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International Watercourses

Enhancing Cooperation and Managing Conflict

Proceedings of a World Bank Seminar

Edited by
Salman M. A. Salman
Laurence Boisson de Chazournes

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FOREWORD

Over 245 river basins are shared by two or more states. About forty percent of the world population and 50 percent of its land are either dependent on or stand to benefit from the waters available in these basins. For the most part, the uses of international waterways by the respective riparian states are carried out peacefully in spite of the lack of a universal agreement on the law governing their non-navigational uses (the UN Convention on this matter was at long last opened for signature on May 21, 1997, but has not yet entered into force). However, lack of adequate cooperation and outright disputes among some riparians hinder the optimal utilization of many international waterways to the detriment of all their basin states. Time has come to replace the old divergent approaches representing conflicting interests of upstream and downstream riparians by an approach that emphasizes cooperative and comprehensive management which benefits all the riparians while ensuring the most efficient and environmentally friendly uses of river basins.

The fictitious dichotomy of the principles of equitable sharing of waters and of the need to avoid causing appreciable harm to any riparian state need not stand in the way of such cooperative management for the optimal and sustainable uses of international waterways. After all, equitable distribution must take account of existing uses and the need to maintain the livelihood of the population who came to be dependent on these uses. A cooperative and comprehensive management is also more conducive to attract international financing and the most modern technology to the basin as a whole and to improve the overall prospects of peace and development in the basin states.

The World Bank, using both its technical capacity and financial resources, has played a major role in facilitating agreement on the cooperative uses of three international waterways, the Indus, the Mekong, and the Aral Sea. It has also financed a large number of projects in international waterways. In 1985, following a lively and prolonged debate in its Board of Executive Directors, the Bank adopted detailed rules and procedures for the financing of this type of projects which are now reflected in its OP 7.50 and BP 7.50. The Bank's approach in this area has certainly influenced the progressive development of international law. This can particularly be seen in the provisions of the 1997 UN Convention regarding the requirement that each riparian state notifies other riparians before it embarks on new projects affecting the water flows and its emphasis on the principle of "equitable and reasonable utilization" and the "obligation not to cause significant harm."

The publication of the proceedings of the seminar organized in November 1997 by the World Bank's Legal Department on this subject allows for a wider dissemination

of the useful information shared in this seminar. It should hopefully contribute to a greater awareness of the value of the cooperative and comprehensive management approach and of the possible use of the Bank's facilities and resources in putting this approach into effect for the benefit of all riparian states.

A handwritten signature in black ink, appearing to read 'I. Shihata', with a large, sweeping flourish extending to the right.

Ibrahim F.I. Shihata
Senior Vice President and General Counsel
The World Bank

ABSTRACT

A number of developments have taken place in recent years in the regime of international watercourses at the bilateral, regional and international levels. At the bilateral level, India signed a treaty with Bangladesh on sharing the waters of the Ganges river, and another one with Nepal for the integrated development of the Mahakali river. At the regional level, in Europe, the Helsinki Convention for the Protection and Use of Transboundary Watercourses and International Lakes entered into force. In the African Continent, the Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) was signed by a number of member countries and the process of ratification has already commenced. At the international level, the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses was adopted in May 1997. Those developments prompted the idea of organizing the seminar, with the view of looking at international watercourses as a concept from both an intellectual and operational viewpoint. The structure of this Report reflects the organization and design of the seminar that was held on November 3-4, 1997.

The first part of the Report deals with the Regulatory Framework for International Watercourses. Chapter 1 provides an historical and conceptual context for the regulation and uses of international watercourses. Chapter 2 introduces the UN Convention on the Law of the Non-Navigational Uses of International Watercourses, gives an overview of its provisions and discusses its prospects and pitfalls. Both Chapters discuss the controversial areas of the Convention, and explain how such controversies and disagreements were addressed.

The second part of the Report deals with the Bank policy for projects on international waterways. Chapter 3 traces the history and evolution of the policy, analyzes its basic concepts and details the inter-relationship between the evolution of the policy and the development of international law in this area.

The third part of the Report deals with international watercourses and the environment. Chapter 4 presents the strategies adopted recently for protecting the environment of international watercourses in Europe, specially with the challenges posed by the break up of the Soviet Union, and the resulting expansion of the membership of the Economic Commission for Europe. The Chapter reviews and analyzes the recently adopted conventions: the Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the Espoo Convention on Environmental Impact Assessment, and highlights the problems and the prospects for those conventions. Chapter 5 traces the environmental problems of the Aral Sea, how they were exacerbated, and discusses the dangers posed by such problems. The Chapter discusses the Aral Sea Basin Program and its objectives, as well as the institutional, legal and financial pre-requisites for implementing the program. Chapter 6 deals with the problems being faced in the management of international

waters in Africa, with particular emphasis on the Volta Basin, Lake Victoria and the international rivers within SADC. It describes the stresses (water scarcity, drought, watershed and aquatic ecosystems degradation) which have emerged as a result of uncoordinated use of resources, and capacity imbalances within each case, and suggests the lessons that can be learnt from those three case studies.

The fourth part of the Report deals with conflict resolution of international watercourses. Chapter 7 deals with the Gabčíkovo-Nagymaros dispute between Hungary and Slovakia over whether or not to build two barrages on the Danube river, and the decision of the International Court of Justice thereon. The Chapter describes the considerable extent to which the Court has gone towards developing the law in relation to international watercourses and the need to protect the environment. Chapter 8 describes the origins of the dispute between India and Bangladesh over the Ganges river, the previous attempts to resolve the dispute, and the reasons for the failure of such attempts. It reviews and analyzes the provisions of the recently concluded treaty, and discusses the dynamics of implementation of the treaty in its first year, and the implications for the future. Chapter 9 traces the roots of the dispute between India and Pakistan over the Indus Basin and describes the role of the World Bank in resolving the dispute and in the conclusion of the Indus Treaty. The Chapter concludes with an analysis of the reasons for the success of the Bank in the Indus Basin.

The conclusion underscores the importance of international legal norms, reflected in the UN Convention and the various regional and bilateral instruments, in enhancing cooperation and managing conflict over international watercourses. It also argues that these instruments demonstrate a trend towards more comprehensive strategies for managing and protecting international watercourses.

ACKNOWLEDGMENTS

A number of people contributed to the success of the seminar on international watercourses and to the preparation of this Report, and it will not be easy to mention them all. However, we would like to extend our sincere thanks and appreciation to the guest speakers: Professors Lucius Cafilisch, Stephen McCaffrey and Philippe Sands, and Messrs. Raj Krishna, Branko Bosnjakovic and Ms. Maureen O'Neill, for their outstanding presentations, and for their contributions to this Report. Our special thanks are extended to Mr. Ibrahim Shihata for his introductory remarks that laid the road map for the seminar. We would also like to thank our colleagues from the regions and the center, Messrs. John Briscoe, Rafik Hirji, Peter Whitford, Keith Pitman, David Grey, Douglas Olson, and Akhtar Elahi, and from the Legal Department, Messrs. Aberra Zerabruk, Charles Di Leva, Kishor Uprety, Sidi Boubacar, and Mmes. Elizabeth Adu, Karen Hudes, Nicolette DeWitt and Dilek Barlas who rearranged their mission and other work assignments to be present and give their presentations at the seminar, and for their contributions to this Report.

We are also grateful to the coordinators of the four sessions of the seminar, Messrs. Andres Rigo, Paatii Ofosu-Amaah, David Freestone and Ian Newport, for the smooth running of those sessions, and for their timely interventions. We would also like to thank Ms. Andrea Olsen from the Learning and Leadership Center, our assistants, Mmes. Valerie Peters and Elizabeth Zucca for their help with the logistics of the seminar, and Mmes. Lillian Manning and Margaret D'Costa for assisting with typing. Our thanks are also extended to Ms. Valerie Peters and Mr. Jean-Philippe Brisson for their assistance with putting together this Report.

Last but not least, we would like to thank the participants for devoting the entire two days for the seminar, and for the lively discussion and for their positive feedback on the design and content of the seminar.

PART I

REGULATORY FRAMEWORK FOR

INTERNATIONAL WATERCOURSES

CHAPTER 1

Regulation of the Uses of International Watercourses

Lucius Caflisch*

INTRODUCTION

The development, apportionment and use of water resources has blossomed into a major economic and social—and even political—issue. The controversies between Israelis and Palestinians, and those between Turkey, Syria and Iraq, illustrate this point, as do the judgment of the International Court of Justice (ICJ) in the Gabčíkovo-Nagymaros case and the recent adoption, by the UN General Assembly, of a convention on the non-navigational uses of international watercourses (IWC).

This chapter will focus on the genesis of this new multilateral instrument and highlight some of the problems relating to it. Before dealing with these issues, it will be necessary, however, to remember that transboundary waters may serve more than one function.

First, IWC may be used to draw international boundaries. While it is true that such waters form a natural unit and, ideally, should be treated as such, it is equally true that they provide a natural means for separating human communities and their territories.

Second, those IWC which are navigable can be used as international highways. As such, they may be of great economic significance for the riparian and possibly other countries. They will be especially important for those riparians who have no access to the sea. It is useful, therefore, to highlight the rules of navigation on IWC.

Third, and as pointed out, such waterways may serve non-navigational uses, such as fishing, irrigation and the production of hydro-electric energy.

The fact that most IWC can accommodate several uses—a similar situation may occur in marine space—raises two questions. The first is that of the priority of utilizations: is there any activity—for instance navigation, if the waterway is

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navigable—which should enjoy inherent priority over other uses, such as the production of electricity? The second related question is whether certain users should have priority over others. Can it be said, for instance, that Egypt, whose prosperity depended on the Nile from time immemorial, enjoys vested rights over the bulk of the Nile's waters because historically it was the first user and because of its economic dependence on these waters?

Another problem which increasingly besets the use of IWC—especially their multiple utilization—is the strain put on the environment of such waterways and their ecosystems. If an upper riparian uses a waterway for purposes of irrigation, for example, its flow will be reduced and irregular, and the water restituted to the watercourse after irrigation may be of increased salinity, thereby injuring the lower riparian or riparians.

Before dealing with the main topic of this presentation—the non-navigational uses of IWC—it will be useful briefly to look at two other possible functions: their use as international boundaries, and navigational activities.

INTERNATIONAL WATERCOURSES AS BOUNDARIES

As pointed out, surface waters—rivers and lakes—may serve to separate human communities and their territories. This can be achieved: (1) by following a shore of an IWC; (2) by cutting across its waters; and (3) by using the waterway as a reference for drawing a land boundary.

Historically, the oldest category is formed by shore boundaries separating two adjacent, i.e., opposing or contiguous States, which can take two forms. Either each State fixes its own boundary on its own shore, in which case the watercourse itself forms either a “no man's land” or a condominium of the States concerned; or those States agree to place the international boundary on the shore of one or the other riparian, thus attributing the entirety of the waters to one State. The first solution is no longer used in State practice, while the second, which is obviously detrimental to the State on whose shore the boundary runs, may still be found in some treaties. This is the case, e.g., for the French-Swiss boundary in the Jura region, located on the Swiss side of the Doubs river, or for part of Lake Malawi, where the border between Malawi and Tanzania runs along the Tanzanian shore.

The second type of situation is that of upper and lower riparians sharing a waterway traversing—instead of separating—their territories. In this case, one speaks of a successive watercourse. Here the boundary will usually consist of a straight line connecting the terminal points of the relevant land boundaries.

The third possibility to be examined is that of ordinary land boundaries drawn by reference to a waterway. An old agreement between France and Great Britain relating to their respective possessions on the West coast of Africa, for instance,

prescribes that the boundary shall run parallel to the river Gambia at a distance of 10 kilometers.

Clearly the most important issue is the drawing of water boundaries between contiguous riparian States. Unless these States decide to establish an arbitrary borderline, for example, by using selected points of reference or coordinates, two basic methods can be used:

- The thalweg (a German word meaning the path running at the bottom of a valley.) State practice shows that this concept has been given three meanings: (i) the succession of deepest points in the river bed; (ii) the main channel used by navigators when traveling downstream; and (iii) the median line of that main channel.
- The median line, that is, a line every point of which is equidistant from the nearest point on each shore, or a simplified median line formed by connecting equidistant points in the watercourse by straight lines.

Each method has its strong and its weak points. In its modern and most usual form, the median line of the main downstream channel of navigation, the thalweg, presents the advantages of relatively easy identification and of offering both riparians access to the navigable areas of the waterway. Its drawback is that the dividing line may run close to the shore of one riparian State and, thereby, disadvantage the other.

Curiously, the median line's main shortcoming is the uncertainty regarding the points, on each shore, from which that line is to be constructed: from the high- or the low - water mark or something in between? From the main shores of the waterway or, if islands are present, taking into account the shores of insular formations? Another drawback of the median-line solution is that if the watercourse is navigable, and if the entire thalweg is located on one side of the median-line boundary, the riparian State on the other side will have no access to the navigable areas (unless, of course, such access is explicitly granted by treaty.) The main advantage of that solution is the fact that it seems to effect an equitable apportionment of the waters and of their non-navigational uses, although even this is not always true, depending on the configuration of the bed of the watercourse.

A question that may be asked is how one is to fix the boundary in the absence of agreement between the riparian States concerned. This is, by and large, an academic issue. Boundaries in waterways are almost invariably drawn by treaty, so that the real problem will be one of interpreting the provisions of the treaty. The density of treaty rules in this field has, in fact, inhibited the growth of customary rules. It has nonetheless been contended that there is at least one such rule, according to which the boundary in navigable rivers is formed by the thalweg, whereas the boundary in non-navigable waterways runs along the median line.

However, the existence of such a rule cannot be proved. One is, therefore, left with the conclusion that watercourses, as is the case of land territory in general, should be divided up by treaty; that in the absence of treaty provisions, there is no ready-made customary rule; and that the only element to turn to, in the absence of a treaty title, would be the effective exercise of sovereignty by one or the other riparian over the contested waters. The problem with the last element is that effective domination over precise surfaces of water will, owing to the nature of these surfaces, be difficult to localize. This leads to the overall conclusion that it is essential, for the riparians of contiguous waterways, to establish their aquatic boundary by treaty.

This is all the more true because complications may arise on account of the presence or disappearance of islands, changes in the configuration of the watercourse, the amalgamation of separate islands, or the fact that works have been constructed in, under or above the waterway.

The boundary treaties concluded by riparian States will also determine, in many cases, the regime of navigation and the allocation of non-navigational uses.

NAVIGATION

Introduction

One often overlooks the fact that navigation is, after all, an economic activity. Contrary to currently prevailing views, this activity is, in many cases, just as important as non-navigational uses such as fishing, irrigation and the production of energy. Accordingly, navigation on IWC may also be of interest to international financing agencies such as the World Bank. Of special interest are situations where navigation competes with non-navigational activities and where a modus vivendi must be sought between different uses and/or users.

The movement of goods, passengers and vessels on waterways was considered of vital importance throughout the 19th Century and part of the 20th Century, not only for trading purposes, but also from a strategic viewpoint. Witness the colonial penetration of the African continent, via the Congo river system, which had been made possible thanks to the freedom of navigation established in 1885 by the Congress of Berlin.

The General Regime of Navigation

The issue of free navigation first rose to prominence in Europe after the French Revolution and the Napoleonic Wars. The Final Act of the Vienna Congress of 9 June 1815, which ended those wars, contained a set of provisions opening the international rivers of the Contracting Parties to the commercial navigation of ships carrying their flag. The legal basis of the freedom of navigation for the flags of riparian States may

be found in the idea that the watercourses concerned are of common interest to those States and, hence, give rise to common legal rights.

