SEPARATE OPINION OF VICE-PRESIDENT WEERAMANTRY

INTRODUCTION

This case raises a rich array of environmentally related legal issues. A discussion of some of them is essential to explain my reasons for voting as I have in this very difficult decision. Three issues on which I wish to make some observations, supplementary to those of the Court, are the role played by the principle of sustainable development in balancing the competing demands of development and environmental protection; the protection given to Hungary by what I would describe as the principle of continuing environmental impact assessment; and the appropriateness of the use of *inter partes* legal principles, such as estoppel, for the resolution of problems with an *erga omnes* connotation such as environmental damage.

A. THE CONCEPT OF SUSTAINABLE DEVELOPMENT

Had the possibility of environmental harm been the only consideration to be taken into account in this regard, the contentions of Hungary could well have proved conclusive.

Yet there are other factors to be taken into account — not the least important of which is the developmental aspect, for the Gabčíkovo scheme is important to Slovakia from the point of view of development. The Court must hold the balance even between the environmental considerations and the developmental considerations raised by the respective Parties. The principle that enables the Court to do so is the principle of sustainable development.

The Court has referred to it as a concept in paragraph 140 of its Judgment. However, I consider it to be more than a mere concept, but as a principle with normative value which is crucial to the determination of this case. Without the benefits of its insights, the issues involved in this case would have been difficult to resolve.

Since sustainable development is a principle fundamental to the determination of the competing considerations in this case, and since, although it has attracted attention only recently in the literature of international law, it is likely to play a major role in determining important environmental disputes of the future, it calls for consideration in some detail. Moreover, this is the first occasion on which it has received attention in the jurisprudence of this Court.

When a major scheme, such as that under consideration in the present case, is planned and implemented, there is always the need to weigh considerations of development against environmental considerations, as their underlying juristic bases — the right to development and the right to environmental protection — are important principles of current international law.

In the present case we have, on the one hand, a scheme which, even in the attenuated form in which it now remains, is important to the welfare of Slovakia and its people, who have already strained their own resources and those of their predecessor State to the extent of over two billion dollars to achieve these benefits. Slovakia, in fact, argues that the environment would be improved through the operation of the Project as it would help to stop erosion of the river bed, and that the scheme would be an effective protection against floods. Further, Slovakia has traditionally been short of electricity, and the power generated would be important to its economic development. Moreover, if the Project is halted in its tracks, vast structural works constructed at great expense, even prior to the repudiation of the Treaty, would be idle and unproductive, and would pose an economic and environmental problem in themselves.

On the other hand, Hungary alleges that the Project produces, or is likely to produce, ecological damage of many varieties, including harm to river bank fauna and flora, damage to fish breeding, damage to surface water quality, eutrophication, damage to the groundwater régime, agriculture, forestry and soil, deterioration of the quality of drinking water reserves, and sedimentation. Hungary alleges that many of these dangers have already occurred and more will manifest themselves, if the scheme continues in operation. In the material placed before the Court, each of these dangers is examined and explained in considerable detail.

How does one handle these considerations? Does one abandon the Project altogether for fear that the latter consequences might emerge? Does one proceed with the scheme because of the national benefits it brings, regardless of the suggested environmental damage? Or does one steer a course between, with due regard to both considerations, but ensuring always a continuing vigilance in respect of environmental harm?

It is clear that a principle must be followed which pays due regard to both considerations. Is there such a principle, and does it command recognition in international law? I believe the answer to both questions is in the affirmative. The principle is the principle of sustainable development and, in my view, it is an integral part of modern international law. It is clearly of the utmost importance, both in this case and more generally.

I would observe, moreover, that both Parties in this case agree on the

applicability to this dispute of the principle of sustainable development. Thus, Hungary states in its pleadings that:

> "Hungary and Slovakia agree that the principle of sustainable development, as formulated in the Brundtland Report, the Rio Declaration and Agenda 21 is applicable to this dispute . . .
>
> International law in the field of sustainable development is now sufficiently well established, and both Parties appear to accept this." (Reply of Hungary, paras. 1.45 and 1.47.)

Slovakia states that "inherent in the concept of sustainable development is the principle that developmental needs are to be taken into account in interpreting and applying environmental obligations" (Counter-Memorial of Slovakia, para. 9.53; see also paras. 9.54-9.59).

Their disagreement seems to be not as to the existence of the principle but, rather, as to the way in which it is to be applied to the facts of this case (Reply of Hungary, para. 1.45).

The problem of steering a course between the needs of development and the necessity to protect the environment is a problem alike of the law of development and of the law of the environment. Both these vital and developing areas of law require, and indeed assume, the existence of a principle which harmonizes both needs.

To hold that no such principle exists in the law is to hold that current law recognizes the juxtaposition of two principles which could operate in collision with each other, without providing the necessary basis of principle for their reconciliation. The untenability of the supposition that the law sanctions such a state of normative anarchy suffices to condemn a hypothesis that leads to so unsatisfactory a result.

Each principle cannot be given free rein, regardless of the other. The law necessarily contains within itself the principle of reconciliation. That principle is the principle of sustainable development.

This case offers a unique opportunity for the application of that principle, for it arises from a Treaty which had development as its objective, and has been brought to a standstill over arguments concerning environmental considerations.

The people of both Hungary and Slovakia are entitled to development for the furtherance of their happiness and welfare. They are likewise entitled to the preservation of their human right to the protection of their environment. Other cases raising environmental questions have been considered by this Court in the context of environmental pollution arising from such sources as nuclear explosions, which are far removed from development projects. The present case thus focuses attention, as no other case has done in the jurisprudence of this Court, on the question of the harmonization of developmental and environmental concepts.

(a) *Development as a Principle of International Law*

Article 1 of the Declaration on the Right to Development, 1986, asserted that "The right to development is an inalienable human right." This Declaration had the overwhelming support of the international community[1] and has been gathering strength since then[2]. Principle 3 of the Rio Declaration, 1992, reaffirmed the need for the right to development to be fulfilled.

"Development" means, of course, development not merely for the sake of development and the economic gain it produces, but for its value in increasing the sum total of human happiness and welfare[3]. That could perhaps be called the first principle of the law relating to development.

To the end of improving the sum total of human happiness and welfare, it is important and inevitable that development projects of various descriptions, both minor and major, will be launched from time to time in all parts of the world.

(b) *Environmental Protection as a Principle of International Law*

The protection of the environment is likewise a vital part of contemporary human rights doctrine, for it is a *sine qua non* for numerous human rights such as the right to health and the right to life itself. It is

[1] 146 votes in favour, with one vote against.

[2] Many years prior to the Declaration of 1986, this right had received strong support in the field of human rights. As early as 1972, at the Third Session of the Institut international de droits de l'homme, Judge Kéba Mbaye, President of the Supreme Court of Senegal and later to be a Vice-President of this Court, argued strongly that such a right existed. He adduced detailed argument in support of his contention from economic, political and moral standpoints. (See K. Mbaye, "Le droit au développement comme un droit de l'homme", *Revue des droits de l'homme*, 1972, Vol. 5, p. 503.)

Nor was the principle without influential voices in its support from the developed world as well. Indeed, the genealogy of the idea can be traced much further back even to the conceptual stages of the Universal Declaration of Human Rights, 1948.

Mrs. Eleanor Roosevelt, who from 1946 to 1952 served as the Chief United States representative to Committee III, Humanitarian, Social and Cultural Affairs, and was the first Chairperson, from 1946 to 1951, of the United Nations Human Rights Commission, had observed in 1947, "We will have to bear in mind that we are writing a bill of rights for the world and that one of the most important rights is the opportunity for development." (M. Glen Johnson, "The Contribution of Eleanor and Franklin Roosevelt to the Development of the International Protection for Human Rights", *Human Rights Quarterly*, 1987, Vol. 9, p. 19, quoting Mrs. Roosevelt's column, "My Day", 6 February 1947.)

General Assembly resolution 642 (VII) of 1952, likewise, referred expressly to "integrated economic and social development".

[3] The Preamble to the Declaration on the Right to Development (1986) recites that development is a comprehensive, economic, social and cultural process which aims at the constant improvement and well-being of the entire population and of all individuals on the basis of their active, free and meaningful participation in development and in the fair distribution of the benefits resulting therefrom.

scarcely necessary to elaborate on this, as damage to the environment can impair and undermine all the human rights spoken of in the Universal Declaration and other human rights instruments.

While, therefore, all peoples have the right to initiate development projects and enjoy their benefits, there is likewise a duty to ensure that those projects do not significantly damage the environment.

(c) *Sustainable Development as a Principle of International Law*

After the early formulations of the concept of development, it has been recognized that development cannot be pursued to such a point as to result in substantial damage to the environment within which it is to occur. Therefore development can only be prosecuted in harmony with the reasonable demands of environmental protection. Whether development is sustainable by reason of its impact on the environment will, of course, be a question to be answered in the context of the particular situation involved.

