assessment. When the application is received, an informative summary is published at the national level.

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produced using gene technology. Member states of the European Union are to ensure that labelling and packaging of GMOs placed on the market as or in products include the words “this product contains genetically modified organisms” clearly displayed either on a label or in accompanying documentation.

10.6.2 International law

The 1992 UN *Convention on Biological Diversity* defines biotechnology to mean any technological application that utilizes biological systems, living organisms, or derivations of them, to make or modify products or processes for specific use. Widespread controversy surrounds the question of the potential risks associated with the handling and introduction into the environment of living modified organisms (LMOs) or, as they were first referred to, genetically-modified organisms. The need to promote biosafety has centered on two related issues:

1) The handling of LMOs at the laboratory level, in order to protect workers and prevent the accidental liberation of such organisms into the surrounding ecosystem ("contained use");
2) The need for regulatory systems to govern the deliberate release of LMOs into the environment, either for testing or commercial purposes.

Uncertainty surrounding the environmental impacts of LMOs is recognized in the Convention, which does not define the term “living modified organism” but calls on the contracting parties to consider the need for modalities of a protocol setting out procedures for the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the environment. The Convention itself obligates parties to “provide any available information about the use and safety regulations required by th[e] contracting party in handling such organisms, as well as any available information on the potential adverse impact of the specified organisms concerned” to any party into which those organisms are introduced.

In respect to in situ conservation, the CBD requires the parties to establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking into account the risks to human health. The Convention also calls for implementing the rights of countries of origin of genetic resources or countries providing genetic resources, particularly developing countries, to benefit from the biotechnological development and the commercial utilization of products derived from such resources. Both the CBD and Agenda 21 adopted by the Conference of Rio de Janeiro on Environment and Development encourage such technology in order to increase benefits from biological resources. The Convention encourages parties to develop national legislation that promotes rights associated with intellectual property and informal innovations, including farmer and breeder's rights.

After extensive negotiations, the parties to the Convention on Biological Diversity adopted a *Protocol on Biosafety* on January 29, 2000. The objective of the Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking into account risks to human health and specifically focusing on transboundary movements. The Protocol does not apply to the transboundary movement of living modified organisms which are pharmaceuticals for human use and that are addressed by relevant international agreements or organizations.

The Protocol institutes an “advance informed agreement” procedure, which is a kind of prior informed consent procedure before certain transboundary movements of LMOs. Thus, the state of export must notify or require the exporter to notify, in writing, the competent national authority of the state of import prior to the intentional transboundary movement of a living modified organism. Annex I of the Protocol specifies the information that must be transmitted. The importing state has 270 days from the date of notification to make a decision on permitting or denying the importation and must transmit the decision to the notifying party and to a Biosafety Clearing House established by the Protocol. A risk assessment report may be used as part of such a procedure in place of domestic regulatory framework.

States parties agree to take appropriate domestic measures aimed at preventing and, if appropriate penalizing illegal transboundary movements of living modified organisms carried out in contravention

of domestic measures to implement the Protocol. Generally, states parties are to promote and facilitate public awareness, education, consultation and participation, encompassing access to information on living modified organisms that may be imported, but the notifier is permitted to identify information to be treated as confidential. The characterization of precaution became a focus of debate during negotiations for the Biosafety Protocol, especially concerning the extent to which measures could be taken by states to exclude LMOs either on scientific or socio-economic grounds. In the end, it was agreed that parties must undertake a process of scientific risk assessment that conforms to the Protocol's requirements (carried out "in a scientifically sound and transparent manner," on a case by case basis,

Chapter 11

AGRICULTURE AND FORESTRY

11.1 INTRODUCTION

Forests cover about one quarter of the world's land area outside Greenland and Antarctica, and are generally categorized into three groups:
1) Tropical forest,
2) Temperate forests, and
3) Boreal forests

Tropical forests constitute half of the world's forest cover, while temperate and boreal forests together comprise the other half.

Not only are forests home to up to ninety percent of all terrestrial species, but they also serve the important functions of producing oxygen for the planet and of acting as "sinks" for greenhouse gases. Thus, forests are essential for the maintenance of all forms of life. However, forests also function in an economic capacity, which can create a major threat to their existence. In recent years, the demand for forest products has grown rapidly. Production of paper products has caused one of the greatest increases in the use of wood – up five times from its level in 1950. The majority of paper consumption takes places in the industrialized Northern countries, while developing countries use about half of the wood cut worldwide for fulfilling basic needs.

Deforestation occurs for many reasons, including both economic gain and necessity. Tropical forests are especially affected by clearing done for agricultural purposes, such as planting crops or grazing cattle. Driven by the basic human need for food, many peasant farmers chop down a small area of trees and burn the trunks in a process called "slash and burn agriculture." More intensive, modern agriculture also occurs on a larger scale, deforesting up to several miles at a time. In addition, rain forests are replaced by large cattle pastures to grow beef for the world market. Another common form of deforestation is commercial logging, where trees are cut for sale as timber or pulp either by selectively cutting the economically valuable trees or by clear-cutting all trees in an area. Commercial logging cannot only damage those individual trees cut down but also the forest overall through the use of heavy machinery, such as bulldozers, road graders, and log skidders, to remove cut trees and build roads. Urbanization, mining and oil exploitation, and fire can also lead to forest depletion.