Freedom of navigation was initially confined to riparian flags. In the second half of the 19th Century, however, it was gradually extended to the trading vessels of both riparians and non-riparians. It equally spread to Africa and Asia, but not to the Americas. The peak of this trend toward liberalization was reached with the Peace Treaty of Versailles, of 28 June 1919, and the Barcelona Statute on the Regime of Navigable Waterways of International Concern, of 20 April 1921. Both instruments opened the navigable rivers of Europe to all nations and only reserved local trade (cabotage) to the national flag.

Why has this trend toward ever-increasing liberalization, even though it may result in competition and in the presence of foreign vessels on national territory prevailed?

An essential factor was undoubtedly Europe's economic awakening during the 19th Century and the practice of unbridled economic *laissez-faire*. The trend was also motivated by policies of colonial expansion and, after the Great War, by the desire to control defeated Germany from the inside; one way of doing so was by ship. Finally there was the wish to secure the survival of a new State in Central Europe—Poland—by granting it access to the sea.

Authoritarian regimes often are a threat to economic liberalism. This is why the general freedom of transit on the international waterways of Europe began to decline with the advent of fascism in Germany and elsewhere in Europe. The decline continued as the world moved into the Cold War. In 1948, the Belgrade Convention practically limited free trade on the Danube to the flags of the Eastern European riparian States. Later on, the riparians of the Rhine retorted by introducing a similar restriction. In many areas of the Third World, the freedom of navigation for all flags resulting from the treaties concluded by the colonial powers was replaced, upon decolonization, by agreements or legislation limiting that freedom to the vessels of the riparian States. This also seems to be the position under contemporary international law. Accordingly, a rule of customary law may be seen to exist which grants freedom of navigation on international rivers—but not lakes—to private vessels flying the flag of a riparian State. This is borne out by Article XIII of the 1966 Helsinki Rules, a codification effected by the International Law Association (ILA). The ILA is a private scholarly body which, however, enjoys a high reputation in this particular field. According to Article XIV of the Helsinki Rules, the freedom of navigation extends to traffic for commercial or other purposes, but not to public vessels (Article XIX) or local trade (Article XVI). It also covers lakes and, in that particular respect, seems to go beyond the existing customary law.

In the Americas, the situation is completely different. The American States have, from the outset, been reluctant to open their waterways even to other riparians

and have developed what one may call the regional custom of the “concesión especial.” Each riparian State is entitled, on the part of watercourse located on its territory, to prohibit foreign navigation of any kind. Vessels sailing under a foreign flag, including that of a co-riparian, may circulate on that part of the watercourse only if they have been given special permission to do so by international agreement or national legislation. Thus the general rule of freedom of navigation for the flags of riparian States does not apply to the American continent where, obviously, IWC are not considered as forming a commonality of the riparians.

NON-NAVIGATIONAL USES

Introduction

The Draft Articles on the Non-Navigational Uses of International Watercourses prepared by the International Law Commission of the United Nations (ILC) have a long history. This history may be traced back to the early sixties, when another respected scholarly body, the Institute of International Law, adopted a resolution on the non-navigational uses of international waterways. This text stressed the idea that the uses and resources of such waterways are to be shared among the riparian States in accordance with equitable principles.

The first modern text dealing with an issue which, hitherto, had attracted minimal attention, was followed, in 1966, by the ILA's Helsinki Rules, which have been mentioned already in connection with navigation. Drafted by some of the then leading lights in the field, the 1966 Rules form, in fact, a comprehensive code of the law of IWC, excluding only the issues of boundaries and of groundwaters. The Helsinki Rules were completed, later on, by various additional texts dealing in particular with environmental problems and with the status of groundwaters. Despite the provisions on navigation it contains, the Helsinki text's main interest lies in its rules on the non-navigational uses of international drainage basins. Article IV sets out the rule of equitable and reasonable apportionment, and Article V enumerates some of the geographical, hydrological, climatic, historical, social, economic and technical elements to be considered when effecting that apportionment. These two basic rules are completed by articles providing that there is no category of uses enjoying any inherent preference over another (Article VI), that no State may reserve future uses for itself (Article VII), and that existing activities may be deemed equitable and reasonable, unless the riparian State challenging them establishes their inequitableness (Article VIII).

The Helsinki Rules make no mention of a principle which would enjoin riparians from causing harm to their co-riparians. But Article V, which enumerates the elements determining the equitable and reasonable share mentions, among them, “the degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State.” In other words, the harm a given use may inflict on a watercourse State is an element, but not the decisive element, for measuring equitable

and reasonable utilization. This is so because otherwise, in the case of a fully-exploited watercourse, any new activity would be prohibited since it would, necessarily, harm present uses and users.

Despite their soundness, the Helsinki Rules as such had no official standing. In addition, the world's water resources, especially those of developing countries, began to be in increasingly short supply. This is why the General Assembly of the United Nations decided, in 1970, to request the ILC to prepare a set of draft articles to govern the non-navigational uses of IWC. Thirteen Reports and five Special Rapporteurs later, in 1991, the Commission forwarded a first draft of 32 articles to the Assembly for discussion by its Sixth (legal) Committee and for comments by interested governments. Thereupon the ILC slightly amended its first draft, mainly regarding the relation between equitable utilization and the no-harm rule included in the draft, and the peaceful settlement of disputes. The amended text went back to the Sixth Committee which, as the reaction of States to this new version seemed quite favorable, decided to forego a diplomatic conference and to have the text finalized, in the form of a multilateral treaty of codification and of progressive development of international law, by a plenary ad hoc working group of the whole.

The Working Group first met from 7 to 25 October 1996 in New York and fought bitterly over the ILC draft, especially its provisions on: (1) the effect of the new Convention on existing watercourse agreements; (2) the possibility for watercourse States to conclude, in the future, agreements that would deviate from the new Convention; (3) the possibility for such States to participate in agreements concluded by other States of the same watercourse; (4) the relation between the principle of equitable and reasonable utilization and the rule that no harm may be caused by one watercourse State to another; and (5) the peaceful settlement of watercourse disputes.

As a result of these controversies, the Working Group nearly collapsed but was given another chance to come to terms by meeting between 24 March and 4 April 1997. Some kind of agreement was finally reached even over the most intractable issue—the relation between the principle of equitable and reasonable utilization and the no-harm rule. That agreement was not unanimous, however, so that some provisions and the Convention as a whole had to be put to a vote. Finally, on 21 May 1997, the Convention was approved by the General Assembly and opened for signature. The remainder of this chapter will be devoted to the first four contested issues.

The Convention in its Relation to Existing Watercourse Agreements

The fate of existing IWC agreements—of which there are a great number, especially in Europe and in North America—was one of the major questions to be settled by the Working Group. The issue had not been covered at all by the Draft Articles, presumably because the ILC had assumed as a matter of course that existing agreements would survive without change unless the Parties were to decide to abrogate or amend them in the light of the new Convention.

According to some participants (notably Portugal and Ethiopia), at least some provisions of the new Convention should be regarded, not only as codification of existing customary rules, but as rules of jus cogens, i.e., imperative law. Under Article 64 of the 1969 Vienna Convention on the Law of Treaties, this would have meant the lapse of all existing watercourse agreements contradicting such rules. At the opposite side of the spectrum, some other countries, such as Egypt, France and Switzerland—held that existing watercourse agreements should in no way be affected by the new instrument.

One will note with interest that both sides included upper as well as lower riparians. This goes to show that the issue was not conditioned by geographical considerations but, rather by the question of who was well served by the existing agreements.

Eventually, a deal was struck between these opposing views. Article 3 (1) of the new Convention provides that:

[n]othing in the present Convention shall affect the rights or obligations of a watercourse State arising from agreements in force for it on the date on which it became a party to the present Convention.

This meant that the States wishing to maintain existing watercourse agreements carried the day. As a concession to those who wanted to do away with them, Article 3 (2) adds, however, that:

[n]otwithstanding the provisions of paragraph 1, Parties to [existing] agreements ... may, where necessary, consider harmonizing such agreements with the basic principles of the present Convention.

Contrary to appearances, this “concession” is virtually without substance. The language used in Article 3 (2) clearly shows that there will be no “harmonization,” i.e., amendment of existing agreements without the consent of all States Parties to them, in conformity with the basic rules of the Law of Treaties. In addition, the “basic principles” with which such agreements may be harmonized are defined nowhere. Accordingly, it is up to the States concerned to do so, and this can only be accomplished by agreement. In short, Article 3 (2) does not go beyond stating the obvious, namely, that existing agreements may be amended with the consent of all the States Parties to them.

Article 3 was one of the provisions which had to be put to a vote within the Working Group. It was adopted by 36 votes to 3 (Egypt, France, Turkey), which was a modest score, considering that there were 21 abstentions. One may wonder, however, why Egypt and France, strong advocates of the survival of existing watercourse agreements, voted against a text which ensured just that. Perhaps they thought that

Article 3 failed to do so with sufficient clarity and vigor; or perhaps they were preoccupied by another aspect of Article 3, which will be considered next.

Future Agreements

What would be the impact of the new Convention on future watercourse agreements? Article 3 (3) of the Convention, which survived virtually unchanged from the ILC Draft (Article 3 (1)), provides that in the future, watercourse States “may enter” into new agreements “which apply and adjust the provisions of the present Convention to the characteristics and uses” of the watercourse concerned. While the verb “apply,” taken in isolation, would seem to mean that the content of future agreements has to be in line with the provisions of the Convention, the second verb, “adjust”, suggests that the States concerned may also depart from those provisions. That this is so is corroborated by the words “may enter”: Whoever may conclude an agreement which applies provisions of the Convention may also do the opposite, that is, enter into an agreement which departs from those provisions. This confirms an earlier conclusion, namely, that the provisions of the Convention are not jus cogens; nor are they multilateral treaty rules which may not be derogated from by agreements between some of the Parties to it. They are, at the most, guidelines for those who intend to negotiate new watercourse agreements. In other words, the conventional freedom of States is fully maintained. This is a reassuring result. But some States may have thought that the language of Article 3 (3) was not vigorous and straightforward enough.

Partial Watercourse Agreements

Future agreements relating to an entire watercourse should apply to all States concerned or, to be precise, every watercourse State should be entitled to participate in the negotiation of such an agreement and to become a Party to it. This rule, contained in Article 4 (1) of the ILC Draft, was not seriously challenged and is now embodied in Article (4) (1) of the Convention.

The real problem, however, was that of partial agreements, that is, agreements concluded inter se by some States of a watercourse and limited to their respective segments of the latter, but threatening adversely to affect other States of the same watercourse. Article 4 (2) of the ILC’s Draft allowed such States, first, to take part in consultations on and in the negotiation of the agreement and, second, to become Parties to it. The question arising in connection with this provision was whether third States of the same watercourse could and should be allowed to accede to agreements from which their original Parties had wished to exclude them. Some countries, including a number of upstream States, thought that they should not. According to one participant, the threat to the interests of other watercourse States inherent in such agreements should be dealt with, not by entitling those States to become Contracting Parties, but by considering this threat as a potentially unlawful activity by the original Parties to the agreement, possibly entailing their international responsibility towards the other

watercourse States. This construction would have avoided any interference with the freedom of States to contract.

In the end, however, the views of the ILC prevailed, but in an attenuated form. Under Article 4 (2) of the Convention, a third watercourse State must be satisfied with a right "to participate in consultations on such an agreement and, where appropriate, in the negotiation thereof in good faith with a view to becoming a Party thereto, to the extent that its use is thereby affected." From the viewpoint of legal orthodoxy, this solution is questionable. It was found acceptable, however, because of the inclusion of the words "where appropriate," which give considerable leverage to the original Parties to the agreement, and also because the participation of a third State in the agreement will be limited "to the extent that its use is thereby affected."

The Principle of Equitable and Reasonable Use and the No-Harm Rule

As has been pointed out, the relationship between the principle of equitable and reasonable utilization and the no-harm rule was the essential problem to be solved. Though addressed by the ILC, this question ripened into a major issue during the second meeting of the Working Group. It will be convenient briefly to analyze each principle or rule separately before examining their relationship.

The No-Harm Rule

The no-harm rule probably originated from the consideration that, as in the case of neighboring owners of real property, neighboring States may not act as they please on their territories. They are not allowed to use or to tolerate the use of their territory for causing damage to their neighbors. This principle, which is linked to the concept of abuse of rights and which originated in the sphere of private law, appears to be a "general principle of law recognized by civilized nations" which, by now, has also entered the realm of customary international law.

The no-harm rule covers the whole range of neighborly relations, including issues pertaining to the protection of the environment. It is relevant, in particular, for two aspects of the law of international waterways; the allocation of the utilizations of such watercourses and the protection of their environment. Regarding the second aspect—environmental protection—the no-harm rule is and remains fully valid. Concerning the first aspect, however, that rule is of little use today. Most international waterways are at present fully exploited or even over-used. Accordingly, the issue is no longer one of not causing harm—in situations of full or over-use, every new or increased activity is harmful for existing utilizations—but one of apportioning resources among competing uses and users. This is why the negative no-harm rule had to be superseded by a positive rule which would make it possible to effect such an apportionment.

The Principle of Equitable and Reasonable Utilization

This principle, which today governs the attribution of shared water resources, has its roots in the judicial practices of federal States such as the United States, Germany and Switzerland, and more precisely, in the case-law relating to the allocation of water resources among the member units of those countries. The practice of the Supreme Court of the United States has been particularly important in this context.

Contrary to the no-harm rule, the principle of equitable and reasonable utilization is specifically intended for, and limited to, activities on international watercourses other than navigation. Its emergence was prompted by the limitations of the no-harm rule: The latter did not allow for the settlement of controversies over allocation issues on fully-used or over-used international watercourses, or would have done so in an equitable way, that is, by giving complete priority to existing activities and by prohibiting the development of new or the extension of existing uses. Moreover, since the main users of international watercourses have usually been lower riparians, such a solution, if it were retained, would heavily advantage those countries and heavily disadvantage the upstream States. The situation on the lower Nile perfectly illustrates the situation. The no-harm rule, if it were the only one to apply, would fully protect the status quo, i.e., the existing rights of the lower riparians—Egypt and, to a lesser degree, the Sudan—and deny the upper riparians—first and foremost Ethiopia—any possibility of developing or expanding activities. In other words, the economic and social growth of any newcomer, in particular upstream countries, would be stunted.

The Relationship between the Principle of Equitable and Reasonable Utilization and the No-Harm Rule

When this question first arose, in the context of the 1966 Helsinki Rules, the ILC considered that the principle of equitable and reasonable utilization should be the guiding rule. Accordingly, the no-harm rule was one among a series of elements to be considered for determining whether a given use was “equitable and reasonable.”

Turning now to the work of the ILC, Mr. Stephen M. Schwebel, Special Rapporteur, had proposed an Article 8, paragraph 2, subordinating the no-harm rule to the principle of equitable and reasonable utilization reflected in Articles 6 and 7 of the Draft. The no-harm rule was to come into play only if a planned new or expanded use was likely to go beyond what was equitable and reasonable. The harm caused by such utilization was, moreover, included among the elements to ascertain the equitableness of that use.