It is thus the correct formulation of the right to development that that right does not exist in the absolute sense, but is relative always to its tolerance by the environment. The right to development as thus refined is clearly part of modern international law. It is compendiously referred to as sustainable development.

The concept of sustainable development can be traced back, beyond the Stockholm Conference of 1972, to such events as the Founex meeting of experts in Switzerland in June 1971[4]; the conference on environment and development in Canberra in 1971; and United Nations General Assembly resolution 2849 (XXVI). It received a powerful impetus from the Stockholm Declaration which, by Principle 11, stressed the essentiality of development as well as the essentiality of bearing environmental considerations in mind in the developmental process. Moreover, many other Principles of that Declaration[5] provided a setting for the development of the concept of sustainable development[6] and more than one-third of the Stockholm Declaration related to the harmonization of environment and development[7]. The Stockholm Conference also produced an Action Plan for the Human Environment[8].

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[4] See *Sustainable Development and International Law*, Winfried Lang (ed.), 1995, p. 143.

[5] For example, Principles 2, 3, 4, 5, 8, 9, 12, 13 and 14.

[6] These principles are thought to be based to a large extent on the Founex Report — see *Sustainable Development and International Law*, Winfried Lang (ed.), *supra*, p. 144.

[7] *Ibid.*

[8] Action Plan for the Human Environment, United Nations doc. A/CONF.48/14/Rev.1. See especially Chapter II which devoted its final section to development and the environment.

The international community had thus been sensitized to this issue even as early as the early 1970s, and it is therefore no cause for surprise that the 1977 Treaty, in Articles 15 and 19, made special reference to environmental considerations. Both Parties to the Treaty recognized the need for the developmental process to be in harmony with the environment and introduced a dynamic element into the Treaty which enabled the Joint Project to be kept in harmony with developing principles of international law.

Since then, it has received considerable endorsement from all sections of the international community, and at all levels.

Whether in the field of multilateral treaties[9], international declarations[10]; the foundation documents of international organizations[11]; the practices of international financial institutions[12]; regional declarations and planning documents[13]; or State practice[14], there is a wide and general recognition of the concept. The Bergen ECE Ministerial Declaration on Sustainable Development of 15 May 1990, resulting from a meeting of

[9] For example, the United Nations Convention to Combat Desertification (The United Nations Convention to Combat Desertification in those Countries Experiencing Serious Droughts and/or Desertification, Particularly in Africa), 1994, Preamble, Art. 9 (1); the United Nations Framework Convention on Climate Change, 1992 (*ILM*, 1992, Vol. XXXI, p. 849, Arts. 2 and 3); and the Convention on Biological Diversity (*ILM*, 1992, Vol. XXXI, p. 818, Preamble, Arts. 1 and 10 — "sustainable use of biodiversity").

[10] For example, the Rio Declaration on Environment and Development, 1992, emphasizes sustainable development in several of its Principles (e.g., Principles 4, 5, 7, 8, 9, 20, 21, 22, 24 and 27 refer expressly to "sustainable development" which can be described as the central concept of the entire document); and the Copenhagen Declaration, 1995 (paras. 6 and 8), following on the Copenhagen World Summit for Social Development, 1995.

[11] For example, the North American Free Trade Agreement (Canada, Mexico, United States) (NAFTA, Preamble, *ILM*, 1993, Vol. XXXII, p. 289); the World Trade Organization (WTO) (paragraph 1 of the Preamble of the Marrakesh Agreement of 15 April 1994, establishing the World Trade Organization, speaks of the "optimal use of the world's resources in accordance with the objective of sustainable development" — *ILM*, 1994, Vol. XXXIII, pp. 1143-1144); and the European Union (Art. 2 of the ECT).

[12] For example, the World Bank Group, the Asian Development Bank, the African Development Bank, the Inter-American Development Bank, and the European Bank for Reconstruction and Development all subscribe to the principle of sustainable development. Indeed, since 1993, the World Bank has convened an annual conference related to advancing environmentally and socially sustainable development (ESSD).

[13] For example, the Langkawi Declaration on the Environment, 1989, adopted by the "Heads of Government of the Commonwealth representing a quarter of the world's population" which adopted "sustainable development" as its central theme; Ministerial Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific, Bangkok, 1990 (doc. 38a, p. 567); and Action Plan for the Protection and Management of the Marine and Coastal Environment of the South Asian Seas Region, 1983 (para. 10: "sustainable, environmentally sound development").

[14] For example, in 1990, the Dublin Declaration by the European Council on the Environmental Imperative stated that there must be an acceleration of effort to ensure that economic development in the Community is "sustainable and environmentally sound"

Ministers from 34 countries in the ECE region, and the Commissioner for the Environment of the European Community, addressed "The challenge of sustainable development of humanity" (para. 6), and prepared a Bergen Agenda for Action which included a consideration of the Economics of Sustainability, Sustainable Energy Use, Sustainable Industrial Activities, and Awareness Raising and Public Participation. It sought to develop "sound national indicators for sustainable development" (para. 13 *(b)*) and sought to encourage investors to apply environmental standards required in their home country to investments abroad. It also sought to encourage UNEP, UNIDO, UNDP, IBRD, ILO, and appropriate international organizations to support member countries in ensuring environmentally sound industrial investment, observing that industry and government should co-operate for this purpose (para. 15 *(f)*)[15]. A Resolution of the Council of Europe, 1990, propounded a European Conservation Strategy to meet, *inter alia*, the legitimate needs and aspirations of all Europeans by seeking to base economic, social and cultural development on a rational and sustainable use of natural resources, and to suggest how sustainable development can be achieved[16].

The concept of sustainable development is thus a principle accepted not merely by the developing countries, but one which rests on a basis of worldwide acceptance.

In 1987, the Brundtland Report brought the concept of sustainable development to the forefront of international attention. In 1992, the Rio Conference made it a central feature of its Declaration, and it has been a focus of attention in all questions relating to development in the developing countries.

(*Bulletin of the European Communities*, 6, 1990, Ann. II, p. 18). It urged the Community and Member States to play a major role to assist developing countries in their efforts to achieve "long-term sustainable development" (*ibid.*, p. 19). It said, in regard to countries of Central and Eastern Europe, that remedial measures must be taken "to ensure that their future economic development is sustainable" *(ibid.)*. It also expressly recited that:

> "As Heads of State or Government of the European Community, . . . [w]e intend that action by the Community and its Member States will be developed . . . on the principles of sustainable development and preventive and precautionary action." (*Ibid.*, Conclusions of the Presidency, Point 1.36, pp. 17-18.)

[15] *Basic Documents of International Environmental Law*, Harald Hohmann (ed.), Vol. 1, 1992, p. 558.

[16] *Ibid.*, p. 598.

The principle of sustainable development is thus a part of modern international law by reason not only of its inescapable logical necessity, but also by reason of its wide and general acceptance by the global community.

The concept has a significant role to play in the resolution of environmentally related disputes. The components of the principle come from well-established areas of international law — human rights, State responsibility, environmental law, economic and industrial law, equity, territorial sovereignty, abuse of rights, good neighbourliness — to mention a few. It has also been expressly incorporated into a number of binding and far-reaching international agreements, thus giving it binding force in the context of those agreements. It offers an important principle for the resolution of tensions between two established rights. It reaffirms in the arena of international law that there must be both development and environmental protection, and that neither of these rights can be neglected.

The general support of the international community does not of course mean that each and every member of the community of nations has given its express and specific support to the principle — nor is this a requirement for the establishment of a principle of customary international law.

As Brierly observes:

> "It would hardly ever be practicable, and all but the strictest of positivists admit that it is not necessary, to show that every state has recognized a certain practice, just as in English law the existence of a valid local custom or custom of trade can be established without proof that every individual in the locality, or engaged in the trade, has practised the custom. This test of *general* recognition is necessarily a vague one; but it is of the nature of customary law, whether national or international . . ."[17]

Evidence appearing in international instruments and State practice (as in development assistance and the practice of international financial institutions) likewise amply supports a contemporary general acceptance of the concept.

Recognition of the concept could thus, fairly, be said to be worldwide[18].

[17] J. Brierly, *The Law of Nations*, 6th ed., 1963, p. 61; emphasis added.

[18] See, further, L. Krämer, *EC Treaty and Environmental Law*, 2nd ed., 1995, p. 63, analysing the environmental connotation in the word "sustainable" and tracing it to the Brundtland Report.

(d) *The Need for International Law to Draw upon the World's Diversity of Cultures in Harmonizing Development and Environmental Protection*

This case, which deals with a major hydraulic project, is an opportunity to tap the wisdom of the past and draw from it some principles which can strengthen the concept of sustainable development, for every development project clearly produces an effect upon the environment, and humanity has lived with this problem for generations.