Unfortunately, deforestation has profound effects on the global environment. For one thing, loss of forests increases the amount of carbon dioxide (CO2) and other trace gases in the atmosphere. The plants and soil of tropical forests hold between 460 and 575 billion metric tons of carbon worldwide. Hence, when a forest is cut and burned, the carbon that was stored in the tree trunks joins with oxygen and is released into the atmosphere as CO2. Deforestation also contributes to global warming by reducing the evaporative cooling that takes place from both soil and plant life. Forest plants and animals can become endangered or extinct due to loss of habitat as well. Moreover, many of the over 200 million indigenous people in the world live in tropical and boreal forests and are particularly affected by environmental harm due to their special relationship with the land, which is often the core of their culture. Thus, deforestation can force forest-dwelling peoples from their traditional homelands and deprive them of their livelihood.

Some of the most well known judgments in environmental law have involved efforts to protect forests against unsustainable logging. See, e.g., *Min O a*, Sup. Ct., Philippines, Awas Tingni Case, Inter-Am. Ct. Hum. Rts.

11.2 NATIONAL LAW

An example of legislation at the national level, India's Forest Conservation Act of 1980 (amended 1988) restricts state authorities or any other authority from assigning any forest land or portion thereof to any private person or other entity not owned, managed or controlled by the Government without first receiving

permission from the Central Government. § 2(iii). It further requires Central Government permission for declaring that a forest area is no longer reserved and for using any forestland for non-forest purposes. §§ 2(i) and (ii). Under section 2 of the Act, "non-forest purpose" means breaking up or clearing of any forest land or portion thereof for the cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plants or any purpose other than reforestation. The Act extends to all Indian states except Jammu and Kashmir. Art. 1(2)

Civil litigation concerning the Forest Conservation Act developed in *Ambica Q a W k . S a e f G ja a and O he* (India, AIR 1987 Sc1073), when the State Government rejected an application for renewal of a mining lease under section 2 of the Act, which requires permission from the Central Government for using forest areas for non-forest purposes. The appeal centered on the issue of finding the proper balance between the need for exploiting mineral resources lying within forest areas, the preservation of ecological balance, and curbing environmental deterioration. The Supreme Court dismissed the appeal because the rationale underlying the Act was the recognition of the serious consequences of deforestation, including ecological imbalances, with an aim of preventing further deforestation. In this case, the renewal of the mining leases would not help to reclaim the deforested areas and would most likely lead to further deforestation. The Court deemed its primary duty was to the community. Thus, its obligation to society must prevail over its obligation to individuals.

The clashing interests of forests and agriculture set the stage for *Sibaji Wai a . Kaki a S ga W k L d* (High Court of Uganda, Jinja, No. 6/2001). While the main suit over the Butamira Forest reserve was pending, respondent entered the disputed forest reserve, uprooted trees and routinely destroyed seed nurseries, resulting in an irreparable damage to the environment. Petitioner requested a temporary injunction: (a) restraining the defendant from uprooting the forest to establish a sugar cane plantation; and (b) restraining the defendant's agents from evicting, intimidating, threatening or in anyway interrupting or destroying residents use and occupation of the forest reserve until the disposal of the main suit or until further judicial order. The Court held that an award of damages alone could not adequately compensate for the alleged environmental damage and granted a 6 month injunction while the main suit was pending or until the Government provided a lasting solution, whichever came first.

Some jurisdictions may enact criminal sanctions for the removal of trees without authority. In these circumstances it is important that the criminal court is aware of the full impact of deforestation and loss of trees, plants and other wildlife as well as the impact on the wider world. Box 27 provides an example of judicial action relating to illegal logging.

11.3 INTERNATIONAL LAW

Recognizing the necessity to preserve and protect tropical rain forests, the first International Tropical Timber Agreement was adopted on November 18, 1983, establishing the International Tropical Timber Organization (ITTO) in an effort to achieve sustainable exploitation and maintain the ecological equilibrium of forests. On January 24, 1994, a replacement International Tropical Timber Agreement was adopted in Geneva, recognizing the need to promote and apply comparable and appropriate guidelines and criteria for the management, conservation and sustainable development of all types of timber-producing forests.

While the vast majority of the Agreement is devoted to defining the structures and functions of the ITTO, it also encourages members to develop national policies aimed at sustainable utilization and conservation of timber producing forests and at maintaining the ecological balance in the regions concerned. Members are further encouraged to support and develop industrial tropical timber reforestation and forest management activities as well as rehabilitation of degraded forest land, with due regard for the interests of local communities dependent on forest resources. (Art. 1.)