The next two Special Rapporteurs, Mr. Jens Evensen and Mr. Stephen C. McCaffrey, reversed the priority. The no-harm rule was not only fully detached from the principle of equitable and reasonable utilization, but was now being characterized by some as forming “the fundamental rule” of the Draft. In addition, “harm” was

removed from the list of factors serving for the determination of what was equitable and reasonable.

This reversal was criticized by some States. Therefore, the last Special Rapporteur, Mr. Robert Rosenstock, attempted to reconcile the opposing views by proposing a new Article 7. Under paragraph 1 of this new Article, watercourse States were to incur international responsibility and liability for transgressions of the no-harm rule if they failed to exercise due diligence, i.e., to act pursuant to the habitual standard of care in matters of international responsibility. Paragraph 2 of Article 7 addressed the consequences of significant harm caused despite the exercise of due diligence, that is, in the absence of responsibility, by providing, for the State whose activity had resulted in the harm, an obligation of consultation on the equitableness and reasonableness of the harmful activity.

This new version of Article 7 was abundantly criticized. A first objection highlighted its lack of clarity. A second criticism was that responsibility and liability under the no-harm rule were maintained except, that where they were not attributable to a lack of due diligence, their consequences were reduced to a duty to consult over the equitableness of the harmful use and measures of abatement or indemnization. It is true that in one of its commentaries on the new Article 7, the ILC asserted that “in general, the principle of equitable and reasonable utilization remains the decisive criterion for balancing the interests in presence,” thus suggesting the primacy of that principle over the no-harm rule, but this suggestion was now being partly neutralized by the words “in general.” Indeed, the inclusion of these words would have meant that in some situations the principle in question was not the decisive criterion; if this was so, what were those situations? In addition, the text failed to make it clear that there would be no responsibility or liability if a new or expanded activity, though harmful, was within the right to equitable and reasonable utilization of the State proposing to exercise it.

The downstream countries as well as many “intermediary” States supported the ILC’s new version of Article 7, while the upstream countries opposed it. Among the suggestions made by the upper riparians, a package deal put forward by Switzerland may be briefly mentioned. That package consisted of three elements: (i) deletion of Article 7; (ii) inclusion, in the list of elements for the determination of equitable and reasonable utilization (Article 6), of a specific reference to the harm likely to result from a planned use; and (iii) inclusion in the Draft Articles of a provision to the effect that uses causing significant harm to the environment can in no circumstances be considered “reasonable.” This proposal had the merit of drawing a clear distinction between the matters to which the “no-harm” rule can no longer apply—the allocation of uses and resources—and situations where the usefulness of the rule remains unchallenged, namely, those relating to the protection of the environment.

The Swiss “package” was, however, turned down by the majority of delegations, especially those of lower riparians and “intermediary” States, and another

solution had to be devised. Accordingly, a compromise proposal was presented, at the end of the Working Group's first session, by Austria, Canada, Portugal, Switzerland and Venezuela. In essence, the five States suggested that if significant harm was inflicted by one watercourse State on another or on other watercourse States, the State causing it shall, in the absence of agreement:

take all appropriate measures, in conformity with the provisions of Articles 5 and 6, [setting forth the equitable utilization rule], in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.

The key elements of this proposal were the words "in conformity with the provisions of Articles 5 and 6," which were intended to make it clear that while the no-harm rule embodied in Article 7 now had a life of its own, it was to come into play only if the principle of equitable and reasonable utilization contained in Articles 5 and 6 was inapplicable. The subordination of the no-harm rule to the principle of equitable and reasonable utilization was not to be complete, however, since Article 6 listed as one of the factors to be taken into account for determining such utilization "[t]he effect of the uses of the watercourses in one watercourse State on other watercourse States" (Article 6 (1) (d)). That factor would assume particular relevance in situations where harm threatens the environment of a watercourse, especially since Article 6 also mentioned the conservation and protection of water resources among the elements to be considered when determining the equitableness and reasonableness of a planned activity (Article 6 (1) (f)).

The effort made by the five States to bridge the existing gap could not, unfortunately, be put to a test because the Chairman of the Working Group had decided to put forward a compromise proposal of his own. That proposal was identical with the text suggested by the five States, except on one point: The phrase "in conformity with the provisions of Articles 5 and 6" was replaced—no doubt to forestall hostile reactions by downstream States—by the words "taking into account the provisions of Articles 5 and 6." Predictably the upper riparian States objected to this proposal, because they saw it as significantly weakening the subordination of equitable utilization to the no-harm rule.

The negotiations within the Working Group would have collapsed had its Chairman not been persuaded, on the very last day, to make an ultimate attempt at reconciling the participants. This attempt resulted in the replacement of the words "taking into account" by the expression "having due regard for." This new formula was considered by a number of lower riparians to be sufficiently neutral not to suggest a subordination of the no-harm rule to the principle of equitable and reasonable utilization. A number of upper riparians thought just the contrary, namely, that that formula was strong enough to support the idea of such a subordination.

These appreciations were not shared by all member of the two camps, however, and as the point addressed here had turned out to be the crux of the entire negotiation, a vote was requested for the "package deal" represented by Articles 5 to 7. That "deal" was accepted by 38 votes to 4 (China, France, Tanzania, Turkey), with 22 abstentions—a rate of approval which raises doubts over the viability of the new Convention.

CONCLUSION

The description and analysis provided in this presentation show that the issues raised by IWC are tricky and that many of them remain unsettled. There are no general rules governing watercourse boundaries, and the States concerned are forced to establish them through negotiation. While it is reasonably clear that there is freedom of navigation on navigable international watercourses—except lakes—for private vessels flying the flag of a riparian State, this rule does not seem to extend to the American continent.

By contrast, there seems to be a set of general rules governing the non-navigational uses of international watercourses, the most important of which are the principle of equitable and reasonable utilization and the no-harm rule. However, the new Convention embodying these as well as other rules had to be adopted, after a particularly difficult and even shrill bargaining, by a voting process revealing many divisions and, therefore, faces an uncertain future. It is doubtful, at this point, whether the new Convention will ever become truly operational.

This situation cannot be attributed to ill-will on the part of States. The allocation of the world's watercourses is escalating into a major problem, while the law of international waterways has always been (and remains) vague and uncertain. The international financing agencies would do well to acknowledge this state of affairs. To hold, simply, that development schemes do not deserve assistance because there is disagreement among the watercourse States or because they are likely to cause harm may not always be a wise course to follow, unless these findings are accompanied by an offer to assist the States concerned in the settlement of their differences. An outstanding example of such a two-track approach is the action taken by the World Bank, almost 40 years ago, to settle the Indus basin dispute between India and Pakistan and to provide the necessary financial aid to harness the resources of that basin.

CHAPTER 2

The UN Convention on the Law of the Non-Navigational Uses of International Watercourses: Prospects and Pitfalls

Stephen McCaffrey*

INTRODUCTION

Professor Caflisch has provided an historical and conceptual context for our consideration of the topic, the Regulatory Framework for International Watercourses. I intend to provide an overview of the recently adopted United Nations Convention on the Law of Non-Navigational Uses of International Watercourses, indicating some of its possible strengths and weaknesses.

THE UN CONVENTION

The Convention on the Law of the Non-Navigational Uses of International Watercourses was adopted by the United Nations General Assembly on May 21, 1997.¹ It had been negotiated in the Sixth (Legal) Committee of the General Assembly, on the basis of draft articles adopted by the International Law Commission (ILC)² after some twenty years' work on the project.³ The Convention is a general, framework agreement that contains thirty-seven articles, which are divided into seven parts. The most important substantive and procedural provisions are contained in Part II, General Principles, Part III, Planned Measures, and Part IV, Protection, Preservation and Management. Also important is Article 33 on the Settlement of Disputes. In the

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¹ The Convention is annexed to U.N.G.A. Res. 51/229, 21 May 1997, adopted by a vote of 103 for and 3 against, with 27 abstentions. See generally Attila Tanzi, *Codifying the Minimum Standards of the Law of International Watercourses: Remarks on Part One and a Half*, 21 NAT. RESOURCES J. 109 (1997); and John Crook & Stephen McCaffrey, *The United Nations Starts Work on a Watercourses Convention*, 91 AM. J. INT'L. L. 374 (1997).

² *Report of the International Law Commission on the Work of its Forty-sixth Session*, U.N. GAOR, 49th Sess., Supp. No. 10, 197, U.N. Doc. A/49/10 (1994) [hereinafter *1994 ILC Report*]. See Stephen McCaffrey, *The International Law Commission Adopts Draft Articles on International Watercourses*, 89 AM. J. INT'L. L. 395 (1995).

³ The ILC included the topic in its general program of work in 1971. It began study of the topic in 1974 with the establishment of a sub-committee and the appointment of the first of five special rapporteurs. See e.g., [1985] Y.B. INT'L. L. COMM'N, vol. 2, pt. 2, 68 (1986).

following overview, I will pay particular attention to the articles that I believe may be of special significance for the Bank's work.

Perhaps the most logical starting place is the Convention's definition of the term "international watercourse." It is natural to think of this expression as being synonymous with "international river", but as used in the Convention it is much broader. The definition takes into account that most fresh water is in fact underground, and that most of this groundwater is related to, or interacts with, surface water. Thus, for example, pollution of surface water can contaminate groundwater, and vice versa, just as withdrawals of groundwater can affect surface water flows. Article 2, therefore, defines "watercourse" as "a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole..." This definition calls the attention of states to the interrelationship between all parts of the system of surface and underground waters that make up an international watercourse. Thus it should be clear immediately that an effect on one part of the system will generally be transmitted to other parts. Let us assume, for example, that an aquifer is intersected by the border between states A and B. Mining of the groundwater in that aquifer in country A can affect groundwater levels in state B. It may also affect surface flows in state B to the extent that the aquifer contributes to those flows. Nevertheless, the inclusion of groundwater in the Convention was cited as a reason for the abstentions of two states from the vote on the Convention.⁴

The relationship of the Convention to agreements concerning specific watercourses is dealt with in Articles 3 and 4 of the Convention, which have been covered by Professor Caflisch. Article 3 generally encourages states sharing watercourses to enter into agreements that apply and adjust the provisions of the Convention to the particular characteristics of the watercourse concerned. While existing agreements remain unaffected by the Convention, parties are called upon to "consider harmonizing" those agreements with its "basic principles."⁵ As you can imagine, some delegations, such as Ethiopia's, believed that harmonization should have been required. But given the vast number and variety of existing agreements, such a requirement would have been impractical. However, this does not mean that the principles reflected in the Convention will be without significance in the *interpretation* of existing agreements.

Article 3 also addresses the situation in which less than all of the states sharing a watercourse enter into an agreement concerning its use. In that case, the agreement may not adversely affect uses of other states on that watercourse without their consent. Then there is the situation in which a riparian state believes the principles of the

⁴ Verbatim record, 99th plenary meeting, U.N. General Assembly, 21 May 1997, U.N. Doc. A/51/PV.99, at 5 (Pakistan) and 12 (Rwanda).

⁵ Some delegations believed harmonization should have been required. See, e.g., the statement of Ethiopia in explaining its vote on the Convention, Verbatim record, *id.* at 9-10.

Convention should govern the watercourse it shares with another state or states. Article 3 provides that in such a case, the states sharing the watercourse *must* enter into consultations “with a view to negotiating in good faith for the purpose of concluding a watercourse agreement.”

Article 4 deals with the rights of riparian states to participate in specific agreements that apply to an entire international watercourse and those that apply “only to a part of the watercourse or to a particular project, program or use.” If an agreement is to apply to an entire international watercourse, all states on the watercourse are entitled to participate in the negotiation of, and to become a party to the agreement. As to agreements concerning only a part of a watercourse or particular project, a riparian state whose use of the watercourse may be affected by the implementation of a prospective agreement of this kind may participate in consultations relating to the agreement, “and, where appropriate, in the negotiation thereof in good faith with a view to becoming a party thereto, to the extent that its use is thereby affected.”

Part II, General Principles, is the core of the Convention. It is introduced by Article 5, “Equitable and Reasonable Utilization and Participation.” This article sets forth what many regard as the cornerstone of the law of international watercourses—namely, the principle that a state must use an international watercourse in a manner that is equitable and reasonable vis-à-vis other states sharing the watercourse. Indeed, the International Court of Justice, in its recent decision in the *Gabcíkovo-Nagymaros* case, emphasized the importance of operating the project involved in the case “in an equitable and reasonable manner.”⁶ According to Article 5, to be equitable and reasonable, the use must also be consistent with adequate *protection* of the watercourse from pollution and other forms of degradation.

But how does upstream State A, for example, know whether its use of an international watercourse is equitable and reasonable vis-à-vis downstream States B and C? The answer is, this may be a very difficult thing for State A to determine, in the absence of a joint mechanism with States B and C, or a very close working relationship with them. Article 6 of the Convention sets forth a non-exhaustive list of factors to be taken into account in making the determination, and Article 9 requires riparian states to exchange data and information concerning the condition of the watercourse on a regular basis. The Article 6 factors will doubtless be of assistance to State A in making the equitable utilization determination, as will the Article 9 data and information—indeed, it would be nearly impossible for a state to ensure its use was equitable without data and information from other riparian states. However, the principle of equitable and reasonable utilization is much better suited to implementation through very close cooperation between the states concerned, ideally through a joint commission, or by a

⁶ Case Concerning the Gabcíkovo-Nagymaros Project (Hung./Slovk.), 1997 I.C.J. 92 (Sept. 25), 37 I.L.M. 162 (1998), para. 150, at 69, <<http://www.icj-cij.org/idoCKET/ihs/ihsjudgment/ihsjudcontent.html>>.

court or other third party. After all, the doctrine had its origins in decisions of the United States Supreme Court in water disputes between U.S. states. This having been said, however, it seems clear that there is no other general principle that can take into account adequately the wide spectrum of factors that may come into play with regard to international watercourse throughout the world.

What this underlines is the importance of *cooperation* between riparian states with a view to achieving a regime of equitable and reasonable utilization and participation for an international watercourse system as a whole. Thus, Article 8 of the Convention lays down a general obligation to cooperate “in order to attain optimal utilization and adequate protection of an international watercourse.” It is interesting to note that the delegations negotiating the Convention attached such significance to cooperation *through joint mechanisms* that they added a paragraph to Article 8 calling for states to “consider the establishment of [such] mechanisms or commissions...”

Returning for a moment to Article 5, that provision also introduces the new concept of equitable *participation*. The basic idea behind this concept is that in order to achieve a regime of equitable and reasonable utilization, riparian states must often cooperate with each other by taking *affirmative* steps, individually or jointly, with regard to the watercourse. While this idea is, in effect, a feature of some well-developed cooperative relationships between river basin countries, it had not been reflected as such in attempts to codify the law in this field until the International Law Commission included it in Article 5. Its acceptance as a part of the Convention is welcome, because it helps to convey the message that a regime of equitable utilization of an international watercourse system, together with the protection and preservation of its ecosystems, cannot be achieved solely through individual action by each riparian state acting in isolation; again, affirmative cooperation will often be necessary. The utility of this concept is illustrated by the fact that the ICJ quoted the entire paragraph of Article 5 that sets forth the obligation of equitable participation in its judgment in the *Gabcíkovo-Nagymaros* case.⁷

I now come to the most controversial provision of the entire Convention, the obligation not to cause significant harm, which is set forth in Article 7. That article was treated as being closely linked with Articles 5 and 6 throughout the negotiations in the U.N. The three-article package was finally adopted by a vote of 38 to 4, with 22 abstentions.

