# The Role of the Judiciary in Promoting Sustainable Development: The Experience of Asia and the Pacific

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A Paper Presented to the second
Kenya National Judicial Colloquium on Environmental Law
Mombasa, Kenya, 17-22 April 2006

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# 1. INTRODUCTION

Environmental law, as a field of learning, is comparatively recent, evolving mainly over the last forty years. It is still in a formative stage but is undergoing a process of rapid development. The rapidity of development is caused partly by "a quantum leap in our understanding of the environmental challenge"[1] and partly by the urgency for the law to respond in an effective manner.

One area of increasing importance, but comparatively little explored in judicial decisions, is the law concerning sustainable development. International, national, provincial and local law and policy-making bodies may have embraced principles of sustainable development, but they have been reticent to explicate their meaning, circumstances of application and precise details of the means of implementation.

The judiciary, particularly at national levels, is therefore faced with the task of explicating the law of sustainable development, case by case. Incrementally, a body of environmental jurisprudence will emerge. In performing that task, national judiciaries will be assisted by the exchange of judicial decisions, information and experience between jurisdictions. In this way, national judiciaries may benefit from each other's knowledge, experience and expertise.[2]

This paper has this information-sharing goal as its purpose. It outlines, in brief, the role of the judiciary. It explicates the history and concept of sustainable development. It then focuses on four key elements or principles of sustainable development: the precautionary principle, inter and intragenerational equity, the conservation of biological diversity and ecological integrity, and the internalisation of environmental costs. For each of the elements or principles, the history and concept are explained, as well as, where applicable, decisions of national judiciaries in the Asia-Pacific Region. In addition, the concept of the public trust is addressed in a similar fashion.

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[1] Judge C G Weeramantry, "Introduction – Judges and Environmental Law" in D Sheldon and A Kiss, *Judicial Handbook on Environmental Law*, UNEP, 2005, p. xvii.

[2] See *Johannesburg Principles on the Role of Law and Sustainable Development*, adopted at the Global Judges Symposium, Johannesburg, South Africa, 20 August 2002, p. 4 and K. Toepfer, "Message" in D. Sheldon and A. Kiss, *Judicial Handbook on Environmental Law*, UNEP, 2005, p. iii.

## 2. ROLE OF THE JUDICIARY

The achievement of ecologically sustainable development depends on the commitment and involvement of all arms of government – the legislature, executive and judiciary – as well as other relevant stakeholders. Klaus Toepfer, the Executive Director of the United Nations Environment Programme (UNEP), stated in his message to the UNEP Global Judges Programme:

> "Success in tackling environmental degradation relies on the full participation of everyone in society. It is essential, therefore, to forge a global partnership among all relevant stakeholders for the protection of the environment based on the affirmation of the human values set out in the United Nations Millennium Declaration: freedom, equality, solidarity, tolerance, respect for nature and shared responsibility. The judiciary plays a key role in weaving these values into the fabric of our societies.
>
> The judiciary is also a crucial partner in promoting environmental governance, upholding the rule of law and in ensuring a fair balance between environmental, social and developmental consideration through its judgements and declarations".[3]

*Agenda 21*, the programme of action for sustainable development, emphasises in Chapter 8, the need to provide an effective legal and regulatory framework:

> "8.13 Laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action, not only through 'command and control' methods, but also as a normative framework for economic planning and market instruments…
>
> 8.14 To effectively integrate environment and development in the policies and practices of each country, it is essential to develop and implement integrated, enforceable and effective laws and regulations that are based upon sound social, ecological, economic and scientific principles. It is equally critical to develop workable programmes to review and enforce compliance with the laws, regulations and standards that are adopted…
>
> 8.15 The enactment and enforcement of laws and regulations (at the regional, national, state/provincial or local/municipal level) are also essential for the implementation of most international agreements in the field of environment and development, as illustrated by the frequent treaty obligation to report on legislative measures…
>
> 8.18 Governments and legislators, with the support, where appropriate, of competent international organisations, should establish judicial and

[3] United Nations Environment Programme, *UNEP Global Judges Programme*, 2005, p. v.

> administrative procedures for legal redress and remedy of actions affecting environment and development that may be unlawful or infringe on rights under the law, and should provide access to individuals, groups and organisations with a recognised legal interest".[4]

The judiciary has a role to play in the interpretation, explication and enforcement of laws and regulations. As Kaniaru, Kurukulasuriya and Okidi state:

> "The judiciary plays a critical role in the enhancement and interpretation of environmental law and the vindication of the public interest in a healthy and secure environment. Judiciaries have, and will most certainly continue to play a pivotal role both in the development and implementation of legislative and institution regimes for sustainable development. A judiciary, well informed on the contemporary developments in the field of international and national imperatives of environmentally friendly development will be a major force in strengthening national efforts to realise the goals of environmentally-friendly development and, in particular, in vindicating the rights of individuals substantively and in accessing the judicial process".[5]

# 3. SUSTAINABLE DEVELOPMENT

## 3.1 History

In 1972, 113 nations of the world gathered in Stockholm, Sweden.[6] They were concerned. The much-vaunted goal of economic growth had brought prosperity and high standards of living. But it had also brought unwanted spillover effects.[7] The land, air and waters of the world were being polluted to a dangerous level.[8] The natural resources were being exploited unsustainably. The world's biological diversity was being diminished. Species were being culled at an exponential rate.[9]

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[4] *Agenda 21*: paras 8.13 – 8.15 and 8.18. The full text of *Agenda 21* can be accessed via http://www.un.org/esa/sustdev/documents/agenda21/english/Agenda21.pdf

[5] D Kaniaru, L Kurukulasuriya and C Okidi, "UNEP Judicial Symposium on the Role of the Judiciary in Promoting Sustainable Development", a paper presented to the Fifth International Conference on Environmental Compliance and Enforcement, Monterey, California, USA, November 1998, p. 22 of conference proceedings.

[6] At the United Nations Conference on the Human Environment. See A Kiss and D Shelton, *International Environmental Law*, Transnational Publishers, 1991, p. 7; and P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, pp. 35–39.

[7] E Mishan, *The Costs of Economic Growth*, Staples Press, London, 1967; E Mishan. *The Economic Growth Debate: An Assessment*,George Allen & Unwin, London, 1977, pp. 149-209; and E Mishan, "Growth and Anti-Growth: What are the Issues?" in A Weintraub et al, *The Economic Growth Controversy*, McMillan, 1973, pp. 3-35.

[8] See R Carson, *Silent Spring*, Houghton Mifflin Books, 1962.

[9] N Meyers, *The Sinking Ark: A New Look at the Problems of Disappearing Species*, Pergamon Press, Oxford, 1979, pp. 30-31 and B J Preston, "The Role of Law and the Protection of Biological Diversity in the Asia and Pacific Region" (1995) 12 EPLJ 264 at 265.

It was time for a rethink. Were Malthus and other doomsayers right?[10] Was "a continual 'growing economy'…no longer healthy, but a cancer"?[11] Should the world's countries adopt a steady state economy?[12] Or is even zero growth not enough; should there be a period of negative growth so as to conserve the available resources for future generations?[13]

The Stockholm Conference did not embrace these recommendations for zero or negative growth. Instead it embraced the then embryonic concept of promoting economic development but in an ecologically sustainable fashion. The goal was to eliminate or mitigate the undesirable environmental and social spillover effects of economic growth. But how was this to be done?

To begin the process, the Stockholm Conference produced two instruments: *The Declaration on the Human Environment*[14] and *The Action Plan for the Human Environment.*[15] The Conference also resulted in the establishment of the UNEP.

After the Stockholm Conference, international governmental and non-governmental organisations took action to formulate programmes to implement the policies and principles enunciated at the Conference.

In 1980, the International Union for the Conservation of Nature and Natural Resources (now known as The World Conservation Union or IUCN) collaborated with UNEP, the World Wildlife Fund (now known as the Worldwide Fund for Nature or WWF) and the United Nations Food and Agriculture Organisation (FAO) to

[10] T R Malthus (1766-1834) was a British political economist who contended that population, tending to increase faster than the means of subsistence, should be checked by social and moral restraints.
[11] To use Synder's words as quoted in G Session, "Spinoza, Pernnial Philosophy and Deed Ecology", a paper presented at a National Conference titled " Philosophy, Where are You?", Dominican College, San Raphael, California, 29 June – 4 July, 1979, p. 7.
[12] See H E Daly, *Toward a Steady State Economy*, W H Freeman & Co, San Francisco, 1973; and E F Schumacher, *Small is Beautiful: A Study of Economics as if People Mattered*, Blond and Briggs, London, 1973, p. 193ff.
[13] A Gorz, *Ecology as Politics*, South End Press, Boston, 1980.
[14] Reprinted in (1972) 11 ILM 1416. See also L B Sohn, "The Stockholm Declaration on the Human Environment" (1973) 14 *Harvard International Law Journal* 423; A Kiss and D Shelton, *International Environmental Law*, Transnational Publishers, 1991, pp. 36-42; and V Koester, "From Stockholm to Brundtland" (1990) 20 *Environmental Policy and Law* 14.
[15] Reprinted in (1972) 11 ILM 1421.

prepare the *World Conservation Strategy*. This Strategy was published in March 1980.[16]

The *World Conservation Strategy* identified a range of priorities and actions designed to achieve three main objectives: the maintenance of essential ecological processes and life support systems, the preservation of genetic diversity, and the sustainable use of species in ecosystems.[17]

The *World Conservation Strategy* addressed the need to integrate conservation objectives with development policies. It defined "conservation" as "the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations whilst maintaining its potential to meet the needs and aspirations of future generations".[18]

The *World Conservation Strategy* urged each nation of the world to prepare and implement a national conservation strategy.

In Australia, the Commonwealth Government, State Governments and Northern Territory Government adopted the recommendation to prepare a *National Conservation Strategy for Australia*.[19]

In December 1981, a national seminar was organised in Canberra to begin the development of a *National Conservation Strategy for Australia*. Informed by that seminar, the National Conservation Strategy Task Force of the Commonwealth Department of Home Affairs and Environment, prepared and publicised a discussion paper entitled "Towards a National Conservation Strategy" in May 1982.[20] The purpose of the paper was to stimulate discussion on the content of a draft National

[16] IUCN, UNEP and WWF, *World Conservation Strategy: Living Resource Conservation for Sustainable Development*, Gland, Switzerland, 1980.
[17] IUCN, UNEP and WWF, *World Conservation Strategy: Living Resource Conservation for Sustainable Development*, Gland, Switzerland, 1980: Sections 2-7.
[18] IUCN, UNEP and WWF, *World Conservation Strategy: Living Resource Conservation for Sustainable Development*, Gland, Switzerland, 1980: Section 1(4).
[19] See Department of Home Affairs and Environment, "Towards a National Conservation Strategy - A Discussion Paper", AGPS, Canberra, 1982, p. 1.
[20] Department of Home Affairs and Environment, "Towards a National Conservation Strategy - A Discussion Paper", AGPS, Canberra, 1982.

Conservation Strategy which was to be prepared in time for a National Conference, originally proposed to be in February 1983.

In fact, the National Conservation Strategy Conference was held in Canberra in June 1983 and considered a draft *National Conservation Strategy*. The conference reached consensus on the Strategy and commended "the Strategy to the Government and people of Australia as an accepted basis for the future development and conservation of Australia's living resources".[21]

The purpose of the *National Conservation Strategy for Australia* was "to provide nationally agreed guidelines for the use of living resources by Australians so that the reasonable needs and aspirations of society can be sustained in perpetuity".[22] The *National Conservation Strategy for Australia* adopted the same three main objectives as the *World Conservation Strategy*[23] and added a fourth objective of maintaining and enforcing environmental qualities.[24] The Strategy also specified the priority national requirements[25] and the priority national actions.[26]

Meanwhile, on the international scene, in 1982, the United Nations General Assembly supplemented the *World Conservation Strategy* with the *World Charter for Nature*.[27] This Charter provided further guidance for national programmes and legislation. The *World Charter for Nature* is not binding international law[28] but "has significant

[21] *National Conservation Strategy for Australia: Living Resource Conservation for Sustainable Development*, AGPS, Canberra, 1984, p. 7.
[22] *National Conservation Strategy for Australia: Living Resource Conservation for Sustainable Development*, AGPS, Canberra, 1984, p. 9, para 4.
[23] *National Conservation Strategy for Australia: Living Resource Conservation for Sustainable Development*, AGPS, Canberra, 1984, p. 13, para 17.
[24] *National Conservation Strategy for Australia: Living Resource Conservation for Sustainable Development*, AGPS, Canberra, 1984, p. 13, para 18.
[25] *National Conservation Strategy for Australia: Living Resource Conservation for Sustainable Development*, AGPS, Canberra, 1984, p. 16, para 25.
[26] *National Conservation Strategy for Australia: Living Resource Conservation for Sustainable Development*, AGPS, Canberra, 1984, pp. 17-21, paras 26-35.
[27] Reprinted in (1983) 22 ILM 455.
[28] See E Brown Weiss, D Magraw and P Szasz, *International Environmental Law: Basic Instruments and References*, Transnational Publishers, 1992, p. 188; and P W Birnie and A E Boyle, *International Law and the Environment*, Clarendon Press, Oxford, 1992, pp. 431 – 432; and P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, p. 45.

political weight, demonstrated by the number of its principles reflected in many countries' laws".[29]

The "Implementation" section of the *World Charter for Nature* calls for incorporation of the Charter's principles into each nation's laws and practices[30] as well as into the practices of governmental and non-governmental organisations.[31]

In 1983, the United Nations established the World Commission on Environment and Development (WCED) as an independent body to address global and environmental problems. One of the WCED's principal tasks was to prepare the report, *Our Common Future*. This groundbreaking report was published in 1987. It is also referred to as the Brundtland Report, after the chairperson of the Commission, Gro Harlem Brundtland.

*Our Common Future* sets out a programme for integrating environmental concerns with economic goals by governments and the private sector at international, national and local levels. In addition, the Legal Experts Group on Environmental Law, established by WCED, developed a set of legal principles for an international agreement on environment and development matters.[32] The group formulated 22 legal principles and 13 proposals for strengthening the legal and institutional framework.

The WCED further recommended that a comprehensive global conference on environment and development should take place.[33]

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[29] B Boer, "Institutionalising Ecologically Sustainable Development: The Roles of National, State and Local Governments in Translating Grand Strategy into Action" (1995) 31 *Willamette Law Review* 307 at 309-310.
[30] *World Charter for Nature*: Article 14. Accessed via http://www.un.org/documents/ga/res/37/a37r007.htm on 5 January 2006.
[31] *World Charter for Nature*: Article 21(a)-(e).
[32] See WCED, *Our Common Future*, Australian ed, Oxford University Press, Melbourne, 1990, p. 392; and E Brown Weiss, D Magraw and P Szasz, *International Environmental Law: Basic Instruments and References*, Transnational Publishers, 1992, p. 188; P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, pp. 48–50; and MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices and Prospects*, Oxford University Press, 2004, pp. 18–19.
[33] WCED, *Our Common Future*, Australian ed, Oxford University Press, Melbourne, 1990, p. 387.

In 1989, in response to the WCED's recommendation, the United Nations General Assembly resolved to hold the United Nations Conference on Environment and Development (UNCED). The mandate of the conference was "to devise integrated strategies that would halt and reverse the negative impact of human behaviour on the physical environment and promote environmentally sustainable economic development in all countries".[34] The conference was held in 1992 in Rio de Janeiro.

In 1991, the IUCN prepared and published *Caring for the Earth: A Strategy for Sustainable Living*. This report was designed to update the earlier *World Conservation Strategy.*[35] The report defined actions necessary to achieve sustainable development in a variety of areas including energy; business, industry and commerce; human settlements; farm and rangelands; forest lands; freshwaters; and oceans and coastal areas.[36] One of the recommendations was that the national legal system should implement the principles of ecologically sustainable development, including providing for the application of the precautionary principle, the use of economic incentives and disincentives, the requirement that all proposed new development and new policies should be subject to environmental impact assessment and public participation.[37]

In Australia at this time, work was being carried out to progress from the *National Conservation Strategy for Australia* to a *National Strategy for Ecologically Sustainable Development.* In mid 1990, a discussion paper titled "Ecologically Sustainable Development" was released.[38] Nine working groups on ecologically sustainable development were established to investigate the possibility of introducing sustainable development policies for each major economic sector. The ecologically

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[34] United Nations, *The United Nations Programme of Action from Rio*, United Nations Department of Public Information, New York, 1992, p. 3.
[35] IUCN, UNEP and WWF, *Caring for the Earth: A Strategy for Sustainable Living*, Earthscan, London, 1991. See further, P W Birnie and A E Boyle, *International Law and the Environment*, Clarendon Press, Oxford, 1992, pp. 428–430; and P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, pp. 47–48.
[36] IUCN, UNEP and WWF, *Caring for the Earth: A Strategy for Sustainable Living*, Earthscan, London, 1991, pp. 89-162.
[37] IUCN, UNEP and WWF, *Caring for the Earth: A Strategy for Sustainable Living*, Earthscan, London, 1991, p. 68.
[38] B Boer, "Institutionalising Ecologically Sustainable Development: The Roles of National, State and Local Governments in Translating Grand Strategy into Action" (1995) 31 *Willamette Law Review* 307 at 343.

sustainable development working groups reported their findings at the end of 1991.[39] In mid 1992, the *Draft National Strategy for Ecologically Sustainable Development* was published and public comments invited.

Also around this time, the Commonwealth, each of the State and Territory governments, and the Australian Local Government Association, met and agreed upon the *Intergovernmental Agreement on the Environment.*[40]

Under the *Intergovernmental Agreement on the Environment*, the respective governments have agreed that the development and implementation of environmental policy and programmes by all levels of government should be guided by the considerations and principles set out in Section 3 of the Agreement.[41] The considerations and principles in Section 3 relate to ecologically sustainable development. The parties agree that the principles of ecologically sustainable development should inform policy making and programme implementation.[42] The four well-known principles of ecologically sustainable development - the precautionary principle, intergenerational equity, conservation of biological diversity and ecological integrity, and improved valuation, pricing and incentive mechanisms - are set out in the agreement.[43]

The schedules to the *Intergovernmental Agreement on the Environment* deal with specific areas of environmental policy and management and form part of the agreement. They set out the ways in which the principles of ecologically sustainable development can be implemented by all levels of government. The schedules discuss: (i) Data collecting and handling; (ii) Resource assessment, land use decisions and approval processes; (iii) Environmental Impact Assessment; (iv) National environment protection measures; (v) Climate Change; (vi) Biological diversity; (vii)

[39] B Boer, "Institutionalising Ecologically Sustainable Development: The Roles of National, State and Local Governments in Translating Grand Strategy into Action" (1995) 31 *Willamette Law Review* 307 at 343-344.
[40] The *Intergovernmental Agreement on the Environment* was signed in May 1992. It can be accessed via http://www.deh.gov.au/esd/national/igae/index.html
[41] *Intergovernmental Agreement on the Environment*: Clause 3.1.
[42] *Intergovernmental Agreement on the Environment:* Clause 3.5.
[43] *Intergovernmental Agreement on the Environment:* Clause 3.5.

National estate (heritage); (viii) World heritage; and (ix) Nature conservation (flora and fauna).

Having reached a broad consensus between the Commonwealth, the States and Territories and local government as to the importance of implementing ecologically sustainable development in Australia, Australia sent representatives to the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, which was held in June 1992 in Rio de Janeiro, Brazil. UNCED was attended by approximately 20,000 people from 178 countries.[44]

The UNCED mandate was to formulate activities and programmes through which global sustainable development could be realised.[45]

The international instruments signed at UNCED by attending countries, including Australia were:

- The *Rio Declaration on Environment and Development*;
- *Agenda 21*;
- The *Convention on Biological Diversity*;
- The *Framework Convention on Climate Change*; and
- The *Statement of Forest Principles*.

The documents enunciate the concept of ecologically sustainable development and recommend a programme of action for the implementation of the concept at international, national and local levels.[46]

The *Rio Declaration* built on the *Stockholm Declaration on the Human Environment*.[47] It adopted the principle of integration in Principle 4:

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[44] B Boer, "The Globalisation of Environmental Law: The Role of the United Nations" (1995) 20 *Melbourne University Law Review* 101 at 103; and P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, pp. 52 – 53.

[45] B Boer, "Institutionalising Ecologically Sustainable Development: The Roles of National, State and Local Governments in Translating Grand Strategy into Action" (1995) 31 *Willamette Law Review* 307 at 312

[46] B Boer, "The Globalisation of Environmental Law: The Role of the United Nations" (1995) 20 *Melbourne University Law Review* 101 at 103-109; and B Boer, "Institutionalising Ecologically Sustainable Development: The Roles of National, State and Local Governments in Translating Grand Strategy into Action" (1995) 31 *Willamette Law Review* 307 at 312-315.

> "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".

It adopted the precautionary principle in Principle 15:

> "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".

It recognised the principle of intergenerational equity in Principle 3:

> "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations".

It embraced the need for the internalisation of environmental costs and the "polluter pays" principle in Principle 16:

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

It also recognised the important role of law in promoting sustainable development in Principle 11:

> "States shall enact effective environmental legislation…".

*Agenda 21*, a programme of action for sustainable development worldwide, was adopted unanimously at UNCED. Together with the *Rio Declaration*, and the *Statement of Forest Principles*, they fulfil the mandate given to UNCED by the United Nations General Assembly when, in 1989, it called for a global meeting "to devise integrated strategies that would halt and reverse the negative impact of human behaviours on the physical environment and promote environmentally sustainable economic development in all countries".[48]

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[47] *Rio Declaration:* Recital 2 of the Preamble. The full text can be accessed via http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163. See also P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, pp. 54-57.

[48] *Agenda 21*: Introduction at p. 3. See further P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, pp. 57–59.

*Agenda 21* is a plan of action designed to integrate environmental development concerns for "the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future".[49]

*Agenda 21* comprises 40 chapters and hundreds of programme areas. They are grouped into four topics: social and economic dimensions; conservation and management of resources for development; strengthening the role of major groups (stakeholders); and the means of implementation. The programme areas are described in terms of the basis for action, objectives, activities, and means of implementation.[50]

In partial fulfilment of its promise entered into upon signing the various instruments at UNCED,[51] Australia finalised the *National Strategy for Ecologically Sustainable Development* (*National ESD Strategy*).

The *National ESD Strategy* was launched in December 1992 and has been adopted by the Commonwealth and each of the States and Territories in Australia. The *National ESD Strategy* is a form of intergovernmental agreement which records the public policy commitment of each of the governments and their agencies to implement the measures agreed to in the Strategy. It includes as appendices a summary of the *Intergovernmental Agreement on the Environment*, the *Rio Declaration on Environment and Development* and a guide to *Agenda 21*.[52] In a sense, there has been an incorporation of these national and international instruments as policies of each of the governments of the Commonwealth, and the States and Territories.

The *National ESD Strategy* recognises that governments have an essential role in the effective implementation of ecologically sustainable development in Australia. "In addition to setting the strategic and policy framework, governments will be making changes to the institutional arrangements to ensure that ESD principles and objectives are taken into consideration in relevant policy making processes".[53] The *National*

[49] *Agenda 21*: Chapter 1, para 1.1.
[50] *Agenda 21*: Chapter 1, para 1.6.
[51] See *Agenda 21*: Chapter 8, para 8.7.
[52] *National Strategy for Ecologically Sustainable Development*: Appendices A, B and C respectively. The *National ESD Strategy* can be accessed via http://www.deh.gov.au/esd/national/nsesd/strategy/index.html
[53] *National Strategy for Ecologically Sustainable Development*: p. 10.

*ESD Strategy* is to be "used by governments to guide policy and decision making particularly in those key industrial sectors which rely on the utilisation of natural resources".[54]

At the international level, in February 1993, the Economic and Social Council of the United Nations established the Commission on Sustainable Development. The functions of the Commission included monitoring progress in the implementation of *Agenda 21* and making recommendations to the United Nations General Assembly through the Economic and Social Council on the implementation of *Agenda 21*.[55]

At its first annual meeting in June 1993, the Commission on Sustainable Development formulated a five-year plan culminating in 1997 with an overall review and appraisal of *Agenda 21* and its implementation.[56]

In June 1997, a Special Session of the General Assembly of the United Nations was held to conduct a five-year review of the progress of the UNCED Earth Summit goals and objectives. This Session is also known as Earth Summit +5. The Session adopted a Programme for the Further Implementation of *Agenda 21* prepared by the Commission of Sustainable Development. It also adopted the programme of work of the Commission for 1998-2002.[57]

In September 2000, the United Nations General Assembly adopted the *Millennium Declaration*.[58] The *Millennium Declaration* stated certain "fundamental values "to be essential to international relations in the 21st century. These included:

> **"Respect for Nature**. Prudence must be shown in the management of all living species and natural resources, in accordance with the precepts of sustainable development. Only in this way can the immeasurable riches provided to us by nature be preserved and passed on to our descendants. The current

[54] *National Strategy for Ecologically Sustainable Development*: p. 17.
[55] See GA Res. 47/191(1992), as quoted in B Boer, "Institutionalising Ecologically Sustainable Development: The Roles of National, State and Local Governments in Translating Grand Strategy into Action" (1995) 31 *Willamette Law Review* 307 at 327-328.
[56] ESCAP, *Environment News*, April-June 1993 at p. 4, as quoted in B Boer, "Institutionalising Ecologically Sustainable Development: The Roles of National, State and Local Governments in Translating Grand Strategy into Action" (1995) 31 *Willamette Law Review* 307 at 329.
[57] See MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices and Prospects*, Oxford University Press, 2004, pp. 22–23.
[58] *United Nations Millennium Declaration*, GA Res. 55/2 (2000). The Declaration can be accessed via http://www.ohchr.org/english/law/millennium.htm

unsustainable patterns of production and consumption must be changed in the interest of our future welfare and that of our descendants".[59]

In order to translate these shared values into actions, the *Millennium Declaration* identifies key objectives.[60] One of these key objectives is "protecting our common environment". To this end, the *Millennium Declaration* pledged to:

a) "spare no effort to free all of humanity, and above all our children and grandchildren from the threat of living on a planet, irredeemably spoilt by human activities, and whose resources would no longer be sufficient for their needs";[61]
b) "reaffirm support for the principles of sustainable development, including those set out in the Agenda 21, agreed upon at the United Nations Conference on Environment and Development";[62] and
c) "adopt in all our environmental actions a new ethic of conservation and stewardship".[63]

In 2002, the tenth session of the Commission on Sustainable Development acted as the Preparatory Committee for the ten-year review of *Agenda 21*. Four Preparatory Committee meetings paved the way to the World Summit on Sustainable Development held in Johannesburg, South Africa, 16 August to 4 September 2002.

The World Summit on Sustainable Development reiterated the initial mandate and functions of the Commission on Sustainable Development and proposed ways in which its role could be enhanced in order to respond to the new demands that would emerge from the *Johannesburg Plan of Implementation*,[64] adopted at the Summit.

The *Johannesburg Plan of Implementation* builds upon the achievements made since UNCED and expedites the realisation of the goals. It promotes "the integration of the interpretation of the three components of sustainable development – economic

[59] *United Nations Millennium Declaration*: para 6.
[60] *United Nations Millennium Declaration*: para 7.
[61] *United Nations Millennium Declaration*: para 21.
[62] *United Nations Millennium Declaration*: para 22.
[63] *United Nations Millennium Declaration*: para 23.
[64] See MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices & Prospects*, Oxford University Press, 2004, pp. 25-43; and P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, pp. 66–69.

development, social development and environmental protection – as interdependent and mutually reinforcing pillars".[65]

The Plan recognised that, at the domestic level of each country, "sound environmental, social and economic policies, democratic institutions responsive to the needs of the people, the rule of law, anti-corruption measures, gender equality and an enabling environment for investment are the basis for sustainable development".[66]

The Plan emphasised the need to strengthen institutional arrangements on sustainable development. The objectives to be achieved by taking measures to strengthen such institutional arrangements are:

" (a) Strengthening commitments to sustainable development;
(b) Integration of the economic, social and environmental dimensions of sustainable development in a balanced manner;
(c) Strengthening of the implementation of Agenda 21, including through the mobilization of financial and technological resources, as well as capacity-building programmes, particularly for developing countries;
(d) Strengthening coherence, coordination and monitoring;
(e) Promoting the rule of law and strengthening of governmental institutions;
(f) Increasing effectiveness and efficiency through limiting overlap and duplication of activities of international organizations, within and outside the United Nations system, based on their mandates and comparative advantages;
(g) Enhancing participation and effective involvement of civil society and other relevant stakeholders in the implementation of Agenda 21, as well as promoting transparency and broad public participation;
(h) Strengthening capacities for sustainable development at all levels; including the local level, in particular those of developing countries; and
(i) Strengthening international cooperation aimed at reinforcing the implementation of Agenda 21 and the outcomes of the Summit".[67]

At the national level, the Plan required countries to:

(a) establish or strengthen existing authorities and mechanisms necessary for policy making, coordination and implementation and enforcement of laws;[68]

[65] *Johannesburg Plan of Implementation*: para 2. The Plan can be accessed via http://www.johannesburgsummit.org/html/documents/summit_docs/2309_planfinal.htm
[66] *Johannesburg Plan of Implementation*: para 4.
[67] *Johannesburg Plan of Implementation*: para 139.
[68] *Johannesburg Plan of Implementation*: para 162(a).