The first global consensus on forests developed in 1992 with the Non-Legally Binding Authoritative

While the Statement recognizes that states have the sovereign right to exploit their own resources pursuant to their own environmental policies, it also notes that states have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction. It further promotes a balance between environment and development, advocating the sustainable management of forest resources and forest lands to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. The Statement calls for integrated and comprehensive environmental protection through scientific research, forest inventories and assessments, the international exchange of information, and the promotion of opportunities for active participation by interested persons. Moreover, members are encouraged to facilitate open and free international trade in forest products by incorporating environmental costs and benefits into market forces and mechanisms and reducing or removing any unilateral measures designed to restrict or ban international trade.

In order to give a higher political profile to the issue and to provide for continued policy development, the UN Forum on Forests was subsequently created in October 2000. By 2005, the UNFF will consider such issues as the parameters of a mandate for developing a legal framework covering all types of forests and the appropriate financial and technology transfer support to enable implementation of sustainable forest management.

Box 20 Illegal Logging and Deforestation

M/S A i Timbe C . & he S a e f Jamm & Ka hmi h gh Chief Sec e a & he (India, O.W.P. No. 568-84/96)

Although the Indian Forest Conservation Act does not encompass Jammu and Kashmir, On May 10, 1996, the Supreme Court of India ordered a logging ban within the state. The court also prohibited the removal of any cut trees and directed the Chief Secretary of the State of Jammu and Kashmir to ensure strict and faithful compliance with this order. Moreover, the Court expressly stated that the logging ban superseded any license or permit granted by any authority or any order made by any other court in the country.

In response, the Principal Chief Conservator of Forests of Jammu and Kashmir issued an order

Chapter 12

PROTECTION OF CULTURAL AND NATURAL HERITAGE

12.1 INTRODUCTION

For centuries communities have recognized that it is important to conserve our cultural heritage for future generations. Cultural heritage includes not only the intellectual, artistic and historical record of humans, but also physical objects, whether human-made or natural. During the present period of rapid change it

The Convention established an Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, one of the principal tasks of which is the establishment, publication and dissemination of the "World Heritage List". The listed natural sites include Australia's Great Barrier Reef; the Grand Canyon, Yellowstone and the Everglades in the United States; the Galapagos Islands (Ecuador), and the Serengeti Park (Tanzania). In certain cases, like Machu Picchu in Peru, the sites qualify both as natural and as cultural heritage.

The World Heritage Committee also establishes and publishes a "List of World Heritage in Danger" that includes property imminently threatened by proven serious and specific dangers such as the threat of disappearance caused by accelerated deterioration, large-scale public or private projects or rapid urban or tourist development projects, destruction caused by changes in the use or ownership of the land, major alterations due to unknown causes, abandonment, armed conflict, calamities and cataclysms, such as serious fires, earthquakes, landslides, volcanic eruptions, etc.

12.2 NATIONAL LAW

A good deal of national legislation has been developed on this topic. In Brazil most of the cultural sites of the World Heritage List had been regulated by preexisting federal legislation, such as the Capanema Law of 1935 on historic and cultural heritage and the 1961 Law 3.924 relating to archaeological sites. State and municipal regulations were introduced after the listing of Olinda, Brasilia and Salvador. Cameroon, responding to international pressure, elevated in 1971 the Douala-Edéa Reserve in the central coastal area and Korup Reserve on the border with Nigeria to national park status, and designated these two areas as wildlife parks for scientific purposes with the prohibition of wildlife exploitation and the eviction of timber

12.3 CULTURAL HERITAGE SITES AND THE COURTS

Individuals have also taken it upon themselves to initiate litigation to protect cultural heritage sites when they feel the government is not taking appropriate measures. In 1984, the Taj Mahal case, discussed in Box 31, was brought by M.C. Mehta to protect India's *Taj Mahal* from air pollution. Sometimes state government actions put cultural heritage at risk. See the Eppawela case in from Sri Lanka in Box 22. At times, it courts remind state governments of their international obligations; see Box 23, *P aka h Mani Sha ma and he n behalf f P P blic* v. *H n able P ime Mini e Gi ija P a ad K i ala and he ,*

The process for inclusion of sites on the "World Heritage List" is as follows. Every state party to the Convention must submit an inventory including documentation on the location and significance of property forming part of the cultural and natural heritage situated on its territory and which it considers of outstanding universal value. From this inventory, the state party selects sites that it nominates for inscription on the World Heritage List. The World Heritage Committee considers the nominations of states parties and decides which merit inclusion in the List.

Among its functions, the World Heritage Committee is to receive and study requests for international assistance formulated by states parties to the Convention for protection, conservation, presentation or rehabilitation of any part of the world cultural or natural heritage, i.e., property included or potentially suitable for inclusion on one of the Lists. Requests also may be submitted for purposes of identifying cultural or natural property.

The World Heritage Convention is important in part because it encompasses the idea that certain property found under the sovereignty of a state is of interest beyond territorial frontiers and concerns all humanity, leading to the conclusion that such property should, beyond tuld, b tuld, b tuluwisone of tnd territoring

Box 24 The Taj Mahal Case

MC Mehta Union of India, WP(C) 13381/1984 (the *Taj Mahal* case)

In 1984, the *Taj Mahal* case was brought by MC Mehta, a leading environmental activist, to protect India's Taj Mahal from air pollution, alleging that industrial emissions were causing the white marble to blacken in places and fungus to grow inside the monument. Mehta requested the implementation of anti-pollution measures or the closure of the pollution causing industries. Over the course of litigation, the Supreme Court passed many orders directing the central, state and local authorities to undertake developmental and regulatory measures for the improvement of the environment and the protection of the Taj Mahal.