At first blush it seems obvious that one state should not cause significant harm to another state, whether through its use of a watercourse or otherwise. But at least in the case of international watercourses, it is not so simple. Suppose, for example, that—as is often the case—upstream State A has not significantly developed its water resources because of its mountainous terrain. The topography of the downstream states

⁷ *Id.*, para. 147. See also Chapter 7 of this Report.

on the watercourse, B and C, is flatter, and they have used the watercourse extensively for irrigation for centuries, if not millennia. State A now wishes to develop its water resources for hydroelectric and agricultural purposes. States B and C cry foul, on the ground that this would significantly harm their established uses. How should the positions of State A, on the one hand, and States B and C, on the other—neither of which seems unreasonable on its face—be reconciled?

This question is at the heart of the controversy over Article 7 and its relationship with Article 5 on equitable and reasonable utilization. I will take up each of these points in turn—albeit only briefly. First, as to how the so-called “no significant harm” obligation should be formulated: The International Law Commission’s first draft of the article, adopted in 1991, was the essence of simplicity. It provided: “Watercourse States shall utilize an international watercourse in such a way as not to cause appreciable harm to other watercourse States.” The Commission’s final draft, adopted in 1994, introduced considerable flexibility into the text, in two principal respects. First, it expressly made the obligation one of “due diligence”: “Watercourse States shall *exercise due diligence* to utilize an international watercourse in such a way as not to cause significant harm ... [etc.].” (You will notice, incidentally, that it also changed “appreciable” to “significant.” I don’t regard this as a terribly “significant” change, however.) But the insertion of the “due diligence” modifier made it clear beyond any doubt that this was not in any way an *absolute* obligation, but rather one of due diligence, or best efforts under the circumstances.

The second way in which flexibility was introduced was by adding a lengthy paragraph 2, which converted the “no harm” obligation into what the ILC described as “a *process* aimed at avoiding significant harm as far as possible while reaching an *equitable result* in each concrete case.” Paragraph 2 did this by requiring that if significant harm was caused despite the exercise of due diligence, the states involved must enter into consultations concerning two things: first, the extent to which the harmful use is equitable and reasonable; and second, whether the harming state should adjust its use to eliminate or mitigate the harm, and, “where appropriate, the question of compensation.”

The ILC’s text was changed in the U.N. negotiations. Undoubtedly, scholars will spill much ink over the extent to which the changes are “significant.” I, personally, don’t think they are. In my view the deletion of “due diligence” from paragraph 1 and its replacement with “take all appropriate measures” is merely saying the same thing in different words. The real fight was over the second paragraph. The question there was whether equitable utilization should prevail over the “no-harm” obligation, or vice-versa. To illustrate, allow me to return to our hypothetical fact situation. If equitable utilization is the controlling legal principle, upstream State A may develop its water resources in an equitable and reasonable manner vis-à-vis downstream States B and C, even though that development would cause significant harm to their established uses. If, on the other hand, the obligation not to cause

significant harm is dominant, State A could engage in no development, no matter how equitable and reasonable, that would cause States B and C significant harm.

To some delegations at the U.N. negotiations, the ILC's final text—which represents an effort to strike a balance between the two principles—favored equitable utilization too heavily. They argued for a text that more clearly gave precedence to the “no-harm” principle. Other delegations took the opposite view. For them the basic rule was equitable utilization; at most, any harm to another riparian state should merely be one factor to be taken into account in determining whether the harming state's use was equitable. You see before you the compromise formula arrived at in the U.N. negotiations. Perhaps not surprisingly, the final text is somewhat like a basket of Halloween candy: there is something in it for everyone. No matter whether you are from the equitable utilization or the no-harm school, you can claim at least partial victory. In my view, however, paragraph 2 of Article 7 of the Convention gives precedence to equitable utilization over the no-harm doctrine. The very existence of a second paragraph implicitly acknowledging that harm may be caused without engaging the harming state's responsibility supports this conclusion. Also indicating a recognition that significant harm may have to be tolerated by a watercourse state are the numerous mitigating clauses in paragraph 2, especially the phrase “having due regard for the provisions of articles 5 and 6”—the two equitable utilization articles. Finally, the proposition that the “no-harm” rule does not enjoy inherent preeminence is supported by Article 10 of the Convention, which provides that any conflict between uses of an international watercourse is to be resolved “with reference to articles 5 to 7...” This would presumably mean that if State A's hydroelectric use conflicts with State B's agricultural use, the conflict is not to be resolved solely by applying the “no-harm” rule of Article 7, but rather through reference to the “package” of articles setting forth the principles of both equitable utilization and “no-harm.”

But in actual disputes, it seems probable that the facts and circumstances of each case, rather than any *a priori* rule, will ultimately be the key determinants of the rights and obligations of the parties. Difficult cases, of which there are bound to be more in the future, will be solved by cooperation and compromise, not by rigid insistence on rules of law. This is one of the lessons of the World Court's judgment in the *Gabcíkovo/Nagymaros case*.

Before leaving the “General Principles” part of the Convention, I should say an additional word about Article 10. Originally conceived as a provision that would clearly specify that navigational uses no longer enjoy inherent priority over non-navigational ones—if they ever did—this article now has a much richer texture. In particular, paragraph 2 provides that a conflict between different kinds of uses of an international watercourse is to be “resolved with reference to articles 5 to 7, with special regard being given to the requirements of vital human needs.” The expression “vital human needs” was discussed at some length in the U.N. negotiations. The final text maintains the ILC's language but a “statement of understanding” accompanying the text of the Convention indicates that: “In determining ‘vital human need,’ special

attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for production of food in order to prevent starvation." This is no doubt right. What some countries may fear is that the concept of "vital human needs" could become a loophole, enabling a state to argue that its use should prevail on this ground when in fact it was highly debatable whether vital human needs were involved at all. But since the "statement of understanding" is based on the ILC's commentary, which would in any event be relevant to an interpretation of paragraph 2, the "statement" probably adds no new problems.

Part III of the Convention, Planned Measures, contains a set of procedures to be followed in relation to a new activity in one state that may have a significant adverse effect on other states sharing an international watercourse. The fact that the basic obligation to provide prior notification of such changes was accepted as a part of the Convention by most delegations⁸ is, in itself, important: it provides further evidence that the international community as a whole emphatically rejects the notion that a state has unfettered discretion to do as it alone wishes with the portion of an international watercourse within its territory.⁹

While the Working Group made a number of drafting changes, the essence of the system envisaged in Part III is unchanged from the ILC's draft. It essentially provides that a state contemplating a new use or a change in an existing use of an international watercourse that may have a significant adverse effect on other riparian states must provide prior notification to the potentially affected states. Those states are then given six months within which to respond. If they object to the planned use, they are to enter into discussions with the notifying state "with a view to arriving at an equitable resolution of the situation." This entire process could take twelve months or longer. If the matter is not resolved to the satisfaction of any of the states concerned, the dispute settlement procedures of Article 33 would be applicable. A final important point concerning Part III is that it seems clear that, of necessity, it is premised on the assumption that the planning state will conduct an environmental impact assessment to identify, possible adverse effects on co-riparian states.¹⁰

Part IV of the Convention, entitled "Protection, Preservation and Management," contains the "environmental" provisions of the Convention. While a variety of proposals were made in the U.N. negotiations for the strengthening of these

⁸ Three that did not were Ethiopia, Rwanda and Turkey. Verbatim record, 99th plenary meeting, *supra* note 4, at 4-5 (Turkey), 12 (Rwanda) and 9 (Ethiopia). In explaining its negative vote on the Convention, Turkey stated that Part III introduces a "veto". *Id.*, at 5. While it is true that the articles provide for a temporary suspensive effect upon implementation of measures by the planning state (see Articles 13 and 17), no veto is provided for in Part III.

⁹ The doctrine of "absolute territorial sovereignty", which would support such unfettered discretion, has long been rejected by the state that invented it. See Stephen McCaffrey, *The Harmon Doctrine One Hundred Years Later: Buried, Not Praised*, 36 NAT. RESOURCES J. 725 (1996).

¹⁰ But cf. art. 12.

provisions, in the end only minor changes were made to the ILC's text. Article 20, Protection and Preservation of Ecosystems, is a simple but potentially quite powerful provision. It says that riparian states have an obligation to "protect and preserve the ecosystems of international watercourses." Like Article 192 of the United Nations Convention on the Law of the Sea, on which it is modeled, this obligation is not qualified. For example, it does not say that the ecosystems must be protected only if failure to do so may harm another riparian state. Since the "ecosystems" of international watercourses include land areas contiguous to them, Article 20 requires that such land areas be maintained in such a way that the watercourses they border are not harmed by, for example, excessive agricultural runoff. Doubtless this is not an absolute obligation, however. That is, it is an obligation to exercise due diligence to protect and preserve watercourse ecosystems. This standard takes into account the sensitivity of the ecosystem as well as the capability of the state involved.

Pollution of international watercourses is dealt with in Article 21, Prevention, Reduction and Control of Pollution. After defining the term "pollution," it uses the standard formula—also employed in Article 194 of the Law of the Sea Convention—that riparian states must "prevent, reduce and control" pollution of international watercourses. Unlike Article 20, however, this obligation is qualified. It is triggered *only* if the pollution "may cause significant harm to other watercourse States or to their environment..." Of course, it is at least arguable that pollution that would harm only the environment of the state of origin would have to be controlled pursuant to Article 20.

Article 22 requires riparian states to prevent the introduction of alien or new species into international watercourses. Like Article 21, the obligation contained in Article 22 applies only where significant harm will be caused to other riparian states.

Article 23 addresses, in a very general way, the problem of marine pollution from landbased sources. Like Article 20, the obligation applies whether or not other states are injured. Article 23 actually goes beyond the problem of pollution, however. Since it requires riparian states to "protect and preserve the marine environment," it would presumably apply also to such things as the protection of anadromous species and of coral reefs.

In a "statement of understanding" the Working Group in which the Convention was negotiated indicated that Articles 21-23 "impose a due diligence standard on watercourse States." It is interesting that this statement does not cover Article 20. But, as I have already indicated, I believe Article 20 must also be read to reflect an obligation of due diligence.

Article 24, Management, is a provision believed by many specialists to be too modest in view of the importance of joint commissions. But the ILC did not feel it could go any further than this in a general, framework instrument. It was of the view that while international law may require riparian states to cooperate with each other, it

does not go so far as to require them to form joint commissions. I believe the Commission was correct in this assessment, although in my view the article could have gone somewhat further in indicating the concrete forms that institutionalized cooperation between riparian states might take. But some states—and indeed some members of the Commission—were somewhat uncomfortable even with the article as it presently stands, let alone a more specific provision.

Regulation of watercourses, international or national, is a common phenomenon, as any hydraulic engineer will tell you. This often takes the form of fortifying banks to prevent erosion, straightening the course of a river, building up embankments, and the like. Article 25 deals with these activities, requiring riparian states to cooperate in responding to needs for regulation, and to participate in the required works on an equitable basis.

The proper construction and maintenance of dams and similar works is dealt with in Article 26, Installations. Since a faulty dam may pose great danger to downstream states, this article requires that a state in whose territory a dam is located maintain it and protect it from forces that may result in harm to other riparian states.

Part V is entitled “Harmful Conditions and Emergency Situations.” It contains one article on each of those topics. By “harmful conditions” is meant such things as water-borne diseases, ice floes, siltation and erosion. Article 27 requires riparian states to take “all appropriate measures” to prevent or mitigate such conditions, where they may be harmful to other states sharing the watercourse. Article 28 deals with emergency situations. This term is defined broadly to include both natural phenomena such as floods, and those that are caused by humans, such as chemical spills. A state within whose territory such an emergency originates must notify other potentially affected states as well as competent international organizations. It must also take “all practicable measures ... to prevent, mitigate and eliminate harmful effects of the emergency.”

Part VI, Miscellaneous Provisions, contains Articles 29 to 33. Article 29, dealing with armed conflict, serves as a reminder that there are rules of international law that protect international watercourses and related installations, facilities and other works during hostilities.

Article 30 provides for riparian states to utilize indirect procedures to fulfill their obligations of cooperation under the Convention when there are serious obstacles to direct contacts between them, such as where they do not have diplomatic relations with each other.

Article 31 simply safeguards classified information that is “vital to ... national defense or security.”

Article 32 deals essentially with private remedies. Its intent was to ensure equal access and nondiscrimination, so that an injured or threatened party could have access to judicial or administrative procedures in the state of origin, regardless of whether that was on the other side of an international boundary. The article provoked controversy in the U.N. negotiations, including a proposal that it be deleted. Evidently not all states are yet comfortable with the idea of granting private persons from other (usually neighboring) countries nondiscriminatory access to their judicial and administrative procedures relating to transboundary harm or the threat thereof.

Article 33 on the settlement of disputes was also somewhat controversial, principally because it provides for compulsory fact-finding at the request of any party to a dispute. Any compulsory dispute-settlement procedure is bound to draw strong objection from certain countries,¹¹ even if all that is compulsory is fact-finding, and even if that only becomes compulsory after negotiations have failed to settle the dispute within six months. The ranks of these “automatic objectors” were swelled somewhat by a few upstream states,¹² who were evidently reluctant to surrender whatever leverage their position on an international watercourse conferred upon them. Yet facts are of critical significance with regard to the core obligations of the Convention. For example, how can states determine whether their utilization is “equitable and reasonable” under article 5 without an agreed factual basis? And how can a state establish that it has sustained significant harm if the state that is alleged to have caused the harm denies that it has caused it or that any harm has been suffered? The importance of facts in this field is no doubt what led the ILC to depart from its usual practice by including an article on dispute settlement in its draft. Article 33 also provides for states to declare upon becoming parties to the Convention that they accept as compulsory the submission of disputes to the International Court of Justice or to arbitration in accordance with procedures set out in the Annex to the Convention.

TO WHAT EXTENT DOES THE CONVENTION REFLECT CUSTOMARY INTERNATIONAL LAW?

I would now like to turn very briefly to the question of the extent to which the Convention reflects rules of customary international law. I think it may be said with some confidence that the most fundamental obligations contained in the Convention do indeed reflect customary norms. Indeed, in the *Gabcíkovo-Nagymaros* judgment the Court said that the adoption of the Convention “strengthened” the “principle” of the

¹¹ E.g., China and India. Verbatim record, 99th plenary meeting, *supra* note 4, at 7 (China) and 9 (India).

¹² E.g., France, Israel (effectively upstream on the Jordan) and Rwanda. These states, together with China and India, generally maintained that the principle of free choice of means should have been followed in Article 33. Verbatim record, 99th plenary meeting, *supra* note 4, at 8 (France), 11 (Israel) and 12 (Rwanda). In a separate vote on Article 33 in the Working Group, the following five countries voted in the negative: China, Colombia, France, India and Turkey. The tally was 33 for, 5 against, with 25 abstentions.

“community of interests” in an international watercourse.¹³ While the International Law Commission does not take a position on whether a particular article or paragraph is a codification of international law or an effort to progressively develop that law, it seems reasonable to conclude on the basis of state practice that at least three of the general principles embodied in the Convention correspond to customary norms. These are the obligations to use an international watercourse in an equitable and reasonable manner, not to cause significant harm, and to notify potentially affected riparian states of planned measures on an international watercourse. Of course, other provisions of the Convention, such as some of those relating to the environment, are closely related to, or even flow from these principles. To the extent that these provisions are based on the fundamental principles, they too might be said to reflect custom.