(b) promote sustainable development at the national level by, inter alia, enacting and enforcing clear and effective laws that support sustainable development;[69] and

(c) strengthen government institutions including by providing necessary infrastructure and by promoting transparency, accountability and fair administrative and judicial institutions.[70]

Between 18 and 20 August 2002, also in Johannesburg, UNEP organised a Global Judges Symposium on Sustainable Development and the Role of Law. The specific objectives of the Global Judges Symposium were:

" 1. To examine and review notable judicial decisions embodying emergent environmental law principles with particular reference to the application of the Rio Principles on Environment and Development.

2. To assess the dispensation of environmental justice, the capacity, competence and the personnel of the judiciary to respond to and deal with the environmental causes and matters.

3. To ensure global endorsement of the critical role the judiciary plays in balancing environmental and developmental considerations through its judgements.

4. To ensure global recognition of the important role of the judiciary in the application of laws affecting the environment.

5. To galvanise international co-operation and donor support for strengthening the capacity of judiciaries in the field of environment.

6. To identify the broad features and elements of a global programme for judicial capacity building that is region-specific and country-driven.

7. To make recommendations as appropriate for strengthening global environmental justice through:
   a. The elimination of procedural and technical obstacles in the administration of environmental justice.
   b. Securing effective compliance with and enforcement of judicial decisions relating to the environment.
   c. The achievement of a judicious balance between development and the environment in consonance with the Rio Principles and ensuring the maximum support of the judiciary as a powerful and authoritative organ for sustainable development.
   d. Capacity building especially in the judiciaries of the developing countries.
   e. The promotion of international co-operation in the use and development of environmental law and jurisprudence for the enhancement of global environmental justice".[71]

[69] *Johannesburg Plan of Implementation*: para 163.
[70] *Johannesburg Plan of Implementation*: para 163.
[71] K Toepfer, "UNEP Executive-Director's Background Paper to the Global Judges Symposium", a paper presented at the Global Judges Symposium on Sustainable Development and the Role of Law, Johannesburg, South Africa, 18–20 August, 2002, p. 13.

The Global Judges Symposium adopted the *Johannesburg Principles on the Role of Law and Sustainable Development*. These Principles contain various affirmations of the principles of sustainable development and the role of the judiciary in their implementation. The representatives then stated four principles that should guide the judiciary in promoting the goals of sustainable development through the application of the rule of law and the democratic process:

> " 1. A full commitment to contributing towards the realization of the goals of sustainable development through the judicial mandate to implement, develop and enforce the law, and to uphold the Rule of Law and democratic process,
> 2. To realise the goals of the Millennium Declaration of the United Nations General Assembly which depend upon the implementation of national and international legal regimes that have been established for achieving the goals of sustainable development;
> 3. In the field of environmental law there is an urgent need for a concerted and sustained programme of work focused on education, training and dissemination of information, including regional and subregional judicial colloquia, and
> 4. That collaboration among members of the Judiciary and others engaged in the judicial process within and across regions is essential to achieve a significant improvement in compliance with implementation, development and enforcement of environmental law".[72]

The realisation of these principles comes from a programme of work which contains certain specified actions. These actions include:

> " (a) The improvement of the capacity of those involved in the process of promoting, implementing, developing and enforcing environmental law, such as judges, prosecutors, legislators and others, to carry out their functions on a well informed basis, equipped with the necessary skills, information and material,
> (b) The improvement in the level of public participation in environmental decision- making, access to justice for the settlement of environmental disputes and the defence and enforcement of environmental rights, and public access to relevant information,
> (c) The strengthening of sub-regional, regional and global collaboration for the mutual benefit of all peoples of the world and exchange of information among national Judiciaries with a view to benefiting from each other's knowledge, experience and expertise,
> (d) The strengthening of environmental law education in schools and universities, including research and analysis as essential to realizing sustainable development,

[72] *Johannesburg Principles on the Role of Law and Sustainable Development*, adopted at the Global Judges Symposium on Sustainable Development and the Role of Law, Johannesburg, South Africa, 18–20 August, 2002, pp. 3–4.

(e) The achievement of sustained improvement in compliance with and enforcement and development of environmental law,

(f) The strengthening of the capacity of organizations and initiatives, including the media, which seek to enable the public to fully engage on a well-informed basis, in focusing attention on issues relating to environmental protection and sustainable development,

(g) An Ad Hoc Committee of Judges consisting of Judges representing geographical regions, legal systems and international courts and tribunals and headed by the Chief Justice of South Africa, should keep under review and publicise the emerging environmental jurisprudence and provide information thereon,

(h) UNEP and its partner agencies, including civil society organizations should provide support to the Ad Hoc Committee of Judges in accomplishing its task,

(i) Governments of the developed countries and the donor community, including international financial institutions and foundations, should give priority to financing the implementation of the above principles and the programme of work,

(j) The Executive Director of the UNEP should continue to provide leadership with the framework of the Montevideo Programme III, to the development and implementation of the programme designed to improve the implementation, development and enforcement of environmental law including, within the applicable law of liability and compensation for environmental harm under multilateral environmental agreements and national law, military activities and the environment, and the legal aspects of the nexus between poverty and environmental degradation, and

(k) This Statement should be presented by the Chief Justice of South Africa to the Secretary-General of the United Nations as a contribution of the Global Judges Symposium to the forthcoming World Summit on Sustainable Development, and for broad dissemination thereof to all member States of the United Nations".[73]

In July 2003, at the Summit of the Heads of State and Government of the African Union, the *Revised African Convention on the Conservation of Nature and Natural Resources* was adopted in Maputo, Mozambique. This Convention revised and amended the 1968 *Algiers Convention* to bring it up to date with international developments in the field of sustainable development. Article IV provides that:

> "The Parties shall adopt and implement all measures necessary to achieve the objectives of this Convention, in particular, through preventative measures and the application of the precautionary principle, and with due regard to ethical

[73] *Johannesburg Principles on the Role of Law and Sustainable Development*, adopted at the Global Judges Symposium on Sustainable Development and the Role of Law, Johannesburg, South Africa, 18–20 August, 2002, pp. 4–5.

and traditional values as well as scientific knowledge in the interest of present and future generations".[74]

### 3.2 Concept

The original concept of sustainable development enunciated in *Our Common Future* (the *Brundtland Report*) is of "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[75]

At the international level, Sands identifies four recurring elements of the concept of sustainable development, as reflected in international agreements:

> "1. the need to preserve national resources for the benefit of future generations (the principle of intergenerational equity);
> 2. the aim of exploiting natural resources in a manner which is 'sustainable' or 'prudent' or 'rational', or 'wise' or 'appropriate' (the principle of sustainable use);
> 3. the 'equitable' use of natural resources, which implies that use by one state must take account of the needs of other states (the principle of equitable use, or intragenerational equity); and
> 4. the need to ensure that environmental considerations are integrated into economic and other development plans, programmes and projects, and that development needs are taken into account in applying environmental objectives (the principle of integration)".[76]

In Australia, the adjective "sustainable" is qualified by "ecologically" to emphasise the necessary integration of economy and environment.[77]

Ecologically sustainable development is to be achieved through the implementation of four principles: the precautionary principle, intergenerational equity, conservation of biological diversity and ecological integrity and improved valuation, pricing and incentive mechanisms. The *Intergovernmental Agreement on the Environment* in Australia explains these four principles as follows:

> " 3.5.1 Precautionary principle -
> where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing

[74] *Revised African Convention on the Conservation of Nature and Natural Resources*: Article IV. The Convention can be accessed via http://www.africa-union.org
[75] WCED, *Our Common Future*, 1987, p. 44.
[76] P Sands, *Principles of International Environmental Law*; 2nd ed, Cambridge University Press, 2003. p. 253.
[77] G Bates, *Environmental Law in Australia*, 5th ed, Lexis Nexis Butterworths, 2002, p. 125 [5.15].

measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

i. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and
ii. an assessment of the risk-weighted consequences of various options.

3.5.2 Intergenerational equity -
the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

3.5.3 Conservation of biological diversity and ecological integrity -
conservation of biological diversity and ecological integrity should be a fundamental consideration.

3.5.4 Improved valuation, pricing and incentive mechanisms -

- Environmental factors should be included in the valuation of assets and services.
- Polluter pays i.e. those who generate pollution and waste should bear the cost of containment, avoidance, or abatement.
- The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.
- Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems".[78]

Moffet and Bregha have identified five "core" elements of sustainable development which focus on the quality of development, rather than on the quantity of economic growth.[79] These elements are that sustainable development:

a) respects ecological integrity;

b) is based on the efficient use of natural, manufactured and social capital;

c) promotes equity;

d) relies on participatory approaches; and

[78] *Intergovernmental Agreement on the Environment:* paras 3.5.1 – 3.5.4. This fourfold formulation of the principles of sustainable development has been adopted at both Commonwealth and State level in Australia in numerous environmental statutes: see, as at 1999, the list of statutes in P Stein and S Mahoney, "Incorporating Sustainability Principles in Legislations" in P Leadbetter, N Gunningham and B Boer, *Environmental Outlook No. 3: Law and Policy*, Federation Press, 1999, pp. 72-75. The list has grown in number since then. For a discussion of how the principles apply in New South Wales, Australia see *BGP Properties Pty Ltd v Lake Macquarie City Council* (2004) 138 LGERA 237 at 253–254[87].

[79] J Moffet and F Bregha, "The Role of Law in the Promotion of Sustainable Development" (1996) 6 *Journal of Environmental Law and Practice* 1 at 3.

e) requires environmental stewardship by all levels of decision-makers.

## 3.3 Twelve principles of the law of sustainable development

### 3.3.1 Background to the principles

In 2000, the European Commission, the legislation and policy-drafting arm of the European Union, released a report it had commissioned entitled *The Law of Sustainable Development: General Principles*.[80] The report recommended twelve principles be adopted by the European Union to ensure that obligations under international law in relation to sustainable development are fulfilled.

The twelve principles of sustainable development provide a systematic scientific and legal analysis of sustainability, and hence provide guidance for the implementation of sustainable development policies and programmes. The system created by the principles covers the fundamental problems surrounding the relationship between the human and natural environments. From these general principles, specific rules for thematic, regional, and domestic activity can be derived in order to guide the implementation of sustainable development policies at each level of governance.

The principles may be categorised into three broad groups. Principles one and two concern the best manner in which to engineer the integration of the human and natural systems and focus on the management, control and organisation of environmental decision-making and policies. Principles three to eight provide guidance on the immediate preservation of the natural environment to ensure environmental, in addition to economic and social survival. Lastly, principles nine to twelve concern the social needs of human systems and focus on the implementation of practices that will foster improved quality of life and increased public environmental awareness.

[80] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000.

### 3.3.2 The twelve principles

*i) The principle of public environmental order*

This principle recognises the complex mix of environmental, cultural, social and economic considerations that contribute to the planning and implementation of development decisions and, as such, holds that for sustainable development to be achieved, regulation must not be left to market forces. Instead, the State has a responsibility to control the environment in which reform takes place through effective legislative reform and the implementation of national strategic plans for sustainable development.[81]

*ii) The principle of sustainability*

This fundamental principle concerns the organisational elements of sustainable development. Any further degradation of natural, cultural and social capital must be prevented for the sake of survival of both the present and future generations. This may only be achieved through a shift in development goals from quantitative to qualitative and the harmonisation of sustainable development policies at all levels.[82]

*iii) The principle of carrying capacity*

This principle emphasises the importance of carrying capacity, defined as the number of species or units of a species which can be perpetually maintained without the degradation of an ecosystem. On a broader level, this principle states that the construction and management of man-made systems must not transcend their own carrying capacity or that of the ecosystems upon which they have influence. Otherwise, destabilisation and eventual collapse of both human and natural systems is likely to occur.[83]

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[81] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 67–75.
[82] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 76–84.
[83] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 85–90.

*iv) The principle of the obligatory restoration of disturbed ecosystems*

Where destabilisation of ecosystems has already occurred, this principle demands any possible restoration that can be achieved through deliberate human intervention such as the reforestation of depleted forests. It is only through an attempt to restore ecosystems to as close to their original natural condition as possible that the reduction of "natural capital" can be averted.[84]

*v) The principle of biodiversity*

This principle recognises the inherent value of all wild flora and fauna species as "biogenetic reserves" and constituents of ecosystems and seeks to protect the variety of these species and their habitats. In accordance with other principles developed under international law, this principle demands the conservation of biodiversity in order to preserve and restore the stability of natural ecosystems.[85]

*vi) The principle of common natural heritage*

This principle concerns the preservation of "common natural heritage", or natural resources that belong to all of mankind. If our common natural heritage is protected and maintained as public property, it is hoped that environmental degradation will be prevented. Implicit in this principle is the concept of the "public trust" which is based on the notion that certain natural resources are held in trust by the State for the benefit of the general public.[86]

*vii) The principle of restrained development of fragile ecosystems*

Ecosystems that are easily disturbed and are sensitive to man-made interference must be considered in planning and development decision-making. In particular, development should be restrained in fragile forest, coastal and mountain areas, upon small islands and in areas of natural beauty.

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[84] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 91–93.

[85] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 94–98.

[86] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 99–100. See the discussion on public trust in the Section 8 of this paper below.

To achieve this, this principle requires that fragile ecosystems be governed by special regulatory systems.[87]

*viii) The principle of spatial planning*

Under this principle, planning policies must take account of the functional division and distribution of land in accordance with its characteristics and utility in order to attain a level of sustainability and equilibrium between human systems and natural ecosystems. When formulating spatial planning policies, including energy, communication and water resource policies, it is important to consider the natural and cultural capital to be conserved, as well as the existence of any fragile ecosystems.[88]

*ix) The principle of cultural heritage*

This principle aims to conserve and perpetuate the most important man-made systems, namely monuments, architectural complexes and sites which hold universal cultural value. The aim is to ensure the stability and historical continuity of the man-made environment. This may be achieved through a legal protection regime, combined with an increase in public awareness of the importance of cultural development.[89]

*x) The principle of the sustainable urban environment*

This principle recognises the advancing degradation of modern cities, and strives to reverse the uncontrolled spread of settlements and building activity, hence improving the quality of life of residents, and minimising the strain on the surrounding natural environment. A sustainable urban environment can be achieved through effective and consistent planning and development policies.[90]

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[87] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 101–105.
[88] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 106–112.
[89] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 113 –115.
[90] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 116–120.

*xi) The principle of the aesthetic value of nature*

According to this principle, the natural beauty of the landscape and nature generally must be preserved. Human intervention with nature should harmonise and not spoil the landscape. If this is achieved, and qualitative development is pursued as opposed to quantitative development, man's aesthetic needs will be served, and further environmental degradation will be prevented.[91]

*xii) The principle of environmental awareness*

In recognising the legitimate interest that global citizens have in environmental conservation, this principle emphasises the importance of instilling environmental values and the encouragement of public awareness. If a significant level of environmental awareness is reached, it will serve as a guarantee and check on the entire control system of environmental management.[92]

### 3.3.3 Draft Declaration on Guiding Principles for Sustainable Development

The European Commission has recently drafted a *Declaration on Guiding Principles for Sustainable Development*,[93] which is expected to be adopted by the European Union in late 2006. The draft declaration incorporates the twelve principles of sustainable development, and reformulates the "policy guiding principles" as being: the promotion and protection of fundamental rights; intragenerational and intergenerational equity; open and democratic society; the involvement of citizens; the involvement of business and social partners; policy coherence and governance; policy integration; the use of the best available knowledge; the precautionary principle; and the polluter pays principle.[94]

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[91] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 121–122.
[92] M Decleris, *The Law of Sustainable Development: General Principles*, Office for Official Publications of the European Communities, 2000 at pp. 123–124.
[93] Commission of the European Communities, *Draft Declaration on Guiding Principles for Sustainable Development*, Communication for the Commission to the Council and the European Parliament, 25 May 2005. The Draft Convention can be accessed via http://europa.eu.int/comm/sustainable/docs/COM_2005_0218_F_EN_ACTE.pdf
[94] Commission of the European Communities, *Draft Declaration on Guiding Principles for Sustainable Development*, Communication for the Commission to the Council and the European Parliament, 25 May 2005, pp. 5–6.

### 3.4 Judicial decisions

In *Narmada Bachao Andolan v Union of India*,[95] a case concerning the construction of a dam, a majority of the Supreme Court of India defined sustainable development to mean "what type or extent of development can take place which can be sustained by nature / ecology with or without mitigation".[96]

In the *Case concerning the Gabcikovo-Nagymaros Project (Hungary v Slovakia)*,[97] the majority of the International Court of Justice referred to the concept of sustainable development.[98] However, Vice-President Weeramantry in a separate opinion, held it to be not only a mere concept, but a principle with normative value. In an illuminating analysis, Vice President Weeramantry reviewed the principle of sustainable development in international law,[99] referring to the need to draw upon the world's diversity of cultures in harmonising development and environmental protection.[100] These traditional principles can assist in the development of modern environmental law.[101]

## 4. THE PRECAUTIONARY PRINCIPLE

### 4. 1 History

The precautionary principle had its origins in German law. Termed as *Vorsorgeprinzip*, the precautionary principle is considered to be the most important principle of German environmental policy.[102]

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[95] AIR 2000 SC 3751.
[96] AIR 2000 SC 3751 at 3804[150] per B.N Kirpal J with who Dr A.S Anand CJI agreed.
[97] 37 ILM 162 (1997).
[98] 37 ILM 162 (1997) at 165.
[99] 37 ILM 162 (1997) at 206-207.
[100] 37 ILM 162 (1997) at 207-213.
[101] 37 ILM 162 (1997) at 213.
[102] S Boehmer – Christiansen, "The Precautionary Principle in Germany- enabling Government" in O'Riordan and J Cameron (eds), *Interpreting the Precautionary Principle*, Earthscan Publications, 1994, pp. 31–60; J Cameron and J Abouchar, "The precautionary principle: A fundamental principle of law and policy for the protection of the global environment" (1991) 14 (1) *Boston College International and Comparative Law Review* 1 at 6-7; N de Sadeleer, *Environmental Principles, From Political Slogans to Legal Rules*, Oxford University Press, 2002, pp. 93, 125-130 MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices & Prospects*, Oxford University Press, 2004, pp. 143-144; and P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, p. 267;.

The precautionary principle appeared at the international level in the mid 1980s. The principle was first formally acknowledged internationally in the Preamble to the 1985 *Vienna Convention for the Protection of the Ozone Layer*, in which the Parties acknowledged the "precautionary measures" which had already been undertaken at both the national and international levels in relation to the protection of the ozone layer.[103] Building on this recognition, in 1987, the Parties to the *Montreal Protocol on Substances that Deplete the Ozone Layer* agreed to take "precautionary measures" to control global emissions of ozone depleting substances and noted the "precautionary measures" already undertaken at national and regional levels in relation to the emission of chlorofluorocarbons.[104]

The need for a "precautionary approach" was also recognised in the sequence of conferences on the North Sea.[105] In the *Second North Sea Conference Ministerial Declaration* (the *London Declaration*) in 1987, the principle was referred to three times:

> "[I]n in order to protect the North Sea from possibly damaging effects of the most dangerous substances, a *precautionary approach* is necessary which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence;
>
> …[B]y combining…approaches based on emission standards and environmental quality objectives, a more *precautionary approach* to dangerous substances will be established;
>
> [The parties] [t]herefore agree to…accept the principle of safeguarding the marine ecosystem of the North Sea by reduction polluting emissions of substances that are persistent, toxic and liable to bioaccumulate at source by the use of the best available technology and other appropriate measures. This applies especially when there is reason to assume that certain damage or harmful effects on the living resources of the sea are likely to be caused by such substances, *even where there is no scientific evidence to prove a causal link between emissions and effects ('the principle of precautionary action')*".[106]

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[103] *Vienna Convention for the Protection of the Ozone Layer*: Preamble. Reprinted in 26 ILM 1516 (1987).
[104] *Montreal Protocol on Substances that Deplete the Ozone Layer*: paras 6 and 8. Reprinted in 26 ILM 1541 (1987).
[105] P Sands, *Principles of International and Environmental Law*, 2nd ed, Cambridge University Press, 2003, p. 269 and N. de Sadeleer, *Environmental Principles, From Political Slogans to Legal Rules*, Oxford University Press, 2002, p. 94.
[106] *Second North Sea Conference Ministerial Declaration*, 1987: Articles VII, XV(i) and XVI (i) (emphasis added). Reprinted in 27 ILM 835 (1988) and quoted in and J Cameron and J Abouchar,

At the Third North Sea Conference in 1990, the participants agreed to:

> "continue to apply the Precautionary Principle, that is to take action to avoid potentially damaging impacts of substances that are persistent, toxic and liable to bioaccumulate even where there is no scientific evidence to prove a causal link between emission and effects".[107]

This process led to the inclusion of the precautionary principle in the *Convention on the Protection of the Marine Environment of the North–East Atlantic* (the *OPSAR Convention*) of 1992.[108]

In 1990, the *Bergen Ministerial Declaration on Sustainable Development in the Economic Commission for Europe Region* was the first international instrument to treat the principle as one of general application and linked to sustainable development. The Declaration states:

> "In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent, and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation".[109]

In 1991, the *Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa* (the *Bamako Convention*), signed in Bamako on 29 January 1991,[110] required parties to strive to adopt and implement:

> "the preventative, precautionary approach to pollution problems which entails, *inter alia*, preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm. The parties shall co-operate with each other in

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"The precautionary principle: A fundamental principle of law and policy for the protection of the global environment" (1991) 14 (1) *Boston College International and Comparative Law Review* 1 at 5.

[107] *Third North Sea Conference Ministerial Declaration*, 1990: Reprinted in 1 *Yearbook of International Environmental Law* 658 at 662-673 and quoted in MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices & Prospects*, Oxford University Press, 2004, p. 146.

[108] *Convention on the Protection of the Marine Environment of the North–East Atlantic*: Article 2(2)(a). Reprinted in 32 ILM 1069 (1993). This Convention is not yet in force.

[109] *Bergen Ministerial Declaration on Sustainable Development in the Economic Commission for Europe Region:* para 7. As quoted in P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, p. 269.

[110] The *Bamako Convention* came into force April 1998. Reprinted in 30 ILM 773 (1991).

> taking the appropriate measures to implement the precautionary principle to pollution prevention through the application of clean production methods".[111]

In 1991, the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) resolved that "in order to achieve sustainable development, policies must be based on the precautionary principle".[112]

In 1992, the Parties to the *Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes*, agreed to be guided by:

> "The precautionary principle, by virtue of which action to avoid the potential transboundary impact of the release of hazardous substances shall not be postponed on the ground that scientific research has not fully proved a causal link between those substances, on the one hand, and the potential transboundary impact on the other hand".[113]

The four instruments signed at the UNCED (the Earth Summit) in Rio de Janeiro also refer to the precautionary principle.[114] The *Rio Declaration* states in Principle 15:

> "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used a reason for postponing cost-effective measures to prevent environmental degradation".

The *Convention on Biological Diversity* recites in the Preamble:

> "*Noting also* that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat".[115]

Article 3(3) of the *Framework Convention on Climate Change* provides that:

> "The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be

[111] *Bamako Convention*: Article 4(3)(f).
[112] *Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific*, 1990: para. 19. As quoted in MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Practices, Principle and Prospects*, Oxford University Press, 2004, p. 148.
[113] *Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes*: Article 2(5)(a). Reprinted in 31 ILM 1312 (1992).
[114] The two Conventions have now come into force and are thus binding under international law: the *Convention on Biological Diversity* on 29 December 1993; the *United Nations Framework Convention on Climate Change* on 24 March 1993.
[115] *Convention on Biological Diversity*: Preamble. Reprinted in 31 ILM 822 (1992).

> cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio- economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties".[116]

*Agenda 21* refers to the precautionary principle in a number of contexts. For example, in relation to marine environmental protection, Chapter 17 calls for:

> "A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, inter alia, the adoption of precautionary measures, environmental impact assessments, clean production techniques, recycling, waste audits and minimization, construction and/or improvement of sewage treatment facilities, quality management criteria for the proper handling of hazardous substances, and a comprehensive approach to damaging impacts from air, land and water".[117]

In dealing with the protection of the quality and supply of freshwater resources, Chapter 18 of *Agenda 21* requires Parties to implement various activities including:

> "Introduction of the precautionary approach in water-quality management, where appropriate, with a focus on pollution minimization and prevention through use of new technologies, product and process change, pollution reduction at source and effluent reuse, recycling and recovery, treatment and environmentally safe disposal".[118]

In the context of science and sustainable development, Chapter 35 of *Agenda 21* states:

> "In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right. The precautionary approach could provide a basis for policies relating to complex systems that are not yet fully understood and whose consequences of disturbances cannot yet be predicted".[119]

Many other conventions have subsequently committed their Parties to apply the precautionary principle.[120]

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[116] *United Nations Framework Convention on Climate Change*: Article 3(3). Reprinted in 31 ILM 849 (1992).
[117] *Agenda 21*: Chapter 17, para 17.21.
[118] *Agenda 21*: Chapter 18, para 18.40.
[119] *Agenda 21*: Chapter 35, para 35.3.
[120] See the Conventions cited in P Sands, *Principles of International and Environmental Law*, 2nd ed, Cambridge University Press, 2003, p. 271 and N. de Sadeleer, *Environmental Principles, From Political Slogans to Legal Rules*, Oxford University Press, 2002, p. 98.

The precautionary principle has also been adopted by Conferences of the Parties established under various treaties. For example, although the text of the *Convention on the International Trade in Endangered Species of Wild Flora and Fauna* (*CITES*)[121] does not expressly invoke the precautionary principle, the Ninth Meeting of the Conference of the Parties endorsed the principle in 1994. The Parties resolved:

> "Recognizing that by virtue of the precautionary principle, in cases of uncertainty, the Parties shall act in the best interest of the conservation of the species when considering proposals for amendment of Appendices I and II; […] resolves that when considering any proposal to amend Appendix I or II the Parties shall apply the precautionary principle so that scientific uncertainty should not be used as a reason for failing to act in the best interest of the conservation of the species".[122]

In 2000, the Conference of the Parties to the 1992 *Convention on Biological Diversity* adopted the *Cartagena Protocol on Biosafety* which recognises the precautionary principle in Article 10(6):

> "Lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects of a living modified organism on the conservation and sustainable use of biological diversity in the party of import…shall not prevent that party from taking a decision, as appropriate, with regard to the import of the living organism…in order to avoid or minimise such potential adverse effects".[123]

Europe in particular has embraced the precautionary principle. In 1992, the *Treaty on European Union* (*Maastricht Treaty*) amended Article 130r(2) of the *Treaty Establishing the European Economic Community* such that European Union action on the environment is based on the precautionary principle. Article 130r(2) provided:

> "Community policy on the environment…shall be based on the precautionary principle and on the principles that preventative action should be taken, that environmental damage should as a priority be rectified at the source, and that the polluters should pay". [124]

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[121] *Convention on the International Trade in Endangered Species of Wild Flora and Fauna*, 1973. Reprinted in 12 ILM 1085 (1973). The Convention came into force 1 July 1975.
[122] *Resolution of the Conference of the Parties of CITES*, Ninth Meeting of the Conference of the Parties, Fort Lauderdale, USA, 7-18 November, 1994, as quoted in MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices & Prospects*, Oxford University Press, 2004, p. 147.
[123] *Cartagena Protocol on Biosafety*: Article 10(6). Reprinted in 39 ILM 1027. See further N. de Sadeleer, *Environmental Principles, From Political Slogans to Legal Rules*, Oxford University Press, 2002, pp. 98-99
[124] *Maastricht Treaty*, 1992: Article 130r(2). Reprinted in 31 ILM 247 (1992).