However, it was not until 1996 that the Court, finding that industries in the area were actively contributing to air pollution, finally ordered 292 coal-based industries to either switch to the use of natural gas or relocate their businesses outside the protected area, with job security or compensatory measures required for employees. While a number of factories complied with the order, many others ignored the order, claiming the cost of such action was prohibitive. Thus, in 1999, the Court ordered 160 factories closed for failure to comply with the order.

Chapter 13

NOISE

13.1 INTRODUCTION

Noise pollution can be described as any unwanted or harmful sound created by human activities. Types of noise pollution range from community noise to occupational noise, with examples including barking dogs, household appliances, security alarms, loud music, road traffic, air traffic, machinery use, and construction activities. Unlike other environmental problems, noise does not lead to chemical or organic pollution of natural resources but instead affects human beings and other animals directly. In recent years, noise has been recognized not only as an annoyance but as a serious health hazard as well. Prolonged or excessive exposure to noise can result in:

- Aggression
- Cardiovascular problems
- Communication disruption
- Despondency
- Disorientation
- Headaches
- Hearing loss or impairment
- Increased accidents
- Increased blood pressure
- Nervousness
- Poor attentiveness or memory
- Sleep disruption
- Stress
- Tension

With an ever-growing world population and rapidly advancing technology, the effects of noise pollution are being felt by greater numbers of people. In fact, as of 1996 an estimated 20 percent of the European Union's population, nearly 80 million people, suffered from noise levels that scientists and health experts deem unacceptable. See: Europa, Noise – the Green Paper (2003).

13.2 NATIONAL LAW

States have aimed to control noise pollution as a public nuisance dating back to ancient Rome, when citizens were so annoyed by the clatter of iron wheels on stone pavements that they enacted legislation to control these disruptions. In medieval Europe, some cities prohibited horse and carriage traffic to protect the sleep of inhabitants. More recently, in 1934 Switzerland introduced nighttime and Sunday bans on heavy goods vehicles to protect the population against noise. See: Swiss Agency for the Environment, Forests and Landscape (SAEFL), Milestones in Noise Abatement.

The United States passed the Noise Control Act of 1972, 42 U.S.C. § 4901(b) "to promote an environment for all Americans free from noise that jeopardizes their health or welfare." To that end, the statute authorized the establishment of federal noise emission standards for commercial products. Similarly, in 1977 the Philippine Environment Code, Presidential Decree No. 1152 (June 6, 1977) called for the establishment of appropriate standards of community noise levels and of standards for noise-producing machinery, such as construction equipment, transportation equipment, and electronic equipment. The United Kingdom codified noise pollution as a statutory nuisance under the Section 79 of the Environment Protection Act 1990, Section 79, as amended by the Noise and Statutory Nuisance Act 1993, regulating noise emitted from premises or emitted from or caused by a vehicle, machinery or equipment in a street. The statute allows local authorities to serve abatement notices and subjects violators to fines.

The actual task of standard-setting is usually left to government agencies which determine an acceptable level of noise for the protection of public health and welfare, taking into account such factors as the

magnitude and condition of use, the degree of noise reduction achievable through the application of best available technology, the cost of compliance, location, zoning and land use classification. Standards then become codified in regulations, such as Section 5, Standard 1105 of the Canadian Motor Vehicle Safety Regulations, which sets exterior sound level noise emissions standards for motor vehicles – buses, passenger cars, trucks, and motorcycles. Canadian Aviation Regulations set similar standards for airplane noise.

Enforcement of regulations is also left, in the first instance, to the agency. The Philippine Environment Code, sections 8 and 9, grants authority for monitoring, surveillance, and enforcement to the National Pollution Control Commission and the Civil Aeronautics Administration.

13.3 NOISE AND THE COURTS

Courts play an important role in controlling noise pollution, e.g. by judicial review of agency decisions. Also, by demanding compliance with noise pollution standards from violators, courts have served to further strengthen the authority of those standards. Regarding the court's role as a check on agency discretion and action, the Secretary, Ministry of the Environment for Sri Lanka, clarified how an agency should test compliance with noise level regulations in *A eal Unde Sec i n 23E f he Na i nal En i nmen al Ac b* E.M.S. Ni a *he Sec e a Mini f En i nmen ,* Sri Lanka (1985) Niyaz appealed against a decision of the Poojapitiya Pradeshiya Sabha (the PS) cancelling the Environmental Protection License (EPL) that covered the discharge of waste and transmission of noise from his saw mill. The Secretary set aside the cancellation of Niyaz's EPL, finding that the PS did not hold a proper inquiry with the participation of Niyaz and any complainants. A proper inquiry includes:

- Hearing neighborhood objections and carrying out appropriate investigations prior to granting an EPL;
- Entertaining, investigating and inquiring into community complaints about EPL or National Environmental Act violations after an EPL is granted; and
- Giving sufficient notice to EPL holders of the case against them so that they can present their defense before the Central Environment Authority (CEA) before an EPL is cancelled or suspended, unless an emergency situation requires immediate suspension. In this case, the PS did not administer step 3, in that it failed to grant Niyaz a hearing or any opportunity to make representations prior to the cancellation of his EPL.