This is a legitimate source for the enrichment of international law, which source is perhaps not used to the extent which its importance warrants.

In drawing into international law the benefits of the insights available from other cultures, and in looking to the past for inspiration, international environmental law would not be departing from the traditional methods of international law, but would, in fact, be following in the path charted out by Grotius. Rather than laying down a set of principles *a priori* for the new discipline of international law, he sought them also *a posteriori* from the experience of the past, searching through the whole range of cultures available to him for this purpose[19]. From them, he drew the durable principles which had weathered the ages, on which to build the new international order of the future. Environmental law is now in a formative stage, not unlike international law in its early stages. A wealth of past experience from a variety of cultures is available to it. It would be pity indeed if it were left untapped merely because of attitudes of formalism which see such approaches as not being entirely *de rigueur*.

I cite in this connection an observation of Sir Robert Jennings that, in taking note of different legal traditions and cultures, the International Court (as it did in the *Western Sahara* case):

> "was asserting, not negating, the Grotian subjection of the totality of international relations to international law. It seems to the writer, indeed, that at the present juncture in the development of the international legal system it may be more important to stress the imperative need to develop international law to comprehend within itself the rich diversity of cultures, civilizations and legal traditions . . ."[20]

Moreover, especially at the frontiers of the discipline of international

[19] Julius Stone, *Human Law and Human Justice*, 1965, p. 66: "It was for this reason that Grotius added to his theoretical deductions such a mass of concrete examples from history."

[20] Sir Robert Y. Jennings, "Universal International Law in a Multicultural World", in *International Law and the Grotian Heritage: A Commemorative Colloquium on the Occasion of the Fourth Centenary of the Birth of Hugo Grotius*, edited and published by the T.M.C. Asser Institute, The Hague, 1985, p. 195.

law, it needs to be multi-disciplinary, drawing from other disciplines such as history, sociology, anthropology, and psychology such wisdom as may be relevant for its purpose. On the need for the international law of the future to be interdisciplinary, I refer to another recent extra-judicial observation of that distinguished former President of the Court that:

> "there should be a much greater, and a practical, recognition by international lawyers that the rule of law in international affairs, and the establishment of international justice, are inter-disciplinary subjects"[21].

Especially where this Court is concerned, "the essence of true universality"[22] of the institution is captured in the language of Article 9 of the Statute of the International Court of Justice which requires the "representation of the *main forms of civilization* and of the principal legal systems of the world" (emphasis added). The struggle for the insertion of the italicized words in the Court's Statute was a hard one, led by the Japanese representative, Mr. Adatci[23], and, since this concept has thus been integrated into the structure and the Statute of the Court, I see the Court as being charged with a duty to draw upon the wisdom of the world's several civilizations, where such a course can enrich its insights into the matter before it. The Court cannot afford to be monocultural, especially where it is entering newly developing areas of law.

This case touches an area where many such insights can be drawn to the enrichment of the developing principles of environmental law and to a clarification of the principles the Court should apply.

It is in this spirit that I approach a principle which, for the first time in its jurisprudence, the Court is called upon to apply — a principle which will assist in the delicate task of balancing two considerations of enormous importance to the contemporary international scene and, potentially, of even greater importance to the future.

(e) *Some Wisdom from the Past Relating to Sustainable Development*

There are some principles of traditional legal systems that can be woven into the fabric of modern environmental law. They are specially pertinent to the concept of sustainable development which was well

[21] "International Lawyers and the Progressive Development of International Law", *Theory of International Law at the Threshold of the 21st Century*, Jerzy Makarczyk (ed.), 1996, p. 423.

[22] Jennings, "Universal International Law in a Multicultural World", *op. cit.*, p. 189.

[23] On this subject of contention, see *Procès-Verbaux of the Proceedings of the Committee, 16 June-24 July 1920*, esp. p. 136.

recognized in those systems. Moreover, several of these systems have particular relevance to this case, in that they relate to the harnessing of streams and rivers and show a concern that these acts of human interference with the course of nature should always be conducted with due regard to the protection of the environment. In the context of environmental wisdom generally, there is much to be derived from ancient civilizations and traditional legal systems in Asia, the Middle East, Africa, Europe, the Americas, the Pacific, and Australia — in fact, the whole world. This is a rich source which modern environmental law has left largely untapped.

As the Court has observed, "Throughout the ages mankind has, for economic and other reasons, constantly interfered with nature." (Judgment, para. 140.)

The concept of reconciling the needs of development with the protection of the environment is thus not new. Millennia ago these concerns were noted and their twin demands well reconciled in a manner so meaningful as to carry a message to our age.

I shall start with a system with which I am specially familiar, which also happens to have specifically articulated these two needs — development and environmental protection — in its ancient literature. I refer to the ancient irrigation-based civilization of Sri Lanka[24]. It is a system which, while recognizing the need for development and vigorously implementing schemes to this end, at the same time specifically articulated the need for environmental protection and ensured that the technology it employed paid due regard to environmental considerations. This concern for the environment was reflected not only in its literature and its technology, but also in its legal system, for the felling of certain forests was prohibited, game sanctuaries were established, and royal edicts decreed that the natural resource of water was to be used to the last drop without any wastage.

This system, some details of which I shall touch on[25], is described by

[24] This was not an isolated civilization, but one which maintained international relations with China, on the one hand, and with Rome (1st c.) and Byzantium (4th c.), on the other. The presence of its ambassadors at the Court of Rome is recorded by Pliny (lib. vi c. 24), and is noted by Grotius — *De Jure Praedae Commentarius*, G. L. Williams and W. H. Zeydol (eds.), *Classics of International Law*, James B. Scott (ed.), 1950, pp. 240-241. This diplomatic representation also receives mention in world literature (e.g., Milton, *Paradise Regained*, Book IV). See also Grotius' reference to the detailed knowledge of Ceylon possessed by the Romans — Grotius, *Mare Liberum* (Freedom of the Seas), trans. R. van Deman Magoffin, p. 12. The island was known as Taprobane to the Greeks, Serendib to the Arabs, Lanka to the Indians, Ceilao to the Portuguese, and Zeylan to the Dutch. Its trade with the Roman Empire and the Far East was noted by Gibbon

[25] It is an aid to the recapitulation of the matters mentioned that the edicts and works I shall refer to have been the subject of written records, maintained contemporaneously and over the centuries. See footnote 38 below.

Arnold Toynbee in his panoramic survey of civilizations. Referring to it as an "amazing system of waterworks"[26], Toynbee describes[27] how hill streams were tapped and their water guided into giant storage tanks, some of them four thousand acres in extent[28], from which channels ran on to other larger tanks[29]. Below each great tank and each great channel were hundreds of little tanks, each the nucleus of a village.

The concern for the environment shown by this ancient irrigation system has attracted study in a recent survey of the Social and Environmental Effects of Large Dams[30], which observes that among the environmentally related aspects of its irrigation systems were the "erosion control tank" which dealt with the problem of silting by being so designed as to collect deposits of silt before they entered the main water storage tanks. Several erosion control tanks were associated with each village irrigation system. The significance of this can well be appreciated in the context of the present case, where the problem of silting has assumed so much importance.

Another such environmentally related measure consisted of the "forest tanks" which were built in the jungle above the village, not for the purpose of irrigating land, but to provide water to wild animals[31].

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[26] Arnold J. Toynbee, *A Study of History*, Somervell's Abridgment, 1960, Vol. 1, p. 257.

[27] *Ibid.*, p. 81, citing John Still, *The Jungle Tide*.

[28] Several of these are still in use, e.g., the *Tissawewa* (3rd c. BC); the *Nuwarawewa* (3rd c. BC); the *Minneriya tank* (275 AD); the *Kalawewa* (5th c. AD); and the *Parakrama Samudra* (Sea of Parakrama, 11th c. AD).

[29] The technical sophistication of this irrigation system has been noted also in Joseph Needham's monumental work on *Science and Civilization in China*. Needham, in describing the ancient irrigation works of China, makes numerous references to the contemporary irrigation works of Ceylon, which he discusses at some length. See especially, Vol. 4, *Physics and Physical Technology*, 1971, pp. 368 *et seq.* Also p. 215: "We shall see how skilled the ancient Ceylonese were in this art."

[30] Edward Goldsmith and Nicholas Hildyard, *The Social and Environmental Effects of Large Dams*, 1985, pp. 291-304.

[31] For these details, see Goldsmith and Hildyard, *ibid.*, pp. 291 and 296. The same authors observe:

> "Sri Lanka is covered with a network of thousands of man-made lakes and ponds, known locally as *tanks* (after *tanque*, the Portuguese word for reservoir). Some are truly massive, many are thousands of years old, and almost all show a high degree of sophistication in their construction and design. Sir James Emerson Tennent, the nineteenth century historian, marvelled in particular at the numerous channels that were dug underneath the bed of each lake in order to ensure that the flow of water was 'constant and equal as long as any water remained in the tank'."