In 1997, the *Treaty of Amsterdam* further amended the *Treaty Establishing the European Economic Community* to apply the precautionary principle to the European Community policy on the environment.[125] Article 130r(2) of the *Treaty Establishing the European Economic Community* was replaced by Article 174(2) which provides that Community policy is to be based on the precautionary principle in similar language to that used in the 1992 *Maastricht Treaty* amendment.

In 2000, the European Commission published a Communication on the precautionary principle which outlines the Commission's approach to the use of the principle, establishes guidelines for applying it, and aims to develop understanding on the assessment, appraisal and management of risk in the face of scientific uncertainty.[126]

In 2005, the European Commission prepared a *Draft Declaration on Guiding Principles for Sustainable Development* which adopts the precautionary principle.[127]

In Australia, as mentioned above, the precautionary principle is expressed in the 1992 *Intergovernmental Agreement on the Environment* as a key principle to be considered in environmental decision-making.[128] At the Commonwealth level, the precautionary principle is stated in a number of enactments. For example, in the *Great Barrier Reef Marine Park Act* 1975 (Cth), s 39Z(1) provides that, in the preparation of management plans for the Park, regard must be had to both the precautionary principle and the protection of world heritage values. The principle is also recognised in the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth) which incorporates the promotion of ecologically sustainable development as one of the objects of the Act.[129] Although it does not use the term "precautionary principle", s 3A of the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth) explains that:

> "if there are threats of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation".[130]

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[125] *Treaty of Amsterdam*, 1997: Article 174(2). Reprinted in 37 ILM 56 (1998).
[126] See Section 3.3.2 above.
[127] See Section 3.3.3 above.
[128] *Intergovernmental Agreement on the Environment*: Section 3.5.1.
[129] *Environment Protection and Conservation Act* 1999 (Cth): Section 3.
[130] *Environment Protection and Conservation Act* 1999 (Cth): Section 3A(b).

In New South Wales, the precautionary principle has been included in many pieces of legislation.[131] The first statutory reference to the principles of ecologically sustainable development was in the *Catchment Management Act* 1989 (NSW). However, it was not until the enactment of the *Protection of the Environment Administration Act* 1991 (NSW) that the precautionary principle was explicitly referred to. Section 6(2) of the *Protection of the Environment Administration Act* 1991 (NSW) includes the precautionary principle as a key element of ecologically sustainable development, in addition to the other generally accepted elements of intergenerational equity, conservation of biological diversity and improved valuation, pricing and incentive mechanisms. The principles of ecologically sustainable development are incorporated into the Act as objectives of the Environment Protection Authority. The definitions in s 6(2) are in identical language to that used in the *Intergovernmental Agreement on the Environment*, as mentioned above.

Many other pieces of legislation in New South Wales now expressly include the principles of ecologically sustainable development, including the *Environmental Planning and Assessment Act* 1979 (NSW) and the *Threatened Species Conservation Act* 1995 (NSW). Mostly, the precautionary principle and the other elements of ecologically sustainable development are merely objectives of the respective enactments, but there are instances where there is an obligation to take them into account.[132]

### 4.2 Concepts enshrined in the precautionary principle

Building on notions of care and wise practice implicit in the precautionary principle which evolved out of the German socio-legal tradition, O'Riordan and Cameron have

[131] A list of the legislation, as at 1999, which expressly include the principles of ecologically sustainable development can be found in P Stein and S Mahony, "Incorporating Sustainability Principles in Legislation" in P Leadbeater, N Gunningham and B Boer (eds) *Environmental Outlook No 3: Law and Policy*, Federation Press, 1999, pp. 73–74. As at 2004, see the discussion in *BGP Properties Pty Ltd v Lake Macquarie City Council* (2004) 138 LGERA 237 at 253-254.

[132] See P Stein and S Mahony, "Incorporating Sustainability Principles in Legislation" in P Leadbeater, N Gunningham and B Boer (eds) *Environmental Outlook No 3: Law and Policy*, Federation Press, 1999, pp. 62–63. For examples of where the precautionary principle has been held to be a relevant consideration in environmental decision-making, see *BGP Properties Pty Ltd v Lake Macquarie City Council* (2004) 138 LGERA 237 at 262[113]; and *BT Goldsmith Planning Services Pty Limited v Blacktown City Council* [2005] NSWLEC 210 at [56]–[57].

identified six basic concepts that are now enshrined in the precautionary principle.[133] They are:

i) *Preventative anticipation*: a willingness to take action, in advance of scientific proof of evidence of the need for the proposed action, on the grounds that further delay will prove ultimately most costly to society and nature, and, in the longer term, selfish and unfair to future generations.

ii) *Safeguarding of ecological space* or environmental room for manoeuvre as a recognition that margins of tolerance should not even be approached, let alone breached. This is sometimes known as widening the assimilative capacity of natural systems by deliberately holding back from potential undesirable resource use.

iii) *Proportionality of response or cost-effectiveness of margins of error* to show that the selected degree of restraint is not unduly costly. This introduces a bias to conventional cost benefit analysis to include a weighting function of ignorance, and for the likely greater dangers for future generations if life support capacities are undermined when such risks could consciously be avoided.

iv) *Duty of care, or onus of proof on those who propose change*: this involves a shifting of the onus of proof to the proposers of a new technology or activity likely to adversely affect the environment in ways that cannot be guaranteed to be sustainable.

v) *Promoting the cause of intrinsic natural rights*: the legal notion of ecological harm is being widened to include the need to allow natural processes to function in such a manner so as to maintain the essential support for all life on earth. The application of ecological buffers in future management gives a practical emphasis to the ethical concept of intrinsic natural rights.

[133] T O'Riordan and J Cameron, "The History and Contemporary Significance of the Precautionary Principle" in T O'Riordan and J Cameron (eds) *Interpreting the Precautionary Principle*, Earthscan Publications, 1994, p. 12 at pp. 17–18.

vi) *Paying for past ecological debt*: precaution is essentially forward looking but there are those who recognise that in the application of care, burden sharing, ecologically buffered cost effectiveness and shifting the burden of proof, there ought to be a penalty for not being cautious or caring in the past. This suggests that those who have created a large ecological burden already should be more "precautious" than those whose ecological footprints have to date been lighter. In a sense this is precaution put into reverse: compensating for past errors of judgment based on ignorance or an unwillingness to shoulder an unclearly stated sense of responsibility for the future.

### 4.3 Conditions under which the precautionary principle applies

The precautionary principle applies to certain situations that are characterised by scientific uncertainty as to the risks involved in the consequence of human interaction with the environment. As it often difficult to assess the quantum and nature of the risk that is potentially involved, it is useful to be aware of the conditions that must be present for the precautionary principle to apply. In a 2005 report entitled *The Precautionary Principle,*[134] the World Commission on the Ethics of Scientific Knowledge and Technology identified these conditions as:

" i) Considerable scientific uncertainty must exist;
ii) Scientifically reasonable (based on scientifically plausible reasoning) scenarios or models of possible harm that may result must have been formulated;
iii) The uncertainties that exist cannot be reduced in the short-term without simultaneously increasing ignorance of other relevant factors;
iv) The potential harm is significantly serious or even irreversible for present or future generations, or otherwise morally unacceptable; and
v) There is a need to act immediately to avoid a significant increase in difficulty or cost". [135]

### 4.4 General measures and processes applicable to the implementation and operation of the precautionary principle

[134] World Commission on the Ethics of Scientific Knowledge and Technology, *The Precautionary Principle*, United Nations Educational, Scientific and Cultural Organisation, Paris, 2005. The report can be accessed via http://unesdoc.unesco.org/images/0013/001395/139578e.pdf
[135] World Commission on the Ethics of Scientific Knowledge and Technology, *The Precautionary Principle*, United Nations Educational, Scientific and Cultural Organisation, Paris, 2005 at p. 31.

### 4.4.1 Principles of risk management

If the above conditions are present, and application of the precautionary principle is deemed necessary, a number of general principles or measures of risk management must not be derogated from. These principles of risk management include:[136]

i) *Proportionality*: the action taken must be proportionate to the desired level of protection. It is unrealistic to have a goal of zero risk, and in some cases, a total ban of development may not be a proportional response to a potential risk.

ii) *Non-discrimination*: the action taken should not be discriminatory in its application such that comparable situations should not be treated differently.

iii) *Consistency*: the action taken should be consistent with the measures already adopted in similar circumstances or using similar approaches.

iv) *Examination of the benefits and costs of action and lack of action*: a comparison of the likely short-term and long-term consequences of the action and inaction should be made, and the proposed action must produce an overall advantage in terms of reducing risks to an acceptable level. While an economic cost/benefit analysis is one way to undertake this comparison, other analysis methods, such as an examination of the socio-economic impacts, may also be relevant.

v) *Examination of scientific developments*: action taken and measures based on the precautionary principle should be subject to review in the light of new scientific data and if necessary modified depending on results of subsequent scientific research.

[136] For a further discussion of these principles, see Commission of the European Communities, *Communication from the Commission on the Precautionary Principle*, 2 February 2000, accessed via http://europa.eu.int/comm/dgs/health_consumer/library/pub/pub07_en.pdf on 5 January 2006.

vi) *The burden of proof*: measures based on the precautionary principle may assign responsibility for producing the scientific evidence necessary for a comprehensive risk assessment.

### 4.4.2 Processes and mechanisms necessary for implementation

In addition to these principles of risk management, other processes and mechanisms should be developed to further strengthen the implementation and operation of the precautionary principle. These processes, which have been suggested by a number of environmental non-governmental organisations, such as the European ECO-Forum,[137] include:

i) the explicit recognition of the limitation of scientific understanding of any activity;
ii) ensuring that independent experts are used;
iii) reversing the burden of proof, with a presumption in favour of health and the environment;
iv) employing minimum safe standards as a "safety net";
v) aiming for continuous hazard improvement;
vi) the reduction of hazards; and
vii) the use of the substitution principle so that safer products or activities are substituted for more hazardous ones.

### 4.4.3 Making precautionary measures operational

In 2001, a Canadian environmental non-governmental organisation, Pollution Probe, conducted a legal analysis of the development and application of the precautionary principle both in Canada and internationally.[138] The recommendations put forward a number of requirements that would need to be implemented to make the precautionary principle operational. These are:

[137] The European ECO-Forum is a network of more than 200 environmental NGOs who share a common interest in the Pan-European cooperation for a better environment. See European ECO-Forum, *Implementing Rio Principles in Europe: Participation and Precaution*, October 2001, accessed via http://www.participate.org/publications/Implementing_rio.pdf on 6 January 2006, p. 10.
[138] K B Ogilvie, "Appendix B: Legal Analysis of the Precautionary Principle", *Application of the Precautionary Principle to Standard Setting for Toxic Substances in Canada*, September 2001, accessed via http://www.pollutionprobe.org/Reports/precautionary.pdf on 6 January 2006, pp. 99–132.

*i) Standards*

To ensure that lack of scientific certainty is not used as a reason for deferring environmentally protective action, commentators have suggested that the precautionary principle requires the use of clean production methods, best available technology, and best environmental management practices.

*ii) Study or assessment requirements*

To ensure that lack of scientific certainty is not used as a reason for deferring precautionary action, commentators have suggested that the precautionary principle also requires that use of comprehensive methods of environmental and economic assessment to decide upon appropriate protective measures. Thus, whenever scientific uncertainty about actual effects exists, activities should only be allowed if the proponent of the activity is obligated to reduce that uncertainty through an appropriate study. A key component of an environmental impact assessment must include examination of alternatives to ensure the least harmful alternative is chosen. [139]

*iii) Procedural requirements*

The precautionary principle requires the adoption of procedural constraints such as requiring public notice before activities are undertaken[140] and the

[139] For a discussion of the requirements of environmental impact assessment in New South Wales, Australia, and the United Kingdom, and the legal consequences of failure to adequately undertake environmental impact assessment, see *Prineas v Forestry Commission of NSW* (1983) 49 LGRA 402 at 417; *Warren v Electricity Commission of NSW* (1990) 130 LGERA 565 at 569–571; *Schaffer Corporation Ltd v Hawkesbury City Council* (1992) 77 LGRA 21 at 30–31; *Byron Shire Business for the Future Inc v Byron Council and Holiday Villages (Byron Bay) Pty Ltd* (1994) 84 LGERA 434; *Timbarra Protection Coalition Inc v Ross Mining NL* (1999) 46 NSWLR 55; *Berkeley v Secretary of State for the Environment* [2001] 2 AC 603 at 615; *Hereford Waste Watchers Ltd v Hereford District Council* [2005] JPL 1469 at 1475–1481; B J Preston, "Adequacy of Environmental Impact Statements in New South Wales" (1986) 3 EPLJ 194; and B J Preston, "The Environmental Impact Statement Threshold Test: When is an Activity Likely to Significantly Affect the Environment" (1990) 7 EPLJ 147.

[140] See for example, *Scurr v Brisbane CC* (1973) 133 CLR 242; *Curac v Shoalhaven CC* (1993) 81 LGERA 124; *Helman v Byron SC* (1995) 87 LGERA 349; and *John Brown Lenton & Co Pty Ltd v Minister for Urban Affairs & Planning* (1999) 106 LGERA 150.

issue of permits or licences.[141] These procedural requirements provide the opportunity to prevent potentially damaging activities from proceeding until appropriate measures are invoked.

*iv) Burden of proof*

The principle of precautionary action requires that the burden of proof rest with persons responsible for potentially harmful activity to demonstrate that their actions are not or will not cause environmental harm.[142] Thus, once the scientific uncertainty and risk has been shown by those who seek to restrain the potentially harmful activity, and not refuted by the proponent of that activity, the precautionary principle is activated. The public policy reason underlying this principle holds that if the burden of proof were not shifted in this way, the process would result in an "inevitable bias against protection of the environment and preservation of natural resources".[143]

*v) Public Participation*

Public participation is an integral part of implementing the precautionary principle because of the need for decision-makers to balance value judgments when evaluating the health and environmental risks of activities. The role of the public may include submissions to decision-makers, involvement in administrative hearings, citizen suits, and access to information.[144]

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[141] See for example, *Mosman Municipal Council v Menai Excavations Pty Limited* (2002) 122 LGERA 89 at 97[35]; *Sutherland Shire Council v Turner* [2004] NSWLEC 774 (18 June 2004) at [24]; and *Byron Shire Council v Fletcher* [2005] NSWLEC 706 (25 November 2005).

[142] For further discussion of the reverse burden of proof, see D Farrier, "Factoring Biodiversity Conservation into Decision-making Processes: The role of the precautionary principle" in R Harding and E Fisher (eds) *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 99 at pp. 107–110; J Cameron and J Abouchar, "The Precautionary Principle: A fundamental principle of law and policy for the protection of the global environment" (1991) 14 *Boston College International and Comparative Law Review* 1 at 22; B J Preston, *Environmental Litigation*, Law Book Co, 1989, pp. 287–289; MC Cordonier Segger and A Khalfan, *Sustainable Development Law Principles: Principles, Practices and Prospects*, Oxford University Press, 2004, p. 150; T O'Riordan and J Cameron, "The History and Contemporary Significance of the Precautionary Principle" in T O'Riordan and J Cameron (eds) *Interpreting the Precautionary Principle*, Earthscan Publications, 1994, p. 12 at pp. 15–16; B A Weintraub, "Science, International Environmental Regulation, and the Precautionary Principle: Setting Standards and Defining Terms" (1992) 1 *NYU Environmental Law Journal* 173 at 204–207.

[143] B J Preston, *Environmental Litigation*, Law Book Co, 1989, p. 288.

[144] For a discussion of public participation in the context of the precautionary principle, see N Pain, "Third Party Rights: Public Participation Under the Act 1979 (NSW)" (1989) EPLJ 26; J Taberner, N

## 4.5 Judicial decisions

### 4.5.1 Australia

The precautionary principle was embraced by the Australian courts shortly after the UNCED (Earth Summit) and adoption of the *Rio Declaration* in 1992.

The first case that discussed the precautionary principle in a meaningful way was *Leatch v National Parks and Wildlife Service.*[145] The case was an appeal in the Land and Environment Court of New South Wales which involved a merits review of a decision of the Director–General of National Parks and Wildlife to issue a licence which gave permission to a local government authority, Shoalhaven City Council, to take and kill endangered fauna from an area of natural bushland where a road was proposed to be constructed. The endangered fauna included the Giant Burrowing Frog and the Yellow-bellied Glider.

The evidence revealed that there was scientific uncertainty in determining both the types of threatened species that might be present and the likely effect on those threatened species. Both the third party objector who was the applicant and the Director–General of National Parks and Wildlife submitted that the Court should, in determining whether to issue a licence, apply the precautionary principle. Stein J recorded the submissions in part as follows:

> "As previously mentioned, at least two submissions raised the question of the application of the 'precautionary principle'. The question arises whether, if the principle is relevant, it may be raised in the appeal. Mr Dodd [solicitor for the appellant] asks that it be taken into account, particularly in relation to the Giant Burrowing Frog. On behalf of the Director–General, Mr Preston submits that the principle could be applicable. For example, he says that the Court would not issue a licence to take or kill a particular endangered species if it was uncertain whether that species would be present or there was scientific uncertainty as to the effect of the development on the species".[146]

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Brunton and L Mather, "Development of Public Participation in Environmental Protection and Planning Law" (1996) 13 EPLJ 260; and J McDonald, "Mechanisms for Public Participation in Environmental Policy Development" (1999) 16 EPLJ 258.

[145] (1993) 81 LGERA 270.

[146] (1993) 81 LGERA 270 at 281.

Stein J surveyed the adoption of the precautionary principle in the international, national and state jurisdictions. His Honour then referred to the submission on behalf of the Director-General that the precautionary principle could be seen to have been incorporated into domestic law and continued:

> "On behalf of the Director-General, Mr Preston made submissions on the incorporation of international law into domestic law. It seems to me unnecessary to enter into this debate. In my opinion the precautionary principle is a statement of commonsense and has already been applied by decision-makers in appropriate circumstances prior to the principle being spelt out. It is directed towards the prevention of serious or irreversible harm to the environment in situations of scientific uncertainty. Its premise is that where uncertainty or ignorance exists concerning the nature or scope of environmental harm (whether this follows from policies, decisions or activities), decision-makers should be cautious".[147]

Stein J determined that having regard to the nature of the appeal under the relevant enactment, s 92C of the *National Parks and Wildlife Act* 1974 (NSW), it was "relevant to have regard to the precautionary principle or what I refer to as consideration of whether a cautious approach should be adopted in the face of scientific uncertainty and the potential for serious or irreversible harm to the environment".[148] Stein J held that:

> "While there is no express provision requiring consideration of the 'precautionary principle', consideration of the state of knowledge or uncertainty regarding a species, the potential for serious or irreversible harm to an endangered fauna and the adoption of a cautious approach in protection of endangered fauna is clearly consistent with the subject matter, scope and purpose of the Act".[149]

Having determined that the precautionary principle could properly be applied, Stein J did so. Stein J noted that in respect of the key threatened species with which the appellant was concerned, the Giant Burrowing Frog, it had only recently been added to the schedule of endangered species as vulnerable and rare and hence the factors threatening extinction of the species were still operating and had not been abated. In these circumstances:

> "…caution should be the keystone to the Court's approach. Application of the precautionary principle appears to me to be most apt in a situation of a scarcity of scientific knowledge of species population, habitat and impacts. Indeed, one permissible approach is to conclude that the state of knowledge is such

[147] (1993) 81 LGERA 270 at 282.
[148] (1993) 81 LGERA 270 at 282.
[149] (1993) 81 LGERA 270 at 282-283.

> that one should not grant a licence to 'take or kill' the species until much more is known. It should be kept steadily in mind that the definition of 'take' in s 5 of the Act includes disturb, injure and a significant modification of habitat which is likely to adversely affect the essential behavioural patterns of a species. In this situation I am left in doubt as to the population, habitat and behavioural patterns of the Giant Burrowing Frog and am unable to conclude with any degree of certainty that a licence to 'take or kill' the species should be granted".[150]

Stein J found that there had been inadequate assessment of the need for the particular road and of the alternatives to it. Adequate alternatives assessment is, of course, an element of the precautionary principle. Stein J concluded:

> "It is in the context of a thorough examination of alternatives, especially ones which have minimal environmental impact, that one must balance the issue of a licence to take or kill endangered fauna. The need for a link road is accepted but I question, when all pertinent factors are weighed in the balance, whether the need is for this particular road. The issue of the best route, taking account of all relevant circumstances, including environmental factors, needs to be carefully assessed. It appears to me that alternatives need to be further explored. I am not satisfied that a licence to take or kill the Yellow-bellied Glider, or any of the other species discussed in the fauna impact statement, is justified. The applicant for such a licence needs to satisfy the Court, on the civil standard on the balance of probabilities, that it is appropriate in all the relevant circumstances to grant the licence. I am not convinced of the strength and validity of the economic arguments presented to the Court by the Council, nor do I take such a predictable view of human behaviour as Mr Nairn.
>
> Following an examination of the evidence, I am not satisfied that a licence under s 120 of the *National Parks and Wildlife* Act to take or kill endangered fauna should be granted to the Council. However, it should be emphasised that refusal of this licence application should not necessary be assumed to be an end of the proposal. Further information on endangered fauna and advances in scientific knowledge may mean that a licence could be granted in the future. Also, changes in the proposal and ameliorative measures may lead to a different assessment. This case has been determined, as it must, on the evidence produced to the Court at the hearing and the Court cannot speculate as to the future".[151]

The precautionary principle was next raised in *Nicholls v Director-General v National Parks and Wildlife.*[152] This was again an appeal by a third party objector to the Land and Environment Court of NSW involving merits review of a decision of the Director-General of National Parks and Wildlife to issue a licence to the Forestry

[150] (1993) 81 LGERA 270 at 284.
[151] (1993) 81 LGERA 270 at 286-287.
[152] (1994) 84 LGERA 397.

Commission of NSW to take or kill endangered fauna in the course of forestry operations within the Wingham Management area in the north coast of NSW.

The applicant pointed to the lack of scientific certainty in regard to 17 of the 33 endangered fauna species covered by the proposed licence. The applicant's case was that there were inadequacies in the fauna impact statement prepared by the Forestry Commission in relation to the proposed forestry operations and in the level of information obtained in surveys undertaken for the purpose of the environmental impact statement. The applicant argued that appropriate ameliorative measures and a conservation strategy could not be determined until the alleged anomalies and deficiencies in the fauna surveys and fauna impact statement have been rectified. Applying the precautionary principle, the applicant submitted the lack of full scientific certainty should not be used as a reason for postponing measures to minimise impact.[153]

Talbot J accepted that the precautionary principle was a practical approach which the Court found axiomatic when dealing with environmental assessment.[154] Talbot J therefore accepted the approach taken by Stein J in *Leatch v National Parks and Wildlife Service*,[155] that while there is no express statutory provision requiring consideration of the precautionary principle, the adoption of a cautious approach in the protection of endangered fauna was clearly consistent with the subject matter, scope and purpose of the *National Parks and Wildlife Act* 1974 (NSW).[156]

The applicant contended that the Court was obliged, as a matter of law, to go further and take into account Australia's international obligations in determining the application for a licence to take or kill endangered fauna.[157]

Talbot J rejected that contention. First, no binding imperative upon the Director-General, being the decision-maker at first instance, or the Court, being the decision-

[153] (1994) 84 LGERA 397 at 410.
[154] (1994) 84 LGERA 397 at 419.
[155] (1993) 81 LGERA 270.
[156] (1994) 84 LGERA 397 at 418.
[157] (1994) 84 LGERA 397 at 419.

maker on appeal, was drawn to the Court's attention.[158] There was no statute which obliged application of the precautionary principle. At that time in NSW, there was only one statute which incorporated the precautionary principle and that was the *Protection of the Environment Administration Act* 1991 (NSW) but it was inapplicable to the case at hand.[159] Talbot J also noted at that time:

> "Furthermore, the statement of the precautionary principle, while it may be framed appropriately for the purpose of a political aspiration, its implementation as a legal standard could have the potential to create interminable forensic argument. Taken literally in practice it might prove to be unworkable. Even the applicant concedes that scientific certainty is essentially impossible. It is only 500 years ago that most scientists were convinced the world was flat. The controversy in this matter further demonstrates that all is not yet settled. What the applicant asks is that decision making is based on conclusions that can be validly drawn from the levels of scientific information available. The question is what that level should be in the context of an application of a s 92B licence.
>
> As Stein J noted, the 1992 Intergovernmental Agreement provides (at 3.5.1) in the application of the precautionary principle, public and private decisions should be guided by:
>
> '(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and
> (ii) an assessment of the risk-weighted consequences of various options.'
>
> That is a practical approach which this Court finds axiomatic, in dealing with environmental assessment.
>
> The evidence in this case provides the opportunity for the Court to make an informed decision. The environmental impact statement and the fauna impact statement and the subsequent reports have provided a basis for evaluation of the potential for damage to endangered species. The Court also has the benefit of further expert evidence to enable it to weigh the consequences of various options".[160]

The Court was therefore able to make a decision and decided to issue the licence "subject to conditions which take account of the need for ongoing survey research and assessment which enables the Director General to be kept up to date so that the conditions of the licence can be varied or the licence revoked according to the evolving circumstances".[161]

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[158] (1994) 84 LGERA 397 at 419.
[159] (1994) 84 LGERA 397 at 419. Subsequently, there have been numerous enactments which incorporate the precautionary principle: see *BGP Properties Pty Ltd v Lake Macquarie City Council* (2004) 138 LGERA 237 at 253 – 254[87].
[160] (1994) 84 LGERA 397 at 419.
[161] (1994) 84 LGERA 397 at 421.

In *Greenpeace Australia Ltd v Redbank Power Company Pty Ltd and Singleton Council,*[162] the environmental non-governmental organisation, Greenpeace Australia Ltd, appealed as a third party objector to the Land and Environment Court of NSW against a decision of Singleton Council to grant development consent for the construction of a power station and ancillary facilities in the Hunter Valley of NSW.

The applicant contended that the impact of air emissions from the project would unacceptably exacerbate the "greenhouse effect" in the earth's atmosphere and the Court should apply the precautionary principle and refuse development consent for the proposal.[163]

The power company, whilst acknowledging that the project would emit greenhouse gases, nevertheless relied on the countervailing, environmentally beneficial effects of the project. The power station would engage new technology capable of using reject tailings as a fuel source. The disposal of tailings from coal washeries is a major environmental problem. Large areas of land are needed for tailings disposal, alienating otherwise economically productive land. The tailings dams do not dry out. They are not strong enough to take any substantial weight, such as heavy vehicles. They cause acidification of water and the escape of acidified water into surrounding soils. Tailings dam may be breached, discharging waters with a high acid content and containing high concentrations of toxic, heavy metal ions. Furthermore, large quantities of coal are wasted in the tailings. In the Hunter Valley, tailings can account for as much as 50 per cent of total reject coal. Hence, tailings are responsible for inefficient utilization of the finite resource of coal.[164]

Finally, notwithstanding that the technology used to utilise the tailings as a fuel source was not as efficient in controlling $CO_2$ emissions as conventional coal-fired stations, the power company pointed out that it was superior to conventional coal-fired stations in lowering other greenhouse gas emissions, notably $SO_2$ and NOx.[165]

[162] (1994) 86 LGERA 143.
[163] (1994) 86 LGERA 143 at 145, 148-149.
[164] (1994) 86 LGERA 143 at 150.
[165] (1994) 86 LGERA 143 at 150.

Hence, the debate was set as sustainable development principles pulled in different directions. The project was inferior on sustainability criteria only in terms of increasing $CO_2$ emissions but superior in terms of mitigating the environmental problem of tailings disposal, efficiently using the finite resource of coal, and reducing the emission of $SO_2$ and NOx.