Moreover, courts can suggest alternate forms of relief to parties. In *A eal f W.I.A.B. Fe nand and*

Corporation had taken clear steps to stop the alleged pollution. In view of those facts and with the assurance of the Attorney General that the government would take all necessary steps to implement the directions of the Election Commission, the Supreme Court held that further direction was unnecessary.

Other times, consideration of the facts may show a health hazard that warrants judicial mitigation.

Chapter 14

TRANSPORTATION

14.1 INTRODUCTION

Transportation – in the form of automobiles, trains and airplanes – is a part of everyday life in modern times. Unfortunately, transportation can adversely affect quality of life by degrading the environment through dirtying the air, contaminating waterways, destroying or disturbing wildlife habitats, contributing to climate change and consuming energy. First and foremost, transportation is a significant source of air pollution. In fact, motor vehicles are responsible for more than two-thirds of the carbon monoxide in the

14.3 TRANSPORTATION AND THE COURTS

National courts have frequently found themselves entangled in transportation-related environmental litigation. For example, in *Fa e . Sec e a , Mini Of C mm nica i n* (Sup. Ct., Sri Lanka),the petitioner filed suit against the Secretaries of the Ministries of Communication, Environment, Health, Home Affairs and Industries, as well as other government authorities, to require performance their statutory duties and mitigate air and noise pollution caused by motor vehicles in the city of Dhaka. Farooque argued that vehicles did not comply with the required fitness standards and emitted smoke that was harmful to humans. He maintained that although the Constitution of Bangladesh contained no specific right to a safe and healthy environment, it was inherent in the "right to life" addressed in Article 32 and in the prohibition of actions detrimental to life, body or property in Article 31. The Court required the Chairman of the Bangladesh Road Transport Authority and the Commissioner of the Dhaka Metropolitan Police to show cause as to why they should not be directed to take effective measures to check air pollution caused by motor vehicle emissions, as provided in the Motor Vehicles Ordinance 1983. See *al Sie a Cl b . C leman and Tiemann,* 14 ILM 1425, where the court examined the environmental impact of the highway construction.

14.4 INTERNATIONAL LAW

While not focused exclusively on transportation-related air pollution, several international agreements have significant implications for transportation. The 1979 Geneva *C n en i n n L ng-Range T an b nda Ai P ll i n* created by UN Economic Commission for Europe was the first international agreement to recognize both the environmental and health affects of the kinds of air pollution associated

socio-economic information on climate change that is available around the world. The IPCC is organized into three working groups and a task force on national greenhouse gas inventories, with Working Group I assessing the scientific aspects of the climate system and of climate change, Working Group II addressing

Chapter 15

TOURISM

15.1 INTRODUCTION

"Tourism is like fire. It can cook your food or burn your house down." (Quote by R. Fox on UNEP website). This quote aptly illustrates the complex relationship between the environment and tourism, the world's biggest industry. On one hand, the quality of the environment is essential to tourism, and tourism itself can contribute to environmental conservation by raising awareness of environmental concerns, financing protection of natural areas and increasing their economic importance. However, tourism also involves many activities that can adversely affect the environment, gradually destroying the environmental resources on which it depends.

The three main environmental effects of tourism are:

- Depletion of natural resources,
- Pollution, and
- Physical impacts.

15.1.1 Depletion of natural resources by tourism

Tourism puts pressure on natural resources by increasing their consumption, which can be particularly problematic in areas where resources are already scarce. Water is one of the critical natural resources that the tourism industry generally overuses, especially for hotels, swimming pools, golf courses and personal use by tourists. For example, an average golf course in a tropical country such as Thailand uses as much water in one year as 60,000 rural villagers. Not only can this result in water shortages and degradation of water supplies, but it can also lead to greater generation of wastewater.

Due to the seasonal nature of tourism, it can place particularly great pressure on local resources like energy, food, and other raw materials during the "high season" when destinations are likely to have ten times more inhabitants, which in turn creates greater extraction and transport of these resources. Furthermore, the use of land, building materials and fuel for the construction and maintenance of tourist facilities directly impacts land resources like minerals, fossil fuels, fertile soil, forests, wetlands and wildlife.

15.1.2 Pollution and tourism

Like any other industry, tourism can cause pollution in the form of air emissions, noise, solid waste and littering, sewage, oil and chemicals, and even architectural or visual affronts. Rising numbers of tourists means increased travel by air, road and rail, contributing to local air and noise pollution – often in unique ways. For example, tour buses frequently leave their motors running for hours so that tourists return from their excursions to a comfortably air-conditioned or heated bus. Noise from recreational vehicles like snowmobiles can cause distress to wildlife and alter their normal activity patterns.