I will add just one additional word on this subject, and it relates to the World Court’s judgment in the *Gabcikovo-Nagymaros* case. As I have already indicated, the Court referred several times in its judgment to the right to an equitable and reasonable share of the uses and benefits of an international watercourse.¹⁴ Notable for its absence was any reference to the “no-harm” principle. Hungary had relied fairly heavily upon this concept in its pleadings, but the Court did not accept its invitation to use it as a basis of its judgment. I do not believe that means the “no-harm” rule has been significantly weakened; but it suggests that the Court views the principle of equitable utilization to be the more important of the two.

CONCLUSION: THE CONVENTION’S ENVIRONMENTAL PROVISIONS

As a conclusion, I would like to comment upon the environmental provisions of the Convention in terms of how they compare with similar provisions in other instruments. First and foremost, it must be borne in mind that this is a universal, framework agreement. Because of this fact, one cannot expect either the level of detail or the degree of “Greenness” that one might find in a bilateral or regional instrument. Indeed, a number of proposals were made during the U.N. negotiations for strengthening and, it was said, “updating” the provisions of the Convention from an environmental standpoint. Most of these proposals came from Western European delegations, but a few came from other regions, such as Latin America. Very few of these proposals were ultimately accepted. One cannot say, therefore, that stronger environmental provisions are missing from the Convention because they were not thought of in the negotiations. The fact is, they *were* thought of, but were simply not acceptable to a sufficient number of delegations.

A second point also relates to the fact that this is a *framework* instrument. It is therefore intended to be supplemented by more detailed agreements concerning specific watercourses shared by two or more countries. The level of protection that might be

¹³ *Supra* note 6, para. 85, slip op. at 47.

¹⁴ *Id.* para. 78 and 85.

appropriate for Canada and the United States, for example, might not be found suitable by other countries. But I would submit that the Convention does provide an appropriate framework for the negotiation by riparian states of agreements suited to their circumstances and needs.

PART II

WORLD BANK POLICY FOR PROJECTS

ON INTERNATIONAL WATERWAYS

CHAPTER 3

The Evolution and Context of the Bank Policy for Projects on International Waterways*

Raj Krishna**

INITIAL STAGE

The World Bank has played a significant role in the financing of projects for the exploitation and development of waters of international rivers.¹ Such financing was not always easy earlier on as it is so to some degree even today. Requests for projects using international watercourse synchronized with the Bank's switch from reconstruction to development financing. Of the problems confronted by the Bank, the existence of international disputes, the absence of clear rules relating to non-navigational uses, the Harmon doctrine, and the paucity of cases and scholarly writings on the subject were the most significant. Thus, initially the Bank followed a rigid practice which was replaced by a more flexible approach later. Even in the initial phase, however, the Bank financed projects where there was no dispute (Rhodesia: Kariba Hydroelectric Project, 1956) or where an agreement seemed feasible between the riparians (often referred to as watercourse state) (El Salvador: Rio Lempa Hydroelectric Project, 1949).

In the case of disputed international watercourses, the Bank refused to finance the projects and insisted upon agreement between the riparians. The Bank thus did not finance projects on the Indus proposed by India (Bhakra/Nangal, 1949) and Pakistan (Lower Sind Barrage Project, 1950), as there was no agreement. It also insisted on an agreement between the riparians in the early 1950s in case of Nile (Egypt: High Aswan Dam Project); (Sudan: Roseries Dam Project, 1957 and Managil Extension Irrigation Project, 1957), and Euphrates (Syria: Youssef Pasha Multipurpose Dam, 1953).

* The current policy and procedures of the Bank for projects on international waterways are included in OP and BP 7.50 (reprinted as Annex 2 of this Report).

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¹ Hereinafter referred to interchangeably as "international waters" or "international watercourses".

FLEXIBLE APPROACH

In 1950, Syria approached the Bank for the financing of the project for "Draining of the Ghab". The project would have involved the use of waters of Orontes, a river that rises in Lebanon, flows through Syria, becomes the Syrian-Turkish frontier for about twenty miles, and then swings west and southwest for about fifty-five miles through Turkey before entering the sea.

Due to increasing requests for projects on international rivers, the Bank staff felt the need to adopt a Bank policy in dealing with such requests. In this connection, four possible approaches were considered. First, the Bank would treat the watercourse basin as one unit and the project as part of a comprehensive scheme. Second, the Bank would require the assent of all the riparians. Third, the Bank would recognize only the established uses/vested rights. Fourth, the Bank would adopt a flexible approach and treat each case on its merits. The Bank staff preferred the flexible approach in case of this project. The Government was, therefore, required to satisfy (a) that the upstream riparian (Lebanon) will not divert the water from the Orontes in such amount as to harm the project, (b) that a downstream riparian country could not lodge a substantive protest because of harm to existing uses and (c) that neither downstream nor upstream riparian could lodge a substantive protest on account of damage to potential uses. Syria was also informed that the Bank would reject any protest from other riparians if it found that the protest was not "pertinent and meritorious". Applying this flexible approach the Bank staff took the position that possible uses upstream would not endanger the project, that the project will control winter floods of Orontes and thus benefit entire valley to the north, and that sufficient summer flows will be available to Turkey. Turkey was informed of Bank's views. The loan was negotiated with Syria, but prior to the presentation of the project to the Board, Turkey lodged a protest with the Bank. The Turkish and Syrian experts met in Damascus and agreed that the Turkish territory would be subject to frequent flooding during the construction phase and the project as it stood would not leave "a drop of water" for Turkey in irrigation seasons. Turkey, therefore, requested that the project be revised. A little while later Syria withdrew its requests for the loans it had negotiated, including the Ghab project.

Even though the project failed to materialize, it nevertheless constituted an important step in the Bank's handling of riparian issues.

OPERATIONAL POLICY MEMORANDUM (8), MARCH 1956

At the time the Bank was busy tackling the Ghab project problems, it adopted a policy for the guidance of the staff.² The March 1956 memorandum established an

² *Operational Memorandum for Projects on International Inland Waterways*, World Bank Operational Memorandum No. 8 (1956).

early warning system by requiring the Bank's management to be informed promptly of any project which involved the use of an international watercourse. No steps were to be taken to investigate merits or to process a project without management approval of a procedure for dealing with the international aspects of the project.

REVISIONS OF 1964 AND 1985

The former added reporting requirements to the Board. The Executive Directors were to be informed that the Bank was satisfied that the riparian issues were covered by appropriate arrangements, or that the other riparians had stated no-objection to the project, or that the project was not harmful and that the absence of express consent by the other riparian was immaterial or the objections were not justified. The revised policy continued in force up to 1985 as OMS 2.32 when it was further revised.

The 1985 revision was triggered by an Iranian protest to the Igdir-Aksu-Eregli-Ercis Irrigation Project in Turkey. As a result it was decided that a review should be undertaken of the Bank policy.

INSTITUTIONAL PRACTICE

The revised Operational Policy draws substantially from the Bank practice up to 1985 and the emerging rules of international law. It will, therefore, be useful to refer to some of the salient aspects of the institutional practice.

Notification

The requirement of notification to other riparians reflects the principle of good-neighborliness of which the Bank, as a cooperative international institution, has been particularly aware. Commencing the proposed Youssef Pasha Project, the Bank has, by and large, required that the riparians should be notified of the project. Such notification could be given by the Government proposing the project to other riparians, or by the Bank. In some cases the Bank has notified the Executive Director representing the other riparian also. No standard format was followed by the Bank and one comes across some variations. Thus, for example, in some cases the entire Project Appraisal Report would be furnished but not so in others.

There were also exceptions to this practice. Notification to non-members was not required by the Bank but it made its own determination as to the potential for harmful effects of the project. There were also cases of plain omissions.

Agreements

Existing agreements between riparians have been generally accepted. Where the agreements have been found inadequate, the Bank has sought changes thereto. Where no agreement exists the Bank staff have assessed whether the project is likely to cause

harm to the other riparian. If harm is likely the Bank has required an agreement between the riparians before financing the project.

Consent

Consent of other riparian has generally not been required and has been mainly sought in those cases where the project will result in appreciable harm to another riparian. For example, where the project would result in greater withdrawals during dry season, thereby affecting downstream riparian. Consent was also sought where the project can suffer appreciable harm by upstream uses. Sometimes, even though the project was not expected to have any adverse effect on the other riparian, or to be so affected, the exigencies of the situation have made it appropriate to seek some indication of support or consent from other riparians.

DRAFTING PROBLEMS AND CONSIDERATIONS

Alignment with International Law Emerging Framework

Between 1956 when the first policy was adopted and the time of the revision of 1985, considerable light had been shed on relevant rules of international law by learned international bodies dealing with the law relating to international watercourses and through scholarly writings. To give one example, it seemed to the Bank's Legal Department Team working on the revision of OMS 2.32, that Harmon's ghost had finally been laid. In the course of the preparation of the said revision nearly 200 treaties and 140 World Bank riparian cases were examined. The staff also drew from the following sources: (i) generally recognized principles of international law; (ii) international arbitral awards, and (iii) works of the Institute of International Law (IIL), International Law Association (ILA) and the UN International Law Commission (ILC).

The principles that appeared to have gained wide acceptance were the right of equitable utilization and the prohibition against causing appreciable harm. The former principle enshrines the idea that each riparian state has an equality of right with every other coriparian state to utilize the waters in a reasonable and beneficial manner. The latter stipulates that a state is entitled to use the flow of the river on its territory but only in such a manner that it does not cause appreciable harm to another riparian.

As regards the case law, two cases: the Trail Smelter Arbitration³ and Lake Lannoux Arbitration⁴ were very relevant for our work. I had always felt that the Trail Arbitration award had great potential for the development of international law and that the international lawyers appeared not to have paid enough attention to this aspect.

³ (U.S. v. Can.) (1941), 3 R.I.A.A. 1905 (1949).

⁴ (Spain v. Fr.), 12 R.I.A.A. 281 (1957).

In addition to the foregoing we also derived considerable benefit from the works of the ILC, ILA (the Helsinki rules) and the Institute of International Law. The ILC had before it drafts of articles prepared by Judge Schwebel and Judge Evensen. Judge Schwebel had submitted three reports⁵ and Judge Evensen two.⁶ The problem, however, was that various draft articles proposed by them exhibited considerable divergence and variations. It was against this background of emerging legal framework that the Bank started to revise the policy.

Terminology

First and foremost problem was what term to use for the international waters the Bank is concerned with. The term "international river" did not appear adequate any longer. "International drainage basin" as used in the Helsinki rules having encountered considerable resistance seemed unlikely to gain international acceptance. The U.N. General Assembly used the term "international watercourses" when it referred the subject for study by the ILC. The ILC had quite early postponed defining the term for future. However, in the first draft articles presented by him, Judge Schwebel advanced the concept of "international watercourse system". It was, therefore, felt necessary to indicate what was understood by "system". Thus without attempting to define, an understanding of the term "international watercourse system" termed as "working hypothesis" was adopted by the ILC. The "working hypothesis" comprised three paragraphs. The first paragraph, more or less, reflected the "international drainage basin" concept. It was the third paragraph which caused the most trouble. It read:

To the extent that parts of the waters in one state are not affected by or do not affect uses of waters in another state, they shall not be treated as being included in the international watercourse system. Thus to the extent that the uses of the waters of the system have an effect on one another, to that extent the system is international, but only to that extent; accordingly, there is not an absolute but a relative international character of the watercourse.

This concept of "relativity" of a watercourse was retained by Judge Evensen in the draft articles proposed by him. Under "relativity" clause, the same body of water could be international for one but not the other riparian unaffected by the use.

⁵ Judge at the International Court of Justice. Stephen M. Schwebel, rapp., *First Report on the Law of the Non-Navigational Uses of International Watercourses*, 1979 vol. II, pt. 1 Y.B. INT'L. L. COMM'N 143, U.N. Doc. A/CN.4/320. For the second report, see *The Law of Navigational Uses of International Watercourses*, 1980 vol. II, pt. 2 Y.B. INT'L. L. COMM'N 104, U.N. Doc. A/CN.4/332 and Add. 1. For the third report, see *Third Report on the Law of the Non-Navigational Uses of International Watercourses*, U.N. Doc. A/CN.4/348.

⁶ Judge of the International Court of Justice. Jens Evensen, rapp., *First Report on the Law of the Non-Navigational Uses of International Watercourses*, 1983 vol. II, pt. 1 Y.B. INT'L. L. COMM'N 155, U.N. Doc. A/CN.4/367. For the second report, see U.N. Doc. A/CN.4/381.

"Relativity" was a novel invention and was tantamount to a negation of the very concept of an international watercourse.

In view of the problems noted earlier, we decided to adopt a more neutral term, "international waterway", for purposes of Bank policy and to follow an enumerative approach specifying the bodies of water covered by the term. The "working hypothesis" and "relativity" were rejected.

Substantive Rules

For purposes of Bank policy we took into consideration the two principles mentioned earlier: the right to equitable utilization and the prohibition against causing appreciable harm. These two, however, were stated differently by the ILA and the ILC, and within the latter, quite differently by Judge Schwebel and Judge Evensen. This notwithstanding, the "no appreciable harm" rule was chosen as the building block for Bank policy.

Our choice of "no appreciable harm" rule has been criticized on various grounds. These are:

- i) The rule of "no appreciable harm" is more favorable to lower riparians;
- ii) The policy ignores equitable use doctrine; and
- iii) The policy favors rush for development.

As regards the first point, it may be pointed out that the policy does not discriminate against upstream riparian. A downstream riparian may also cause harm upstream. The second criticism is also not justified. The Bank policy paper proposing the policy changes gave equal emphasis to both principles. At the time of the policy revision (1984-85), the ILC had taken two very different positions. Judge Schwebel proposed the rule in a way that suggested that a riparian can cause appreciable harm to other riparian so long as it is acting within its right to equitable utilization of the waters. Thus up to a point, the principle prohibiting appreciable harm yields to the principle of equitable utilization. But Judge Evensen altered the principle drastically and stated it without reference to equitable utilization thereby making the two principles independent of each other.

The Bank policy could have been developed around the principle of equitable utilization also. The big hurdle here, however, is that for each project the Bank will need to determine whether the particular use to be financed by it falls within the equitable utilization of the beneficiary state, further necessitating an analysis of what is equitable for other riparians -- a task the Bank cannot accomplish without the agreement of other coriparians as it is neither a court nor a tribunal. On the other hand, the no harm rule seemed more appropriate for the Bank and simple to apply. Moreover, avoidance of harm as the guiding principle is imbedded in the Bank's

practice over the years. Its adoption by the Bank in no way derogates from the significance of the principle of equitable utilization.

This being said, let me acknowledge that, although we had followed the “no appreciable harm” rule, I was troubled by the nagging doubt that in order for the Bank to determine whether a project will or will not cause appreciable harm it cannot avoid getting into the question of equitable utilization. When in connection with a proposed project, I made a statement asserting that harm is caused when a watercourse state is denied its right of equitable utilization, I was asked by the General Counsel to explain my position. I pointed out to him that at some point the two rules do intersect. After a lengthy discussion, he gave the ruling that the Bank will not go into an examination of whether a project will or will not cause appreciable harm, but would instead examine the issue of whether the project would cause damage or adverse effects. If it did, the Bank will stop at that point and will not finance the project.