Pearlman J considered the precautionary principle and its use in cases involving scientific uncertainty:

> "There are, however, instances of scientific uncertainty on both sides of the issues in this case. For example, Redbank has contended that tailing dams pose environmental problems surrounding current methods of tailing disposal. On the other hand, Greenpeace has asserted that $CO_2$ emission from the project will have serious environmental consequences, whilst Redbank has asserted that there is considerable uncertainty about its consequences. The important point about the application of the precautionary principle in this case is that 'decision-makers should be cautious' (per Stein J in *Leatch v National Parks & Wildlife Service* (1993) 81 LGERA 270 at 282). The application of the precautionary principle dictates that a cautious approach should be adopted in evaluating the various relevant factors in determining whether or not to grant consent; it does not require that the greenhouse issue should outweigh all other issues".[166]

Pearlman J evaluated the need for the project and continued:

> "All these matters lead, in my opinion, to a conclusion that the greenhouse issue should not outweigh all other factors relevant to a determination of whether or not to grant consent, but must be taken into account in the Court's overall assessment of the project. What, then, are the other factors which the Court must take into account in reaching its determination?
>
> Redbank pointed to the beneficial environmental effects of the project. It will use tailing as fuel, thereby avoiding the detrimental environmental effects of tailing disposal in dams. It will produce lower emissions of $SO_2$ and NOx in comparison with the coal-fired power stations which it is likely to displace.
>
> There are other beneficial effects as well. The project will reduce the amount of land sterilised by tailing dams. It will convert a waste product into a usable one. It will permit more efficient use of energy resources by recovering coal currently discarded in tailing".[167]

Taking all of these matters into account, the Court concluded that development should be approved on conditions. One condition was that there be a tree planting

[166] (1994) 86 LGERA 143 at 154.
[167] (1994) 86 LGERA 143 at 155.

programme which would be beneficial for a number of reasons, one of which was that it may constitute a greenhouse sink, that is, the sequestration of $CO_2$ in the trees.[168]

These three decisions of the Land and Environment Court of NSW have been referred to as illustrations where principles of international environmental law are being recognised by domestic courts.[169]

*Northcompass Inc. v Hornsby Shire Council*[170] was another case involving the principles of ecologically sustainable development tugging in different directions. It was an appeal by way of merits review to the Land and Environment Court of NSW in which the applicant, a residents action group, was objecting to the local government authority, Hornsby Shire Council, granting itself development consent for a green organics bioremediation facility. The group was particularly concerned as to the impact of odour and air pollution from the windows for bioremediating the green organic material on proximate, sensitive receptors of a public school and pre-school and residences. There was scientific uncertainty as to the effect of odour and air pollution on children and residents in close proximity. Stein J noted in a postscript to the judgment of the Court:

> "It must be said that this case is not an example of the so-called NIMBY (not in my backyard) syndrome. On the evidence, it is simply inappropriate to locate a bioremediation plant with open windrows so close to sensitive land uses. One would need a trial which proved an environmental success, rather then a failure, to lend confidence in good environmental performance given the present location. Alternatively, a proponent could demonstrate the soundness of a proposal by field or laboratory tests simulating operating conditions, as suggested by the EPA. This has not occurred.
>
> The council argue that the concept of a bioremediation facility is an excellent example of ecologically sustainable development. We agree. It is consistent with ESD to have a facility which takes green wastes away from diminishing landfill and provides value added end products. This is consistent with the core principle of intergenerational equity. It must, however, be noted that another core ESD principle is the precautionary principle. This was mentioned by the EPA and a cautionary approach was quite specifically adopted by

[168] (1994) 86 LGERA 143 at 156, 162.
[169] Sir Anthony Mason, "The Influence of International and Transnational Law on Australian Municipal Law" (1996) 7 *Public Law Review* 20 at 27-28; B Boer, " The Globalisation of Environmental Law: The Role of the United Nations" (1995) 20 *Melbourne University Law Review* 101; and D Rothwell and B Boer, "From Franklin to Berlin: The Internationalisation of Australian Environmental Law and Policy" (1995) 17 *Sydney Law Review* 242.
[170] (1996) 130 LGERA 248.

> Commissioner Cleland in his report and recommendations to council. We think that he was correct to do so, given the particular factual context and bufferless location.
>
> There are of course many Rio principles which are relevant to environmental decision-making, including a case such as this. For example, the right to a healthy environment (principle 1). Indeed, the principle of environmental harm is a major cornerstone of ESD. This is most effectively accomplished through environmental impact assessment processes (Rio principle 17) involving full public participation (principle 10).
>
> The applicability of ESD principles to designated development under Pt 4 of the *Environmental Planning and Assessment Act* 1979 (NSW) and the inter-relationship of the principles has never been fully explored in the Court. It is unnecessary to do so in this case given our conclusion that the application should be refused on its merits for the reasons we have given".[171]

In *Alumino (Aust) Pty Ltd v Minister Administering the Environmental Planning and Assessment Act* 1979 (NSW),[172] the Land and Environment Court of NSW determined an appeal by way of merits review in relation to a development application for an aluminium dross processing and recycling plant in Kurri Kurri, a town in the Hunter Valley of NSW. The Minister, whose decision was the subject of the appeal, contended that development consent ought not to be granted, particularly having regard to possible health effects on the neighbouring community. The Minister relied on the precautionary principle.

Talbot J reiterated what he had stated in *Nicholls v Director General of National Parks and Wildlife* [173] in relation to the precautionary principle and that common sense and caution ought to be applied. Talbot J stated:

> "It is obvious that where development involves the handling and processing of materials which have the potential to cause significant harm to the health of human beings and vegetation, extreme caution must be used in determining whether development consent will be forthcoming. In the present case the Court has sat and listened to the testing of technical opinions and advice tendered by expert witnesses in the relevant fields…The result has been, however, that the Court has the advantage of knowing that none of the applicant's expert witnesses were persuaded to deviate from their conviction that the plant could be operated in a way which would not have any significant environmental consequence. As Mr Craig said, this is not a case in which there really is a competing expert view demonstrating different scientific

[171] (1996) 130 LGERA 248 at 264-265.
[172] [1996] NSWLEC 102 (29 March 1996).
[173] (1994) 84 LGERA 397 at 419.

> options which remain unresolved. Rather it has been demonstrated that the dross recycling process can be managed and controlled in such a way that the predictions will be met. The conditions proposed will establish a robust and rigorous programme of assessments and reports to enable an ongoing assessment. Local residents and Cessnock City Council will be an integral part of that process. The Court does not propose to leave it up to the EPA to licence the plant to limit emissions to the maximum level adopted by Dr Zib. The applicant and the Minister will be directed to draft a further condition whereby the applicant is required to install a particular control device which will be activated in the event that the maximum level of emission of fluoride is exceeded in the way that Mr Halverson assumed it could be done".[174]

In *Friends of Hinchinbrook Society Inc v Minister for Environment*,[175] the applicant challenged consents granted by the Commonwealth Minister for the Environment under the *World Heritage Properties Conservation* Act 1983 (Cth) to dredge a marina access channel and to cut and remove mangroves in certain areas. The works were part of carrying out a proposed resort village on the Queensland mainland coast adjacent to Hinchinbrook Channel and opposite Hinchinbrook Island, both part of the Great Barrier Reef World Heritage Area.

Amongst many grounds of judicial review raised, the applicant submitted that the Minister's decision was vitiated by his failure to have regard to a relevant consideration, namely the precautionary principle. To succeed on this ground, the applicant had to establish that the precautionary principle was a relevant consideration at law. This required establishing that the Minister, by the statute under which the power to grant the consents was exercised, was bound either expressly or by necessary implication from the subject matter, scope or purpose of the statute, to consider the precautionary principle.[176]

The statute in question, the *World Heritage Properties Conservation Act* 1983 (Cth), did not expressly refer to or require consideration of the precautionary principle. Nevertheless, the applicant submitted that the precautionary principle had been enshrined in the *Intergovernmental Agreement on the Environment*, to which the Commonwealth was a party. Furthermore, the applicant submitted that in light of the scope and purpose of the *World Heritage Properties Conservation Act* 1983 (Cth), the

[174] [1996] NSWLEC 102 (29 March 1996), pp. 15-16 of judgment.
[175] (1997) 93 LGERA 249.
[176] See *Minister for Aboriginal Affairs v Peko Wallsend Ltd* (1986) 162 CLR 24 at 39-40.

Minister was bound to have regard to the precautionary principle when exercising powers under the Act.[177]

Sackville J, of the Federal Court of Australia, referred to the decision of Stein J in *Leatch v National Parks and Wildlife Service*[178] and his statement that "the precautionary principle is a statement of commonsense and has already been applied by decision-makers in appropriate circumstances prior to the principle being spelt out".[179] Sackville J continued:

> "I do not think that the precautionary principle in the form adopted by the *1992 Intergovernmental Agreement* (nine years after the enactment of the World Heritage Act), is a relevant consideration that the Minister is bound to take into account in exercising the powers conferred by the World Heritage Act. There is nothing to suggest that in 1983 any particular formulation of the precautionary principle commanded international approval, let alone endorsement by the Parliament. It may be that the 'commonsense principle' identified by Stein J is one to which the Minister must have regard. But this would flow from the proper construction of the relevant legislation and its scope and purpose, rather than the adoption by representatives of Australian governments of policies and objectives relevant to a national strategy on the environment: cf *Nicholls v Director-General of National Parks and Wildlife* (1994) 84 LGERA 397 at 419. It would be difficult, for example, for the Minister to have regard only to the protection, conservation and presentation of particular property, as required by s 13(1) of the World Heritage Act, unless he or she takes account of the prospect of serious and irreversible harm to the property in circumstances where scientific opinion is uncertain or in conflict".[180]

In any event, Sackville J held that to the extent that the Minister was required to take into account the need to exercise caution on the fact of scientific uncertainty, he did so. Sackville J held:

> "It is true that the Minister did not expressly refer to the precautionary principle or some variation of it, in his reasons. But it is equally clear that before making a final decision, he took steps to put in place arrangements designed to address the matters of concern identified in the scientific reports and other material available to him. The implementation of these arrangements, through the amended deed and the MOU, indicate that the Minister accepted that he should act cautiously in assessing and addressing the risks to World Heritage values. This is not to say that the Minister's assessment would be endorsed by all who made submissions and provided advice; clearly it would not. But he took into account the commonsense

[177] (1997) 93 LGERA 249 at 295.
[178] (1993) 81 LGERA 270.
[179] *Leatch v National Parks and Wildlife Service* (1993) 81 LGERA 270 at 282.
[180] (1997) 93 LGERA 249 at 296.

principle that caution should be exercised where scientific opinion is divided or scientific information is incomplete".[181]

In *Carstens v Pittwater Council,*[182] a Commissioner of the Land and Environment Court of NSW had dismissed the applicant's appeal against the refusal by the local government authority to approve a dwelling house and associated works. Critical to the Commissioner's decision was his finding that the vegetation on the development site comprised part of a threatened ecological community, namely the Pittwater spotted gum. Also critical was the Commissioner's holding that the relevant statute, the *Environmental Planning and Assessment* Act 1979 (NSW), required the principles of ecologically sustainable development to be a factor in the consideration of a development application under the Act.

The applicant appealed on a question of law against the Commissioner's decision to a judge of the Land and Environment Court of NSW. The applicant submitted that the Commissioner had erred in law in a number of respects, one of which was holding that the principles of ecologically sustainable development were a relevant factor to be considered. Lloyd J sets out the rival submissions of the parties and states his conclusion as follows:

> "72. Mr Tomasetti [counsel for the appellant] submits that the Commissioner erred in holding that the Act required that the principles of ecologically sustainable development ("ESD") must be a factor in the assessment of the impact; it is not a factor which is set out in s 79C(1), neither is the phrase defined in the Act.
>
> 73. Mr Preston [counsel for the respondent] submits that having regard to (a) the express object in s 5(a)(ii) of the EP&A Act of encouraging ESD; (b) the fact that one of the central issues in determining the development application concerned the likely effect on a threatened ecological community; (c) the desirability of an administrative decision-maker exercising discretionary statutory powers in a way which promotes the objects of the Act; (d) the fact that the principles of ESD are relevant to many of the s 79C(1) generic categories of matters; (e) the fact that the principles of ESD have been accepted internationally, nationally and within New South Wales as relevant to environmental decision-making; and (f) the absence of any provision in s 79C(1) or elsewhere which states that ESD is an extraneous consideration, the Court should not conclude that ESD is an irrelevant consideration. Mr Preston refers to a number of

[181] (1997) 93 LGERA 249 at 297.
[182] (1999) 111 LGERA 1.

cases in the Court and elsewhere in which ESD principles have been applied.

74. I have previously discussed under ground (1) above the relationship between the objects of the EP&A Act described in s 5 and the matters to be taken into consideration in determining a development application set out in s 79C(1). In the light of that discussion and for the reasons which I have there stated, I concluded that s 79C(1) sets out the matters that *must* be taken into consideration, but that subsection does not exclude from consideration matters not listed and which may be of relevance to the particular development application and which further the objects of the Act. That is to say, it is not an irrelevant consideration for the decision-maker to take into account a matter relating to the objects of the Act. One of those objects is to encourage ecologically sustainable development (s 5(a)(vii)). Moreover, one of the considerations expressly mentioned in s 79C(1) is "*(e) the public interest*". In my opinion it is in the public interest, in determining a development application, to give effect to the objects of the Act. For these reasons I do not accept the submission that the Commissioner erred in holding that the principles of ESD must be a factor in the consideration of a combined development application and construction certificate".[183]

In *Conservation Council of South Australia v Development Assessment Committee and Tuna Boat Owners Association (No. 2)*,[184] an environmental non-governmental organisation, the Conservation Council of South Australia, appealed by way of merits review to the Environment, Resources and Development Court of South Australia (ERD Court) against the decision of the relevant government agency, the Development Assessment Commission, to grant development consent to the establishment of tuna farms in the waters of Louth Bay in Spencer Gulf, South Australia.

The appellant contended that consent should be refused on a number of grounds including that the development was not ecologically sustainable.

The Court considered the concept of ecologically sustainable development and in particular the precautionary principle. The Court referred to the detailed formulation of the precautionary principle contained in the *Intergovernmental Agreement on the*

[183] (1999) 111 LGERA 1 at 25.
[184] [1999] SAERDC 86 (16 December 1999).

*Environment*.[185] The Court also referred to a number of articles on the meaning and application of the precautionary principle.[186]

The Court noted that:

> "Generally, the precautionary principle in its various formulations has been said to be 'preventative' (Cameron), and to involve the minimisation of consequential environmental impact (MacIntyre & Mosedale), and the taking of remedial action upon evidence of a significant but not necessarily provable risk of environmental harm (Handl)".[187]

The Court explained the rationale for the development of the precautionary principle:

> "22. There would appear to be general agreement amongst the authors of articles on the precautionary principle that it was developed in response to the recognition, based upon observation, that the environment could not assimilate all the consequences of activities impacting upon it. Implicit in this recognition is an acknowledgment that science and the scientific method have limitations. Because of the limitations, it is unlikely that the full consequences of the impact of a particular act or activity upon the environment can be known in advance. The scientific process involves deriving knowledge from the testing of a hypothesis. A number of biases have been identified in the process, giving rise to comments such as 'the normal process of scientific reasoning is not as logically water-tight as one might imagine' (Fisk, David *Environmental Science and Environmental Law* 10 J Env L 3 (1998)). The scientific method does not necessarily give the quality of certainty to the opinion or assessment of a scientist. Indeed, one writer has suggested that a scientific opinion might be best evaluated for reliability by testing it against seven types of uncertainty he identified as being likely to be found in any scientific assessment or opinion, namely conceptual uncertainty, measurement uncertainty, sampling uncertainty, mathematical modelling uncertainty, causal uncertainty, testing uncertainty and communicative and cognitive uncertainty (P Brad Limpert, "Beyond the Rule in Mohan: A New Model for Assessing the Reliability of Scientific Evidence" 54 Univ Toronto L Rev (1998)). Thus, the inherent uncertainty or bias in the scientific method combined with (generally speaking) a perennial lack of resources and a consequential lack of data to assist scientists, leads inevitably to the conclusion that there is likely to be an incomplete understanding of the full extent of the environmental impacts of any particular act or activity proposed. That prospect, supported

[185] [1999] SAERDC 86 (16 December 1999) at [18] and [20].
[186] [1999] SAERDC 86 (16 December 1999) at [21]. These included G Handl, "Environmental Security and Global Change: the Challenge to International Law" 1 *Yearbook of International Environmental Law* (1990); W Gullett, "Environmental Protection and the 'Precautionary Principle': A Response to Scientific Uncertainty in Environmental Management" (1997) 14 EPLJ 52; O Macintyre and T Mosedale "The Precautionary Principle as a Norm of Customary International Law" 9 *Journal of Environmental Law* 221 (1998); and C Barton, "The Precautionary Principle in Australia: Its Emergence in Legislation and as a Common Law Doctrine" 22 *Harvard Environmental Law Review* 509 (1998).
[187] [1999] SAERDC 86 (16 December 1999) at [21].

by empirical observations gathered world-wide, led to the development of the precautionary principle as a commonsense approach to avoid or minimise serious or irreversible harm to the environment".[188]

The Court next considered the onus of proof:

"24. The question arises as to who has the onus of satisfying us that the proposed development would be carried out in an ecologically sustainable way, and located, sited, designed, constructed and managed to be ecologically sustainable. It is well accepted in the literature, and it stands to reason, that the proponent needs to satisfy us that the development would be ecologically sustainable. In the matter before us, is the proponent called upon to prove this, only when the appellant has proved, on the balance of probabilities, that there is a threat of serious or irreversible damage to the environment? That cannot be the case. It is our task, as it was that of the relevant authority, to assess the proposed development against the relevant provisions of the Development Plan. The development should be ecologically sustainable in the terms of Objective 35 and Principle of Development Control 12. The onus lies on the proponent to show that the development would meet the policy set out in the Development Plan. In any event. it cannot be the case that the appellant must prove that the development will threaten serious or irreversible environmental damage, for another reason. Because of the inherent uncertainty in a scientific opinion, an appellant is unlikely to be able to show that a particular development would be likely to result in serious or irreversible damage to the environment. In reasoning thus, we have taken 'threat' to mean 'likelihood' or 'probability': see the relevant word meanings in the *Macquarie Dictionary* (second edition). However. the appellant must be mindful of its status as appellant and the provisions of Section 17(4) of the *Environment, Resources and Development Court Act 1993* and thus would need to show that there is a prospect of serious or irreversible damage to the environment, should the proposed development proceed. If that is shown, the burden of proof switches to the proponent and it will be necessary for the proponent to show, in order to have his or her development classified as ecologically sustainable, the following:

- the measures that the proponent will take (within the limits of practicability) to avoid serious or irreversible damage to the environment; and
- that the risk-weighted consequences of the development assessed together do not suggest that serious or irreversible environmental damage would be sustained.

The above is derived from the IGAE [Intergovernmental Agreement on the Environment] which recorded the agreement of the parties as to the process, for reaching decisions, in the application of the precautionary principle (see above).

[188] [1999] SAERDC 86 (16 December 1999) at [22].

25. The proponent would have to satisfy the burden of proof by evidence as to the likely consequences of the proposal, including scientific evidence (with its limitations), evidence as to the proposed management regime and measures, and evidence to assist the Court in the assessment of the risk-weighted consequences of the proposal".[189]

The Court then assessed the development application against the principles of ecologically sustainable development and the precautionary principle. The Court concluded that the appeal should be upheld and development consent refused.

The Court's decision was itself subject to an appeal to a Full Court of the Supreme Court of South Australia by the unsuccessful proponent of the tuna farm proposal in *Tuna Boat Owners Association of SA Inc. v Development Assessment Commission.*[190] One ground of appeal was that the ERD Court was in error in determining for itself whether the proposed development was ecologically sustainable. The appellant submitted that the ERD Court should leave it to the Minister to determine whether the proposed development would be operated in an ecologically sustainable manner.[191]

A Full Court of the Supreme Court of South Australia rejected that submission:

"48. In assessing the proposed development against the DP [Development Plan], the ERD Court was required to consider whether the proposed development was ecologically sustainable. It was entitled to have regard to powers available to other authorities under legislation, and it was appropriate for it to do so. But the existence of those powers does not mean that the ERD Court, or any other relevant authority acting under s 35 of the Act, either can or should take the view that the question of ecological sustainability is no longer its concern. It cannot be said that the question of ecological sustainability was not a matter properly the concern of a planning authority under the DP, and is properly the exclusive concern of another statutory authority. The most that can be said is that ecological sustainability is properly the concern of each of them. Nor can it be said that the matters that concerned the ERD Court were matters more appropriately left, being matters of management detail, to another statutory authority with powers that could be exercised in relation to ecological sustainability. In my view, the terms of the DP are such that the ERD Court, as a planning authority, was required to consider whether the proposed development would be ecologically sustainable. It was entitled to have regard to the statutory powers available to the Minister, but neither could nor should simply proceed on the assumption that the Minister

[189] [1999] SAERDC 86 (16 December 1999) at [24] and [25].
[190] (2000) 110 LGERA 1.
[191] (2000) 110 LGERA 1 at 9[42].

would exercise those powers in a manner that would produce the desired outcome. To do so would be to abdicate its own responsibility".[192]

Another ground of appeal was that the ERD Court erred in placing an onus on the proponent of the development to justify the grant of development consent. The appellant argued that it was for the objector, the Conservation Council of SA, to show that damage to the environment would result from the proposed development rather than for the proponent to show that such damage would not result. The Full Court rejected this submission:

"27. I disagree. It is true that generally there is no onus on an applicant for development consent to establish that the development consent should be granted. The relevant authority must simply assess the proposed development against the relevant DP. But in this case, the Development Plan contains an objective and principle that invokes the concept of ESD. That in turn, in a case like the present, invites the use of the precautionary principle, simply because all of the consequences of the proposed development are not known and fully understood.

28. In such a case, assessing the proposal against the DP requires a consideration of whether it is a development which is ecologically sustainable. As the longer term consequences of the proposed development are not known, it is appropriate to require measures that will avert adverse environmental impacts that might emerge.

29. That was the ERD Court's approach. It was open to it to so proceed. The Court did not wrongly impose an onus on the Association in relation to the assessment of the proposal against the DP. The approach of the Court simply reflected what was inherent in one of the matters that the Court had to consider, the issue of ESD.

30. There can be no hard and fast rules about what is required in a case such as this. Everything will depend upon the circumstances of the particular case, especially the level of knowledge about the environmental impacts of the particular proposal. I agree broadly with what the Court said:

> 'The proponent would have to satisfy the burden of proof by evidence as to the likely consequences of the proposal, including scientific evidence (with its limitations), evidence as to the proposed management regime and measures, and evidence to assist the Court in the assessment of the risk-weighted consequences of the proposal'.

This should not be taken as a proposition of law, but simply as an expression in the particular case of what, in general terms, was required before the ERD Court could properly find for the Association when

[192] (2000) 110 LGERA 1 at 10 [48] per Doyle CJ with whom Duggan and Lander JJ agreed.

considering whether the development would be managed so as to be ecologically sustainable".[193]

In *Hutchinson Telecommunications (Australia) Pty Limited v Baulkham Hills Shire Council* [194]the applicant appealed to the Land and Environment Court by way of merits review against the decision of the relevant consent authority, Baulkham Hills Shire Council, to refuse development consent for the installation of telecommunications infrastructure. One of the key issues was the potential health effects of electromagnetic radiation from the proposed development. The evidence established that the levels of radiofrequency electromagnetic radiation from the proposed development would comply, by a significant margin, with the adopted Radiation Protection Standard. Nevertheless, the Council argued that the precautionary principle dictated that if consent were to be granted, conditions of consent should be imposed requiring the applicant to meet an exposure limit stricter than the Standard. The applicant opposed the Council's suggested conditions.

Pain J first accepted that the precautionary principle is a relevant consideration under s 79C of the *Environmental Planning and Assessment Act* 1979 (NSW), given the reference to ecologically sustainable development in that Act's objectives.[195] Pain J also adopted the statement on the precautionary principle given in another statute, in s 6(2) of the *Protection of the Environment Administration Act* 1991 (NSW).[196] At that time, there was no definition of ecologically sustainable development. Subsequently, a definition was inserted which adopted, as Pain J had held was appropriate, the definition in s 6(2) of the *Protection of the Enviornment Administration Act* 1991 (NSW).[197]

Pain J then turned to apply the principles of ecologically sustainable development, and in particular the precautionary principle, to the case at hand. The problem was that if the proposed development would comply with the relevant Radiation Protection Standard and that Standard protects the health and safety of persons, then

[193] (2000) 110 LGERA 1 at 6[27]–7[30] per Doyle CJ with whom Duggan and Lander JJ agreed.
[194] [2004] NSWLEC 104 (26 March 2004)
[195] [2004] NSWLEC 104 (26 March 2004), [26].
[196] [2004] NSWLEC 104 (26 March 2004), [25], [26].
[197] See now s 4(1) of the *Environmental Planning and Assessment Act* 1979 (NSW)

there was no threat of serious or irreversible environmental damage from the proposed development. Pain J held:

> "27. The difficulty for the Council's case is that there must be a legally valid basis under which the principles of ESD can be applied by this Court. Given that the evidence as agreed by the parties in that no residence will be affected by a field strength of 1 v/m [the more stringent level argued by the Council] and that the current ARPANSA standard has been met there does not appear to be any basis on which to apply the precautionary principle to this development". [198]

Pain J concluded that the Court should not impose conditions requiring a stricter level of precaution than was justified by the evidence and the relevant Standard.[199]

In *BGP Properties Pty Ltd v Lake Macquarie City Council,*[200] the applicant appealed by way of merits review against the refusal of the local government authority of an integrated development application to subdivide land into 48 lots for industrial use and storage. The land was located at Redhead in the City of Lake Macquarie and contained a threatened ecological community, the Sydney Freshwater Wetland, and a threatened species of plant, *Tetratheca juncea*. The land was also located nearby to residential areas. Development of the land would impact on the threatened ecological community and the threatened species and on the residents in terms of traffic and noise generated by the industrial development.

At the outset, McClellan CJ of the Land and Environment Court of NSW considered what ought to be the approach the Court should take in evaluating the impacts of the development:

> "82. Before considering the evidence in relation to each issue and its significance to the decision in this appeal, it is necessary to resolve the approach to be taken to the evaluation of some matters. The evidence raises for consideration a number of complex issues relating to the potential impact of the development on threatened species and ecological communities or their habitats. When such issues are raised, there is often difficulty in arriving at absolute conclusions as to the existence of a relevant species, community or habitat and their disposition on a given site. Even greater difficulties can arise in identifying the impacts from the development, particularly when the proposal accepts that impacts will

[198] [2004] NSWLEC (26 March 2004), [27].
[199] [2004] NSWLEC (26 March 2004), [35].
[200] (2004) 138 LGERA 237.

> occur but seeks to ameliorate them by carefully designing the development and providing for ongoing operation or maintenance within an environmentally sensitive framework".[201]

The local government authority submitted that the correct approach to evaluation of the evidence was to apply the principles of ecologically sustainable development, including the precautionary principle.[202] McClellan CJ reviewed the evolution of the concept of ecologically sustainable development and its incorporation in various statutes in NSW as an object and as a factor for consideration in certain circumstance and/or by certain persons.[203] McClellan CJ agreed with the conclusion of Lloyd J in *Carstens v Pittwater Council*[204] that the principles of ecologically sustainable development are a factor in the consideration of a development application under the *Environmental Planning and Assessment Act* 1979 (NSW).[205]

McClellan CJ referred to the earlier decisions of the Court in *Leatch v National Parks and Wildlife Service,*[206] *Greenpeace Australia Ltd v Redbank Power Co Pty Ltd,*[207] and *Nicholls v Director General of National Parks and Wildlife.*[208] With respect to the last mentioned decision, McClellan CJ disagreed with Talbot J's characterisation of the precautionary principle as a "political aspiration". McClellan CJ referred to his previous decision in *Murrumbidgee Ground-Water Preservation Association v Minister for National Resources*[209] where he said that statutory recognition of the precautionary principle has made it:

> "…a central element in the decision making process and cannot be confined. It is not merely a political aspiration but must be applied when decisions are being made under the *Water Management* Act and any other Act which adopts the principles".[210]

McClellan CJ concluded by saying:

> "113. In my opinion, by requiring a consent authority (including the Court) to have regard to the public interst, s 79C(e) of the EP&A Act

[201] (2004) 138 LGERA 237 at 252[82].
[202] (2004) 138 LGERA 237 at 252[84].
[203] (2004) 138 LGERA 237 at 252[85]-256[97].
[204] (1999) 111 LGERA 1 at 25.
[205] (2004) 138 LGERA 237 at 256[100]-257[101].
[206] (1993) 81 LGERA 270.
[207] (1995) 86 LGERA 143.
[208] (1994) 84 LGERA 397.
[209] [2004] NSWLEC 122 (7 April 2004).
[210] [2004] NSWLEC 122 (7 April 2004) at [178].