Tourists also generate large amounts of waste, as both solid waste and sewage, which is not always disposed of properly. Environmental degradation results, leading to such nicknames as the "Toilet paper trail" for frequently visited trails in the Peruvian Andes and in Nepal. Lack of land-use planning and building regulations also leads to the construction of sprawling tourist structures that are not integrated, and may even clash, with the natural features and indigenous architectural of the destination.

15.1.3 Physical impacts

Tourism can cause extensive physical impacts to the environment, mainly degradation of ecosystems from tourism development and from tourist activities. Development of tourism encompasses the construction of general infrastructure such as roads and airports, and of tourism facilities, including resorts, hotels, restaurants, shops, golf courses and marinas. Such activities often involve clearing of forested land or draining of wetlands and can lead to loss of wildlife habitats, deterioration of scenery and soil erosion.

Tourist activities can further cause physical impacts to the environment through trampling of vegetation and of soil, anchoring and other marine activities and the general noise and commotion caused by tourists, resulting in loss of biodiversity and alternations in animal behavior and ecosystems. Coral reefs, for example, are particularly fragile ecosystems and are suffering worldwide from reef-based tourism development and marine activities.

15.2 NATIONAL LAW, TOURISM AND THE COURTS

A number of countries have taken action on the national level to address the environmental effects of tourism. For example, Australia developed the 1979 Environmental Planning and Assessment Act to deal with matters of environmental development, such as the construction of tourist facilities. It requires government authorities to take into account the likely environmental impacts on both the natural and built environments, as well as the social and economic impacts in the locality when considering applications for development projects. The Act came to the forefront in *B n Shi e B ine e f he F e Inc. B n C ncil and H lida Village (B n Ba) PTY L d.*, concerning a dispute over the construction of a coastal tourist village on land at Byron Bay, Australia. See, Land and Environment Court of New South Wales, (1994) LGERA 434. The case is discussed further in Box 11 above.

15.3 INTERNATIONAL LAW

At the global level, these environmental effects can contribute to loss of biological diversity, depletion of the ozone layer and climate change – problems that led in part to the 1989 Hague Declaration on Tourism. The Hague Declaration recognizes that tourism is now an everyday phenomenon for millions of people and constitutes an activity essential to the lives of human beings and modern society. Moreover, tourism can be an effective instrument for socio-economic growth for all countries, but it requires the development of proper infrastructure and careful consideration of the overall capacity of the natural, physical and cultural environment of tourist destination. (Principle 2). Specifically, a healthy natural, cultural and human environment is a fundamental condition for the development of tourism. (Principle 3). To that end, the Declaration advocates taking effective measures to inform and educate tourists to respect the environment and to promote sustainable development.

Furthering the concept of what constitutes sustainable tourism, in 1995 the World Travel and Tourism Environment Research Centre developed the concept of Integrated Total Quality Tourism Management (ITQT), which is a holistic approach to tourism development and management that comprehensively integrates socio-cultural, environmental and economic aspects. It recognizes that tourism is not necessarily desirable or feasible for every place. Therefore, each community should examine if the project in question is feasible, sustainable and desirable with regard to socio-cultural, environmental and economic aspects, using such methods as Environmental Impact Assessment (EIA), Carrying Capacity Analysis (CCA), Life-Cycle Analysis (LCA), and Environmental Audits (EA). Under ITQT, a genuinely sustainable approach needs to be not only environmentally sustainable and economically viable, but socio-culturally enriching as well, undertaken with integrated long-term planning, management and monitoring.

In the Manila Declaration on Social Impact of Tourism, adopted in the Philippines in May 1997, representatives of governments and private groups from 77 countries and territories committed themselves to ten goals aimed at maximizing the positive aspects and minimizing the negative effects of tourism. The goals of the Manila Declaration aspire to improve people's standard of living through tourism while at the same time ensuring that tourism development preserves the legacy, heritage and integrity of tourism destinations, particularly the social and cultural norms of indigenous communities, and takes into account the environmental costs of tourism. The tenth goal entails working towards the formulation and eventual adoption of a Global Code of Ethics for Tourism.

In fact, the tenth goal was reached on October 1, 1999, when members of the World Tourism Organization established the Global Code of Ethics for Tourism in Santiago, Chile. The aim of the Code is to synthesize the various documents, codes and declarations of the same kind or with comparable aspirations published over the years, and to complement them with new considerations reflecting the development of societies around the world, thus serving as a frame of reference for the stakeholders in

world tourism. The Code operates under the beliefs that tourism contributes to mutual understanding and respect between peoples, and that there is a universal right to tourism as the common heritage of mankind. Moreover, the Code asserts that all stakeholders in tourism development should safeguard the natural environment for both present and future generations by protecting the natural heritage composed of ecosystems and biodiversity, preserving endangered species of wildlife, saving rare and precious resources, and respecting artistic, archaeological and cultural heritage. Suggested methods for accomplishing such objectives include the staggering in time and space of tourist and visitor flows, and using financial resources derived from visits to cultural sites and monuments for the upkeep, safeguard, development and embellishment of this heritage.