Judged in the light of developments in the ILC subsequent to 1984-85, the General Counsel’s ruling anticipated quite remarkably the later outcome in ILC. Up to this time the ILC was employing the term “appreciable harm” in the statement of the substantive principle of law as well as in respect of planned works that a riparian intended to carry out, which also were mandated not to cause appreciable harm. In subsequent years, the ILC while retaining the substantive principle, as modified, dropped the phrase “appreciable harm” in respect of planned works (which are what Bank financed projects are) and substituted it with the words “significant adverse effects”. The practice of the Bank to look into “adverse effects” rather than “appreciable harm” in respect of its projects which are planned works generally, it is submitted, is fully consistent with international law.

As regards the third criticism that the Bank policy encourages rush for development downstream, it may be pointed out that this has been happening regardless of the Bank policy.

Types of Projects

Inasmuch as the policy is intended both for the legal and non-legal staff, it was felt desirable to define also the type of projects covered by it. The policy statement further reflects the concern of the Bank as to the important environmental aspect of pollution.

Requirement as to Notification

With minor exceptions, Bank policy requires that riparians be notified of the project across the Board. The duty to notify follows from the substantive rules of international law. It is recognized by learned bodies and scholars and enjoys some support in State practice.

Scope of Duty to Notify

The Helsinki rules stipulated notification to any other basin state, the interests of which may be substantially affected, as regards any proposed construction or installation which would alter the regime of the basin in a manner which might give rise to a dispute. In their respective formulations of the notification requirement, both Schwebel and Evensen mandated notification if the proposed project may cause appreciable harm to another watercourse state.

In all of these formulations the decision whether to notify rests entirely on the determination of the watercourse state planning the use. As a practical matter, it was felt inadvisable for the Bank to rely exclusively on determinations made by one watercourse state which may affect rights and interests of other watercourse states. Also, while international law may permit a watercourse state not to notify projects which in its view shall result in less than appreciable harm, the Bank must act within the constraints stemming from its character of being an international cooperative institution and avoid any possibility of dispute among its members. For these reasons, barring two exceptions, the revised Bank policy adopts the principle of notification for all projects. These exceptions are:

- i) Projects involving additions or alterations by way of rehabilitation, construction, or otherwise to any on-going scheme which in Bank's judgment will not adversely change the quality of quantity of water flows to other riparians. However, the policy makes it clear that if there is an agreement or arrangement between the watercourse states it needs to be complied with.
- ii) Water resource surveys and feasibility studies on or involving international waterways.
- iii) The current OP 7.50, in addition, contains another exception which reflects Bank's interpretation of the policy.

Requirement as to Notification Period

Notification is contemplated at the earliest stage in the project cycle. There were, however, diverging views among members of the Bank-wide Committee charged with the task of revising the policy, as regards the period to be allowed for response of the other riparian. The ILC had proposed that a reasonable period of time of six months be given. Some members of the Committee considered 6 months too long a period whereas others pointed out that in case of a complicated project, six months may not be adequate. As a result of compromise the Bank policy stipulated: "The other riparians should be allowed a reasonable period of time, which should not normally exceed six months from the dispatch of the Project details".

Refusal to Notify

Under the ILC rules a watercourse state shall incur liability if it does not notify the project and the project results in appreciable harm. In view of such liability, the Bank adopted a different approach. It was provided that if a watercourse state does not notify and objects to notification by the Bank, the Bank will discontinue the further processing of the project. In practice, this condition has proven quite effective.

Riparian Response

The Bank does not require the consent of the notified watercourse state. A positive response will suffice which can be in the form of consent, no objection, support to the project or confirmation that the project will not be harmful to its interests.

No Response

A more difficult situation is created when the notified watercourse state fails to respond. Can the notifying state proceed without incurring responsibility under international law? Does failure to respond entail loss of substantive rights under international law? Can silence be construed as consent? These were the more significant issues we had to tackle.

The Helsinki rules did not answer these questions. On the other hand, Schewebel and Evensen faced the core issue squarely and took essentially the view that a notifying state shall not be liable for ensuing harm if it is otherwise not in violation of the provisions of the Draft Articles submitted to ILC. That silence amounted to consent seemed to be implicit in their position. We had some reservations on this in the light of ILC's Draft Articles on State Responsibility. Moreover, there may be a variety of reasons why a member state of the Bank may not respond. It may be without a Government. Also, there may be more than one faction claiming to be the legitimate Government. In view of the conflict of opinions we decided to leave the decision as to what course of action is to be followed in the non-response situation to Bank's senior management who may choose to refer the matter to independent experts provided for in the policy.

Riparian Protest

Prior to 1985, the policy was somewhat blunt in case a riparian protested the project. It required the staff to inform the Executive Directors in connection with the consideration of the loan that the Bank is satisfied that the "project is not harmful to the interests of other riparians and their absence of express consent is immaterial or their objections are not justified".

The revised policy sets forth a more detailed procedure for handling protests. The Bank may appoint one or more independent experts for their opinion to enable it to decide on further processing of the project. The relevant provisions are detailed in the current BP 7.50. Earlier drafts in 1985 had suggested recourse to pacific means of dispute settlement if objections were found to be substantiated. This automaticity was unacceptable to the senior management. Instead, the revised policy stipulates that the pacific means will "normally" be resorted to where objections are substantiated.

Independent Opinion

An important question that arose related to the appointing authority for independent experts. Should the riparians do so? We rejected the idea as this procedure seemed too much like arbitration. In the case of a watercourse with several riparians, the panel of experts would have become too unwieldy. Besides, there was likelihood that upper or lower riparians could feel outnumbered. Also, with an even number, the involvement of an outside agency would be necessary giving rise to complex procedures and delays. For these reasons we had earlier proposed the President of the Bank as the appointing authority of a Technical Advisory Panel comprising the experts. These suggestions did not find much favor with the senior management. The relevant provisions are contained in the current BP 7.50.

CRITICISMS OF BANK POLICY

Upstream, Downstream Riparian Issue

Over the years some criticisms of Bank policy have been voiced. It has been said that it favors downstream riparians. This point has already been covered earlier. Some have maintained that the policy should have been stated in terms of upstream and downstream riparians. In fact, in one of the revised policy statements necessitated by Bank's internal organizational changes after 1985, through oversight, this idea got introduced which, upon discovery, was immediately deleted. The Bank did not accept the upstream-downstream approach and applied the policy equally to all watercourse states. There were several reasons for doing so. For example, geographical complexities argued against it. Boundary waters do not have upstream and downstream riparians. A watercourse may flow from state A to state B, then form a boundary, and later swing back from state B to A. Who is upstream and downstream riparian? Moreover, neither ILC nor ILA endorsed this approach. On the contrary, insofar as navigational uses are concerned, the principle of equality of riparians has prevailed.

Groundwater Issue

One of the main criticisms is that the policy does not cover international groundwaters. In this connection it may be pointed out that in the course of the revision, this matter was fully considered, but in view of ILC's postponing defining "international watercourse" and the decision not to include confined international

groundwater within the scope of its Draft Articles, groundwater was excluded from Bank's policy as well. However, the policy was applied on an ad hoc basis to projects using groundwaters of international character. Given recent adoption of the Convention, there is an urgent need to review the policy and either incorporate groundwaters in it or to adopt a separate policy with respect thereto.

Bank Abstain from Financing Disputed Projects

As stated earlier, Bank policy prescribes procedures to deal with riparian protests. Some have taken the view that the Bank should not finance projects which are subject of dispute. The problem with this proposition is that it confers the power to veto on other riparians. Where the potential of a project is too great and other alternatives too limited, a protest should not prevent financing of projects if harm is non-existent or negligible. The important thing is that in such situations the Bank should act in the most transparent manner which is the aim of the policy. Where, however, the Bank decides to finance a project, opposed by another riparian, based on staff assessment of lack of appreciable harm, it is its moral responsibility to continue to monitor the impact of the project over a reasonable period of time to ensure that appreciable harm does not result.

Bank's Role is too Passive

One other criticism is that the Bank must be more pro-active in dealing with riparian matters. There is some justification in this. But one must bear in mind that there are limitations to what the Bank can do without being too overbearing or interfering. Some change in this regard, however, has become discernible in recent years. The Bank can give increased financial and technical support to existing river basin institutions or help establish such bodies.

Rule as to Minor Additions

As pointed out earlier, the revision of 1985 provided an exception to notification in case of minor additions and alterations to ongoing schemes. Paragraph 7 of the current OP 7.50, incorporated that exception, as later modified, and has been criticized as too limiting and restrictive. It will be appreciated that notification is the main pillar on which the Bank policy rests. The purpose of the exception was to allow some minor additions, etc., to on-going schemes. It certainly was not intended to permit, for example, addition of canals for irrigation to a hydro-power project or periodic additions to an irrigation project which taken together would exceed the area covered under the original project. OP 7.50 clarifies the scope of the exception incorporated in the 1985 revision.

Projects on a Tributary in the Lowest Riparian

This exception contained in paragraph 7(e) of OP 7.50 did not exist in the revision of 1985. This exception incorporated the result of Bank decision in case of a project located in the territory of the lowest downstream riparian. Personally, I find this to be unfortunately worded inasmuch as it is inconsistent with our position on upstream and downstream issue as it explicitly exempts projects in a downstream riparian from notification. Perhaps, some other wording would be more appropriate.

SOME PROBLEMS AFTER 1985

Who to Notify?

This question arose in respect of a project in Lesotho on a watercourse which had Namibia as one of the riparians. Namibia was not an independent country at that time. The Bank, therefore, notified the United Nations Council for Namibia.

Time Limit

It has already been explained why the notification period was stated to "normally not to exceed six months". The question of what is reasonable period to be allowed normally was left open, the reason being that international law, in any event, leaned towards six months. Evensen was quite categorical in stating: "Six months has been proposed as a reasonable minimum period". It was felt that six months would be the reasonable period for the Bank as well. There was, however, a tendency to treat six months as the outer limit and shorter notification period began to be given. This is not what we intended. If international law requires six months, then that should be the minimum period for the Bank. Consequently, GP 7.50 now clarifies that notice of less than six months is desirable only for emergency situations.

Notification Under Bank Policy in Presence of International Agreements

In this regard the question may be framed thus: If two watercourse states have concluded an agreement which in addition to water allocation contains exhaustive and detailed provisions as to the use of waters, but does not require notification, should the Bank, pursuant to its policy, require notification for projects which fall within the agreed water allocation. My submission is in the negative. Bank policy does not override an international agreement and as the parties in this case did not contemplate notification, none should be required of them. As it is, reaching agreements on water sharing has been demonstrated again and again to be an extremely difficult process and every effort should be made to give them fullest effect.

CONCLUSION

From nearly the inception of its development financing operations, the World Bank encountered considerable difficulty in doing projects involving international watercourses. Due to the existence of riparian disputes in many parts of the world and the lack of clarity in the applicable rules of international law, the Bank proceeded very cautiously at the beginning. Later, to meet the new challenges presented by these factors, a policy directive for the staff was adopted in 1956 that underwent several revisions, the major ones being those of 1985. Those revisions are now reflected in the current OP, BP and GP.

This policy is built upon the international law obligation not to cause appreciable harm to other riparians. Sheer practical considerations, and the considerations stemming from the character of the Bank as an international cooperative institution, determined this approach, rather than the recognition of any alleged pre-eminence of the said obligation over the riparians right to equitable utilization. No doubt the Bank policy is consistent with international law rules relating to international watercourses, and has influenced, and been influenced by such rules. However, in light of criticism of the policy in some quarters, the problems encountered in the implementation of the policy, and the recent developments in international law such as the inclusion of groundwater, the desirability of revising the current policy merits attention by the Bank.

PART III
INTERNATIONAL WATERCOURSES
AND THE ENVIRONMENT

CHAPTER 4

UN/ECE Strategies for Protecting the Environment with Respect to International Watercourses: The Helsinki and Espoo Conventions

Branko Bosnjakovic*

BACKGROUND AND ISSUES OF UN/ECE ENVIRONMENTAL CONVENTIONS

New Borders and New Potential for Transboundary Environmental Problems

The current process of changes in Europe is posing new and compelling challenges to regional cooperation in general, and to cooperation in the fields of the environment and the security in particular. Between 1990 and 1995, the United Nations Economic Commission for Europe (UN/ECE) membership increased from 34 to 55 countries, including 27 countries in transition from a centrally planned to a market economy. With the emergence of new countries with economies in transition, new frontiers are cutting through the region, creating more transboundary situations and issues.

Environmental protection, sustainable development and a rational use of natural resources represent problems mostly transboundary in nature. They include: fresh and sea water use and protection; (long-range) air pollution; desertification or flooding; dangerous waste; transport; nuclear risks; and impact of military activities.

The fact that a growing number of countries in transition are at the level of developing countries increases the diversity of socio-economic and environmental backgrounds and therefore the challenges in the field of environmental security.

Environmental Legacies of the Past in Countries in Transition

Two recent overview reports, "Europe's Environment - The Dobris Assessment"¹ and "Concern for Europe's Tomorrow"², give a consistent picture of environmental risks and problem findings which are specific or especially pronounced

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¹ EUROPE'S ENVIRONMENT - THE DOBRIS ASSESSMENT (David Stanners & Philippe Bourdeau eds., 1995).

² WHO CENTRE FOR ENVIRONMENT AND HEALTH, CONCERN FOR EUROPE'S TOMORROW: HEALTH AND THE ENVIRONMENT IN THE WHO EUROPEAN REGION (1995).

in the countries in transition (CIT), comprising the countries of Central and Eastern Europe (CEE) and the Newly Independent States (NIS) which emerged from the former USSR.

The main economic sectors and source activities responsible for environmental risks in the countries in transition are industry, energy and agriculture, to which must be added inadequacies and deficiencies of infrastructure, e.g. water supply, waste water treatment and solid waste management.

Manufacturing *industry* contributes nearly 50% to GDP in some CEE countries and NIS, twice as much as in the European Union (EU). The centrally planned economy of the former USSR in particular resulted in large industrial conglomerates with interacting industries located near each other. Overwhelming priority used to be given to productivity, and less attention paid to emission control or waste disposal. Air pollution has become a substantial problem in many industrial areas, and is associated with increased morbidity from respiratory diseases and allergies, particularly in children. Widespread soil and water contamination resulted from storing liquid industrial waste in uninsulated ponds and/or simply dumping solid industrial and municipal waste in the ground.

The combustion of fossil fuels for *energy production* in power plants, industry and transport is still a major source of urban ambient air pollution with suspended particulate matter, nitrogen oxides (NO_x), carbon dioxide (CO₂) and sulphur dioxide (SO₂). The levels of SO₂ emissions in CEE are very high in comparison to the scale of energy consumption because of their dependence on poor quality coal, along with the lack of control technology; the domestic use of coal also contributes. Centrally planned economies had little incentives for energy efficiency improvement.

Intensive *agriculture and livestock farming*, combined with excessive use of chemicals, add an enormous pressure on the aquatic environment from non-point sources. The area of irrigated land has considerably increased, particularly in the semi-arid regions of the CEE and NIS. The adverse environmental effects of irrigation include the depletion of water supplies from upland areas, rivers and local artesian sources, and the salinisation and alkalization of soils by mobilisation from deeper levels, which makes them unfit for agriculture and grazing. The area around the Aral Sea provides a clear example of what can be wrong with irrigation schemes, and what may result: desertification, loss of two thirds of the water inflow to the Sea, and the eradication of local fishing.

Reliable, piped supplies of *drinking water* are lacking for 86 million people in the NIS. These basic inadequacies in supply are aggravated by poorly maintained distribution systems, with resulting interruptions in supply, leakage and contamination. Sewage is inadequately treated in many areas.