> [*Environmental Planning and Assessment Act* 1979 (NSW)] obliges the decision maker to have regard to the principles of ecologically sustainable development in cases where issues relevant to those principles arise, This will have the consequence that, amongst other matters, consideration must be given to matters of inter-generational equity, conservation of biological diversity and ecological integrity, Furthermore, where there is a lack of scientific certainty, the precautionary principle must be utilised. As Stein J said in *Leatch*, this will mean that the decision-maker must approach the matter with caution but will also require the decision-maker to avoid, where practicable, serious or irreversible damage to the environment.
>
> Consideration of these principles does not preclude a decision to approve an application in any cases where the overall benefits of the project outweigh the likely environmental harm. However, care needs to be taken to determine whether appropriate and adequate measures have been incorporated into such a project to confine any likely harm to the environment".[211]

The Court evaluated the evidence, applying this approach, and concluded that the impacts, particularly on the threatened ecological community, were such as to warrant refusal of the development application.[212]

McClellan CJ's approach to the precautionary principle was recently endorsed by Pain J in *BT Goldsmith Planning Services Pty Limited v Blacktown City Council*.[213] In that case, Her Honour held that "the precautionary principles can have wide application"[214] and took a precautionary approach to the consideration of factors relevant to determine the likelihood of significant impact on a community listed as an endangered ecological community under the *Threatened Species Conservation Act* 1995 (NSW).[215] This case is further discussed in the the context of the conservation of biological diversity and ecological integrity below.

In *Port Stephens Pearls Pty Ltd v Minister for Infrastructure and Planning,*[216] the applicant appealed by way of merits review against the decision of the relevant consent authority, the Minister, to refuse development consent to a development application to establish a pearl farm in the waters of Port Stephens, New South Wales.

[211] (2004) 138 LGERA 237 at 262 [113]-[114].
[212] (2004) 138 LGERA 237 at 271[150], 272[160], 278[202]-[203] and 280[220].
[213] [2005] NSWLEC 210 (1 July 2005)
[214] [2005] NSWLEC 210 (1 July 2005) at [72].
[215] [2005] NSWLEC 210 (1 July 2005) at [73].
[216] [2005] NSWLEC 426 (15 August 2005).

The Minister was concerned about the likely impacts of the pearl farm such as the risks and potential consequences of the development on marine life, including dolphins, the visual impact of a plume in the water created by cleaning and maintenance activities, incompatibility with other users of the waterway and inconsistency with the proposed creation of a marine national park.[217]

In evaluating the evidence on these issues, the applicability of the principles of ecologically sustainable development arose for determination. Talbot J held:

> "54. For the reasons succinctly expressed by Lloyd J in *Carstens v Pittwater Council* (1999) 111 LGERA 1 the principles of ecologically sustainable development must be a factor in the consideration of a development application. See also the more recent judgment of the Chief Judge of this Court in *BGP Properties Pty Ltd v Lake Macquarie City Council* (2004) 138 LGERA 237. Since the publication of my judgment in *Nicholls v Director General of National Parks and Wildlife Service* (1994) 84 LGERA 397 the precautionary principle, as a consequence of its formal adoption by various statutes, has become more than a 'political aspiration'. The requirement in s 79C(1)(e) of the EP&A Act to take account of the public interest brings with it the obligation to have regard to the principles of ecologically sustainable development including the precautionary principle.
>
> 55. In the present case there is no real threat of irreversible environmental damage but nevertheless the decision making process needs to take account of appropriate measures to prevent environmental degradation. Such an approach is axiomatic to the proper consideration of any environmental issue.
>
> 56. The experts agree that the real issue to be confronted is the associated residual risk particularly in terms of the alleged cumulative impact on the habitat of dolphins. The application of the precautionary principle as a driving force behind the consideration of the application does not lead to a determination to refuse consent. The element of caution nevertheless dictates that the Court, as the consent authority, needs to adopt every avenue open to it in order to minimise any potential risk of an adverse impact from the proposal no matter how remotely connected or unlikely the manifestation of that risk is. Conditions requiring ongoing surveys and monitoring with appropriate built in remedial mechanisms in the event of the detection of detrimental effects reflect this cautious approach.
>
> 57. I have adopted the approach foreshadowed by the Environmental Resources and Development Court of South Australia and referred to by the South Australia Full Court decision in *Tuna Boat Owners Association*

[217] [2005] NSWLEC 426 (15 August 2005), [32].

*of SA Inc v Development Assessment Commission and Another* (2000) 110 LGERA 1 at [35] as follows:-

> *... that it would consent to the proposed development only if there was a monitoring regime that would detect emerging adverse impacts and a scheme of conditions which would enable an appropriate authority to require those impacts to be averted if and when they emerged.*

58. The ERD Court appears to have rejected the proposal before it. Nevertheless after adopting the principle expressed and taking account of the proposed conditions of consent, in this case I am satisfied there can be a monitoring regime that will detect any emerging adverse impacts in regard to water quality, the effect on seagrasses and the impact on marine animals (particularly the population of resident dolphins) and thus enable the appropriate authority to require them to be addressed if and when they arise".[218]

In *Providence Projects Pty Ltd v Gosford City Council* [219]the applicant appealed to the Land and Environment Court by way of merits review against the refusal of the relevant consent authority, Gosford City Council, of a proposed retirement village. The site on which the development was proposed contained an endangered ecological community, the Umina Coastal Sandplain Woodland ("UCSW"). There was scientific uncertainty as to the extent of distribution of that community over the site. Hence, there was scientific uncertainty as to the threat or risk of serious or irreversible environmental damage that might be caused to the endangered ecological community by the carrying out of the proposed development. Bignold J invoked the precautionary principle to resolve the scientific uncertainty. Bignold J stated:

> "76. Having regard to the statutory definition of the "precautionary principle" (as an integral aspect of the defined concept of "ecologically sustainable development") and to the decided cases which have recognised the legitimacy of applying the precautionary principle to various decision-making duties imposed by the EP&A Act, I am of the opinion that there is legitimacy in applying the precautionary principle in the present case to resolve the scientific uncertainty created by the irreconcilable expert evidence on the question whether UCSW is widely distributed over the development site.
>
> 77. The application of the precautionary principle in the present case justifies an approach which avoids the risk of serious or irreversible environmental damange by assuming the existence

[218] [2005] NSWLEC 426 (15 August 2005) at [54]-[58].
[219] [2006] NSWLEC 52 (17 February 2006)

> of the wide distribution of UCSW over the development site…".[220]

Bignold J also followed the decision in *B T Goldsmith Planning Services Pty Limited v Blacktown City Council*[221] that the precautionary principle was applicable to the consideration of the factors enumerated in s 5A of the *Environmental Planning and Assessment Act* 1979 (NSW) relevant to determine the likelihood of significant impact on a community listed as an endangered ecological community under the *Threatened Species Conservation Act* 1996 (NSW).[222]

In *Gales Holdings Pty Limited v Tweed Shire Council*[223] the applicant appealed to the Land and Environment Court against the deemed refusal by the relevant consent authority, Tweed Shire Council, of a shopping and commercial development. The Council raised a preliminary point whether the development application should be accompanied by a species impact statement ("SIS"). A SIS is required to accompany a development application under the *Environmental Planning and Assessment Act* 1979 (NSW) if the development proposed in the development application is likely to significantly affect threatened species, populations or ecological communities, or their habitats.[224] Located on the development site was a threatened species, the Mitchell's Rainforest Snail. There was scientific uncertainty in respect of the extent and location of the most important habitat for the threatened species and the relationship of that habitat to the proposed drainage works to be undertaken as part of the development.[225]

Talbot J held that the precautionary principle is a relevant factor to take into account in the determination of the preliminary point of whether an SIS is required.[226] Talbot J held that the proposed development was likely to significantly affect the threatened species and an SIS was required before the development application could be determined.[227]

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[220] [2006] NSWLEC 52 (17 February 2006)
[221] [2005] NSWLEC 210 (1 July 2005).
[222] [2006] NSWLEC 52 (17 February 2006), [80].
[223] *Council* [2006] NSWLEC 85 (27 February 2006)
[224] S 78A(8)(b) of the *Environmental Planning and Assessment Act* 1979 (NSW).
[225] [2006] NSWLEC 85 (27 February 2006), [7].
[226] [2006] NSWLEC 85 (27 February 2006), [56], [61].
[227] [2006] NSWLEC 85 (27 February 2006), [69].

In *Telstra Corporation Limited v Hornsby Shire Council* [2006] NSWLEC 133 (24 March 2006), the applicant appealed to the Land and Environment Court by way of merits review against the refusal of the relevant consent authority, Hornsby Shire Council, of a proposed mobile telephone base station. The primary ground of refusal was the concern of the Council and certain residents that the radiofrequency electromagnetic energy emitted from the proposed facility might adversely affect the health and safety of the residents in the vicinity. The Council and the residents urged the Court to apply the precautionary principle to refuse consent to the proposed facility.

The judgment contains one of the most detailed and comprehensive elaborations of the precautionary principle in a national court decision to date. The Court (I was the presiding judge) offered the following guidance on the concept of the precautionary principle and its application:

1. The application of the precautionary principle and the concomitant need to take precautionary measures is triggered by the satisfaction of two conditions precedent or thresholds: a threat of serious or irreversible environmental damage and scientific uncertainty as to the environmental damage. These are cumulative.[228]

2. As to the first condition precedent, it is not necessary that serious or irreversible environmental damange actually have occurred – it is the *threat* of such damage that is required. The environmental damage threatened must attain the threshold of being *serious or irreversible*.[229]

3. The threat of environmental damage must be adequately sustained by scientific evidence.[230]

4. If there is no threat of serious or irreversible environmental damage, there is basis upon which the precautionary principle can operate.[231]

[228] [2006] NSWLEC 133 (24 March 2006), [128]
[229] [2006] NSWLEC 133 (24 March 2006), [129]
[230] [2006] NSWLEC 133 (24 March 2006), [129]

5. As to the second condition precedent, the lack of full scientific certainty, the uncertainty is in relation to the nature and scope of the threat of environmental damage.[232]

6. The degree of scientific uncertainty that needs to exist in order to trigger application of the precautionary principle varies, depending on the magnitude of environmental damage used in the formulation of the first condition precedent of the precautionary principle. For the formulation of "serious or irreversible environmental damage", the correlative degree of certainty about the threat is "highly uncertain of threat"[233] or "considerable scientific uncertainty".[234]

7. There must be reasonable scientific plausibility as to the threat of environmental damage. This condition would be fulfilled when empirical scientific data (as opposed to simple hypothesis, speculation or intuition) make it reasonable to envisage a scenario, even if it does not enjoy unamimous scientific support.[235]

8. If there is not considerable scientific uncertainty (the second condition precedent is not satisfied), but there is a threat of serious or irreversible environmental damage (the first condition precedent is satisfied), the precautionary principle will not apply. Measures will still need to be taken but these will be *preventative* measures to control or regulate the relatively certain threat of serious or irreversible environmental damage, rather than *precautionary* measures which are appropriate in relation to uncertain threats.[236]

9. If each of the two conditions precedent or thresholds are satisfied – that is, there is a threat of serious or irreversible environmental damage and there is the requisite degree of scientific uncertainty – the precautionary principle will be activated. At this point, there is a shifting of an evidentary burden of proof. A decision-maker must assume that the threat of serious or irreversible

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[231] [2006] NSWLEC 133 (24 March 2006), [138], [139]
[232] [2006] NSWLEC 133 (24 March 2006), [140]
[233] [2006] NSWLEC 133 (24 March 2006), [146]
[234] [2006] NSWLEC 133 (24 March 2006), [147]
[235] [2006] NSWLEC 133 (24 March 2006), [148]
[236] [2006] NSWLEC 133 (24 March 2006), [129]

environmental damage is no longer uncertain but is a reality. The burden of showing that this threat does not in fact exist or is negligible effectively reverts to the proponent of the economic or other development plan, programme or project.[237]

10. The precautionary principle permits the taking of preventative measures without having to wait until the reality and seriousness of the threats become fully known. This is the concept of preventative anticipation.[238]

11. A zero risk precautionary standard is inappropriate. Not every risk is unacceptable and needs to be prevented.[239] A preventative measure may be taken only if the risk, although the reality and extent of the risk have not been "fully" demonstrated by conclusive scientific evidence, appears nevertheless to be adequately backed up by the scientific data available at the time when the measure was taken. [240]

12. The type and level of precautionary measures that will be appropriate will depend on the combined effect of the degree of seriousness and irreversibility of the threat and the degree of uncertainty. This involves assessment of risk in its usual formulation, namely the probability of the event occuring and the seriousness of the consequences should it occur. The more significant and the more uncertain the threat, the greater the degree of precaution required.[241]

13. Prudence would also suggest that some margin for error should be retained until all the consequences of the decision to proceed with the development plan, programme or project are known. This allows for potential errors in risk assessment and cost-benefit analysis. Potential errors are weighted in favour of environmental protection. Weighting the risk of error in favour of the

[237] [2006] NSWLEC 133 (24 March 2006), [150]
[238] [2006] NSWLEC 133 (24 March 2006), [156]
[239] [2006] NSWLEC 133 (24 March 2006), [158]
[240] [2006] NSWLEC 133 (24 March 2006), [157], [159]
[241] [2006] NSWLEC 133 (24 March 2006), [161]

environment is to safeguard the ecological space or environmental room for manouvre.[242]

14. One means of retaining a margin for error is to implement a step-wise or adaptive management approach, whereby uncertainties are acknowledged and the area affected by the development plan, programme or project is expanded as the extent of uncertainty is reduced.[243]

15. The precautionary principle embraces the concept of proportionality. In applying the precautionary principle, measures should be adopted that are proportionate to the threats.[244] Consideration of practicability need to be taken into account.[245] There must be proportionality of response or cost effectiveness of margins of error to show that the selected precautionary measure is not unduly costly.[246]

16. The selection of the appropriate precautionary measure requires assessment of the risk-weighted consequences of various options. [247]

17. The precautionary principle, where triggered, does not necessarily prohibit the carrying out of a development plan, programme or project until full scientific certainty is attained.[248]

18. The precautionary principle should be viewed not in isolation, but as part of the package of principles of ecologically sustainable development. Precautionary measures selected should not only be appropriate having regard to the precautionary principle itself, but also in the context of the other principles of ecologically sustainable development.[249]

[242] [2006] NSWLEC 133 (24 March 2006), [162]
[243] [2006] NSWLEC 122 (24 March 2006), [163]
[244] [2006] NSWLEC 133 (24 March 2006), [166], [167]
[245] [2006] NSWLEC 133 (24 March 2006), [169]
[246] [2006] NSWLEC 133 (24 March 2006), [170], [171]
[247] [2006] NSWLEC 133 (24 March 2006), [172]-[178]
[248] [2006] NSWLEC 133 (24 March 2006), [179], [180]
[249] [2006] NSWLEC 133 (24 March 2006), [182]

4.5.2 Pakistan

The precautionary principle has been accepted in Pakistan. In *Zia v WAPAD,*[250] citizens were concerned about the construction and operation of a grid station, in particular about being exposed to the hazards of electromagnetic fields. The citizens petitioned the Supreme Court of Pakistan for consideration as a human rights case raising two questions, one of which was whether any government agency has a right to endanger the life of citizens by its actions without the latter's consent. Notice was issued by the Supreme Court to the relevant government authority.

The Supreme Court noted that there was scientific uncertainty as to the likelihood of adverse effects of electromagnetic fields on human health. The Court stated:

> "There is a state of uncertainty and in such a situation the authorities should observe the rules of prudence and precaution. The rule of prudence is to adopt such measure which may avert the so-called danger, if it occurs. The rule of precautionary policy is to first consider the welfare and safety of the human beings and the environment and then to pick up a policy and execute the plan which is more suited to obviate the possible danger or make such alternate precautionary measures which may ensure safety. To stick to a particular plan on the basis of old studies or inclusive research cannot be said to be a policy of prudence and precaution….
>
> It is highly technical subject upon which the Court declined to give a definite finding particularly when the experts and the technical evidence produced is inconclusive. In these circumstances the balance should be struck between the rights of the citizens and also the plan which are executed by the power authorities for welfare, economic progress and prosperity of the country".[251]

The Supreme Court referred to Principle 15 of the Rio Declaration and noted that it envisages a rule of precaution and prudence. The Supreme Court continued:

> "According to it if there are threats of serious damage, effective measures should be taken to control it and it should not be postponed merely on the ground that scientific research and studies are uncertain and not conclusive. It enshrines the principle that prevention is better than cure. It is a cautious approach to avert a catastrophe at the earliest stage. Pakistan is a developing country. It cannot afford the researches and studies made in developed countries on scientific problems particularly the subject at hand. However, the researches and their conclusions with reference to specific cases are available, the information and knowledge is at hand and we should take benefit out of it. In this background if we consider the problem faced by us in this case, it seems reasonable to take preventative and precautionary measures

[250] PLD 1994 SC 693.
[251] PLD 1994 SC 693 at [8].

> straightaway instead of maintaining status quo because there is no conclusive finding on the effect of electromagnetic fields on human life. One should not wait for conclusive finding as it may take ages to find out and, therefore, measures should be taken to avert any possible danger and for that reason one should not go to scrap the entire scheme but could make such adjustments, alterations or additions which may ensure safety and security or at least minimise the possible hazards".[252]

The Court concluded:

> "Therefore, a method should be devised to strike balance between economic progress and prosperity and to minimise possible hazards. In fact a policy of sustainable development should be adopted. It will thus require a deep study into the planning and the methods adopted by Authority for the construction of the grid station".[253]

### 4.5.3 India

The Indian courts have particularly embraced the precautionary principle. In *Vellore Citizens Welfare Forum v Union of India,*[254] the petitioners filed a petition in the public interest under Article 32 of the Constitution of India, directed against the pollution caused by enormous discharge of untreated effluent by the tanneries and other industries in the State of Tamil Nadu. The Supreme Court of India (Kuldip Singh J, Faizan Uddin and K Venkataswami JJ), in a judgment delivered by Kuldip Singh J, noted that:

> "though the leather industry is of vital importance to the country as it generates foreign exchange and provides employment avenues it has no right to destroy the ecology, degrade the environment and pose as a health-hazard".[255]

The Supreme Court recognised that a balance must be struck between the economy and the environment:

> "The traditional concept that development and ecology are opposed to each other, is no longer acceptable; 'Sustainable Development' is the answer".[256]

The Supreme Court reviewed the development of the concept of sustainable development in the international sphere, from the Stockholm Declaration of 1972,

[252] PLD 1994 SC 693 at [9].
[253] PLD 1994 SC 693 at [10].
[254] AIR 1996 SC 2715.
[255] AIR 1996 SC 2715 at 2720[8].
[256] AIR 1996 SC 2715 at 2720[10].

*Our Common Future* in 1987 and *Caring for the Earth* in 1991, to the Earth Summit and the *Rio Declaration* in 1992.[257]

The Supreme Court then stated:

> "Some of the salient principles of 'Sustainable Development' as culled out from the Brundtland Report and other international documents are Intergenerational Equity, Use and Conservation of Natural Resources, Environmental Protection, the Precautionary Principle, Polluter Pays, principle, Obligation to assist and co-operate, Eradication of Poverty and Financial Assistance to the developing countries. We are, however, of the view that 'The Precautionary Principle' and 'The Polluter Pays' principle are essential features of 'Sustainable Development'. The 'Precautionary Principle' in the context of the municipal law means:
>
> (i) Environmental measures – by the State Government and the statutory authorities – must anticipate, prevent and attack the causes of environmental degradation.
>
> (ii) Where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
>
> (iii) The 'Onus of proof' is on the actor or the developer/industrialist to show that his action is environmentally benign. 'The Polluter Pays' principle has been held to be a sound principle by this Court in *Indian Council for Enviro Legal Action v Union of India* (1996) 2JT (SC) 196: (1996 AIR SCW 1069). The Court observed, 'We are of the opinion that any principle evolved in this behalf should be simple, practical and suited to the conditions obtaining in this country'. The Court ruled that 'Once the activity carried on is hazardous or inherently dangerous, the person carrying on such activity is liable to make good the loss caused to any other person by his activity irrespective of the fact whether he took reasonable care while carrying on his activity. The rule is premised upon the very nature of the activity carried on'. Consequently the polluting industries are 'absolutely liable to compensate for the harm caused by them to villagers in the affected area, to the soil and to the underground water and hence, they are bound to take all necessary measures to remove sludge and other pollutants lying in the affected areas'. The 'Polluter Pays' principle as interpreted by this Court means that the absolute liability for harm to the environment extends not only to compensate the victims of pollution but also the cost of restoring the environmental degradation. Remediation of the damaged environment is part of the process of 'Sustainable Development' and as such polluter is liable to pay the cost to the individual suffers as well as the cost of reversing the damaged ecology".[258]

[257] AIR 1996 SC 2715 at 2720[10].
[258] AIR 1996 SC 2715 at 2720[11]-2721.

The Supreme Court held that "the precautionary principle and the polluter pays principle are part of the environmental law of the country".[259]

In *M.C Mehta v Kamal Nath,*[260] the Supreme Court of India affirmed the decision in *Vellore Citizens' Welfare Forum v Union on India*[261] upholding the precautionary principle as part of the environmental law of India.[262]

In *AP Pollution Control Board v Prof. M V Nayudu,*[263] the Supreme Court of India comprehensively reviewed the precautionary principle. An application was submitted by a company to the Pollution Control Board for permission to set up an industry for production on "BSS Castor Oil Derivatives". Although a letter of intent had later been received by the company, the Pollution Control Board did not give its no-objection certificate to the location of the industry on the site proposed by it. The Pollution Control Board, while rejecting the application for consent, inter alia, stated that the factory fell under the red category of polluting industry and it would not be desirable to locate such an industry in the catchment area of Himayat Sagar, a lake in Andhra Pradesh. The appeal filed by the company against the decision of the Pollution Control Board was accepted by the appellate authority. A writ petition was filed in the nature of public interest litigation and also by the Gram Panchayat challenging the order of the appellate authority but the writ petition was dismissed by the High Court. On the other hand, the writ petition filed by the company was allowed and the High Court directed the Pollution Board to grant consent subject to such conditions as may be imposed by it. The decision of the High Court was the subject matter of challenge in the Supreme Court of India.

The Supreme Court (SB Majumdar and M Jagannadha Rao JJ), in a judgment delivered by M Jagannadha Rao JJ, referred to the difficulty courts face in dealing with highly technological or scientific data. The Court noted that uncertainty in science in the environmental context has led international conferences to formulate

[259] AIR 1996 SC 2715 at 2721[13]-2722.
[260] (1997) 1 SCC 388.
[261] AIR 1996 SC 2715.
[262] (1997) 1 SCC 388 at [37].
[263] AIR 1999 SC 812.

new legal theories and rules of evidence. One of these is the precautionary principle.[264]

The Supreme Court discussed the earlier Supreme Court decision in *Vellore Citizens Welfare Forum v Union of India*[265] where it was held that the precautionary principle, and the shifting of the burden of proof onto the developer or industrialist who is proposing to alter the status quo, are part of the environmental law of the country.

The Supreme Court found it "necessary to explain the meaning of the principles in more detail, so that courts and tribunals or environmental authorities can properly apply the said principles in the matters which come before them".[266]

The Supreme Court reviewed the development of the precautionary principle at international level, including reference to Principle 15 of the *Rio Declaration*. The Court identified inadequacies of science as the real basis that has led to the precautionary principle.[267] The precautionary principle is "based on the theory that it is better to err on the side of caution and prevent environmental harm which may become irreversible".[268] The Supreme Court continued:

> "[35] The principle of precaution involves the anticipation of environmental harm and taking measures to avoid it, or to choose the least environmentally harmful activity. It is based on scientific uncertainty. Environmental protection should not only aim at protecting health, prosperity and economic interest, but also protect the environment for its own sake. Precautionary duties must not only be triggered by the suspicion of concrete danger, but also by (justified) concern or risk potential".[269]

The Supreme Court next elaborated on the burden of proof referred to in the *Vellore* case. The Court stated:

> "[37] It is to be noticed that while the inadequacies of science have led to the 'precautionary principle', the said 'precautionary principle' in its turn, has led to the special principle of burden of proof in environmental cases where burden as to the absence of injurious effect of the actions proposed, is placed on those who want to change the status quo reversal of the burden of proof, because otherwise in environmental cases, those opposing the change would

[264] AIR 1999 SC 812 at 818[23] and 820[30].
[265] AIR 1996 SC 2715.
[266] AIR 1999 SC 812 at 820[32].
[267] AIR 1999 SC 812 at 821[34].
[268] AIR 1999 SC 812 at 821[34].
[269] AIR 1999 SC 812 at 821[35].

be compelled to preserve the status quo (Wynne, Uncertainty and Environmental Learning, (1992) 2 Global Envtl Change 111, at p 123). This is often termed as a reversal of the burden of proof, because otherwise in environmental cases, those opposing the change would be compelled to shoulder the evidentiary burden, a procedure which is not fair. Therefore, it is necessary that the party attempting to preserve the status quo by maintaining a less polluted state should not carry the burden of proof, and the party who wants to alter it must bear this burden (see James M Olson, "Shifting the burden of Proof", 20 Envtl Law p 891 at p 898, 1990, quoted in (1998) 22 Harv Env L Rev p 509 at pp 519, 550).

[38] The Precautionary Principle suggests that where there is an identifiable risk of serious or irreversible harm, including, for example, extinction of species, widespread toxic pollution in major threats to essential ecological processes, it may be appropriate to place the burden of proof on the person or entity proposing the activity that is potentially harmful to the environment (see Report of Dr Sreenivasa Rao Pemmaraju, Special Rapporteur, International Law Commission, dated 3 April 1998, para 61).

[39] It is also explained that if the environmental risks being run by regulatory inaction are in some way 'uncertain but non-negligible' then regulatory action is justified. This will lead to the question as to what is the 'non-negligible risk'. In such a situation, the burden of proof is to be placed on those attempting to alter the status quo. They are to discharge this burden by showing the absence of a 'reasonable ecological or medical concern'. That is the required standard of proof.