This system of tanks and channels, some of them two thousand years old, constitute in their totality several multiples of the irrigation works involved in the present scheme. They constituted development as it was understood at the time, for they achieved in Toynbee's words, "the arduous feat of conquering the parched plains of Ceylon for agriculture"[32]. Yet they were executed with meticulous regard for environmental concerns, and showed that the concept of sustainable development was consciously practised over two millennia ago with much success.

Under this irrigation system, major rivers were dammed and reservoirs created, on a scale and in a manner reminiscent of the damming which the Court saw on its inspection of the dams in this case.

This ancient concept of development was carried out on such a large scale that, apart from the major reservoirs[33], of which there were several

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[32] Toynbee, *op. cit.*, p. 81. Andrew Carnegie, the donor of the Peace Palace, the seat of this Court, has described this ancient work of development in the following terms:

> "The position held by Ceylon in ancient days as the great granary of Southern Asia explains the precedence accorded to agricultural pursuits. Under native rule the whole island was brought under irrigation by means of artificial lakes, constructed by dams across ravines, many of them of great extent — one still existing is twenty miles in circumference — but the system has been allowed to fall into decay." (Andrew Carnegie, *Round the World*, 1879 (1933 ed.), pp. 155-160.)

[33] The first of these major tanks was thought to have been constructed in 504 BC (Sir James Emerson Tennent, *Ceylon*, 1859, Vol. I, p. 367). A few examples, straddling 15 centuries, were:

— the *Vavunik-kulam* (3rd c. BC) (1,975 acres water surface, 596 million cubic feet water capacity); the *Pavatkulam* (3rd or 2nd c. BC) (2,029 acres water surface, 770 million cubic feet water capacity) — Parker, *Ancient Ceylon*, 1909, pp. 363, 373;

— the *Tissawewa* (3rd c. BC); and the *Nuwarawewa* (3rd c. BC), both still in service and still supplying water to the ancient capital Anuradhapura, which is now a provincial capital;
— the *Minneriya tank* (275 AD) ("The reservoir upwards of twenty miles in circumference . . . the great embankment remains nearly perfect") (Tennent, *op. cit.*, Vol. II, p. 600);

— the *Topawewa* (4th c. AD), area considerably in excess of 1,000 acres;
— the *Kalawewa* (5th c. AD) — embankment 3.25 miles long, rising to a height of 40 feet, tapping the river Kala Oya and supplying water to the capital Anuradhapura through a canal 50 miles in length;
— the *Yodawewa* (5th c. AD). Needham describes this as "A most grandiose conception . . . the culmination of Ceylonese hydraulics . . . an artificial lake with a six-and-a-half mile embankment on three sides of a square, sited on a sloping plain and not in a river valley at all." It was fed by a 50-mile canal from the river Malvatu-Oya;

— the *Parakrama Samudra* (Sea of Parakrama) (11th c. AD), embankment 9 miles long, up to 40 feet high, enclosing 6,000 acres of water area. (Brohier, *Ancient Irrigation Works in Ceylon*, 1934, p. 9.)

dozen, between 25,000 and 30,000 minor reservoirs were fed from these reservoirs through an intricate network of canals[34].

The philosophy underlying this gigantic system[35], which for upwards of two thousand years served the needs of man and nature alike, was articulated in a famous principle laid down by an outstanding monarch[36] that "not even a little water that comes from the rain is to flow into the ocean without being made useful to man"[37]. According to the ancient chronicles[38], these works were undertaken "for the benefit of the country", and "out of compassion for all living creatures"[39]. This complex of irrigation works was aimed at making the entire country a granary. They embodied the concept of development *par excellence*.

Just as development was the aim of this system, it was accompanied by a systematic philosophy of conservation dating back to at least the third century BC. The ancient chronicles record that when the King (Devanampiya Tissa, 247-207 BC) was on a hunting trip (around 223 BC), the Arahat[40] Mahinda, son of the Emperor Asoka of India, preached to him

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[34] On the irrigation systems, generally, see H. Parker, *Ancient Ceylon, op. cit.*; R. L. Brohier, *Ancient Irrigation Works in Ceylon*, 1934; Edward Goldsmith and Nicholas Hildyard, *op. cit.*, pp. 291-304. Needham, describing the ancient canal system of China, observes that "it was comparable only with the irrigation contour canals of Ceylon, not with any work in Europe" (*op. cit.*, Vol. 4, p. 359).

[35] "so vast were the dimensions of some of these gigantic tanks that many still in existence cover an area from fifteen to twenty miles in circumference" (Tennent, *op. cit.*, Vol. I, p. 364).

[36] King Parakrama Bahu (1153-1186 AD). This monarch constructed or restored 163 major tanks, 2,376 minor tanks, 3,910 canals, and 165 dams. His masterpiece was the Sea of Parakrama, referred to in footnote 33. All of this was conceived within the environmental philosophy of avoiding any wastage of natural resources.

[37] See Toynbee's reference to this:

> "The idea underlying the system was very great. It was intended by the tank-building kings that none of the rain which fell in such abundance in the mountains should reach the sea without paying tribute to man on the way." (*Op. cit.*, p. 81.)

[38] *The Mahavamsa*, Turnour's translation, Chap. XXXVII, p. 242. The *Mahavamsa* was the ancient historical chronicle of Sri Lanka, maintained contemporaneously by Buddhist monks, and an important source of dating for South Asian history. Commencing at the close of the 4th century AD, and incorporating earlier chronicles and oral traditions dating back a further eight centuries, this constitutes a continuous record for over 15 centuries — see *The Mahavamsa or The Great Chronicle of Ceylon*, translated into English by Wilhelm Geiger, 1912, Introduction, pp. ix-xii. The King's statement, earlier referred to, is recorded in the *Mahavamsa* as follows:

> "In the realm that is subject to me are . . . but few fields which are dependent on rivers with permanent flow . . . Also by many mountains, thick jungles and by widespread swamps my kingdom is much straitened. Truly, in such a country not even a little water that comes from the rain must flow into the ocean without being made useful to man." (*Ibid.*, Chap. LXVIII, verses 8-12.)

[39] See also, on this matter, Emerson Tennent, *op. cit.*, Vol. I, p. 311.

[40] A person who has attained a very high state of enlightenment. For its more technical meaning, see Walpola Rahula, *History of Buddhism in Ceylon*, 1956, pp. 217-221.

a sermon on Buddhism which converted the king. Here are excerpts from that sermon:

> "O great King, the birds of the air and the beasts have as equal a right to live and move about in any part of the land as thou. The land belongs to the people and all living beings; thou art only the guardian of it."[41]

This sermon, which indeed contained the first principle of modern environmental law — the principle of trusteeship of earth resources — caused the king to start sanctuaries for wild animals — a concept which continued to be respected for over twenty centuries. The traditional legal system's protection of fauna and flora, based on this Buddhist teaching, extended well into the eighteenth century[42].

The sermon also pointed out that even birds and beasts have a right to freedom from fear[43].

The notion of not causing harm to others and hence *sic utere tuo ut alienum non laedas* was a central notion of Buddhism. It translated well into environmental attitudes. *"Alienum"* in this context would be extended by Buddhism to future generations as well, and to other component elements of the natural order beyond man himself, for the Buddhist concept of duty had an enormously long reach.

This marked concern with environmental needs was reflected also in royal edicts, dating back to the third century BC, which ordained that certain primeval forests should on no account be felled. This was because adequate forest cover in the highlands was known to be crucial to the irrigation system as the mountain jungles intercepted and stored the monsoon rains[44]. They attracted the rain which fed the river and irrigation systems of the country, and were therefore considered vital.

Environmental considerations were reflected also in the actual work of construction and engineering. The ancient engineers devised an answer to the problem of silting (which has assumed much importance in the present case), and they invented a device (the *bisokotuwa* or valve pit), the counterpart of the sluice, for dealing with this environmental prob-

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[41] This sermon is recorded in *The Mahavamsa*, Chap. XIV.

[42] See K. N. Jayatilleke, "The Principles of International Law in Buddhist Doctrine", *Recueil des cours de l'Académie de droit international*, Vol. 120, 1967, p. 558.

[43] For this idea in the scriptures of Buddhism, see *Digha Nikaya*, III, Pali Text Society, p. 850.

[44] Goldsmith and Hildyard, *op. cit.*, p. 299. See, also, R. L. Brohier, "The Interrelation of Groups of Ancient Reservoirs and Channels in Ceylon", *Journal of the Royal Asiatic Society (Ceylon)*, 1937, Vol. 34, No. 90, p. 65. Brohier's study is one of the foremost authorities on the subject.

lem[45], by controlling the pressure and the quantity of the outflow of water when it was released from the reservoir[46]. Weirs were also built, as in the case of the construction involved in this case, for raising the levels of river water and regulating its flow[47].