Chapter 16

TOXIC AND HAZARDOUS SUBSTANCES AND WASTE

16.1 INTRODUCTION

Human activities introducing hazardous or toxic substances and waste into the environment may cause irremediable harm to natural, cyclical phenomena such as the life cycle, the water cycle or the carbon cycle. Since the end of the 1970s rules increasingly have regulated the substances that produce or can produce harmful environmental consequences. Following the "cradle to grave" approach, such regulations have concerned the production and use, the trade and transport, and the elimination of toxic and hazardous substances and waste.

"Waste" is typically taken to mean anything that can be discarded, although treaties and national laws have particular definitions. Nearly every human activity generates some kind of waste. Households create common garbage or municipal waste. Municipal waste consists of everyday items such as paper, yard trimmings, food, clothing, and product packaging. Industrial and manufacturing sites produce solid and hazardous waste. Industrial waste comes from a broad range of activities and in many shapes and sizes, including process waste, animal waste, radioactive waste, and medical waste.

The state of the economy strongly impacts consumption patterns and waste generation. In other words, as countries become wealthier, they produce more waste. In 2001, the United States produced 229.1 million tons of municipal waste. The UK produces some 400 million tons of waste each year, a quarter of which is from households, commerce and industry, with the remainder made up of construction and demolition wastes, mining and agricultural wastes, sewage sludge and dredged spoils. Most waste currently ends up in landfill sites, disposal facilities designed to permanently contain the waste and prevent the release of harmful pollutants to the environment. Unfortunately, while the amount of waste produced continues to grow exponentially, there is only a finite amount of land in which to dispose of it.

Judges encounter several kinds of cases concerning this topic:

- Consumer protection actions seeking damages for harm
- Enforcement of bans on the sale or import of hazardous substances and waste
- Prosecution for misbranding or mislabelling products.
- Prosecution of violations of hazardous waste management laws
- Suits seeking cleanup of sites contaminated by hazardous substances or reimbursement of costs incurred in cleaning up such sites

This area of law is separable into two fairly discrete subtopics: chemicals and waste.

16.2 CHEMICALS

National law -- At the national level, many countries have set up systems to screen industrial chemicals and pesticides before allowing them to be marketed for use. For example, many countries require a pesticide to be registered before it can be sold or distributed. Decisions on whether to register a pesticide for particular uses often depends on consideration of the risks the pesticide might pose to human health or to the environment, as well as consideration of the benefits associated with use of the pesticide. One tool that can be used to ensure that these decisions are based on solid information is legislation that specifies broad authority on the part of regulatory agencies to require the applicant for registration to submit the necessary scientific data for consideration. Restrictions on the method of application or other aspects of use of the pesticide might be included as conditions of the registration. A similar approach can be taken to screening of industrial chemicals prior to marketing for use.

International law -- At the international level, the production and use of hazardous chemicals is today covered by the Stockholm *Convention on Persistent Organic Pollutants* of May 22, 2001. Such pollutants possess toxic properties, resist decay, bioaccumulate and are transported through air, water and with migratory species. Using the precautionary approach and advocating the polluter pays principle, the

Convention provides that each party shall prohibit and eliminate the production and use and regulate the import and export of substances listed in an Annex, mainly insecticides and PCBs. Each party also shall take measures concerning unintentional production of the chemicals listed in another Annex, primarily PCBs and dioxins. A convention on Safety and Health in Agriculture adopted by the International Labor Organization (ILO) several weeks later, on June 21, 2001, has the aim of preventing accidents and injury by eliminating, minimizing or controlling hazards in the agricultural working environment. Each state is required to take measures to ensure that there is an appropriate system for the importation, classification, packaging and labelling of chemicals used in agriculture and for their banning or restriction. The measures must cover, *inter alia,* the preparation, handling, application, storage and transportation of chemicals, the dispersion of chemicals and the handling of tools and other objects used for chemicals.

The Rotterdam *Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade* (entry into force Feb. 24, 2004) also bear note in this regard. This Convention requires exporting states that trade in a list of hazardous substances to obtain the prior informed consent (PIC) of importing states before proceeding with the trade. By providing the tools and information needed to identify potential hazards, the Convention allows importing countries the chance to exclude chemicals they cannot manage safely. Moreover, the Convention promotes the safe use of hazardous chemicals once imported through labelling standards, technical assistance and other forms of

d) Disposal

Waste that cannot be reused or recycled must be disposed. Landfilling, or placing waste into the land, is the most common method of disposal for both municipal and hazardous waste. Usually landfills are

hazardous. Other systems determine whether a waste qualifies as hazardous by applying certain testing protocols to determine whether the waste exhibits various characteristics, such as toxicity, corrosivity, or flammability. Some countries include biological and medical wastes as within the ambit of what is a hazardous waste; others exclude them. Some countries are beginning to experiment with different sets of management requirements for different types of wastes, depending on their degree of hazard. An important question for adjudication of a hazardous waste enforcement case is who has the burden of proving whether a waste is hazardous or not, and under what circumstances does the burden shift to the other party.