The result would be that if insufficient evidence is presented by them to alleviate concern about the level of uncertainty, then the presumption should operate in favour of environmental protection. Such a presumption has been applied in Ashburton Acclimatisation Society v Federated Farmers of New Zealand [1998] 1 NZLR 78. The required standard now is that the risk of harm to the environment or to human health is to be decided in public interest, according to a 'reasonable person' test (see Precautionary Principle in Australia, Charmain Barton, (1998) 22 Harv Env L Rev p 509 at p 549)".[270]

In *Narmada Bachao Andolan v Union of India*,[271] the Supreme Court of India was called upon to decide various legal questions arising from the Sardar Sarovar Project involving the construction of a dam on the Narmada River. An environmental clearance had been given for the Project by the Prime Minister. At the time it was granted there was no obligation to obtain any statutory clearance and hence the environmental clearance granted was essentially administrative in character. Nevertheless, the environmental clearance was challenged. It was alleged the

[270] AIR 1999 SC 812 at 821[37]-[39].
[271] AIR 2000 SC 3751.

necessary particulars in regard to the environmental impact of the Project were not available when the environmental clearance was given and it therefore could not have been given.[272] It was further alleged that the execution of the Project, having diverse and far reaching environmental impact, without proper study and understanding of the environmental impacts and without proper planning of mitigative measures, was a violation of fundamental rights of life of the affected people guaranteed under Article 21 of the Constitution of India.[273] Neither of these arguments were accepted by the majority (B. N. Kirpal J with whom Dr. A. S Anand CJI agreed)[274] but were by the dissenting judge, S.P. Bharucha J.[275] Nevertheless, in the course of judgment, the majority noted the submission of the petitioners that "in cases pertaining to the environment, the onus of proof is on the person who wants to change the status quo and, therefore, it is for the respondents to satisfy the Court that there will be no environmental degradation".[276] The majority dealt with this argument of shifting of the burden of proof and the precautionary principle stating:

> "150. It appears to us that the 'precautionary principle' and the corresponding burden of proof on the person who wants to change the status quo will ordinarily apply in a case of polluting or other project or industry where the extent of damage likely to be inflicted is not known. When there is a state of uncertainty due to lack of data or material about the extent of damage or pollution likely to be caused then, in order to maintain the ecology balance, the burden of proof that the said balance will be maintained must necessarily be on the industry or the unit which is likely to cause pollution. On the other hand where the effect on ecology of environment of setting up of an industry is known, what has to be seen is that if the environment is likely to suffer, then what mitigative steps can be taken to off set the same. Merely because there will be a change is no reason to presume that there will be ecological disaster. It is when the effect of the project is known then the principle of sustainable development would come into play which will ensure that mitigative steps are and can be taken to preserve the ecological balance. Sustainable development means what type or extent of development can take place which can be sustained by nature/ecology with or without mitigation".[277]

In *Sujatha v A. Prema*,[278] the High Court of Kerala, India, considered the precautionary principle in the context of the emission of chemicals from a tyre factroy

[272] AIR 2000 SC 3751 at 3769[14] and 3787[92]-[93].
[273] AIR 2000 SC 3751 at 3787[92].
[274] AIR 2000 SC 3751 at 3795[119], 3804[153]-[154].
[275] AIR 2000 SC 3751 at 3770[20].
[276] AIR 2000 SC 3751 at 3803[147].
[277] AIR 2000 SC 3751 at 3803[150]-3804.
[278] ILR 2005 (3) Kerala 258.

which, according to the petitioner, were creating a health hazard. M. Sasidharan Nambiar J considered the element of the precautionary principle, applied the decision in *Vellore Citizens Wefare Forum v Union of India*,[279] and held that the precautionary principle is "part of the environmental law of this country".[280] Thus, the Court held that the onus of proof was on the tyre company to establish that the functioning of the factory was not causing the nuisance alleged by the petitioner.[281]

# 5. INTERGENERATIONAL AND INTRAGENERATIONAL EQUITY

## 5.1 Concepts of intergenerational and intragenerational equity

Intergenerational equity is an umbrella concept which is based on the premise that "the present generation is required to ensure that the health, diversity and productivity of natural resources are maintained or enhanced for the benefit of future generations".[282] The essence of the concept is summarised by Edith Brown Weiss in the following terms:

> "The proposed theory of intergenerational equity postulates that all countries have an intergenerational obligation to future generations as a class, regardless of nationality…There is increasing recognition that while we may be able to maximise the welfare of a few immediate successors, we will be able to do so only at the expense of our more remote descendents who will inherit a despoiled nature and environment. Our planet is finite, and we are becoming increasingly interdependent in using it. Our rapid technological growth ensures that this dependence will increase. Thus our concern for our own country must, as we extend our concerns into longer time horizons and broader geographical scales, focus on protecting the planetary quality of our natural and cultural environment. This means that, even to protect our own future nationals, we must cooperate in the conservation of natural and cultural resources for all future generations".[283]

Related to intergenerational equity is the concept of intragenerational equity or environmental justice. Intragenerational equity concerns equality within the present generation, such that each member has an equal right to access the earth's natural and

[279] AIR 1996 SC 2715.
[280] ILR 2005 (3) Kerala 258 at [10].
[281] ILR 2005 (3) Kerala 258 at [12].
[282] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 129.
[283] E Brown Weiss, *In Fairness to Future Generations*, UN University Press, 1989 at pp. 26 – 27.

cultural resources. As Weiss Brown argues, members of the present generation have a right of "equitable access to use and benefit from the planet's resources, which derives from the underlying equality all generations have with each other in relation to their use of the natural system".[284] Thus, while intergenerational equity may be viewed by some to be in conflict with achieving intragenerational equity, the two concepts can be consistent and are in fact intertwined. Even members of the present generation who care only about their own descendants will increasingly care about the general environment that will be inherited and, because a healthy environment requires the cooperation of all countries, meeting the needs of developing countries will become part of the pursuit of intergenerational equity.[285]

The concepts of intergenerational and intragenerational equity are an integral element of ecologically sustainable development, and have been incorporated into international law as such. The 1975 *Charter of Economic Rights and Duties of States* declared that:

> "The protection, preservation and enhancement of the environment for the present and future generations is the responsibility of all States. All States shall endeavour to establish their own environmental and developmental policies in conformity with such responsibility. The environmental policies of all States shall enhance and not adversely affect the present and future development potential of developing countries".[286]

Similarly, the concepts of intergenerational and intragenerational equity are enshrined in Principle 3 of the 1992 *Rio Declaration* which provides that:

> "the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations".

However, as Wirth notes, these two approaches are somewhat divergent. In the earlier instrument, the necessity of preserving environmental values in their own right for the benefit of future generations is recognised. However, the *Rio Declaration* uses the

[284] E Brown Weiss, "Intergenerational Equity: a legal framework for global environmental change" in E Brown Weiss (ed) *Environmental Change and International Law: New Challenges and Dimensions*, UN University Press, 1992, p. 385 at p. 397.
[285] E Brown Weiss, "Intergenerational Equity: a legal framework for global environmental change" in E Brown Weiss (ed) *Environmental Change and International Law: New Challenges and Dimensions*, UN University Press, 1992, p. 385 at pp. 397–398.
[286] *Charter of Economic Rights and Duties of States*, G.A Res. 3281, 1975: Article 50.

term “environmental needs” which is ambiguous and seems to require a narrower obligation.[287]

## 5.2 Fundamental principles of intergenerational equity

There are three fundamental principles which form the basis of intergenerational equity, and hence are integral to sustainable development. First, the “conservation of options” principle requires each generation to conserve the diversity of the natural and cultural resource base in order to ensure that options are available to future generations for solving their problems and satisfying their needs. Second, the “conservation of quality” principle holds that each generation must maintain the quality of the earth such that it is passed on in no worse condition than in which it was received. Third, the “conservation of access” principle provides that each generation should give its members “equitable rights of access to the legacy of past generations and should conserve this access for future generations”.[288]

These principles have been explored and expanded upon by Edith Brown Weiss, and may be summarised as follows:

i) *Conservation of options*

This principle rests on the premise that diversity contributes to robustness. It is argued that while diversity may lead to change in the biological population, biodiverse ecosystems will remain robust. Thus, destructive activities such as clear-cutting tropical trees, developing crop monocultures and exhausting non-renewable resources such as oil must be avoided to ensure that future generations have a diverse natural and cultural resource base comparable to the status quo. Future generations are

[287] D A Wirth, “The Rio Declaration on Environment and Development: Two steps forward and one back, or vice versa?” (1995) 29 *Georgia Law Review* 599 at 628-629.
[288] E Brown Weiss, “Intergenerational Equity: a legal framework for global environmental change” in E Brown Weiss (ed) *Environmental Change and International Law: New Challenges and Dimensions*, UN University Press, 1992, p. 385 at p. 401.

more likely to survive, attain their goals and be capable of solving problems that may arise if they have a variety of options available.[289]

ii) *Conservation of quality*

This principle requires that the present generation leave the quality of the natural and cultural environments in at least the same condition as they were received. It is foreseeable that the environment will change, and trade-offs may be inevitable. For example, using non-renewable natural resources and causing some pollution may be permissible provided higher levels of capital and knowledge are passed on to future generations to find substitutes and solutions.[290]

iii) *Conservation of access*

This principles holds that the present generation should have a reasonable and equitable right of access to the natural and cultural resources of the earth. Provided that they uphold their duties to the future generations, each member of the present generation ought to be entitled to the resources that would improve their own economic and social well-being. In this way, this principle of intergenerational equity encompasses the concept of intragenerational equity.[291]

## 5.3 Guidelines for implementing intergenerational equity

To determine whether a decision is likely to be consistent with the principles of intergenerational equity, specific guidelines for implementation need to be established. Young argues that governments "will need to rely on a wide range of policy approaches and institutional arrangements that are conducive to the

[289] E Brown Weiss, "Intergenerational Equity: a legal framework for global environmental change" in E Brown Weiss (ed) *Environmental Change and International Law: New Challenges and Dimensions*, UN University Press, 1992, p. 385 at pp. 402–404.
[290] E Brown Weiss, "Intergenerational Equity: a legal framework for global environmental change" in E Brown Weiss (ed) *Environmental Change and International Law: New Challenges and Dimensions*, UN University Press, 1992, p. 385 at pp. 404–405.
[291] E Brown Weiss, "Intergenerational Equity: a legal framework for global environmental change" in E Brown Weiss (ed) *Environmental Change and International Law: New Challenges and Dimensions*, UN University Press, 1992, p. 385 at p. 405.

maintenance of intergenerational equity".[292] Young suggests a number of methods of implementation that may be adopted including:

i) *A strategic or anticipatory approach*: governments should develop national and regional strategies that identify national constraints necessary to prevent irreversible damage, maintain opportunity sets and prevent serious environmental damage.[293]

ii) *Step-wise or adaptive management*: in relation to strategies that are developed, it is important to proceed cautiously and leave some margin for error until all consequences of a decision are known to prevent the incurrence of unexpected future costs.[294]

iii) *Project assessment*: use traditional cost-benefit analysis in combination with other methods which take account of ecological and ethical constraints such that all projects separate economic efficiency, environmental integrity and equity tests.[295]

iv) *Offset projects and countervailing policies*: in situations where the likelihood of long-term costs is uncertain, environmental assurance bonds and other policies can be used to ensure that future generations can afford to repair unforeseen damage and that firms have an incentive to avoid causing them.[296]

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[292] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 139.
[293] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at pp. 139–140.
[294] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at pp. 140–141.
[295] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at pp. 141–143.
[296] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 143.

v) *Community consultation and education*: citizen-based decision-making is of great importance and can include opportunities to appoint people to represent future generations. For example, an ombudsman could be appointed to represent the interests of future nationals.[297]

vi) *The setting of safe minimum standards*: this is necessary to ensure that risks are kept within acceptable limits. Typically, national standards should be set to leave room for some variation to account for local differences.[298]

vii) *Making macroeconomic policy ESD consistent*: when preceded by appropriate microeconomic reforms, low real interest rates (market interest rates minus the inflation rate) encourage the investment necessary to increase per capita welfare and redirect investment in more sustainable directions.[299]

viii) *Improving and re-directing research*: improving research will play an important role in reducing uncertainty and providing foresight.[300]

ix) *A "whole of life cycle" management approach*: the pursuit of resource-conserving and waste-minimising technologies will lessen the present generation's dependence on non-renewable resources and increase the opportunities available to future generations. Whole of life cycle management policies include deposit schemes and the introduction of resource severance taxes.[301]

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[297] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 143.
[298] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 144.
[299] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at pp. 145–146.
[300] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 146.
[301] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 147.

x) *Extending markets where possible*: market mechanisms and resource-right systems such as licences that allocate resources efficiently and within ecologically sustainable limits are more likely to achieve the objectives of ecologically sustainable development, including intergenerational equity, than taxation and price mechanisms.[302]

xi) *Shifting the onus of responsibility*: as is the case with the implementation of the precautionary principle, shifting the burden of proof from the government or decision-maker to the party seeking to alter the status quo may be an effective method of achieving the goals of intergenerational equity.[303]

xii) *Improving pricing*: the implementation of "user pays" and "polluter-pays" principles will enhance pricing arrangements to better incorporate social and environmental costs and lessen the need for government intervention in pursuing intergenerational equity.[304]

xiii) *Modifying land use planning and zoning instruments*: land use planning and zoning instruments can be used to implement safe-minimum standards and facilitate an adaptive approach to management.[305]

xiv) *Monitoring success*: periodic reviews can be used to assess the degree to which the above methods are being implemented and track changes in desired outcomes. However, it is important that monitoring methods promote anticipatory rather than reactionary planning.[306]

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[302] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 147.
[303] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at pp. 147–148.
[304] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 148.
[305] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 148.
[306] M D Young, "The Precautionary Principles as a Key Element of Ecologically Sustainable Development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 149.

## 5.4 Judicial decisions

### 5.4.1 Intergenerational equity

In the landmark decision of the Supreme Court of the Philippines, *Minors Oposa v Secretary of the Department of Environment and Natural Resources*,[307] the plaintiffs were minors represented by their parents. They sought an order that the government discontinue existing and further timber licence agreements, alleging that deforestation was causing environmental damage. The government argued that the plaintiffs had failed to state a cause of action, that the issues raised were non justiciable and political and that the existing licences could not be cancelled without violating due process of law. The trial court upheld the government's contentions and dismissed the complaint. The plaintiffs filed an action for certiorari asking the Supreme Court to rescind and set aside the dismissal order.

The Supreme Court first dealt with certain procedural matters, including the standing of the minors to bring the proceedings. The Supreme Court held that the case brought by the plaintiffs constituted a class suit, not merely because the plaintiffs were numerous and representative enough to ensure the full protection of all concerned interests but also because the plaintiffs represented present and future generations:

> "We find no difficulty in ruling that they can, for themselves, for others of their generation and for the succeeding generations, file a class suit. Their personality to sue on behalf of the succeeding generations can only be based on the concept of intergenerational responsibility insofar as the right to a balanced and healthful ecology is concerned. Such a right, as hereinafter expounded, considers the 'rhythm and harmony of nature'. Nature means the created world in its entirety. Such rhythm and harmony indispensably include *inter alia*, the judicious disposition, utilization, management, renewal and conservation of the country's forest, mineral, land, waters, fisheries, wildlife, off-shore areas and other natural resources to the end that their exploration, development and utilization be equitably accessible to the present as well as future generations. Needless to say, every generation has a responsibility to the next to preserve that rhythm and harmony for the full enjoyment of a balanced and healthful ecology. Put a little differently, the minors assertion of their right to a sound environment constitutes, at the same time, the performance of their obligation to ensure the protection of that right for the generations to come".[308]

[307] 33 ILM 173 (1994).
[308] 33 ILM 173 (1994) at 185 per Davide J.

Having determined that the plaintiffs had standing to bring the proceedings, the Supreme Court addressed the substantive issues. The Supreme Court found that the trial court was in error in holding that the plaintiffs had failed to allege a specific legal right involved or a specific legal wrong committed.[309]

The Supreme Court found that the complaint focused on a specific fundamental legal right, the right to a balanced and healthful ecology, incorporated in the fundamental constitutional law.[310] The right to a balanced and healthful ecology carries with it the correlative duty to refrain from impairing the environment.[311] A denial or violation of the plaintiffs' right to a balanced and healthful ecology by the government who has the correlative duty or obligation to respect or protect the same gave rise to a cause of action.[312]

The Supreme Court therefore granted the petition and reversed the trial court's order dismissing the complaint.

In India, in *State of Himachal Pradesh v Ganesh Wood Products*,[313] a writ petition was filed seeking issuance of a writ restraining the government of the State of Himachal Pradesh from permitting the establishment of any factory units for the manufacture of Katha in the State. Katha is derived from the Khair tree which are found in considerable numbers in the State. Only the central portion of the trunk of the Khair tree is used for the manufacture of Katha. Hence, the manufacture of Katha requires the cutting of the Khair trees. The ground for seeking the writ was that the establishment of Katha manufacturing units would lead to indiscriminate felling of Khair trees which would have a deep and adverse effect upon the environment and ecology of the State.[314]

[309] 33 ILM 173 (1994) at 186 and 187.
[310] Section 16, Article II of the 1987 Constitution. See 33 ILM 173 (1994) at 187.
[311] 33 ILM 173 (1994) at 188.
[312] 33 ILM 173 (1994) at 191.
[313] AIR 1996 SC 149.
[314] AIR 1996 SC 149 at 152[10].

The Supreme Court of India (B.P Jeevan Reddy J and M.K. Mukherjee J) in a judgement delivered by B P Jeevan Reddy J upheld the appeal. The Supreme Court stated that:

> "The considerations of environment and ecology and preservation of forest wealth are absolutely relevant considerations which the Government must keep in mind while devising its policies and programmes".[315]

The Supreme Court upheld the applicability and significance of the concept of sustainable development. The Court cited from the *Our Common Future* report,[316] the 1972 Stockholm Conference[317] and E.F Schumacher's book, *Small is beautiful – a study of economics as if people mattered*.[318]

The Supreme Court then emphasised the significance of the concepts of sustainable development and intergenerational equity. As to the latter, the Supreme Court said:

> "Intergenerational equity means the concern for the generations to come. The present generation has no right to impede the safety and well being of the next generation or the generation sot come thereafter".[319]

The Supreme Court found the actions of the relevant government body to approve any and every proposal that came before it, on the assumption that so long as there is no commitment on the part of the Government to supply Khair wood to the proposed factories there is no harm, to be "a totally faulty and a myopic approach". It not only violated relevant and National and State Forest Policies, it was also:

> "contrary to public interest involved in preserving forest wealth, maintenance of environment and ecology and considerations of sustainable growth and inter-generational equity. After all, the present generation has no right to deplete all the existing forests and leave nothing for the next and future generations. Not keeping the above considerations in mind, it is obvious, has vitiated the approvals granted by the sub-committee of IPARA – apart from the fact that it was not empowered to grant any such approval. The obligation of sustainable development requires that a proper assessment should be made of the forest wealth and the establishment of industries based on forest produce should not only be restricted accordingly but their working should also be monitored closely to ensure that the required balance is not disturbed".[320]

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[315] AIR 1996 SC 149 at 158[36].
[316] AIR 1996 SC 149 at 158[37]-159[38].
[317] AIR 1996 SC 149 at 159[39].
[318] AIR 1996 SC 149 at 159[40].
[319] AIR 1996 SC 149 at 159[42].
[320] AIR 1996 SC 149 at 163[51]-164.

5.4.2 Intragenerational equity or environmental justice

In India, the principle of intragenerational equity and environmental justice has been judicially recognised in a number of cases.

In *Ratlam Municipality v Vardhichand*,[321] residents of a locality within the municipality of Ratlam were tormented by the stench and stink caused by open drains and public excretion by nearby slum-dwellers. They moved the Magistrate under s 133 of the *Criminal Procedure Code* to require the Municipality to fulfil its duty to members of the public. The Magistrate gave directions to the Municipalitiy to draft a plan for removing the nuisance within six months. On appeal, the Sessions Court reversed the order. The High Court approved of the order of the Magistrate. On further appeal, the Supreme Court (V.R. Krishna Iyer, O. Chinnapa and Reddy JJ) also affirmed the Magistrate's order.

Krishna Iyer J, who delivered the judgement of the Supreme Court, emphasised that the role of the court is to deliver social justice, regardless of wealth or social standing. In an environmental context, all persons have a right to a clean and healthy environment. Krishna Iyer J stated:

> "15. Public nuisance, because of pollutants being discharged by big factories to the detriment of the poorer sections, is a challenge to the social justice component of the rule of law. Likewise, the grievous failure of local authorities to provide the basic amenity of public conveniences drives the miserable slum-dwellers to ease in the streets, on the sly for a time, and openly thereafter, because under Nature's pressure, bashfulness becomes a luxury and dignity a difficult art. A responsible municipal council constituted for the precise purpose of preserving public health and providing better finances cannot run away from its principal duty by pleading financial inability. Decency and dignity are non-negotiable facets of human rights and are a first charge on local self-governing bodies. Similarly, providing drainage systems – not pompous and attractive, but in working condition and sufficient to meet the needs of the people – cannot be evaded if the municipality is to justify its existence. A bare study of the statutory provisions makes this position clear.
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> 16. In this view, the Magistrate's approach appears to be impeccable although in places he seems to have been influenced by the fact that 'cultured and educated people' live in this area and 'New Road, Ratlam is a very important road and so many prosperous and educated persons

[321] AIR 1980 SC 1622.

> are living on this road'. In India 'one man one value' is the democracy of remedies and rich or poor the law will call to order where people's rights are violated…".[322]

In *Rural Litigation and Entitlement Kendera v State of Uttar Pradesh,*[323] the petitioners were rural villagers concerned about the unauthorised and illegal mining of limestone in the Mussorie-Dehradun belt in the State of Uttar Pradesh which adversely affected the ecology of the area and led to environmental disorder. The mining also adversely affect the villagers.

A letter written by the petitioners to the Supreme Court of India in 1983 was directed to be registered as a writ petition under Article 32 of the Indian Constitution and notice was ordered to the State of Uttar Pradesh and the Collector of Dehradun.[324]

Over time, the public interest litigation expanded. The number of parties increased to include the Governments of the Union of India and of Uttar Pradesh, several government agencies and mining lessees. The Supreme Court appointed various Committees which inspected the mines and reported to the Supreme Court. There were many affidavits and lengthy arguments at the Bar.[325]

In 1985, the Supreme Court ordered the closure of the worst category of mines in terms of environmental damage (category C) as well as a number of the middle category of mines (category B) on a permanent basis. The Supreme Court directed the balance of mines in the middle category (category B) and the mines in the remaining category (category A) be subject to further enquiry and report by a Committee to the Supreme Court.[326]. The Committee so enquired and reported.[327]

In 1987, the Supreme Court found that limestone quarrying in the Doon Valley area should be stopped and directed the closure of three operating mines.[328] The Supreme Court exempted some category A mines from further scrutiny but did not release them

[322] AIR 1980 SC 1622 at 1629[15]-[16].
[323] AIR 1988 SC 2187.
[324] AIR 1988 SC 2187 at 2189[1].
[325] AIR 1988 SC 2187 at 2189[1].
[326] AIR 1988 SC 2187 at 2189[3]-2190[4].
[327] AIR 1988 SC 2187at 2191[6]-2193[7].
[328] AIR 1988 SC 2187 at 2193[12]-[13].

from the proceedings.[329] The Court also directed the Union of India to file further affidavits:

> "…as to whether keeping the principles of ecology, environmental protection and safeguards and anti-pollution measures, it is in the interest of the Society that the requirements should be met by import or by taking other alternate indigenous sources or mining activity in this area should be permitted to a limited extent. The Court expects the Union of India to balance these two aspects and place on record its stand not as a party to the litigation but as a protector of the environment in discharge of its statutory and social obligation for the purpose of consideration of the Court…".[330]

In 1988, the Supreme Court considered the further evidence and gave reasoning for its conclusion that mining in the Doon Valley area should be stopped.[331] The Supreme Court surveyed the ecological consequences of mining of the limestone deposits and noted:

> "21. The Doon Valley lime stone deposits are a gift of nature to mankind. Underneath the soil cover there is an unseen storehouse of bounty almost everywhere. Similarly forests provide the green belt and are a bequest of the past generations to the present. Limestone deposits if excavated and utilised get exhausted while if forests are exploited, there can be regeneration provided reforestation is undertaken. Trees however take time to grown and ordinarily a 15 to 25 year period is necessary for such purpose".[332]

The Supreme Court held:

> "We are also satisfied that if mining activity even to a limited extent is permitted in future, it would be not congenial to ecology and environment and the natural calm and peace which is a special feature of this area in its normal condition shall not be restored. This tourist zone in its natural setting would certainly be at its best if its serenity is restored in the fullest way. We are of the considered opinion that mining activity in this Valley must be completely stopped but as indicated in another part of this judgement such a situation will be available only after the original leases of the working mines are over".[333]

The Court described the ecological and utilitarian benefits of the forests of the area:

> "24. It is time to turn to the contention relating to forests. Air and water are the most indispensable gifts of Nature for preservation of life. Abundant sunshine together with adequate rain keeps Nature's generating force at work. Human habitations all through the ages has thrived on riverbanks and in close proximity of water sources. Forests have natural growth of herbs which provide cure for diseases. Our ancestors knew that trees were friends of

[329] AIR 1988 SC 2187 at 2193[14]-2194.
[330] AIR 1988 SC 2187 at 2196[22]-2197.
[331] AIR 1988 SC 2187 at 2195[18].
[332] AIR 1988 SC 2187 at 2196[21].
[333] AIR 1988 SC 2187 at 2197[23].

mankind and forests were necessary for human existence and civilization to thrive. It is these forests that provided shelter for the 'Rishies' and accommodated the ancient 'Gurukulas'. They too provided food and sport for our forefathers living in the State of Nature. That is why there is copious reference to forests in the Vedas and the ancient literature of ours. In ancient times trees were worshiped as gods and prayers for up-keep of forests were offered to the Divine. In the Artharva Veda (5.30.6) it has been said:

> 'Man's paradise is on earth: This living world is the beloved place of all; it has the blessing of Nature's bounties: Live in a lovely spirit'.

25. In due course civilization developed and men came to live away from forests. Yet the human community depended heavily upon the forests which caused rains and provided timber, fruits, herbs and sports. With sufficient sunshine and water there was luxuriant growth of forests in the tropical and semi-tropical zones all over the globe. Then came the age of science and outburst of human populations. Man required more space for living as also for cultivation as well as more of timber. In that pursuit the forests were cleared and exploitation was arbitrary and excessive; the deep forests were depleted; consequently rainfall got reduced; soil erosion took place. The earth crust was washed away and places like Cherapunji in Assam which used to receive an average annual rainfall of 500 inches suffered occasional drought.

26. Scientists came to realise that forests play a vital role in maintaining the balance of the ecological system. They came to know that forests preserve the soils and heavy humus acts as a porous reservoir for retaining water and gradually releasing it in a sustained flow. The trees in the forest draw water from the bowls of the earth and release the same into the atmosphere by the process of transpiration and the same is received back by way of rain as a result of condensation of clouds formed out of the atmospheric moisture. Forests thus help the cycle to be completed. Trees are responsible to purify the air by releasing oxygen into the atmosphere through the process of photosynthesis. It has, therefore, been rightly said that there is a balance on earth between air, water, soil and plant. Forests hold up the mountains, cushion the rains and they discipline the rivers and control the floods. They sustain the springs; they break the winds; they foster the bulks; they keep the air cool and clean. Forests also prevent erosion by wind and water and preserve the carpet of the soil".[334]

The Supreme Court described the environmental consequences caused by the excessive exploitation and clearing of the forests.[335] The Supreme Court summarised the response of the legislature and executive of the Union and the State of Uttar Pradesh to the problem.[336]

[334]AIR 1988 SC 2187 at 2197[24]–2198[26].
[335] AIR 1988 SC 2187 at 2198[27]–2199[30].
[336] AIR 1988 SC 2187 at 2199[31]-2200[35].

The Supreme Court considered the mines that were operating in reserved forests. The Supreme Court held that:

> "To these areas the Forest Conservation Act applies and to the allow mining in these areas even under strictest control as a permanent feature would not only be violative of the provision of Forest (Conservation) Act but would be detrimental to restoration of the forest growth in a natural way in this area. Once the importance of forests is realised and as a matter of national policy and in the interests of the community, preservation of forests is accepted as the goal, nothing which would detract from that end should be permitted. In such circumstances we reiterate our conclusion that mining in this area has to be totally stopped".[337]

The Supreme Court then considered the position of three category A mines. The Supreme Court considered that they could be allowed to continue mining operations on appropriate conditions. The Court considered that the conditions should include the giving of an undertaking to a Monitoring Committee that "all care and attention shall be bestowed to preserve ecological and environmental balance while carrying on mining operations" and that "25% of the gross profits of the three mines shall be credited to the Fund in Charge of the Monitoring Committee in such manner as the Committee may direct and the Committee shall ensure maintenance of ecology and environment as also reforestation in the area of mining by expending money from the fund".[338]

The Supreme Court's decision, therefore, addressed both intergenerational equity and intragenerational equity for the affected villagers in the valley.

# 6. CONSERVATION OF BIOLOGICAL DIVERSITY AND ECOLOGICAL INTEGRITY

## 6.1 Concept

The elements of sustainable development of the precautionary principle and intergenerational equity, properly applied, will operate to conserve biological diversity and ecological integrity[339]. Nevertheless, the conservation of biological

[337] AIR 1988 SC 2187 at 2206[46].
[338] AIR 1988 SC 2187 at 2209[57].
[339] See generally on the role of the precautional principle in the conservation of biological diversity, R. Cooney and B. Dickson (eds), *Biodiversity and the Precautionary Principle Risk and Uncertainty in Conservation and Sustainable Use*, Earthscan, 2005.

diversity and ecological integrity are independently stated to be an element of ecologically sustainable development in their own right.