This juxtaposition in this ancient heritage of the concepts of development and environmental protection invites comment immediately from those familiar with it. Anyone interested in the human future would perceive the connection between the two concepts and the manner of their reconciliation.

Not merely from the legal perspective does this become apparent, but even from the approaches of other disciplines.

Thus Arthur C. Clarke, the noted futurist, with that vision which has enabled him to bring high science to the service of humanity, put his finger on the precise legal problem we are considering when he observed: "the small Indian Ocean island . . . provides textbook examples of many modern dilemmas: *development* versus *environment*"[48], and proceeds immediately to recapitulate the famous sermon, already referred to, relating to the trusteeship of land, observing, "For as King Devanampiya Tissa was told three centuries before the birth of Christ, we are its guardians — *not* its owners."[49]

The task of the law is to convert such wisdom into practical terms —

[45] H. Parker, *Ancient Ceylon, op. cit.*, p. 379:

> "Since about the middle of the last century, open wells, called 'valve towers' when they stand clear of the embankment or 'valve pits' when they are in it, have been built in numerous reservoirs in Europe. Their duty is to hold the valves, and the lifting-gear for working them, by means of which the outward flow of water is regulated or totally stopped. Such also was the function of the *bisokotuwa* of the Sinhalese engineers; they were the first inventors of the valve-pit more than 2,100 years ago."

[46] H. Parker, *op. cit.* Needham observes:

> "Already in the first century AD they [the Sinhalese engineers] understood the principle of the oblique weir . . . But perhaps the most striking invention was the intake-towers or valve towers *(Bisokotuwa)* which were fitted in the reservoirs perhaps from the 2nd Century BC onwards, certainly from the 2nd Century AD . . . In this way silt and scum-free water could be obtained and at the same time the pressure-head was so reduced as to make the outflow controllable." (Joseph Needham, *Science and Civilization in China, op. cit.*, Vol. 4, p. 372.)

[47] K. M. de Silva, *A History of Sri Lanka*, 1981, p. 30.

[48] Arthur C. Clarke, "Sri Lanka's Wildlife Heritage", *National Geographic*, August 1983, No. 2, p. 254; emphasis added.

[49] Arthur C. Clarke has also written:

> "Of all Ceylon's architectural wonders, however, the most remarkable — and certainly the most useful — is the enormous irrigation system which, for over two thousand years, has brought prosperity to the rice farmers in regions where it may not rain for six months at a time. Frequently ruined, abandoned and rebuilt, this legacy of the ancient engineers is one of the island's most precious possessions. Some of its artificial lakes are ten or twenty kilometres in circumference, and abound with birds and wildlife." (*The View from Serendip*, 1977, p. 121.)

and the law has often lagged behind other disciplines in so doing. Happily for international law, there are plentiful indications, as recited earlier in this opinion, of that degree of "general recognition among states of a certain practice as obligatory"[50] to give the principle of sustainable development the nature of customary law.

This reference to the practice and philosophy of a major irrigation civilization of the pre-modern world[51] illustrates that when technology on this scale was attempted it was accompanied by a due concern for the environment. Moreover, when so attempted, the necessary response from the traditional legal system, as indicated above, was one of affirmative steps for environmental protection, often taking the form of royal decrees, apart from the practices of a sophisticated system of customary law which regulated the manner in which the irrigation facilities were to be used and protected by individual members of the public.

The foregoing is but one illustrative example of the concern felt by prior legal systems for the preservation and protection of the environment. There are other examples of complex irrigation systems that have sustained themselves for centuries, if not millennia.

My next illustration comes from two ancient cultures of sub-Saharan Africa — those of the Sonjo and the Chagga, both Tanzanian tribes[52]. Their complicated networks of irrigation furrows, collecting water from the mountain streams and transporting it over long distances to the fields below, have aroused the admiration of modern observers not merely for their technical sophistication, but also for the durability of the complex irrigation systems they fashioned. Among the Sonjo, it was considered to be the sacred duty of each generation to ensure that the system was kept in good repair and all able-bodied men in the villages were expected to take part[53]. The system comprised a fine network of small canals, reinforced by a superimposed network of larger channels. The water did

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[50] J. Brierly, *The Law of Nations, op. cit.*, p. 61.

[51] "It is possible that in no other part of the world are there to be found within the same space the remains of so many works for irrigation, which are at the same time of such great antiquity and of such vast magnitude as in Ceylon . . ." (Bailey, *Report on Irrigation in Uva*, 1859; see also R. L. Brohier, *Ancient Irrigation Works in Ceylon, op. cit.*, p. 1);

"No people in any age or country had so great practice and experience in the construction of works for irrigation." (Sir James Emerson Tennent, *op. cit.*, Vol. I, p. 468);

"The stupendous ruins of their reservoirs are the proudest monuments which remain of the former greatness of their country . . . Excepting the exaggerated dimensions of Lake Moeris in Central Egypt, and the mysterious 'Basin of Al Aram' . . . no similar constructions formed by any race, whether ancient or modern, exceed in colossal magnitude the stupendous tanks of Ceylon." (Sir James Emerson Tennent, quoted in Brohier, *supra*, p. 1.)

[52] Goldsmith and Hildyard, *op. cit.*, pp. 282-291.

[53] *Ibid.*, pp. 284-285.

not enter the irrigation area unless it was strictly required, and was not allowed to pass through the plots in the rainy season. There was thus no over-irrigation, salinity was reduced, and water-borne diseases avoided[54].

Sir Charles Dundas, who visited the Chagga in the first quarter of this century, was much impressed by the manner in which, throughout the long course of the furrows, society was so organized that law and order prevailed[55]. Care of the furrows was a prime social duty, and if a furrow was damaged, even accidentally, one of the elders would sound a horn in the evening (which was known as the call to the furrows), and next morning everyone would leave their normal work and set about the business of repair[56]. The furrow was a social asset owned by the clan[57].

Another example is that of the *qanats*[58] of Iran, of which there were around 22,000, comprising more than 170,000 miles[59] of underground irrigation channels built thousands of years ago, and many of them still functioning[60]. Not only is the extent of this system remarkable, but also the fact that it has functioned for thousands of years and, until recently, supplied Iran with around 75 per cent of the water used for both irrigation and domestic purposes.

By way of contrast, where the needs of the land were neglected, and massive schemes launched for urban supply rather than irrigation, there was disaster. The immense works in the Euphrates Valley in the third millennium BC aimed not at improving the irrigation system of the local tribesmen, but at supplying the requirements of a rapidly growing urban society (e.g., a vast canal built around 2400 BC by King Entemenak) led to seepage, flooding and over-irrigation[61]. Traditional farming methods and later irrigation systems helped to overcome the resulting problems of waterlogging and salinization.

China was another site of great irrigation works, some of which are still in use over two millennia after their construction. For example, the ravages of the Mo river were overcome by an excavation through a

[54] Goldsmith and Hildyard, *op. cit.*, p. 284.
[55] Sir Charles Dundas, *Kilimanjaro and Its Peoples*, 1924, p. 262.
[56] Goldsmith and Hildyard, *op. cit.*, p. 289.
[57] See further Fidelio T. Masao, "The Irrigation System in Uchagga: An Ethno-Historical Approach", *Tanzania Notes and Records*, No. 75, 1974.
[58] *Qanats* comprise a series of vertical shafts dug down to the aquifer and joined by a horizontal canal — see Goldsmith and Hildyard, *op. cit.*, p. 277.
[59] Some idea of the immensity of this work can be gathered from the fact that it would cost around one million dollars to build an eight kilometres *qanat* with an average tunnel depth of 15 metres (*ibid.*, p. 280).
[60] *Ibid.*, p. 277.
[61] Goldsmith and Hildyard, *op. cit.*, p. 308.

mountain and the construction of two great canals. Needham describes this as "one of the greatest of Chinese engineering operations which, now 2,200 years old, is still in use today"[62]. An ancient stone inscription teaching the art of river control says that its teaching "holds good for a thousand autumns"[63]. Such action was often inspired by the philosophy recorded in the *Tao Te Ching* which "with its usual gemlike brevity says 'Let there be no action [contrary to Nature] and there will be nothing that will not be well regulated'".[64] Here, from another ancient irrigation civilization, is yet another expression of the idea of the rights of future generations being served through the harmonization of human developmental work with respect for the natural environment.

Regarding the Inca civilization at its height, it has been observed that it continually brought new lands under cultivation by swamp drainage, expansion of irrigation works, terracing of hillsides and construction of irrigation works in dry zones, the goal being always the same — better utilization of all resources so as to maintain an equilibrium between production and consumption[65]. In the words of a noted writer on this civilization, "in this respect we can consider the Inca civilization triumphant, since it conquered the eternal problem of *maximum use* and *conservation of soil*"[66]. Here, too, we note the harmonization of developmental and environmental considerations.