In addition to statutory bases for liability for clean-up of hazardous waste, the common law may provide remedies for parties claiming to be injured by improperly managed remedies. For example, causes of action may be sustained based on theories of nuisance, trespass, property damage, negligence, or strict liability in tort. An issue for judicial consideration however, is, when a country has adopted a comprehensive statutory scheme for regulating hazardous waste and apportioning liability for cleanup, to what extent does the statutory scheme preempt common law liability theories. The question of pre-emption will, of course, turn on the nuances of the law in each country.

Box 26 The Importance of Enforcing Hazardous Waste Regulatory Requirements

U.S. . Elia (Idah 2002)

Elias, the owner and operator of a Idaho fertilizer manufacturing company, ordered his employees to clean a storage tank containing cyanide and did not provide them with warnings or required protective equipment. He also directed them to dump the cyanide sludge removed from the tank onto the ground. He was convicted of knowingly endangering his employees in violation of U.S. hazardous waste laws, illegally disposing of hazardous cyanide sludge, and making false statements to government officials by falsifying and backdating a safety plan. For his crimes, he was sentenced to 17 years in prison, ordered to a victim of cyanide poisoning approximately $6 million in restitution and EPA over $300,000 for cleanup costs.

16.5 INTERNATIONAL LAW ON HAZARDOUS WASTE

UNEP estimates that countries worldwide generate over 400 million tons of hazardous waste each year, with OECD countries producing the largest amount of waste at around 300 million tons. Moreover, the cost of waste disposal has risen in many countries due to tighter regulatory controls. In some cases, depending on the proximity of treatment or disposal facilities that are equipped to manage a particularly waste, exporting a waste to a nearby facility may be both more economical and environmentally sound than disposing of it in a domestic facility. However, transfrontier movement of waste has also increased due to the economic advantages of exporting it to poorer countries with less stringent controls and lower public awareness of the issues.

The problem of transboundary movement of waste has been the subject of attention at the international level. Adopted in 1989, the Basel *C n en i n f he C n l f T an b nda M emen f Ha a d Wa e* establishes a global framework for controlling transboundary trade in hazardous waste and ensuring sound management of wastes that are exported and imported. In its focus on transboundary shipments, the Basel Convention and national-level implement legislation can be complementary to national laws regulating domestic management of hazardous waste. The three main goals of the Convention are: to reduce transboundary movement of hazardous wastes together, promote environmentally sound management of waste that is moved across borders; to promote treatment and disposal of hazardous waste as close as possible to its source of origin; and to promote reduction of hazardous waste generation at its source.

The Convention also creates obligations between contracting parties, most notably that each party may prohibit the importation of hazardous wastes, and that other parties must ensure that hazardous wastes

are not exported to contracting parties who have prohibited their importation. The Convention therefore sets up a system requiring prior informed consent by the importing country before hazardous waste may be exported. In addition, it requires importing countries to assure the "environmentally sound management" of hazardous wastes it imports. Further, an exporting State may not export to an importing State, even if the importing State has consented, if the first State has reason to believe that the wastes will not be managed in an environmentally sound manner. Additionally, contracting parties are not permitted to export hazardous wastes to, or import hazardous wastes from, any non-party to the Convention, unless there is an appropriate arrangement in place. An amendment to the Convention, the "Basel Ban," was added in 1995, prohibiting the EU, OECD member states, and Liechtenstein from exporting hazardous wastes for final disposal or recycling to all States. However, the Ban Amendment has yet to enter into force.

Many African states considered the Basel Convention insufficient, and in 1998, the Organization for African Unity adopted the Bamako *Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes* within Africa to address specific regional concerns regarding hazardous waste. The provisions of the Bamako Convention generally correspond to those of the Basel Convention, with a few important distinctions. First, the Bamako Convention defines waste in a much broader context, including radioactive wastes that are subject to any international control system. Parties must also strive to apply the precautionary approach in their activities. Most importantly, Parties to the Bamako Convention commit to prohibit and criminalize the importation of all hazardous wastes, for any reason, into Africa from non-contracting parties. Additionally, it bans the dumping of hazardous wastes at sea by contracting parties or in internal waters by non-contracting parties, and it requires Parties to impose strict, unlimited liability, along with joint and several liability, on those parties that generate hazardous waste.

Box 27 Controlling the Importation of Waste

Research Foundation for Science, Technology and Natural Resource Policy Union of India Supreme Court of India, Writ Petition No. 657 of 1995.

According to the Additional Solicitor General, about 2,000 tons of hazardous waste was being generated in India each day due to the fact that Indian states were granting permission for the importation, generation and disposal of hazardous waste, even though they did not possess the required safe disposal sites.

Due to inaction by all concerned authorities, and in view of the magnitude of the problem and its impact, the court held that no further hazardous waste could be imported if it was banned by the Central Government or any other authority, or if it was banned under the Basel Convention. Further, the state governments and State Pollution Control Board were required to file reports within 4 weeks stating the steps taken to ensure safe disposal of hazardous waste, particularly while granting any waste import authorisation. They were also required to list any plan of action they had for tackling the problem of hazardous waste, including why any unsafe disposal sites or hazardous waste handling units were not ordered to be shut down.


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