There are three aspects to biological diversity. First, genetic diversity refers to the totality of chromosomal information contained in the genes of plants and animals. Secondly, species diversity refers to the variety of living organisms on earth. Thirdly, ecosystem diversity is the diversity of habitats and biotic communities that exist on earth.[340]

In relation to ecological integrity, Moffet and Bregha define the term as "the conservation of the earth's life-support systems".[341] These systems involve processes which "shape climate, cleanse air and water, regulate water flow, recycle essential elements, create and regenerate soil, and enable ecosystems to renew themselves".[342] Thus, the ability of the environment to act as a provider of inputs and as a "sink" for wastes must be maintained and preserved.[343]

In Australia, one of the core objectives of the *National Strategy for Ecologically Sustainable Development* is "to protect biological diversity and maintain essential ecological processes and life-support systems". At the national level, this objective was complemented in 1996 by the adoption of the *National Strategy for the Conservation of Australia's Biological Diversity* (*National Biodiversity Strategy*) which was prepared by the Australian and New Zealand Environment and Conservation Council, in collaboration with a number of other government authorities. The *National Biodiversity Strategy* adopts a number of important principles that are intended to be used as a guide for implementation. They are that:

" 1. Biological diversity is best conserved in-situ.
2. Although all levels of government have clear responsibility, the cooperation of conservation groups, resource users, indigenous

[340] These aspects are discussed in J Moffet and F Bregha, "The Role of Law in the Promotion of Sustainable Development" (1996) 6 *Journal of Environmental Law and Practice* 1 at 5.
[341] J Moffet and F Bregha, "The Role of Law in the Promotion of Sustainable Development" (1996) 6 *Journal of Environmental Law and Practice* 1 at 4.
[342] IUCN, UNEP, WWF, *Caring for the Earth: A Strategy for Sustainable Living*, Oxford University Press, 1992 at p. 9, as quoted in J Moffet and F Bregha, "The Role of Law in the Promotion of Sustainable Development" (1996) 6 *Journal of Environmental Law and Practice* 1 at 4.
[343] J Moffet and F Bregha, "The Role of Law in the Promotion of Sustainable Development" (1996) 6 *Journal of Environmental Law and Practice* 1 at 4.

peoples, and the community in general is critical to the conservation of biological diversity.

3. It is vital to anticipate, prevent and attack at source the causes of significant reduction or loss of biological diversity.
4. Processes for and decisions about the allocation and use of Australia's resources should be efficient, equitable and transparent.
5. Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity.
6. The conservation of Australia's biological diversity is affected by international activities and requires actions extending beyond Australia's national jurisdiction.
7. Australians operating beyond our national jurisdiction should respect the principles of conservation and ecologically sustainable use of biological diversity and act in accordance with any relevant national or international laws.
8. Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource production systems.
9. The close, traditional association of Australia's indigenous peoples with components of biological diversity should be recognised, as should the desirability of sharing equitably benefits arising from the innovative use of traditional knowledge of biological diversity."[344]

In New South Wales, the conservation of biological diversity is specified as an object of a number of pieces of legislation including the *National Parks and Wildlife Act* 1974 (NSW)[345] and the *Threatened Species Conservation Act* 1995 (NSW).[346] Section 4(1) of the *Threatened Species Conservation Act* 1995 (NSW) defines biological diversity as "the diversity of life" made up of:

" (a) genetic diversity – the variety of genes (or units of heredity) in any population,

(b) species diversity – the variety of species,

(c) ecosystem diversity – the variety of communities or ecosystems".[347]

In 1999, the *NSW Biodiversity Strategy* was launched. The strategy has a statutory basis[348] and "proposes a framework for coordinating and integrating government and

[344] "Principles" in *National Strategy for the Conservation of Australia's Biological Diversity*: "Principles". The Strategy can be accessed via http://www.deh.gov.au/biodiversity/publications/strategy/goal.html#princ
[345] *National Parks and Wildlife Act* 1974 (NSW): Section 2A.
[346] *Threatened Species Conservation Act* 1995 (NSW): Section 3.
[347] *Threatened Species Conservation Act* 1995 (NSW): Section 4(1).

community efforts (in relation to biodiversity conservation), ensuring that all available resources are efficiently and effectively applied".[349]

*Agenda 21*, the worldwide programme for sustainable development, deals expressly with the conservation of biological diversity in Chapter 15. The objectives and activities stated are intended to improve the conservation of biological diversity and the sustainable use of biological resources, as well as support the *Convention on Biological Diversity*.[350]

The *Convention on Biological Diversity* emphasises the role of the conservation of biological diversity in sustainable development. In the Preamble, the recitals state:

- "the importance of biological diversity for evolution and for maintain life sustaining systems of the biosphere";
- " states are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner";
- "conservation and sustainable use of biological diversity is of critical importance for meeting the food, health and other needs of the growing world population, for which purpose access to an sharing of both genetic resources and technologies are essential"; and
- "conserve and sustainably use biological diversity for the benefit of present and future generations".[351]

Article 6 of the *Convention on Biological Diversity* states the general measures for conservation and sustainable use:

> "Each Contracting Party shall, in accordance with its particular conditions and capabilities:
>
> (a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and

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[348] *Threatened Species Conservation Act* 1995 (NSW): Section 140.
[349] *NSW Biodiversity Strategy* at p. 3. The NSW Strategy can be accessed via http://www.nationalparks.nsw.gov.au/PDFs/BIO.pdf
[350] *Agenda 21*: Chapter 15, para 15.1.
[351] *Convention on Biological Diversity*, 1992. Reprinted in 31 ILM 822 (1992).

(b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross sectoral plans, programmes and policies".[352]

Article 10 deals with the sustainable use of components of biological diversity including requiring each Contracting Party to:

" (a) Integrate consideration of the conservation and sustainable use of biological resources into national decision making; and
(b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity…".[353]

Steps to conserve biodiversity can ultimately only succeed and endure in the larger context of a worldwide transition towards sustainable living. *Caring for the Earth: A Strategy for Sustainable Living*[354] identified principles for building a sustainable society. One of those principles was to conserve Earth's vitality and diversity:

> "Development must be conservation based: It must protect the structure, functions and diversity of the world's natural systems on which our species depends".[355]

## 6.2 Judicial decisions

This fundamental element of sustainable development has been recognised in a number of decisions concerning proposed developments or actions that may have a detrimental impact on certain ecological communities.

In *Corkill v Forestry Commission of New South Wales*,[356] the Forestry Commission of New South Wales had granted licences to three logging contractors to carry out a number of operations in forest areas which contained, or were likely to contain, over 30 different species of fauna protected under the *National Parks and Wildlife Act* 1974 (NSW). The applicant claimed the respondents were in breach of s 98 and s 99 of the *National Parks and Wildlife Act* 1974 (NSW) which provided that it was an offence to take or kill any protected or endangered fauna. Stein J of the Land and

[352] *Convention on Biological Diversity*, 1992: Article 6. Reprinted in 31 ILM 822 (1992).
[353] *Convention on Biological Diversity*, 1992: Article 10. Reprinted in 31 ILM 822 (1992).
[354] IUCN, UNEP, WWF, *Caring for the Earth: A Strategy for Sustainable Living*, Oxford University Press, 1992.
[355] See also WREI, IUCN, UNEP, *Global Biodiversity Strategy: Guidelines for Action to Save, Study and Use Earth's Biotic Wealth Sustainability and Equitably*, 1992, pp. 20-21.
[356] (1991) 73 LGRA 126.

Environment Court of NSW held that s 98 and s 99 of the *National Parks and Wildlife Act* 1974 (NSW) were not constrained to the direct and intended consequences of conduct constituting the taking or killing of fauna. In particular, Stein J discussed the meaning of the term "disturb" in the definition of "take" in s 5 of the *National Parks and Wildlife Act* 1974 (NSW). His Honour held that "disturb":

> "covers conduct which modifies habitat in a significant fashion thus placing the species of fauna under threat by adversely affecting essential behavioural patterns relating to feeding, breeding or nesting. In other words, it includes habitat destruction or degradation which disturbs an endangered or protected species by adverse impact upon it leading immediately or over time to a reduced population".[357]

Stein J's wholistic reasoning is consistent with the principle of the conservation of biological diversity and ecological integrity. The proposed logging operations were found to constitute an imminent breach of s 98 and s 99 of the *National Parks and Wildlife Act* 1974 (NSW) in relation to the many species of endangered and protected species of fauna.[358] Stein J's decision was upheld by the New South Wales Court of Appeal.[359]

The case of *Leatch v National Parks and Wildlife Service*[360] has been discussed above in relation to the precautionary principle. In refusing to grant a licence to Shoalhaven City Council under s 120 of the *National Parks and Wildlife Act* 1974 (NSW), Stein J of the Land and Environment Court of NSW recognised the importance of preserving biological diversity and ecological integrity, holding that:

> "consideration of the state of knowledge or uncertainty regarding a species, the potential for serious or irreversible harm to an endangered fauna and the adoption of a cautious approach in protection of endangered fauna is clearly consistent with the subject matter, scope and purpose of the Act".[361]

In *Booth v Bosworth*,[362] the Federal Court of Australia was concerned with whether the operation of electric grids had or was likely to have a significant impact on the world heritage values of the Wet Tropics World Heritage Area in north Queensland. The grids were being used by a farmer to electrocute thousands of Spectacled Flying

[357] (1991) 73 LGRA 126 at 139–140.
[358] (1991) 73 LGRA 126 at 161.
[359] *Forestry Commission of New South Wales v Corkill* (1991) 73 LGRA 247 per Mahoney AP, Meagher and Handley JJA.
[360] (1993) 81 LGERA 270.
[361] (1993) 81 LGERA 270 at 282-283.
[362] (2001) 117 LGERA 168.

Foxes, purportedly to protect his lychee crop. The species lives in the rainforests of north-eastern Queensland, and is considered important for seed disperal, evolutionary processes and general ecological function within the rainforest.[363] Following the refusal of the farmer to cease electrocuting the flying foxes, the applicant sought an injunction under s 475 of the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth).

As the case consituted the first full trial under the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth), Justice Branson of the Federal Court of Australia took the opportunity to explore, inter alia, the meaning of "likely to have", "significant impact" and "world heritage values" under the Act. The acknowledgement of the importance of biological diversity and ecological intergrity is implicit in her decision. In the result, Justice Branson granted the injunction, holding that:

> "the disppearance of the Spectacled Flying Fox from the Wet Tropics World Heritage Area, or an appeciable reduction in the numbers of Spectacled Flying Foxes within the Wet Tropics World Heritage Area, would impact on the World Heritage Values of the area. Either such event would tend to detract from the biological diversity of the area and from the importance and significance of the habitats contained within it for in-situ conservation of biological diversity. Further, I am satisifed that the disppearance of the Spectacled Flying Fox from the Wet Tropics World Heritage Area, or a dramatic reduction in its numbers in the area, would detract from the record contained in that area of the mixing of the faunas of the Australian and Asian continental plates".[364]

In *BGP Properties Pty Limited v Lake Macquarie City Council*,[365] as has been discussed above in relation to the precautionary principle, McClellan CJ held that the principles of ecologically sustainable development, including the conservation of biological diversity and ecological integrity, must be taken into account by decision-makers where relevant issues arise pursuant to s 79C(1)(e) of the *Environmental Planning and Assessment Act* 1979 (NSW).[366]

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[363] G Richards, "The Spectacled Flying-fox, *Pteropus conspicillatus* (Chiroptera: Pteropodidae), in north Queensland" (1990) 13 *Australian Mammalogy* 25.
[364] (2001) 117 LGERA 168 at 194[103].
[365] (2004) 138 LGERA 237.
[366] (2004) 138 LGERA 237 at 262.

This approach was followed by Pain J of the Land and Environment Court of New South Wales in the recent case of *BT Goldsmith Planning Services Pty Limited v Blacktown City Council*.[367] The case concerned whether a species impact statement in accordance with the *Threatened Species Conservation Act* 1995 (NSW) was required to accompany a development application pursuant to s 78A(8)(b) of the *Environmental Planning and Assessment Act* 1979 (NSW). The site in question was predominantly covered by Cumberland Plain Woodland which was classified as an endangered ecological community under the *Threatened Species Conservation Act* 1995 (NSW). Although the case concerned a different issue, Pain J agreed with McClellan CJ's interpretation of the principles of ecologically sustainable development set out in *BGP Properties Pty Limited v Lake Macquarie City Council*.[368] Her Honour found that the objectives of the *Threatened Species Conservation Act* 1995 (NSW), as well as the principles of ecologically sustainable development "need to be kept in mind when considering issues such as whether a SIS [species impact statement] is required".[369] Relevantly, Pain J held that in this case, the precautionary principle and the conservation of biological diversity and ecological integrity were "particularly pertinent".[370]

While recognising that it was "necessary to rely on incomplete or out of date data in relation to the assessment of conservation value and scarcity of 'prime' CPW [Cumberland Plain Woodland], and the vulnerability of CPW",[371] Pain J took a precautionary approach and held that a species impact statement, the purpose of which was to prevent or reduce the likelihood of environmental degradation, was required to accompany the development application.[372]

[367] [2005] NSWLEC 210 (1 July 2005).
[368] (2004) 138 LGERA 237.
[369] [2005] NSWLEC 210 (1 July 2005) at [57].
[370] [2005] NSWLEC 210 (1 July 2005) at [57].
[371] [2005] NSWLEC 210 (1 July 2005) at [88].
[372] [2005] NSWLEC 210 (1 July 2005) at [92].

# 7. INTERNALISATION OF ENVIRONMENTAL COSTS AND IMPROVED VALUATION AND PRICING

## 7.1 Concepts of the user-pays and polluter-pays principles

Ecologically sustainable development involves the internalisation of environmental costs into decision making for policies and activities likely to affect the environment. This requires accounting for both the short-term and long-term external environmental impacts of development[373] and can be undertaken in a variety of ways including:

- environmental factors should be reflected in the valuation of assets and services;
- polluter pays i.e. those who generate pollution and waste should bear the cost of containment, avoidance, or abatement;
- the users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes; and
- environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.[374]

The rationale underlying the internalisation of environmental costs is that if the real value of the environment, and components of it, are reflected in the costs of using it, the environment will be sustainably used and managed and not exploited wastefully.

The concept can be expressed in the form of a "user pays" principle and a "polluter pays" principle.

The user pays principle requires that those who benefit from investment should pay for its creation. Young observes that:

[373] J Moffet and F Bregha, "The Role of Law in the Promotion of Sustainable Development" (1996) 6 *Journal of Environmental Law and Practice*1 at 7.
[374] See *Intergovernmental Agreement on the Environment*, 1992: Section 3.5.4.

> "When users have to pay for infrastructure and investment costs there is less risk of poor investments being used as an indirect means to develop marginal resources.
>
> In most cost-benefit analysis the costs of previous investments are regarded as 'sunk' costs to be excluded from the analysis. As history illustrates vividly, sunk government subsidises to promote the construction of roads, dams and railways have resulted in much degradation".[375]

The polluter pays principle requires that the polluter should bear the expenses of carrying out pollution prevention measures or paying for damage caused by pollution. As Cordonier Segger and Khalfan observe:

> "Instituting the polluter pays principle ensures that the prices of goods reflect the costs of producing that good, including costs associated with pollution, resource degradation and environmental harm. Environmental costs are reflected (or 'internalised') in the price of every good. The result is that goods that pollute less will cost less, and consumers may switch to less polluting substances. This will result in a more efficient use of resources and less pollution".[376]

Attempts to incorporate this principle are appearing in various national legislative and executive actions. In Australia, Bates notes the principle is:

> "…now appearing in environment protection legislation through, for example, the introduction of load-based licensing for emission of pollution, that set fees by reference to the actual or potential impact on the environment of the effluent discharged, rather than by simple reference to volumes discharged; by the establishment of incentive-based schemes for voluntary conservation agreements with private landholders; and by market-based approaches to contaminated sites and waste avoidance, reduction and disposal. Broad-based policy initiatives such as the reform of water supply and irrigation practices, fisheries management and forestry agreements also incorporate some of these principles".[377]

Biodiversity credits are the latest illustration of the internalisation of environmental costs.[378]

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[375] M D Young, "The precautionary principle as a key element of ecologically sustainable development" in R Harding and E Fisher, *Perspectives on the Precautionary Principle*, Federation Press, 1999, p. 127 at p. 148.

[376] MC Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices & Prospects,* Oxford University Press, 2004, pp. 82-83.

[377] G. Bates, *Environmental Law in Australia*, 5th ed, Lexis Nexis Butterworths, 2002 at p.138[5.41].

[378] See J Agius, "Biodiversity Credits: Creating Missing Markets for Biodiveristy" (2001) 18 EPLJ 481; M Jenkins, S J Scherr and M Inbar, *Markets for Biodiversity Services: Potential Roles and Challenges,* Aspen Institute, 23 November 2005; and NSW Department of Environment and Conservation, *Biodiversity conservation and banking in coastal and growth areas*, July 2005, accessed via http://www.environment.nsw.gov.au/resources/biodiversitybankingweb.pdf on 6 January 2006.

## 7.2 Polluter-pays principle

The polluter pays principle is an economic rule of cost allocation. The source of the principle is in the economic theory of externalities. As de Sadeleer explains, the polluter pays principle:

> "requires the polluter take responsibility for the external costs arising from his pollution. Internalization is complete when the polluter takes responsibility for all the costs arising from pollution; it is incomplete when part of the cost is shifted to the community as a whole".[379]

Moffet and Bregha explain the philosophical foundation of the "polluter pays" principle in the following way:

> "The polluter pays principle reflects an important philosophical position…Under the polluter pays principle, the community effectively 'owns' the environment, and forces users to pay for the damage they impose. By contrast, if the community must pay the polluter, the implicit message is that the polluter owns the environment and can use and pollute it with impunity. This message is inconsistent with the principles of sustainable development and is not widely reflected in contemporary policy pronouncements, although it remains the effective basis for decision-making in the many areas in which public policy has not yet compelled polluters to internalize their external costs".[380]

The polluter pays principle was originally recommended by the Council of the Organisation for Economic Cooperation and Development (OECD) in May 1972. The definition of the principle in the 1972 OECD *Guiding Principles Concerning the International Economic Aspects of Environmental Policies*, is that the polluter should bear the expenses of carrying out measures deemed necessary by public authorities to protect the environment in "an acceptable state" or "in other words, the cost of these measures should be reflected in the costs of goods and services which cause pollution in production and/or in consumption. Such measures should not be accompanied by subsidies causing significant distortions in international trade and investment".[381]

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[379] N. de Sadeleer, *Environmental Principles, From Political Slogans to Legal Rules*, Oxford University Press, 2002, p. 21.

[380] J Moffet and F Bregha, "The Role of Law in the Promotion of Sustainable Development" (1996) 6 *Journal of Environmental Law and Practice* 1 at 8.

[381] *Guiding Principles Concerning the International Economic Aspects of Environmental Policies*, OECD Recommendations C(72)128, reprinted in 14 ILM 236 (1975). See also P W Birnie and A E Boyle, *International Law and the Environment*, Clarendon Press, Oxford, 1992, pp. 109-110; and P Sands, *Principles of International Environmental Law*, 2nd ed., Cambridge University Press, 2003, p. 281.

As Birnie and Boyle note, originally the primary object of the principle was economic, not environmental:

> "The elimination of wider subsidies is a necessary part of the process of economic liberalisation and free trade in developed economies. Uniform implementation will thus ensure better allocation of resources and avoid distortions in trade and investment".[382]

However, in 1973, the European Economic Community adopted an *Environmental Action Programme* which endorsed the principle.[383]

In 1975, the European Community Council adopted a recommendation regarding cost allocation and action by public authorities on environmental matters which required the European Community, both at Community and national level, to apply the polluter pays principle according to which:

> "natural or legal persons governed by public or private law who are responsible for pollution must pay the costs of such measures as are necessary to eliminate that pollution or to reduce it so as to comply with the standards of equivalent measures laid down by the public authorities".[384]

In 1986, Article 25 of the *Single European Act* provided that:

> "Action by the Community relating to the environment shall be based on the principles that preventative action should be taken, that environmental damage should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay".[385]

In 1992, the European Community member states and the European Free Trade Area member countries agreed that action by the parties was to be based on the principle that "the polluter should pay".[386]

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[382] P W Birnie and A E Boyle, *International Law and the Environment*, Clarendon Press, Oxford, 1992, p. 110.
[383] *Declaration on an Environmental Action Programme*, 20 December 1973.
[384] European Community Council, "Cost allocation and action by public authorities on environmental matters, Recommendation 75/436/EURATOM, ECSC, EEC of 3 March 1975: para 2 of Annexure; as quoted in P Sands, *Principles of International Environmental Law*, 2nd ed, Cambridge University Press, 2003, p. 283.
[385] As quoted in P W Birnie and E Boyle, *International Law and the Environment*, Clarendon Press, Oxford, 1992, p. 110.
[386] *European Economic Area Agreement*: Article 73(2); as discussed in P Sands, *Principles of International Environmental Law*, 2nd ed, Cambridge University Press, 2003, p. 283.

The "polluter pays" principle and the internalisation of environmental costs were embraced at the 1992 UNCED (Earth Summit) and in the *Rio Declaration*. Principle 16 of the *Rio Declaration* provides:

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

This language is more qualified than the statement of the principle at the national level. As Sands explains, the reason for this is that the text "derives, at least in part, from the view held by a number of states, both developed and developing, that the polluter-pays principle is applicable at the domestic level but does not govern rights or responsibilities between states at the international level".[387]

## 7.3 Judicial decisions

### 7.3.1 India

In *Indian Council for Enviro-Legal Action v Union of India*,[388] a number of private companies operated chemical factories without the required licences and had not installed equipment for the treatment of highly toxic effluent which they discharged. The discharge polluted water aquifers and the soil in the area. An environmental non-governmental organisation filed a petition on behalf of the villagers whose right to life had been endangered by the pollution caused by the companies' actions. The petition sought a writ compelling the Central and State governments and the State Pollution Control Board to perform their statutory duties and direct the central Government to recover costs of the remedial measures from the companies.

The Supreme Court of India dealt with the liability of the companies to defray the costs of the remedial measures. One of the ways that the liability of the companies could be viewed was from the "polluter pays" principle:

> "67. The question of liability of the respondents to defray the costs of remedial measures can also be looked into from another angle, which has now come

[387] P Sands, *Principles of International Environmental Law*, 2nd ed, Cambridge University Press, 2003, pp. 280-281.
[388] AIR 1996 SC 1446.

to be accepted universally as a sound principle, viz., the ‘Polluter Pays’ Principle.

The polluter pays principle demands that the financial costs of preventing or remedying damage caused by pollution should lie with the undertakings which cause the pollution, or produce the goods which cause the pollution. Under the principle it is not the role of Government to meet the costs involved in either prevention of such damage, or in carrying out remedial action, because the effect of this would be to shift the financial burden of the pollution incident to the taxpayer. The `polluter pays' principle was promoted by the Organization for Economic Co-operation and Development (OECD) during the 1970s when there was great public interest in environmental issues. During this time there were demands on government and other institutions to introduce policies and mechanisms for the protection of the environment and the public from the threats posed by pollution in a modern industrialized society. Since then there has been considerable discussion of the nature of the polluter pays principle, but the precise scope of the principle and its implications for those involved in past, or potentially polluting activities have never been satisfactorily agreed.

Despite the difficulties inherent in defining the principle, the European Community accepted it as a fundamental part of its strategy on environmental matters, and it has been one of the underlying principles of the four Community Action Programmes on the Environment. The current Fourth Action Programme ([1987] O.J.C328/1) makes it clear that the cost of preventing and eliminating nuisances must in principle be borne by the polluter, and the polluter pays principle has now been incorporated into the European Community Treaty as part of the new Articles on the environment which were introduced by the Single European Act of 1986. Article 120R(2) of the Treaty states that environmental considerations are to play a part in all the policies of the Community, and that action is to be based on three principles: the need for preventative action; the need for environmental damage to be rectified at source; and that the polluter should pay”. ["Historic Pollution - Does the Polluter Pay?" By Carolyn Shelbourn - Journal of Planning and Environmental Law, Aug.1994 issue.]

Thus, according to this principle, the responsibility for repairing the damage is that of the offending industry. Sections 3 and 5 empower the Central Government to give directions and take measures for giving effect to this principle. In all the circumstances of the case, we think it appropriate that the task of determining the amount required for carrying out the remedial measures, its recovery/realisation and the task of undertaking the remedial measures is placed upon the Central Government in the light of the provisions of the Environment (Protection) Act, 1986. It is, of course, open to the Central Government to take the help and assistance of State Government, R.P.C.B. or such other agency or authority, as they think fit”.[389]

[389] AIR 1996 SC 1446 at 1466[67].

In *Vellore Citizens Wefare Forum v Union of India*,[390] the Supreme Court of India, in a judgment delivered by Kuldip Singh J, referred to the Supreme Court's decision in *Indian Council for Enviro-Legal Action v Union of India*[391] and held that the polluter pays principle had been accepted as part of the environmental law of the country.[392]

In *M.C Mehta v Union of India*,[393] the Supreme Court of India was concerned with approximately 550 tanneries located in Calcutta. The tanneries were in thickly populated residential areas. They were being operated in extremely unhygienic conditions and discharged highly toxic effluents over the areas. The Supreme Court (Kuldip Singh J and Saghir Ahmed J), in a judgment delivered by Kuldip Singh J, referred to the Supreme Court's decisions in *Indian Council for Enviro-Legal Action v Union of India*[394] and *Vellore Citizens Welfare Forum v Union of India*[395] and held that:

> "19. It is thus settled by this Court that one who pollutes the environment must pay the to reverse the damage caused by his acts".[396]

The Court ordered the Calcutta tanneries to relocate and to pay compensation for the loss of ecology/environment of the affected areas and the suffering of the residents.[397]

Similarly, in *M.C Mehta v Union of India*,[398] the Supreme Court of India (Kuldip Singh and Faizanuddin JJ), in a judgment delivered by Kuldip Singh J, ordered coke/coal consuming industries emitting air pollution that was damaging the Taj Mahal in Agra and the residents of the Taj Trapezium, to apply for gas connection or, on failing to do so, to relocate. The Court cited with approval the decisions in *Indian Council for Enviro-Legal Action v Union of India*[399] and *Vellore Citizens Welfare Forum v Union of India*.[400]

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[390] AIR 1996 SC 2715. The facts have been stated earlier in the discussion of this case in Section 4 on the precautionary principle above.
[391] AIR 1996 SC 1446.
[392] AIR 1996 SC 2715 at 2721[12]-[13].
[393] WP 3727/1985 (19 December 1996).
[394] AIR 1996 SC 1446.
[395] AIR 1996 SC 2715.
[396] WP 3727/1985 (19 December 1996) at [19].
[397] WP 3727/1985 (19 December 1996) at [20].
[398] WP 13381/1984 (30 December 1996).
[399] AIR 1996 SC 1446.
[400] AIR 1996 SC 2715.

In *Research Foundation for Science Technology and Natural Resources Policy v Union of India*,[401] the Supreme Court of India was concerned with 133 containers of oil which constituted hazardous waste which were lying at Nhava Sheva Port. The containers had been illegally imported. The importers were given notice by order of the Supreme Court to show cause why the consignment should not be ordered to be re-exported or destroyed at their cost. Further, the importers were required to show cause why the costs incurred by the relevant government body on testing the oil to determine its status as hazardous waste should not be recovered from them and why they should not be directed to pay compensation on the basis of the polluter pays principle.

The Supreme Court (Y.K. Sabharwal and S.H. Kapadia JJ), in a judgment delivered by Y.K. Sabharwal J, held:

> "24. The liability of the importers to pay the amounts to be spent for destroying the goods in question cannot be doubted on applicability of precautionary principle and polluter pays principle. These principles are part of the environmental law of India. There is constitutional mandate to protect and improve the environment. In order to fulfil the constitutional mandate various legislations have been enacted with attempt to solve the problem of environmental degradation.
>
> 25. In respect of the precautionary principle, Rio Declaration (Principle No.15) provides that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as reason for postponing cost effective measures to prevent environmental degradation. This principle generally describes an approach to the protection of the environmental or human health based around precaution even where there is no clear evidence of harm or risk of harm from an activity or substance. It is a part of principle of sustainable development, it provides for taking protection against specific environmental hazards by avoiding or reducing environmental risks before specific harms are experienced…
>
> 27. The polluter pays principle basically means that the producer of goods of other items should be responsible for the cost of preventing or dealing with any pollution that the process causes. This includes environmental cost as well as direct cost to the people or property, it also covers cost incurred in avoiding pollution and not just those related to remedying any damage. It will include full environmental cost and not just those which are immediately tangible. The principle also does not mean that the polluter can pollute and pay for it. The nature and extent of cost and the circumstances in which the principle will apply may differ from case to case.