Many more instances can be cited of irrigation cultures which accorded due importance to environmental considerations and reconciled the rights of present and future generations. I have referred to some of the more outstanding. Among them, I have examined one at greater length, partly because it combined vast hydraulic development projects with a meticulous regard for environmental considerations, and partly because both development and environmental protection are mentioned in its ancient records. That is sustainable development *par excellence*; and the principles on which it was based must surely have a message for modern law.

Traditional wisdom which inspired these ancient legal systems was able to handle such problems. Modern legal systems can do no less, achieving a blend of the concepts of development and of conservation of the environment, which alone does justice to humanity's obligations to itself and

[62] *Op. cit.*, Vol. 4, p. 288.
[63] *Ibid.*, p. 295.
[64] Needham, *Science and Civilization in China*, Vol. 2, *History of Scientific Thought*, 1969, p. 69.
[65] Jorge E. Hardoy, *Pre-Columbian Cities*, 1973, p. 415.
[66] John Collier, *Los indios de las Americas*, 1960, cited in Hardoy, *op. cit.*, p. 415. See also Donald Collier, "Development of Civilization on the Coast of Peru", in *Irrigation Civilizations: A Comparative Study*, Julian H. Steward (ed.), 1955.

to the planet which is its home. Another way of viewing the problem is to look upon it as involving the imperative of balancing the needs of the present generation with those of posterity.

In relation to concern for the environment generally, examples may be cited from nearly every traditional system, ranging from Australasia and the Pacific Islands, through Amerindian and African cultures to those of ancient Europe. When Native American wisdom, with its deep love of nature, ordained that no activity affecting the land should be undertaken without giving thought to its impact on the land for seven generations to come[67]; when African tradition viewed the human community as threefold — past, present and future — and refused to adopt a one-eyed vision of concentration on the present; when Pacific tradition despised the view of land as merchandise that could be bought and sold like a common article of commerce[68], and viewed land as a living entity which lived and grew with the people and upon whose sickness and death the people likewise sickened and died; when Chinese and Japanese culture stressed the need for harmony with nature; and when Aboriginal custom, while maximizing the use of all species of plant and animal life, yet decreed that no land should be used by man to the point where it could not replenish itself[69], these varied cultures were reflecting the ancient wisdom of the human family which the legal systems of the time and the tribe absorbed, reflected and turned into principles whose legal validity cannot be denied. Ancient Indian teaching so respected the environment that it was illegal

[67] On Native American attitudes to land, see Guruswamy, Palmer and Weston (eds.), *International Environmental Law and World Order*, 1994, pp. 298-299. On American Indian attitudes, see further J. Callicott, "The Traditional American Indian and Western European Attitudes towards Nature: An Overview", *Environmental Ethics*, 1982, Vol. 4, p. 293; A. Wiggins, "Indian Rights and the Environment", *Yale J. Int'l Law*, 1993, Vol. 18, p. 345; J. Hughes, *American Indian Ecology*, 1983.

[68] A Pacific Islander, giving evidence before the first Land Commission in the British Solomons (1919-1924), poured scorn on the concept that land could be treated "as if it were a thing like a box" which could be bought and sold, pointing out that land was treated in his society with respect and with due regard for the rights of future generations. (Peter G. Sack, *Land between Two Laws*, 1993, p. 33.)

[69] On Aboriginal attitudes to land, see E. M. Eggleston, *Fear, Favour and Affection*, 1976. For all their concern with the environment, the Aboriginal people were not without their own development projects:

> "There were remarkable Aboriginal water control schemes at Lake Condah, Toolondo and Mount William in south-western Victoria. These were major engineering feats, each involving several kilometres of stone channels connecting swamp and watercourses.
>
> At Lake Condah, thousands of years before Leonardo da Vinci studied the hydrology of the northern Italian lakes, the original inhabitants of Australia perfectly understood the hydrology of the site. A sophisticated network of traps, weirs and sluices were designed . . ." (Stephen Johnson *et al.*, *Engineering and Society: An Australian Perspective*, 1995, p. 35.)

to cause wanton damage, even to an enemy's territory in the course of military conflict[70].

Europe, likewise, had a deep-seated tradition of love for the environment, a prominent feature of European culture, until the industrial revolution pushed these concerns into the background. Wordsworth in England, Thoreau in the United States, Rousseau in France, Tolstoy and Chekhov in Russia, Goethe in Germany spoke not only for themselves, but represented a deep-seated love of nature that was instinct in the ancient traditions of Europe — traditions whose gradual disappearance these writers lamented in their various ways[71].

Indeed, European concern with the environment can be traced back through the millennia to such writers as Virgil, whose *Georgics*, composed between 37 and 30 BC, extols the beauty of the Italian countryside and pleads for the restoration of the traditional agricultural life of Italy, which was being damaged by the drift to the cities[72].

This survey would not be complete without a reference also to the principles of Islamic law that inasmuch as all land belongs to God, land is never the subject of human ownership, but is only held in trust, with all the connotations that follow of due care, wise management, and custody for future generations. The first principle of modern environmental law — the principle of trusteeship of earth resources — is thus categorically formulated in this system.

The ingrained values of any civilization are the source from which its legal concepts derive, and the ultimate yardstick and touchstone of their validity. This is so in international and domestic legal systems alike, save that international law would require a worldwide recognition of those values. It would not be wrong to state that the love of nature, the desire for its preservation, and the need for human activity to respect the

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[70] Nagendra Singh, *Human Rights and the Future of Mankind*, 1981, p. 93.

[71] Commenting on the rise of naturalism in all the arts in Europe in the later Middle Ages, one of this century's outstanding philosophers of science has observed:

> "The whole atmosphere of every art exhibited direct joy in the apprehension of the things around us. The craftsmen who executed the later mediaeval decorative sculpture, Giotto, Chaucer, Wordsworth, Walt Whitman, and at the present day the New England poet Robert Frost, are all akin to each other in this respect." (Alfred North Whitehead, *Science and the Modern World*, 1926, p. 17.)

[72] See the *Georgics*, Book II, l. 36 ff.; l. 458 ff. Also *Encyclopaedia Britannica*, 1992, Vol. 29, pp. 499-500.

requisites for its maintenance and continuance are among those pristine and universal values which command international recognition.

The formalism of modern legal systems may cause us to lose sight of such principles, but the time has come when they must once more be integrated into the corpus of the living law. As stated in the exhaustive study of *The Social and Environmental Effects of Large Dams*, already cited, "We should examine not only what has caused modern irrigation systems to *fail*; it is much more important to understand what has made traditional irrigation societies to *succeed*."[73]

Observing that various societies have practised sustainable irrigation agriculture over thousands of years, and that modern irrigation systems rarely last more than a few decades, the authors pose the question whether it was due to the achievement of a "congruence of fit" between their methods and "the nature of land, water and climate"[74]. Modern environmental law needs to take note of the experience of the past in pursuing this "congruence of fit" between development and environmental imperatives.

By virtue of its representation of the main forms of civilization, this Court constitutes a unique forum for the reflection and the revitalization of those global legal traditions. There were principles ingrained in these civilizations as well as embodied in their *legal systems*, for legal systems include not merely written legal systems but traditional legal systems as well, which modern researchers have shown to be no less legal systems than their written cousins, and in some respects even more sophisticated and finely tuned than the latter[75].

Living law which is daily observed by members of the community, and compliance with which is so axiomatic that it is taken for granted, is not deprived of the character of law by the extraneous test and standard of reduction to writing. Writing is of course useful for establishing certainty, but when a duty such as the duty to protect the environment is so well accepted that all citizens act upon it, that duty is part of the legal system in question[76].

Moreover, when the Statute of the Court described the sources of international law as including the "general principles of law recognized

[73] Goldsmith and Hildyard, *op. cit.*, p. 316.

[74] *Ibid.*

[75] See, for example, M. Gluckman, *African Traditional Law in Historical Perspective*, 1974, *The Ideas in Barotse Jurisprudence*, 2nd ed., 1972, and *The Judicial Process among the Barotse*, 1955; A. L. Epstein, *Juridical Techniques and the Judicial Process: A Study in African Customary Law*, 1954.

[76] On the precision with which these systems assigned duties to their members, see Malinowski, *Crime and Custom in Savage Society*, 1926.

by civilized nations", it expressly opened a door to the entry of such principles into modern international law.

(f) *Traditional Principles That Can Assist in the Development of Modern Environmental Law*

As modern environmental law develops, it can, with profit to itself, take account of the perspectives and principles of traditional systems, not merely in a general way, but with reference to specific principles, concepts, and aspirational standards.

Among those which may be extracted from the systems already referred to are such far-reaching principles as the principle of trusteeship of earth resources, the principle of intergenerational rights, and the principle that development and environmental conservation must go hand in hand. Land is to be respected as having a vitality of its own and being integrally linked to the welfare of the community. When it is used by humans, every opportunity should be afforded to it to replenish itself. Since flora and fauna have a niche in the ecological system, they must be expressly protected. There is a duty lying upon all members of the community to preserve the integrity and purity of the environment.