The above-mentioned legacies of the past have led, and still lead, to serious problems for transboundary waterways. They are too numerous to be listed in an exhaustive manner, but a few of them are worth mentioning. Apart from the notorious pollution of open seas, huge land-locked inland waters like the Caspian and Aral Seas, and small and medium-sized lakes like Peipsi, Ohrid and Dojran have been affected. When speaking about the pollution of international rivers, the effects of transboundary accidents should not be forgotten. The application of environmental impact assessment methodology in the transboundary context is a challenge for the future.

Response to Environmental Challenges

Whereas many international, supranational, regional and subregional cooperation structures exist to cope with economic, security and other issues in Europe, UN/ECE is still the sole pan-European forum for environmental cooperation and sustainable development. Apart from servicing the "Environment for Europe" process, the tasks of ECE are threefold: developing policies, standards and guidelines including binding international instruments; analysing and reviewing policies of the member states through Environmental Performance Reviews; and contributing technical assistance to the member states through Advisory Services.

In order to contribute to the solving of transboundary problems, the UN Economic Commission for Europe promotes transboundary cooperation by developing institutional and legal frameworks which are applicable at the regional level but can serve also as a model for solving transboundary environmental issues in other regions. The following regional environmental conventions have been adopted so far:

- Convention on Long-range Transboundary Air Pollution (signed 1979, in force since 1983) with five protocols;
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes (signed in 1992, in force since 6 October 1996)³;
- Convention on Environmental Impact Assessment in a Transboundary Context (signed 1991, in force since September 1997);
- Convention on the Transboundary Effects of Industrial Accidents (signed 1992); and
- Convention on Access to Environmental Information and Public Participation in Environmental Decision-making (in preparation).

³ The ECE recommendations and guidelines which further substantiate the Convention on the Protection and Use of Transboundary Watercourses and International Lakes are listed in the Annex to this Chapter.

THE HENSINKI CONVENTION ON THE PROTECTION AND USE OF TRANSBOUNDARY WATERCOURSES AND INTERNATIONAL LAKES

The UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes was signed in 1992 at Helsinki by 25 countries. It entered into force on October 6, 1996.

General Provisions

The aims of the Convention (see Article 2) may be summarised as follows:

- protection of transboundary waters (including surface and groundwaters) by preventing, controlling and reducing pollution;
- ecologically sound and rational management of transboundary waters;
- reasonable and equitable use of transboundary waters; and
- conservation/restoration of ecosystems.

To that end, Parties have the obligation to take measures for the prevention, control and reduction of pollution, where possible at source. This applies both to point and diffuse sources.

The Convention explicitly recognizes the need to apply a number of basic principles. The *precautionary principle* implies that 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 and the potential transboundary impact. Costs of pollution prevention, control and reduction measures shall be borne by the polluter ("the *polluter-pays-principle*"). Water resources shall be managed so that the needs of the present generation are met *without compromising the ability of future generations* to meet their own needs.

Provisions Relating to All Parties

The essential obligation of the Parties (Article 3 and the following ones) is to develop, adopt, implement and render compatible relevant legal, administrative, economic, financial and technical measures with respect to a number of issues including:

- application of low- and non-waste technologies;
- introducing emission limits for and licensing of waste-water discharges;

- applying at least biological treatment to municipal waste-water;
- applying best available technology (BAT) and best available practices to reduce nutrient inputs from industrial and diffuse sources;
- application of environmental impact assessment;
- promoting sustainable water-resources management including the application of the ecosystem approach;
- contingency planning and minimisation of the risk of accidental pollution;
- monitoring the conditions of transboundary waters; and
- research and development on effective techniques for the prevention, control and reduction of transboundary impact.

Provisions Relating to Riparian Parties

The main and core obligation (Article 9) to the Riparian Parties, i.e. the parties bordering the same transboundary waters, is to enter on the basis of equality and reciprocity into bilateral or multilateral agreements or other arrangements, in order to define their mutual relations and conduct regarding the prevention, control and reduction of transboundary impact. Such agreements shall provide for the establishment of joint bodies, covering well-defined catchment areas, with their tasks including to:

- collecting, compiling and evaluating data on and inventories of pollution sources;
- elaborating joint monitoring programmes;
- elaborating emission limits for waste water, and evaluating effectiveness of control programmes;
- elaborating joint water-quality objectives;
- developing concerted action programmes for the reduction of pollution loads; establishing warning and alarm procedures; and
- exchanging information on existing and planned uses of water and on BAT.

The work of the joint bodies specifically includes the cooperation with coastal States, as well as with the joint bodies established by coastal States for the protection of the marine environment directly affected by transboundary impact.

Whether or not in the framework of joint bodies, the Riparian States have very detailed obligations on consultations, joint monitoring and assessment, common research and development, exchange of information, warning and alarm systems, mutual assistance and public information (Articles 11-16). The Riparian Parties should ensure that the following information is made available to the public:

- water-quality objectives;
- permits used and the conditions required to be met; and
- results of water and effluent sampling carried out for the purposes of monitoring, assessment as well as checking compliance with the water-quality objectives or the permit conditions.

The Convention contains also certain *institutional provisions on the settlement of disputes* which are discussed in Chapter 4.

The Helsinki Declaration 1997

The First Meeting of the Parties to the Convention,⁴ which was held at Helsinki from 2 to 4 July 1997, adopted the Helsinki Declaration. The main statements of this declaration are as follows:

- The problems faced are not unique to transboundary waters; they should be seen in the context of integrated water management.
- The cooperation will be focused on five programme areas of the Work Plan 1997-2000 (see below).
- There will be close cooperation at all levels - regional, sub-regional, national, provincial and local - and the relevant activities will be delegated to the lowest appropriate level.
- All ECE member countries are encouraged to ratify the Convention and to ratify under its umbrella relevant conventions and agreements, such as the Convention on Cooperation for the Protection and Sustainable Use of the Danube River.

⁴ ECONOMIC COMMISSION FOR EUROPE, MEETING THE PARTIES TO THE CONVENTION ON THE PROTECTION AND USE OF TRANSBOUNDARY WATERCOURSES AND INTERNATIONAL LAKES, REPORT OF THE FIRST MEETING (1997).

- Executive bodies of related conventions, organizations, institutions are invited to cooperate so that both sides can benefit from one another's experience.
- Broad public participation is essential for implementing and developing further the Convention.
- An aim is to prepare jointly with WHO-EURO an international instrument to address the problem of water-related diseases.
- The Parties encourage countries in transition to prepare and implement joint projects on human resources development and institutional capacity building to resolve existing water-management problems and prevent future disputes over water resources. They support the ECE Regional Advisory Service Programme (see below) in facilitating the preparation and implementation of such joint activities. They call on financial institutions and funding mechanisms to give high priority to such joint country initiatives.

Work Plan 1997 - 2000

The First Meeting of the Parties to the Convention also adopted a Work Plan 1997 - 2000 with the following main programme areas.

Programme Area 1: Joint Bodies

- A series of workshops to assist countries in setting up joint river and lake commissions.
- Inventory of agreements on transboundary waters.

Programme Area 2: Assistance to Countries with Economies in Transition

- Pilot programme on monitoring.
- Advisory service on legal instruments.
- Strengthening the capability of Parties to comply with the obligations under the Convention.
- Sharing experience on the implementation of the Convention.

Programme Area 3: Integrated Management of Water and Related Ecosystems

- Review of national policies and strategies for the protection and use of transboundary waters.
- Orientation beyond 2000.
- Implementation, compliance monitoring and enforcement.
- Conference on Management of Transboundary Waters in Europe (Mrzezyno, Poland, September 1997).
- Groundwater management: assist countries to develop a comprehensive groundwater protection policy.
- Monitoring and assessing transboundary groundwaters and rivers.
- Pilot programme on monitoring.
- Laboratory quality management and accreditation.

Programme Area 4: Land-based Pollution Control

- Land-based pollution control in catchment areas of transboundary lakes.
- Best agricultural practices.

Programme Area 5: Water Supply and Human Health

- Prevention, control and reduction of water-related diseases.

A number of parties have offered to take the lead in the implementation of the various programme areas and sub-programmes of the Work Plan 1997-2000.

ECE Regional Advisory Services to Facilitate the Implementation of the Convention

The UN/ECE Regional Advisory Services Programme (RASP) was established in mid-1994. It offers a new dimension of services and diversification of assistance to countries in transition (CIT). The Programme acts as a fieldwork oriented catalyst for the transition to a market economy. Its activities are demand-driven and are executed in direct consultations to national policy makers. One aim is to assist the integration of the CIT through the application of ECE norms and standards. Another major aim is to assist in capacity building, project preparation and in developing links with the private

sector and financing and donor organizations. The RASP gives logistic support and input to the Southeast Europe Cooperative Initiative (SECI) and the Joint ESCAP/ECE Special Programme for the Economies of Central Asia (SPECA). The RASP environmental activities⁵ have focused on:

- Water management and protection.
- Prevention of, and response to industrial accidents.
- Cleaner industrial and agricultural production.
- Environmental impact assessment.
- Environmental performance reviews.

RASP will continue facilitating future implementation of the Convention by providing assistance to countries in transition in developing human resources and building institutional capacities in all programme areas.

THE ESPOO CONVENTION ON ENVIRONMENTAL IMPACT ASSESSMENT IN A TRANSBOUNDARY CONTEXT: RELEVANCE TO THE PROTECTION OF INTERNATIONAL WATERCOURSES

Environmental impact assessment (EIA) has already proven to be a very important instrument for implementing and strengthening sustainable development. It combines the precautionary principle with the principle of preventing environmental damage and arranges for public participation. EIA has become the major tool for an integrated approach to the protection of the environment since it requires a comprehensive assessment of the impacts of an activity on the environment, contrary to the traditional sectoral approach. Moreover, it looks into alternatives to the proposed activity and brings facts and information on environmental impacts to the attention of

⁵ Examples of advisory activities in capacity building include:

ECE Training Workshop on "Significance and implementation of the ECE Environmental Conventions in Central Asian republics", Almaty (Kazakhstan), December 1996; ECE Training Workshop on "Significance and implementation of the ECE Environmental Conventions in Transcaucasian Republics", Tbilisi (Georgia), November 1997; ECE Workshop on "Prevention and limitation of industrial accidents with effects on transboundary waters", Berlin (Germany), 1998; and Conference on "Protection and management of international lakes", Estonia, 1998.

Examples of advisory assistance in project preparation include:

Protection and management of transboundary waters between Belarus, Estonia, Latvia, Lithuania and the Russian Federation (submitted by the five countries for support by the PHARE and TACIS programmes); Protection and management of the transboundary Kura River Basin (project proposal for the Sixth UNDP Programming Cycle); Pilot Inventory Programme for Stockpiled Obsolete Pesticides in Ukraine; and Spent Oil Collection and Recycling and Treatment of Oil-Containing Wastes in NIS.

the decision makers and the public. The EIA Convention was adopted at Espoo (Finland) on 25 February 1991 and entered into force on 10 September 1997.

This Convention is the first multilateral treaty to specify the procedural rights and duties of Parties with regard to transboundary impacts of proposed activities and to provide procedures, in a transboundary context, for the consideration of environmental impacts in decision-making procedures. The EIA Convention stipulates the obligations of Parties to assess the environmental impacts at an early stage of planning. The Convention prescribes measures and procedures to prevent, control or reduce any significant adverse effect on the environment, particularly any transboundary effect, likely caused by a proposed activity or any major change to an existing activity. Appendix I to this Convention covers seventeen groups of activities to which the Convention applies, including, inter alia, activities such as nuclear and thermal power stations, road and railway construction, chemical installations, waste disposal facilities and water management activities such as the construction of dams and reservoirs, groundwater abstraction and the construction of ports and water ways.

Definitions

Article 1 contains the definitions. The definition of "proposed activity" comprises not only new or planned activities but also "any major change to an activity". The definition of "transboundary impact" explicitly excludes impacts of a global nature and therefore concentrates on impacts of a local or subregional character in the ECE region.

Field of Application

Normally, Parties must apply the provisions of the EIA Convention when two requirements are met. According to Article 2, a Party has to take the necessary legal, administrative or other measures to implement the provisions of this Convention, such as the establishment of an EIA procedure that permits public participation and the preparation of the EIA documentation according to Appendix II, for proposed activities (i) listed in Appendix I to the EIA Convention and (ii) likely to cause a significant adverse transboundary impact.

Proposed Activities Listed in Appendix I

Many activities listed in Appendix I to the EIA Convention are fairly well defined. However, the words "major", "integrated" and "large" are also used to set a threshold for several activities in Appendix I to this Convention. Difficulties in determining thresholds may arise due to the differences in environmental, social and economic conditions in a geographical area under consideration for the purposes of the EIA Convention. Despite many difficulties, specific thresholds would serve as useful initial guidance in the application of the EIA Convention. It must be decided whether an activity is referred to in the list of proposed activities in Appendix I to the EIA

Convention, before the significance of the likely transboundary impact can be considered.

Significant Impact

The consideration of the "significance" of an adverse transboundary impact will always be part of the decision to apply the EIA Convention. At the national level, various approaches to determining the significance of an impact has been developed in ECE countries. They are described in the ECE publication "Policies and Systems of Environmental Impact Assessment."⁶ In some countries, particular criteria have been used to draw up lists of activities subject to an EIA at the national level. These so-called positive lists are usually more extensive than the one included in Appendix I to the Convention. The advantage of establishing and applying lists of activities, considered a priori to have a significant adverse impact, is that both authorities and proponents know when an EIA has to be carried out.

According to Article 3 of the EIA Convention, the identification of likely transboundary impacts and the determination of significance for transmitting the notification to the affected country could be set in a general framework, which would give a structured starting point for further discussions between the competent authorities in the country of origin, the proponent and the affected country. The information to be submitted to the affected country in the notification in accordance with Article 3 of the Convention could include a description of the impacts and indicate which impacts are considered possibly significant. In all cases of likely transboundary impacts, a central consideration will be the likely area of impact relative to the border. The competent authority in the country of origin must decide on the likely area of impact and on the criteria by which it is delimited. Reference should be made to relevant environmental standards and threshold values.

EIA Procedure

If a planned activity is listed in Appendix I to the Convention and this activity is likely to cause a significant adverse transboundary impact, the Convention procedure as indicated in this Convention must be implemented. This procedure starts with a notification by the Party of origin to any Party that it considers an affected Party as early as possible and no later than when informing its own public about the proposed activity.

The wording of Article 3, paragraph 1, of the Convention should, in principle, pose no problem for countries that have introduced a national scoping procedure as part of the EIA procedure, which includes the mandatory participation of the public. These

⁶ ECONOMIC COMMISSION FOR EUROPE, ENVIRONMENTAL SERIES NO. 4: POLICIES AND SYSTEMS OF ENVIRONMENTAL IMPACT ASSESSMENT (1991).

countries must notify affected countries no later than when informing their own public in the scoping procedure.

Article 3 furthermore requires the affected Party to respond to the Party of origin and to indicate whether it intends to participate in the EIA procedure. The purpose of this provision is to help the Party of origin to prepare the EIA documentation. The information shall be furnished "promptly". The Convention sets a standard for the minimum requirements for the content of the documentation to be submitted to the competent authority. When the EIA documentation has been prepared it is transmitted to the competent authority of the Party of origin, which has to transmit the documentation to the affected Party. The documentation is to be used for further consultations between the concerned Parties.

The Convention includes provisions that aim at establishing mechanisms to prevent a dispute about the application or interpretation of the agreement.