[401] WP 657/1995 (5 January 2005).

28. The observations in Deepak Nitrite Ltd. State of Gujarat and Others ((2004) 6 SCC 402) that 'mere violation of the law in not observing the norms would result in degradation of environment would not be correct' is evidently confined to the facts of that case. In the said case the fact that the industrial units had not conformed with the standards prescribed by the pollution control board was not in dispute but there was no finding that the said circumstance had caused damage to environment. The decision also cannot be said to have laid down a proposition that in absence of actual degradation of environment by the offending activities, the payment for repair on application of the polluter pays principle cannot be ordered. The said case is not relevant for considering the cases like the present one where offending activities has the potential of degrading the environment. In any case, in the present case, the point simply is about the payments to be made for the expenditure to be incurred for the destruction of imported hazardous waste and amount spent for conducting tests for determining whether it is such a waste or not. The law prescribes that on the detection of PCBs in the furnace or lubricating oil, the same would come within the definition of hazardous waste. Apart from polluter pays principle, support can also be had from principle 16 of the Rio Declaration, which provides that national authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interests and without distorting international trade and investment….

31. The polluter pays principle was applied in Indian Council for Enviro-Legal Action and others. vs. Union of India and others ((1996) 3 SCC 212) to fasten liability for defraying the costs of remedial measures. The task of determining the amount required for carrying out the remedial measures, its recovery / realization and the task of undertaking the remedial measures was placed in this case upon the Central Government. In the present case the approximate expenditure to be incurred for destroying the hazardous waste has been mentioned in report.

32. In Vellore Citizens' Welfare Forum vs. Union of India and others (1996) 5 SCC 647) the precautionary principle and polluter pays principle were held to be part of the environmental law of the country. It was held that the polluter pays principle means that the absolute liability for harm to the environment extends not only to compensate the victims of pollution but also the cost of restoring the environmental degradation. Remediation of the damaged environment is part of the process of sustainable development.

33. In this very case, i.e. Research Foundation For Science Technology National Resource Policy vs. Union of India and another ((2003 (9) SCALE 303) while examining the precautionary principle and polluter pays principle, the legal principles noticed in brief were:-

‘The legal position regarding applicability of the precautionary principle and polluter pays principle which are part of the concept of sustainable

development in our country in now well settled. In Vellore Citizens' Welfare Forum vs. Union of India and others ((1996) 5 SCC 647), a three Judge Bench of this Court, after referring to the principles evolved in various international conferences and to the concept of ‘sustainable development’, inter alia, held that the precautionary principle and polluter pays principle have now emerged and govern the law in our country, as is clear from Articles 47, 48-A and 51-A(g) of our Constitution and that, in fact, in the various environmental statutes including the Environment (Protection) Act, 1986, these concepts are already implied. These principles have been held to have become part of our law. Further, it was observed in Vellore Citizens' Welfare Forum's case that these principles are accepted as part of the customary international law and hence there should be no difficulty in accepting them as part of our domestic law. Reference may also be made to the decision in the case of A.P. Pollution Control Board vs. Prof. M.V. Nayudu (Retd). and others ((1996) 5 SCC 718) where, after referring to the principles noticed in Vellore Citizens' Welfare Forum's Case, the same have been explained in more detail with a view to enable the Courts and the Tribunals or environmental authorities to properly apply the said principles in the matters which come before them. In this decision, it has also been observed that the principle of good governance is an accepted principle of international and domestic laws. It comprises of the rule of law, effective State institutions, transparency and accountability and public affairs, respect for human rights and the meaningful participation of citizens in the political process of their countries and in the decisions affecting their lives. Reference has also been made to Article 7 of the draft approved by the working group of the International Law Commission in 1996 on "Prevention of Trans-boundary Damage from Hazardous Activities" to include the need for the State to take necessary ‘legislative, administrative and other actions’" to implement the duty of prevention of environmental harm. Environmental concerns have been placed at same pedestal as human rights concerns, both being traced to Article 21 of the Constitution of India. It is the duty of this Court to render justice by taking all aspects into consideration. It has also been observed that with a view to ensure that there is neither danger to the environment nor to the ecology and, at the same time, ensuring sustainable development, the Court can refer scientific and technical aspects for an investigation and opinion to expert bodies. The provisions of a covenant which elucidate and go to effectuate the fundamental rights guaranteed by our Constitution, can be relied upon by Courts as facets of those fundamental rights and hence enforceable as such (see People's Union for Civil Liberties vs. Union of India and another ((1997) 3 SCC 433). The Basel Convention, it cannot be doubted, effectuates the fundamental rights guaranteed under Article 21. The rights to information and community participation for protection of environment and human health is also a right which flows from Article 21. The Government and authorities have, thus to motivate the public participation. These well-shrined principles have been kept in view by us while examining and determining various aspect and facets of the problems in issue and the permissible remedies.’

34. The aforenoted precautionary principles are fully applicable to the facts and circumstances of the case and we have no manner of doubt that the only

> appropriate course to protect environments is to direct the destruction of the consignments by incineration in terms discussed above and as recommended by the Monitoring Committee".[402]

### 7.3.2 Australia

The rationale of the polluter pays principle has also informed courts in Australia in fixing the appropriate quantum of a fine in sentencing offenders who have committed environmental crime. A leading case illustrating this approach is the decision of the Court of Criminal Appeal of NSW in *Axer Pty Ltd v Environmental Protection Authority.*[403] In that case, the defendant company had been involved in aerial spraying of pesticides on irrigated fields of cotton. The spray drifted over or otherwise descended into a nearby river, causing pollution and the death of fish.

Mahoney J A stated:

> "In determining the fine appropriate to an offence of pollution, two things are to be borne in mind: the seriousness with which the community regards pollution of this kind; and the purposes sought to be achieved by the imposition of fines in cases such as these.
>
> The community has adopted a stern policy against pollution. The legislative scheme requires that proper, and strict, precautions be taken by those whose activities may cause proscribed pollution. The quantum of the fines which may be imposed evidences this: for the present offence, a maximum fine of $125,000 was available. The quantum of the fines which the legislation allows to be imposed has no doubt been fixed not merely to indicate the seriousness with which such pollution is regarded but also to deter those engaged in such activities and to procure that they will take the precautions necessary to ensure that it does not occur.
>
> That leads to the second matter. The argument in this appeal has at least suggested that the Court, in assessing the penalty, should take into account the serious effect which fines of this order of severity will have upon the operations of those engaged in the cotton growing industry. I do not doubt that the Court must take into account the impact of a particular fine upon a particular defendant. But that consideration does not stand alone.
>
> The legislation does not seek merely to prevent deliberate or negligent pollution. It envisages that, at least in many cases, proper precautions must be taken to ensure that pollution does not occur. Experience has shown that it is not enough merely to take care: accidents will happen. The legislation envisages that in many cases care must be supplemented by positive

[402] WP 657/1995 (5 January 2005) at [24]-[25], [27]-[28] and [31]-[34].
[403] (1993) 113 LGERA 357.

> precautions; business must be arranged and precautions taken so as to ensure that pollution will not occur.
>
> Precautions may be costly. The cost of precautions to avoid pollution will no doubt become accepted, in due course, as an ordinary cost of operating in an industry where, absent precautions, pollution may occur. The legislature was no doubt conscious of the effect which increased costs may have in a market; what I have said is expressed in general terms and is, of course, subject to the circumstances of each case. But I believe legislation of this kind contemplates that, in general, the cost of preventing pollution will be absorbed into the costing of the relevant industries and in that way will be borne by the community or by that part of it which uses the product which the industry produces. In assessing the quantum of a fine considerations of this kind are to be taken into account. The fine should be such as will make it worthwhile that the cost of precautions be undertaken. As the learned judge indicated, in the present case, in order to prevent pollution of the river, it was necessary, inter alia, that the company delay spraying until the conditions were appropriate for it. No doubt that delay costs money. Ordinarily, the fine to be imposed should be such as to make it worthwhile that costs of this kind be incurred.
>
> I do not mean by this that the legislature saw the legislation as providing, by payment of a fine, a licence to pollute. In the end, the object of the legislation is to prevent pollution and to do this, inter alia, by the deterrent effect of a substantial fine and by, in consequence, persuading the industries concerned to adopt preventive measures. In assessing the fine in an individual case, it is proper to bear in mind the economic realities upon which such legislation is based".[404]

That approach was also adopted in sentencing an offender who had committed the environmental offence of damaging and destroying a threatened species of plant, contrary to the *National Parks and Wildlife Act* 1974 (NSW). In *Bentley v Gordon,*[405] I referred to the decision in *Axer Pty Lt v Environmental Protection Authority*[406]and stated:

> "99. In the context of the conservation of threatened species, it is equally true to say that the object of the NPW Act is to prevent damage to threatened species and their habitat. Business must be arranged and precautions taken to ensure that damage to threatened species does not occur. The cost of taking precautions to avoid damaging threatened species must become accepted as an ordinary cost of doing business. So, too, therefore, in assessing the amount of a fine for an offence involving damage to threatened species, considerations of this kind are to be taken into account. The fine should be such as will make it worthwhile that the costs of taking precautions to avoid damaging threatened species are undertaken".[407]

[404] (1993) 113 LGERA 357 at 359-360.
[405] [2005] NSWLEC 695 (22 November 2005).
[406] (1993) 113 LGERA 357.
[407] [2005] NSWLEC 695 (22 November 2005) at [99].

In *Bentley v BGP Properties Pty Limited*[408], I referred again to *Axer Pty Ltd v Environment Protection Authority*[409] in the context of sentencing for an environmental offence and stated:

> "156. The importance of the Court bearing in mind the economic realities of development of or that affects the environment and the need for the Court to impose a sentence which changes the 'economic calculus' for those contemplating such development, was emphasised by Mahoney JA in *Axer Pty Ltd v Environmental Protection Authority* (1993) 113 LGERA 357-360…
>
> 157. By a court taking such factors into account, it promotes the achievement of ecologically sustainable development. The fourth pillar of ecologically sustainable development is the internalisation of external environmental costs. Ecologically sustainable development requires accounting for the short term and long term, external environmental impacts of development. One way of doing so is by adoption of the user pays or polluter pays principle: J Moffet and F Bregha, "The Role of Law Reform in the Promotion of Sustainable Development" (1997) 6 *Journal of Environmental Law and Practice* 1 at 7".

# 8. PUBLIC TRUST

## 8.1 Concept

The concept of the "public trust" has its roots in Roman law, and was based on the idea that certain common resources such as the air, waterways and forests were held in trust by the State for the benefit and use of the general public. A broader conception of the public trust holds that the earth's natural resources are held in trust by the present generation for future generations. In this way, public trust law may be "the strongest contemporary expression of the idea that the legal rights of nature and of future generations are enforceable against contemporary users".[410]

The essence of the public trust is that the State, as trustee, is under a fiduciary duty to deal with the trust property, being the common natural resources, in a manner that is in the interests of the general public. Hence, the State cannot alienate the trust

[408] [2006] NSWLEC 34 (6 February 2006)
[409] (1993) 113 LGERA 357
[410] W H Rodgers, "Bringing People Back: Toward a Comprehensive Theory of Taking in Natural Resource Law" (1982) 10 *Ecology Law Quarterly* 205 at 239 – 240.

property unless the public benefit that would result outweighs the loss of the public use or "social wealth" derived from the area.[411] Although it was not until the early 1970s that the doctrine was explicitly applied as a mechanism for protecting the environment and managing resources, elements of it can be seen in much earlier cases.

In the Scottish case of *Lord Advocate v Clyde Navigation Trustees*,[412] the Lord Advocate, on behalf of the Crown, sought an order preventing a statutory body from dumping dredge waste in Loch Long. His claim was based on the idea that Loch Long was part of the kingdom, the Crown was the proprietor of the Loch, and thus the Crown had title to prevent interference with its rights unless they had been assigned to someone else. Referring to the existence of a trust and "trust subjects", the Court of Session granted the remedy sought by the Crown, stating clearly that "the Crown must use the property in the public interest".[413]

In Australia, the concept of the doctrine of public trust can be traced back to an early dispute over a proposed coalmine in Sydney Harbour in the 1890s. A government authority granted a lease to a private company over an area of the northern foreshore. At issue was the effect this would have on the natural beauty of the area and "whether the people of Sydney and especially of St Leonards were to have the right to go over these water frontages".[414] A young barrister objecting to the mine wrote to a newspaper declaring:

> "We in Sydney are the trustees for all Australia and of all time of that national heritage of beauty which gives to us our pride of place amongst the capitals of this continent and endows us with a reflected glory amongst the people of all nations who visit us".[415]

When the case was heard in 1895, the New South Wales Land Appeal Court adopted public trust reasoning, holding that the Crown was under an obligation to use public

[411] See J L Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention" (1970) 68 *Michigan Law Review* 471; and W H Rodgers, "Bringing People Back: Toward a Comprehensive Theory of Taking in Natural Resource Law" (1982) 10 *Ecology Law Quarterly* 205.
[412] *Lord Advocate v Clyde Navigation Trustees* (1891) 19 Rettie 174.
[413] *Lord Advocate v Clyde Navigation Trustees* (1891) 19 Rettie 174 at 183.
[414] T Bonyhady, "A Usable Past: The Public Trust in Australia" (1995) 12 EPLJ 329 at 334, quoting Sir Julian Salomons QC, *Sydney Morning Herald*, 9 June 1891, p. 4.
[415] T Bonyhady, "A Usable Past: The Public Trust in Australia" (1995) 12 EPLJ 329 at 333, quoting A B Piddington, *Daily Telegraph*, 17 November 1893, p. 3.

land for the "health recreation, and enjoyment" of the people, and occupied "a position in relation to public lands something in the nature of a trustee under an obligation to dispose of, or alienate those lands, whether permanently or temporarily, only in the interest and for the benefit of the people of this Colony".[416]

Professor Joseph Sax resurrected and expanded the concept of a public trust many decades later.[417] In a famous article published in the *Michigan Law Review*,[418] Sax explored the extent to which the public trusteeship constrains the State, and concluded that three types of restrictions on government authority are imposed by a public trust. First, "the property subject to the trust must not only be used for a public purpose, but it must be held available for use by the general public". Second, the trust property may not be sold. And third, "the property must be maintained for particular types of uses, such as navigation, recreation, or fishery".[419] While realising that some elements of the public trust will inevitably be transferred into private ownership and control, Sax argued that the doctrine had "the breadth and substantive content which might make it useful as a tool of general application for citizens seeking to develop a comprehensive legal approach to resource management problems".[420]

The public trust doctrine has, to differing extents, become part of the law of all countries with a common law heritage, and many maintain that it should play a principal part in sustainable resource allocation and decision-making. While traditionally applied primarily to waterways and rivers, the doctrine has now been extended to protect other natural resources from private use and harm as a tool of environmental conservation.

The decisions discussed below illustrate how courts in many jurisdictions including the United States, Australia, India, Pakistan and Sri Lanka have considered the

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[416] *Re Sydney Harbour Collieries Co* (1895) 5 *Land Appeal Court Reports* 243 at 259.
[417] See J L Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention" (1970) 68 *Michigan Law Review* 471; J L Sax, *Defending the Environment: A Handbook for Citizen Action*, Vintage Books, 1971.
[418] J L Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention" (1970) 68 *Michigan Law Review* 471.
[419] J L Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention" (1970) 68 *Michigan Law Review* 471 at 477.
[420] J L Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention" (1970) 68 *Michigan Law Review* 471 at 474.

doctrine of public trust in recognising various natural resources as the common property of mankind, and upheld the duties of states to preserve the environmental value of these resources.

## 8.2 Judicial decisions

### 8.2.1 United States

In *National Audubon Society v Department of Water and Power of the City of Los Angeles,*[421] the Supreme Court of California held that the doctrine of public trust was an independent basis for contesting the allocation of water resources. The case concerned a challenge to diversion tunnels, constructed under government permit by the respondents, around California's second largest lake, Mono Lake. The water diversions resulted in a one-third reduction in the surface area of the lake, depletion of the bird communities which fed on the lake's shrimp and a decrease in "both the scenic beauty and the ecological values of Mono Lake".[422]

The plaintiffs argued that the shores, bed and waters of the lake constituted a public trust and hence the state had a duty to protect the human and environmental uses of the lake and prevent anyone from acquiring a right to harm it. The majority of the Supreme Court of California agreed, holding that "the core of the public trust doctrine is the state's authority as sovereign to exercise a continuous supervision and control over the navigable waters of the state and the lands underlying those waters".[423] As the doctrine of public trust was found to be integrated with, and not independent to, the appropriative water rights system, the state had a duty to take the human and environmental uses of the lake into account when planning the allocation of water resources as "approval of (water) diversion without considering public trust values may result in needless destruction of those values".[424]

### 8.2.2 Australia

[421] (1983) 658 P 2d 709.
[422] (1983) 658 P 2d 709 at 711.
[423] (1983) 658 P 2d 709 at 712.
[424] (1983) 658 P 2d 709 at 712.

In *Willoughby City Council v Minister Administering the National Parks and Wildlife Act*,[425] the applicant sought declarations that a lease and building consent relating to land reserved under the *National Parks and Wildlife Act* 1974 (NSW) as being for the purpose of public recreation and enjoyment were void. The Minister had approved a lease for a building on national park land at Middle Harbour on the north shore of Sydney, and the construction commenced without the consent of the local council and in breach of the *National Parks and Wildlife Act* 1974 (NSW). In accepting the applicant's submission that there was a public trust over national parks, and the Minister could not lawfully make an administrative decision to harm the land, Stein J of the Land and Environment Court of NSW declared the lease and building consent to be void ab initio and ordered the building be demolished.[426] Relevantly, Stein J stated:

> "…national parks are held by the State in trust for the enjoyment and benefit of its citizens, including future generations. In this instance the public trust is reposed in the Minister, the director and the service. These public officers have a duty to protect and preserve national parks and exercise their functions and powers within the law in order to achieve the objects of the *National Parks and Wildlife Act*".[427]

### 8.2.3 India

The Indian courts have been keen to employ the public trust doctrine for the purpose of environmental conservation. In *M.C Mehta v Kamal Nath*,[428] a newspaper article alerted the Supreme Court of India that a private company had built a hotel on the bank of River Beas. The land had been leased to the company whilst Kamal Nath, who had links with the company was the Minister for Environment and Forests. The article claimed that during the construction process, bulldozers were used to create a new channel for the purpose of diverting the river-flow away from the hotel to save it from flooding. The Supreme Court of India was most concerned at the alleged environmental degradation.

The Supreme Court took the opportunity to explore the doctrine of public trust as it applied in Indian law. After discussing the importance of sustainable development and

[425] (1992) 78 LGRA 19.
[426] (1992) 78 LGRA 19 at 34–36.
[427] (1992) 78 LGRA 19 at 34. For a discussion of this case, see T Bonyhady, "A Usable Past: The Public Trust in Australia" (1995) 12 EPLJ 329 at 330–331.
[428] (1997) 1 SCC 388.

respect for the "laws of nature",[429] the Court discussed the development of the doctrine and observed that:

> "Our legal system – based on English common law – includes the public trust doctrine as part of its jurisprudence. The State is the trustee of all natural resources which are by nature meant for public use and enjoyment. Public at large is the beneficiary of the sea-shore, running waters, airs, forests and ecologically fragile lands. The State as a trustee is under a legal duty to protect the natural resources. These resources meant for public use cannot be converted into private ownership".[430]

In finding that "the public trust doctrine…is part of the law of the land",[431] and River Beas was in fact trust property, the Court ordered the lease to be quashed, directed the company to undertake various remediation works and ordered it to pay compensation for "the restitution of the environment and ecology of the area".[432]

In the recent decision of *T.N Godavarman Thirumulpad v Union of India,*[433] the Supreme Court of India endorsed the decision in *M.C Mehta v Kamal Nath,*[434] stating:

> "The duty to preserve natural resources in pristine purity has been highlighted in M.C. Mehta v. Kamal Nath & Ors. [(1997) 1 SCC 388]. After considering the opinion of various renowned authors and decisions rendered by other countries as well on environment and ecology, this Court held that the notion that the public has a right to expect certain lands and natural areas to retain their natural characteristics is finding its way into the law of the land. The Court accepted the applicability of public trust doctrine and held that it was founded on the ideas that certain common properties such as rivers, sea-shore, forests and the air were held by the Government in trusteeship for the free and unimpeded use of the general public. These natural resources have a great importance to the people as a whole such that it would wholly unjustified to make them subject to private ownership. These resources being a gift of nature, should be made freely available to everyone irrespective of the status in life. The doctrine enjoins upon the Government to protect the resources for the enjoyment of the general public rather than to permit their use for private ownership or commercial purposes".[435]

### 8.2.4 Pakistan

[429] (1997) 1 SCC 388 at [23].
[430] (1997) 1 SCC 388 at [34].
[431] (1997) 1 SCC 388 at [39].
[432] (1997) 1 SCC 388 at [39].
[433] CDJ 2005 SC 713.
[434] (1997) 1 SCC 388.
[435] CDJ 2005 SC 713s at [70].

The case of *In re: Human Rights Case (Environment Pollution in Balochistan)*[436] illustrates how the Indian approach has been followed in the neighbouring jurisdiction of Pakistan. Again, the Supreme Court of Pakistan was informed of impending environmental harm by a newspaper article that claimed that businessmen were attempting to buy a section of coastal area and convert it into a waste and nuclear waste dump. As the dump would cause environmental hazard and pollution, it would be a violation of Article 9 of the Constitution.

Notwithstanding that no such businessmen or potential waste dump were identified, the Supreme Court recognised that the relevant local government authority had a duty to "regularly check that allottees are not engaged in dumping industrial or nuclear waste of any nature on the land or in the sea or destroying it by any device".[437] Saleem Akhtar J of the Supreme Court of Pakistan made orders obligating the local authority to submit the details of any person to which the land had or would be allotted to, and requiring a condition to be inserted into allotment letters that future allottees would not use the land as a waste dump.[438] Although the doctrine of public trust was not explicitly referred to, it is clear that the notion that the coastal land belonged to the public underpinned the decision and Saleem Akhtar J praised those members of the public who had "shown their interest and keenness in tackling the problem".[439]

The case of *General Secretary, West Pakistan Salt Miners Labour Union v The Director, Industries and Mineral Development*[440] illustrates the extent to which courts in Pakistan will go to overcome procedural barriers in order to recognise the doctrine of public trust and the importance of environmental conservation. The case involved residents concerned that salt mining in their area would result in the contamination of the local watercourse, reservoir and pipeline. The residents petitioned the Supreme Court of Pakistan to enforce their right to have clean and unpolluted water and filed

[436] PLD 1994 SC 102.
[437] PLD 1994 SC 102 at 102.
[438] PLD 1994 SC 102 at 102 – 103.
[439] PLD 1994 SC 102 at 103.
[440] 1994 SCMR 2061.

their claim as a human rights case under Article 184(1) of the Pakistan Constitution.[441]

The Supreme Court of Pakistan held that as Article 9 of the Constitution provided that "no person shall be deprived of life or liberty save in accordance with the law" and "life" should be given an expansive definition, the right to have unpolluted water was a right to life itself. Saleem Akhtar J reiterated his statement in *Zia v WAPDA*[442] that:

> "The Constitution guarantees dignity of man and also right to 'life' under Article 9 and if both are read together, question will arise whether a person can be said to have dignity of man if his right to life is below bare necessity line without proper food, clothing, shelter, education, health care, clean atmosphere and unpolluted environment".[443]

In addition, the Court observed that:

> "It is well-settled that in human rights cases/public interest litigation under Article 184(3), the procedural trappings and restrictions, precondition of being an aggrieved person and other similar technical objections cannot bar the jurisdiction of the Court".[444]

In the result, the Court established a Commission to supervise and report on the activities of the salt mining for the purpose of protecting the watercourse and reservoirs, hence illustrating the public trust doctrine implicit in the decision.

### 8.2.5 Sri Lanka

Sri Lankan courts have also adopted the doctrine of public trust. The case of *Bulankulama v Secretary, Ministry of Industrial Development* (the *Eppawela Case*)[445] concerned a proposed agreement between the government and a private company relating to the potential mining of phosphate and other minerals in the Eppawela area. Many residents of Eppawela objected to the contract, claiming carrying out of work would result in both an environmental and economic disaster.[446] It was argued that mining operations would leave large pits and gullies that would provide breeding grounds for mosquitoes and lead to malaria. In addition, it was claimed that a by-

[441] 1994 SCMR 2061 at 2068.
[442] PLD 1994 SC 693.
[443] 1994 SCMR 2061 at 2069.
[444] 1994 SCMR 2061 at 2072.
[445] Application No. 884/99, Supreme Court of Sri Lanka 243 (7 April 2000).
[446] Application No. 884/99, Supreme Court of Sri Lanka 243 (7 April 2000) at 243.

product of the project, Phospho-Gypsum, would pollute the environment as there was no method to safely dispose of it.[447]

The Supreme Court of Sri Lanka observed that the government was the "trustee" of natural resources in Sri Lanka and, as such, the individual residents had standing to sue as the case concerned "the rights of individual petitioners, even though their rights are linked to the collective rights of the citizenry of Sri Lanka".[448] Moreover, the Court recognised that the public trust doctrine includes the notion of public guardianship as "the organs of state are guardians to whom the people have committed the care and preservation of the resources of the people".[449]

In reaching its decision, the Court discussed the relevant environmental and development policies applicable to the exploitation of natural resources, and the requirements of both international and domestic law. The Court held that the government had not "acted correctly as trustee", an imminent infringement of the Constitutional rights of the petitioners to object to the proposed agreement had been established, and that the government was to be restrained from entering into the contract until further studies and reports on the site had been carried out.[450]

## 9. CONCLUSION

It is clear that the law on sustainable development is gaining momentum at local, national, regional, and international levels. While the four fundamental elements of sustainable development – the precautionary principle, intergenerational and intragenerational equity, the conservation of biological diversity and ecological integrity, and the internalisation of environmental costs – have been much discussed and promulgated in various international and national legal contexts, there is still a long way to go in terms of their implementation.

[447] Application No. 884/99, Supreme Court of Sri Lanka 243 at 245.
[448] Application No. 884/99, Supreme Court of Sri Lanka 243 at 244, 257-260.
[449] Application No. 884/99, Supreme Court of Sri Lanka 243 at 253.
[450] Application No. 884/99, Supreme Court of Sri Lanka 243 at 320 – 321.

The role of the judiciary in relation to the law of sustainable development is thus of the greatest importance. This paper has explained the history and concepts of the four elements of sustainable development, as well as the doctrine of the public trust. Many key decisions of national judiciaries in the Asia-Pacific Region have been discussed and it has been shown that, on a case-by case basis, a body of environmental jurisprudence with respect to sustainable development is indeed emerging. It is up to the judiciary to clearly define the circumstances of application and the means of implementation of the principles of sustainable development so that this body of law can continue to develop.

These tasks may seem overwhelming to each individual member of the judiciary. However, each member of the judiciary can make a contribution and ought to do so. The well-known Kenyan environmental activist and 2004 Nobel Peace Prize Winner Wangari Maathai, also known as *Mama Miti* ("Mother of Trees"), encourages individual action with the following story:

> "Once there was a hummingbird that lived in the forest. Then a huge fire broke out and all the animals fled. But the hummingbird kept flying to the stream, collecting a few drops of water in its beak and dropping it on the flames. The lions and elephants and giraffes mocked the hummingbird until at last the bird responded, 'I'm doing the best I can'. And that's all we can do – the best we can".[451]

If individual members of the judiciary each work towards the common goal of achieving an environmentally sustainable future, the law on sustainable development will gain strength and through collective effort the goal will be reached. To use a phrase of Victor Hugo's, "there is one thing stronger than all the armies in the world and that is an idea whose time has come".[452] It is clear that the time for sustainable development has come, and it is essential that individual judges and national judiciaries seize the opportunity.

[451] J van der Walt, "The best she can" (Nov 2005 – Jan 2006) 53 *Msafiri* 63 at 65.
[452] The translation of this phrase differs. Its probable source is from V Hugo, "Conclusion-La Chute" in *Histoire d'un crime*, as quoted in a Nobel Lecture by Dr M L King, "The Quest for Peace and Justice". Accessed via http://nobelprize.org/peace/laureates/1964/king-lecture.html on 6 January 2006.