Natural resources are not individually, but collectively, owned, and a principle of their use is that they should be used for the maximum service of people. There should be no waste, and there should be a maximization of the use of plant and animal species, while preserving their regenerative powers. The purpose of development is the betterment of the condition of the people.

Most of them have relevance to the present case, and all of them can greatly enhance the ability of international environmental law to cope with problems such as these if and when they arise in the future. There are many routes of entry by which they can be assimilated into the international legal system, and modern international law would only diminish itself were it to lose sight of them — embodying as they do the wisdom which enabled the works of man to function for centuries and millennia in a stable relationship with the principles of the environment. This approach assumes increasing importance at a time when such a harmony between humanity and its planetary inheritance is a prerequisite for human survival.

* * *

Sustainable development is thus not merely a principle of modern international law. It is one of the most ancient of ideas in the human heritage. Fortified by the rich insights that can be gained from millennia

of human experience, it has an important part to play in the service of international law.

B. The Principle of Continuing Environmental Impact Assessment

(a) *The Principle of Continuing Environmental Impact Assessment*

Environmental Impact Assessment (EIA) has assumed an important role in this case.

In a previous opinion[77] I have had occasion to observe that this principle was gathering strength and international acceptance, and had reached the level of general recognition at which this Court should take notice of it[78].

I wish in this opinion to clarify further the scope and extent of the environmental impact principle in the sense that environmental impact assessment means not merely an assessment prior to the commencement of the project, but a continuing assessment and evaluation as long as the project is in operation. This follows from the fact that EIA is a dynamic principle and is not confined to a pre-project evaluation of possible environmental consequences. As long as a project of some magnitude is in operation, EIA must continue, for every such project can have unexpected consequences; and considerations of prudence would point to the need for continuous monitoring[79].

The greater the size and scope of the project, the greater is the need for a continuous monitoring of its effects, for EIA before the scheme can never be expected, in a matter so complex as the environment, to anticipate every possible environmental danger.

In the present case, the incorporation of environmental considerations into the Treaty by Articles 15 and 19 meant that the principle of EIA was also built into the Treaty. These provisions were clearly not restricted to EIA before the project commenced, but also included the concept of

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[77] *Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the* Nuclear Tests (New Zealand *v.* France) *Case, I.C.J. Reports 1995*, p. 344. See, also, *Legality of the Use by a State of Nuclear Weapons in Armed Conflict, I.C.J. Reports 1996*, p. 140.

[78] Major international documents recognizing this principle (first established in domestic law under the 1972 National Environmental Protection Act of the United States) are the 1992 Rio Declaration (Principle 17); United Nations General Assembly resolution 2995 (XXVII), 1972; the 1978 UNEP Draft Principles of Conduct (Principle 5); Agenda 21 (paras. 7.41 *(b)* and 8.4); the 1974 Nordic Environmental Protection Convention (Art. 6); the 1985 EC Environmental Assessment Directive (Art. 3); and the 1991 Espoo Convention. The status of the principle in actual practice is indicated also by the fact that multilateral development banks have adopted it as an essential precaution (World Bank Operational Directive 4.00).

[79] *Trail Smelter Arbitration* (United Nations, *Reports of International Arbitral Awards, (RIAA)*, 1941, Vol. III, p. 1907).

monitoring during the continuance of the project. Article 15 speaks expressly of monitoring of the water quality during the *operation* of the System of Locks, and Article 19 speaks of compliance with obligations for the protection of nature arising in connection with the construction and *operation* of the System of Locks.

Environmental law in its current state of development would read into treaties which may reasonably be considered to have a significant impact upon the environment, a duty of environmental impact assessment and this means also, whether the treaty expressly so provides or not, a duty of monitoring the environmental impacts of any substantial project during the operation of the scheme.

Over half a century ago the *Trail Smelter Arbitration*[80] recognized the importance of continuous monitoring when, in a series of elaborate provisions, it required the parties to monitor subsequent performance under the decision[81]. It directed the Trail Smelter to install observation stations, equipment necessary to give information of gas conditions and sulphur dioxide recorders, and to render regular reports which the Tribunal would consider at a future meeting. In the present case, the Judgment of the Court imposes a requirement of joint supervision which must be similarly understood and applied.

The concept of monitoring and exchange of information has gathered much recognition in international practice. Examples are the Co-operative Programme for the Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe, under the ECE Convention, the Vienna Convention for the Protection of the Ozone Layer, 1985 (Arts. 3 and 4), and the Convention on Long-Range Transboundary Air Pollution, 1979 (Art. 9)[82]. There has thus been growing international recognition of the concept of continuing monitoring as part of EIA.

The Court has indicated in its Judgment (para. 155 (2) (C)) that a joint operational régime must be established in accordance with the Treaty of 16 September 1977. A continuous monitoring of the scheme for its environmental impacts will accord with the principles outlined, and be a part of that operational régime. Indeed, the 1977 Treaty, with its contemplated régime of joint operation and joint supervision, had itself a built-in régime of continuous joint environmental monitoring. This principle of environmental law, as reinforced by the terms of the Treaty and as now incorporated into the Judgment of the Court (para. 140), would require the Parties to take upon themselves an obligation to set up the machinery for continuous watchfulness, anticipation and evaluation

[80] *RIAA*, 1941, Vol. III, p. 1907.
[81] See *ibid.*, pp. 1934-1937.
[82] *ILM*, 1979, Vol. XVIII, p. 1442.

at every stage of the project's progress, throughout its period of active operation.

Domestic legal systems have shown an intense awareness of this need and have even devised procedural structures to this end. In India, for example, the concept has evolved of the "continuous mandamus" — a court order which specifies certain environmental safeguards in relation to a given project, and does not leave the matter there, but orders a continuous monitoring of the project to ensure compliance with the standards which the court has ordained[83].

EIA, being a specific application of the larger general principle of caution, embodies the obligation of continuing watchfulness and anticipation.

(b) *The Principle of Contemporaneity in the Application of Environmental Norms*

This is a principle which supplements the observations just made regarding continuing assessment. It provides the standard by which the continuing assessment is to be made.

This case concerns a treaty that was entered into in 1977. Environmental standards and the relevant scientific knowledge of 1997 are far in advance of those of 1977. As the Court has observed, new scientific insights and a growing awareness of the risks for mankind have led to the development of new norms and standards:

> "Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past." (Para. 140.)

This assumes great practical importance in view of the continued joint monitoring that will be required in terms of the Court's Judgment.

Both Parties envisaged that the project they had agreed upon was not one which would be operative for just a few years. It was to reach far into the long-term future, and be operative for decades, improving in a permanent way the natural features that it dealt with, and forming a lasting contribution to the economic welfare of both participants.

If the Treaty was to operate for decades into the future, it could not

[83] For a reference to environmentally related judicial initiatives of the courts of the SAARC Region, see the Proceedings of the Regional Symposium on the Role of the Judiciary in Promoting the Rule of Law in the Area of Sustainable Development, held in Colombo, Sri Lanka, 4-6 July 1997, shortly to be published.

operate on the basis of environmental norms as though they were frozen in time when the Treaty was entered into.

This inter-temporal aspect of the present case is of importance to all treaties dealing with projects impacting on the environment. Unfortunately, the Vienna Convention offers very little guidance regarding this matter which is of such importance in the environmental field. The provision in Article 31, paragraph 3 *(c)*, providing that "any relevant rules of international law applicable in the relations between the parties" shall be taken into account, scarcely covers this aspect with the degree of clarity requisite to so important a matter.

Environmental concerns are live and continuing concerns whenever the project under which they arise may have been inaugurated. It matters little that an undertaking has been commenced under a treaty of 1950, if in fact that undertaking continues in operation in the year 2000. The relevant environmental standards that will be applicable will be those of the year 2000.

As this Court observed in the *Namibia* case, "an international instrument has to be interpreted and applied within the framework of the entire legal system prevailing at the time of the interpretation" (*Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970), Advisory Opinion, I.C.J. Reports 1971*, p. 31, para. 53), and these principles are "not limited to the rules of international law applicable at the time the treaty was concluded"[84].

Environmental rights are human rights. Treaties that affect human rights cannot be applied in such a manner as to constitute a denial of human rights as understood at the time of their application. A Court cannot endorse actions which are a violation of human rights by the standards of their time merely because they are taken under a treaty which dates back to a period when such action was not a violation of human rights.

Support for this proposition can be sought from the opinion of Judge Tanaka in *South West Africa*, when he observed that a new customary law could be applied to the interpretation of an instrument entered into more than 40 years previously (*I.C.J. Reports 1966*, pp. 293-294). The ethical and human rights related aspects of environmental law bring it within the category of law so essential to human welfare that we cannot apply to today's problems in this field the standards of yesterday. Judge Tanaka reasoned that a party to a humanitarian instrument has no right to act in a manner which is today considered inhuman, even though the action be taken under an instrument of 40 years ago. Likewise, no action should be permissible which is today considered environmentally

[84] *Oppenheim's International Law*, R. Y. Jennings and A. Watts (eds.), 1992, p. 1275, note 21.

unsound, even though it is taken under an instrument of more than 20 years ago.

Mention may also be made in this context of the observation of the European Court of Human Rights in the *Tyrer* case that the Convention is a "living instrument" which must be interpreted "in the light of present-day conditions"[85].

It may also be observed that we are not here dealing with questions of the *validity* of the Treaty which fall to be determined by the principles applicable at the time of the Treaty, but with the *application* of the Treaty[86]. In the application of an environmental treaty, it is vitally important that the standards in force *at the time of application* would be the governing standards.

A recognition of the principle of contemporaneity in the application of environmental norms applies to the joint supervisory régime envisaged in the Court's Judgment, and will be an additional safeguard for protecting the environmental interests of Hungary.

C. The Handling of *Erga Omnes* Obligations in *Inter Partes* Judicial Procedure

(a) *The Factual Background: The Presence of the Elements of Estoppel*

It is necessary to bear in mind that the Treaty of 1977 was not one that suddenly materialized and was hastily entered into, but that it was the result of years of negotiation and study following the first formulations of the idea in the 1960s. During the period of negotiation and implementation of the Treaty, numerous detailed studies were conducted by many experts and organizations, including the Hungarian Academy of Sciences.

The first observation to be made on this matter is that Hungary went into the 1977 Treaty, despite very clear warnings during the preparatory studies that the Project might involve the possibility of environmental damage. Hungary, with a vast amount of material before it, both for and against, thus took a considered decision, despite warnings of possible danger to its ecology on almost all the grounds which are advanced today.

Secondly, Hungary, having entered into the Treaty, continued to treat it as valid and binding for around 12 years. As early as 1981, the Gov-

[85] Judgment of the Court, *Tyrer* case, 25 April 1978, para. 31, publ. Court A, Vol. 26, at 15, 16.

[86] See further Rosalyn Higgins, "Some Observations on the Inter-Temporal Rule in International Law", in *Theory of International Law at the Threshold of the 21st Century, op. cit.*, p. 173.

ernment of Hungary had ordered a reconsideration of the Project and researchers had then suggested a postponement of the construction, pending more detailed ecological studies. Yet Hungary went ahead with the implementation of the Treaty.

Thirdly, not only did Hungary devote its own effort and resources to the implementation of the Treaty but, by its attitude, it left Czechoslovakia with the impression that the binding force of the Treaty was not in doubt. Under this impression, and in pursuance of the Treaty which bound both Parties, Czechoslovakia committed enormous resources to the Project. Hungary looked on without comment or protest and, indeed, urged Czechoslovakia to more expeditious action. It was clear to Hungary that Czechoslovakia was spending vast funds on the Project — resources clearly so large as to strain the economy of a State whose economy was not particularly strong.

Fourthly, Hungary's action in so entering into the Treaty in 1977 was confirmed by it as late as October 1988 when the Hungarian Parliament approved of the Project, despite all the additional material available to it in the intervening space of 12 years. A further reaffirmation of this Hungarian position is to be found in the signing of a Protocol by the Deputy Chairman of the Hungarian Council of Ministers on 6 February 1989, reaffirming Hungary's commitment to the 1977 Project. Hungary was in fact interested in setting back the date of completion from 1995 to 1994.

Ninety-six days after the 1989 Protocol took effect, i.e., on 13 May 1989, the Hungarian Government announced the immediate suspension for two months of work at the Nagymaros site. It abandoned performance on 20 July 1989, and thereafter suspended work on all parts of the Project. Formal termination of the 1977 Treaty by Hungary took place in May 1992.

It seems to me that all the ingredients of a legally binding estoppel are here present[87].

The other Treaty partner was left with a vast amount of useless project construction on its hands and enormous incurred expenditure which it had fruitlessly undertaken.

(b) *The Context of Hungary's Actions*

In making these observations, one must be deeply sensitive to the fact that Hungary was passing through a very difficult phase, having regard

[87] On the application of principles of estoppel in the jurisprudence of this Court and its predecessor, see *Legal Status of Eastern Greenland, P.C.I.J., Series A/B, No. 53*, p. 22; *Fisheries (United Kingdom* v. *Norway), I.C.J. Reports 1951*, p. 116; *Temple of Preah Vihear, I.C.J. Reports 1962*, p. 151. For an analysis of this jurisprudence, see the separate opinion of Judge Ajibola in *Territorial Dispute (Libyan Arab Jamahiriya/Chad), I.C.J. Reports 1994*, pp. 77-83.

to the epochal events that had recently taken place in Eastern Europe. Such historic events necessarily leave their aftermath of internal tension. This may well manifest itself in shifts of official policy as different emergent groups exercise power and influence in the new order that was in the course of replacing that under which the country had functioned for close on half a century. One cannot but take note of these realities in understanding the drastic official changes of policy exhibited by Hungary.

Yet the Court is placed in the position of an objective observer, seeking to determine the effects of one State's changing official attitudes upon a neighbouring State. This is particularly so where the latter was obliged, in determining its course of action, to take into account the representations emanating from the official repositories of power in the first State.

Whatever be the reason for the internal changes of policy, and whatever be the internal pressures that might have produced this, the Court can only assess the respective rights of the two States on the basis of their official attitudes and pronouncements. Viewing the matter from the standpoint of an external observer, there can be little doubt that there was indeed a marked change of official attitude towards the Treaty, involving a sharp shift from full official acceptance to full official rejection. It is on this basis that the legal consequence of estoppel would follow.

(c) *Is It Appropriate to Use the Rules of* Inter Partes *Litigation to Determine* Erga Omnes *Obligations?*

This recapitulation of the facts brings me to the point where I believe a distinction must be made between litigation involving issues *inter partes* and litigation which involves issues with an *erga omnes* connotation.

An important conceptual problem arises when, in such a dispute *inter partes*, an issue arises regarding an alleged violation of rights or duties in relation to the rest of the world. The Court, in the discharge of its traditional duty of deciding *between the parties*, makes the decision which is in accordance with justice and fairness *between the parties*. The procedure it follows is largely adversarial. Yet this scarcely does justice to rights and obligations of an *erga omnes* character — least of all in cases involving environmental damage of a far-reaching and irreversible nature. I draw attention to this problem as it will present itself sooner or later in the field of environmental law, and because (though not essential to the decision actually reached) the facts of this case draw attention to it in a particularly pointed form.

There has been conduct on the part of Hungary which, in ordinary

inter partes litigation, would prevent it from taking up wholly contradictory positions. But can momentous environmental issues be decided on the basis of such *inter partes* conduct? In cases where the *erga omnes* issues are of sufficient importance, I would think not.

This is a suitable opportunity, both to draw attention to the problem and to indicate concern at the inadequacies of such *inter partes* rules as determining factors in major environmental disputes.

I stress this for the reason that *inter partes* adversarial procedures, eminently fair and reasonable in a purely *inter partes* issue, may need reconsideration in the future, if ever a case should arise of the imminence of serious or catastrophic environmental danger, especially to parties other than the immediate litigants.

Indeed, the inadequacies of technical judicial rules of procedure for the decision of scientific matters has for long been the subject of scholarly comment[88].

We have entered an era of international law in which international law subserves not only the interests of individual States, but looks beyond them and their parochial concerns to the greater interests of humanity and planetary welfare. In addressing such problems, which transcend the individual rights and obligations of the litigating States, international law will need to look beyond procedural rules fashioned for purely *inter partes* litigation.

When we enter the arena of obligations which operate *erga omnes* rather than *inter partes*, rules based on individual fairness and procedural compliance may be inadequate. The great ecological questions now surfacing will call for thought upon this matter. International environmental law will need to proceed beyond weighing the rights and obligations of parties within a closed compartment of individual State self-interest, unrelated to the global concerns of humanity as a whole.

The present case offers an opportunity for such reflection.

* * *

Environmental law is one of the most rapidly developing areas of international law and I have thought it fit to make these observations on a few aspects which have presented themselves for consideration in this case.

[88] See, for example, Peter Brett, "Implications of Science for the Law", *McGill Law Journal*, 1972, Vol. 18, p. 170, at p. 191. For a well-known comment from the perspective of sociology, see Jacques Ellul, *The Technological Society*, trans. John Wilkinson, 1964, pp. 251, 291-300.

As this vital branch of law proceeds to develop, it will need all the insights available from the human experience, crossing cultural and disciplinary boundaries which have traditionally hemmed in the discipline of international law.

(Signed) Christopher Gregory WEERAMANTRY.