Public Participation

The EIA Convention contains three references to public participation. Article 2, paragraph 6, includes a general reference to this issue and Articles 3 and 4 mention more specific parts in the EIA procedure where the public has the right to participate. Article 3, paragraph 8, of the Convention requires the concerned Parties to ensure that the public of the affected Party in the areas likely to be affected is informed of, and provided with possibilities for making comments on, or objections to the proposed activity and for the transmittal of these comments or objections to the competent authority of the Party of origin. Similarly, under Article 4, paragraph 2, the concerned Parties shall arrange for distribution of the EIA documentation to the authorities and the public of the affected Party in the areas likely to be affected and for the submission of comments to the competent authority of the Party of origin.

Effects on International Law

The elaboration and signing of the Convention on Environmental Impact Assessment in a Transboundary Context has influenced and will continue to influence other international instruments such as Conventions and Ministerial Declarations. The already mentioned 1992 Convention on the Transboundary Effects of Industrial Accidents includes procedures compatible with those set out in the Convention. Article 7 of the Convention on the Marine Environment of the Baltic Sea Area (Helsinki, 1992) also makes reference to EIA in a transboundary context. The EIA Convention is also recognized in, for example, the Final Declaration of the Ministerial Meeting of the Oslo and Paris Commissions (September 1992), the Ministerial Declaration on Cooperation in the Barents Euro-Arctic Region (January 1993) and the Nuuk Declaration on Environment and Development in the Arctic (September 1993).

Interim Implementation

Meetings of the Signatories to the EIA Convention, open to all ECE member countries, were held annually. These meetings reviewed the actions taken by Signatories to implement the Convention pending its entry into force and considered legal, administrative and methodological aspects of its practical application. The meeting also discussed ways and means of strengthening the capability of future Parties, particularly countries with economies in transition, to comply with the obligations under this Convention, and established a work programme. ECE member countries are making the necessary arrangements to implement the provisions of the EIA Convention at the subregional level, in particular through bilateral and multilateral agreements or other arrangements of relevance to this Convention. A number of existing bilateral and multilateral agreements are being used to implement the Convention.

For example, in Hungary, bilateral agreements on transboundary waters with neighbouring countries relate to activities that might have an adverse impact on the quality and quantity of these waters, and include provisions for the submission of information on such impact. The bilateral agreement between Hungary and Ukraine on environmental cooperation provides for cooperation in the field of EIA in relation to proposed activities that may have an adverse environmental transboundary impact. In Finland, in many cases the relevant cooperation regarding EIA in a transboundary context is done through joint bodies. The mandate of these joint bodies and the means of cooperation are defined in agreements. Finland is a party to such joint bodies or otherwise regularly cooperates with other countries according to several agreements. In some agreements there are provisions on the right of parties to obtain information on a planned project and participate in the relevant planning and permit procedures.

Also new agreements are being elaborated for this purpose and other cooperative arrangements are being made. For instance, in the Netherlands, initiatives were taken to start bilateral discussions, with Belgium and Germany. Examples of specific experiences with transboundary EIA include the application of the Convention between Croatia and Hungary, Hungary and Slovakia and The Netherlands and Germany. In Finland, the first notification according to the Convention was sent to Sweden in late autumn 1994. The notification included information on plans to build the Vuotos artificial lake (i.e. large dam and reservoir) in Lapland. It is likely that the building of the reservoir will have an adverse impact on the water quality in the Bothnian Bay, which is also on Swedish territory. According to some other agreements and arrangements Finland and neighbouring countries have cooperated concerning permission procedures for the planned projects.

The Convention is understood to be an innovative international legal instrument for achieving sustainable development and for preventing, reducing and controlling transboundary environmental impacts. The importance of this legal instrument as an

efficient tool to promote active, direct and action-oriented international cooperation at the regional level is growing in view of the increasing membership of the ECE.

THE UN/ECE CONVENTIONS AS A TOOL TO PROMOTE CONFLICT PREVENTION AND SETTLEMENT OF DISPUTES IN TRANSBOUNDARY ENVIRONMENTAL ISSUES

Although not designed solely for that specific purpose, the UN/ECE conventions provide a mechanism to promote conflict prevention and settlement of disputes in transboundary environmental issues.

Conflict Prevention

UN/ECE Conventions are preventive by design as is stipulated in the formulation of certain general provisions. For example, Article 2, paragraph 1, of the Convention on the Environmental Impact Assessment in the Transboundary Context states that “[t]he Parties shall, either individually or jointly take all the appropriate measures to prevent, reduce and control significant adverse transboundary environmental impact from proposed activities.”

Article 2, paragraph 1, of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes states that “The Parties shall take all appropriate measures to prevent, control and reduce any transboundary impact.”

A number of corresponding instruments of conflict prevention have been elaborated and included in the Conventions, such as

- obligation of Parties to cooperate.
- consultation mechanisms.
- transboundary notification.
- exchange of information and technology.
- information and participation of the public.
- bilateral and multilateral cooperation.
- mutual assistance.
- joint assessment and monitoring.
- bilateral and multilateral agreements.

Settlement of Disputes in the Framework of UN/ECE Conventions

The UN/ECE Conventions contain identical provisions for the settlement of disputes. For example, Article 22 of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes stipulates that “if a dispute arises between two or more Parties about the interpretation or application of this Convention, they shall seek a solution by negotiation or by any other means of dispute settlement acceptable to the parties to the dispute.” Paragraph 2 continues that “a Party may declare ... that, for a dispute not resolved ... it accepts one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation: (a) Submission of the dispute to the International Court of Justice; and (b) Arbitration in accordance with the procedure set out in annex IV.”

The main elements of that arbitration procedure are as follows:

- In the event of a dispute, a party or parties shall notify the secretariat.
- The arbitral tribunal shall consist of three members; both the claimant party and the other party to the dispute shall appoint an arbitrator, and the two arbitrators shall designate by common agreement the third arbitrator, who shall be the president of the arbitral tribunal.
- The arbitral tribunal shall render its decisions in accordance with international law and the provisions of the Convention.
- The decisions, both on procedure and on substance, shall be taken by majority vote.
- Unless determined otherwise, the expenses of the tribunal will be borne by the parties to the dispute in equal shares.
- The arbitral tribunal shall render its award within 5 months of the date on which it is established.
- The award of the tribunal shall be accompanied by a statement of reasons; it shall be final and binding on all parties.

CONCLUSION: MANAGING TRANSBOUNDARY WATERS IN EUROPE - LESSONS LEARNT AND FUTURE PROSPECTS

Some 150 international - bilateral or multilateral - agreements exist in Europe and North America on the protection and use of transboundary waters.⁷ However not all of Europe's transboundary waters are covered, and some of the agreements are outdated. Lessons can be learnt from the drawing-up and implementation of these agreements and arrangements.⁸

- There should be a common will to resolve existing problems:

If there is no sufficient political will on both sides of the border to resolve existing problems, or if water problems are overshadowed by other political problems, it is cumbersome to draw up and implement water-related agreements.

- There should be confidence that all the Parties are willing and able to undertake action as stipulated:

The principles of good-neighbourliness, reciprocity, non-discrimination and good faith form the basis for cooperation. However good-will is not enough: countries need to develop the necessary skills in financing, management and negotiation, and this needs time.

- Acting in partnership:

Wherever applicable, command-and-control approaches need to be replaced by acting in partnership by all stakeholders. This requires a new culture in environmental transboundary relationship calling for opening up of cooperative processes to all main stakeholders as partners: governments, local authorities, business and industry, banking institutions, non-governmental organisations and the public at large.

- Challenging medium- and long-term objectives:

Remarkably, ECE was the first forum where Governments agreed on the ecosystem approach in water management to be applied to the whole catchment area.

⁷ SENIOR ADVISERS TO ECE GOVERNMENTS ON ENVIRONMENTAL AND WATER PROBLEMS, ECONOMIC COMMISSION FOR EUROPE, BILATERAL AND MULTILATERAL AGREEMENTS AND OTHER ARRANGEMENTS IN EUROPE AND NORTH AMERICA ON THE PROTECTION AND USE OF TRANSBOUNDARY WATERS (1993).

⁸ Rainer E. Enderlein, *Managing Transboundary Waters in Europe: Lessons Learned and Future Prospects*, in PROCEEDINGS OF THE INTERNATIONAL CONFERENCE "MANAGEMENT OF TRANSBOUNDARY WATERS IN EUROPE" (forthcoming). See also Branko Bosnjakovic, *Environmental Security: A Regional Perspective for Countries in Transition*, in PROCEEDINGS OF THE INTERNATIONAL WORKSHOP "ENVIRONMENTAL SECURITY AND SUSTAINABLE DEVELOPMENT" (Marcel T.J. Kok ed., 1996).

To implement that principle with success, medium-term and long-term objectives need to be jointly agreed upon.

- Flexibility in dealing with newly emerging problems:

Countries are now confronted with certain problems which were neglected or underestimated in the recent decades, such as the environmental effects of floods, outbreaks of water-borne diseases and industrial accidents.

- Parties should delegate authority to joint bodies:

As has been observed in a review⁹ of major regional policy implications of the outcome of the 1992 UN Conference on Environment and Development, there are complex and still unresolved issues associated with the protection and management of transboundary waters. These issues relate to the development and application of policies and practices ensuring the equitable and rational use of water and sustainable water management, the development of environmentally sound water-construction works and water-regulation techniques, and the physical and financial assessment of damage resulting from transboundary impact. Further progress is also required in developing a concept of responsibility and liability for transboundary water pollution which is acceptable region-wide.

⁹ ECONOMIC COMMISSION FOR EUROPE, THE RIO FOLLOW-UP AT REGIONAL LEVEL, A REVIEW OF MAJOR REGIONAL POLICY IMPLICATIONS OF THE OUTCOME OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (1993).

ANNEX

ECE Recommendations and Guidelines which further Substantiate the Convention

1993 Guidelines on the ecosystem approach in water management.

1993 Recommendations to ECE Governments on water-quality criteria and objectives.

1994 Recommendations to ECE Governments on the prevention of water pollution from hazardous substances.

1995 Guidelines for ECE Governments on the prevention and control of water pollution from fertilizers and pesticides in agriculture.

1996 Guidelines on licensing waste-water discharges from point sources into transboundary waters.

1996 Recommendations to ECE Governments on specific measures to prevent, control and reduce Groundwater pollution from chemical storage facilities and waste-disposal sites.

1996 Guidelines on water-quality monitoring and assessment of transboundary rivers.

CHAPTER 5

Elements of a Legal Strategy for Managing International Watercourses: The Aral Sea Basin

Laurence Boisson de Chazournes*

INTRODUCTION

Once the world's fourth-largest inland body of water, the Aral Sea has shriveled to half its former area and a third of its volume. The Aral Sea was a victim of the drive by the Soviet planners who decided in the 1960s to make their country self-sufficient in cotton, and to provide employment for a rapidly growing population. Irrigation water was diverted from rivers flowing into the inland sea. Besides the vanishing of the sea, disaster conditions were also spreading on large portions of the territories upstream of the sea. Productive wetlands in the deltas have dried up. Salt dust from the bed of the drying sea and chemicals from fertilizers used in cotton fields have endangered the health of millions of people living in the region. In addition, salinity in the rivers has risen to very high levels which causes serious threats to soil productivity.

The Aral Sea crisis was to be dealt with at a basin level, taking into consideration the particularities of the Aral Sea Basin.¹ The Basin area is formed by two of the largest rivers in Central Asia, *i.e.* the Amu Darya and the Syr Darya. The Amu Darya rises from Tajikistan and Afghanistan and flows through Uzbekistan and

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¹ The Aral Sea is a closed drainage area, the characteristic feature of which is a marked variety of relief forms. Its western and central parts are covered by plains; the eastern part is occupied by large mountain ranges. The main mountain systems of the Tien Shan are composed of large ranges with heights up to 7,500 m with extensive glacial areas. The Pamir mountains are divided into the deeply dissected Western Pamirs and the high mountain plateau of the Eastern Pamirs. Vast glacial areas are located mainly on the Western Pamirs where one of the biggest glaciers in the world (Fedchenko glacier) is situated, being up to 77 km long. In the Eastern Pamirs glaciers occur only at very high attitudes. These mountain systems serve as accumulators in winter moisture. They collect moisture in the cold and humid period in the form of snow and ice and release it as river flow in the dry summer period. The rivers of the basin are fed predominantly from snow-melt, from glacier-melt or from a mixture of both. They flow from the mountains onto the plains and are mainly exhausted and disappear in the sands in the deserts, except for the two largest rivers, the Amu Darya and the Syr Darya, which cross the deserts and flow into the Aral Sea; EUROPEAN COMMISSION (TACIS), WARMAP PROJECT: FORMULATION & ANALYSIS OF REGIONAL STRATEGIES ON LAND AND WATER RESOURCES 7 (1997).

Turkmenistan to the Aral Sea. The Syr Darya rises in the Kyrgyz Republic and flows through Tadjikistan, Uzbekistan and Kazakhstan to the Aral Sea.²

The Aral Sea was nearly biologically dead and rapidly diminishing in size, formerly productive land was dead or dying, the water management system and associated investments and transfers provided by the central planning system in Moscow was gone, and the potential for conflict was very high. At their independence, in 1991, the five newly emerging Central Asian Republics (Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan) recognized the urgency for action. At their request, UNDP, UNEP, the World Bank, the European Union and other international aid agencies provided support in assisting the five countries in elaborating their ideas for long term solutions.

This action culminated in the adoption by the five Central Asian Republics of a comprehensive Aral Sea Basin Program (ASBP) in January 1994.³ The ASBP attempts to deal in a comprehensive fashion with the full range of problems which constitute the Aral Sea crisis. It is transboundary and multi-sectoral, including activities to develop sustainable water and related land resources management strategies, improve information base needed for all planning and management activities, mitigate the impacts of environmental degradation, improve conditions in the upper watersheds and areas adjacent to the Sea, and strengthen the implementation capacities of the competent regional institutions.

The ASBP Program has four long-term objectives: (i) to stabilize the environment of the Aral Sea Basin, (ii) to rehabilitate the Disaster Zone around the Sea, (iii) to improve the management of the international waters of the basin, and (iv) to build the capacity of regional institutions to plan and manage these programs. It also intends to assist the riparian states in cooperating and adopting sustainable regional policies for addressing the crisis, as well as to provide a framework for establishing national macroeconomic and sectoral policies to achieve sustainable development of land, water, and other natural resources.

It was recognized at the outset that achieving these objectives - which in fact were supposed to reverse forty years of water resource mismanagement and environmental destruction - would be an enormous undertaking and would have to be

² The Aral Sea's drainage basin covers about 1.8 million km² within seven states: five republics of the Former Soviet Union, Afghanistan and Iran, although only about 0.5 million km² of this area actively produces or consumes water which could enter the Aral Sea. It is to be noted that Iran's contribution to the flows in the basin is entirely in streams which end in the Kara Kum desert, and cannot actually reach the Aral Sea. *Id.* at 1.

³ In June 1994, a donors meeting was held in Paris, and support for some components of the first phase of the Program (ASP-1) was pledged by various multi- and bi-lateral donors. The Program has enjoyed solid donor support, backed by US dollars 32 million in grant financing pledged in Paris in 1994 for the preparation stage.

approached in phases. The first phase of the program was planned to be completed in three to four years, to emphasize getting assistance to the people of the Disaster Zone, and building up the knowledge base and the institutions required to deal with longer term issues. In the next stage of the program, attention is to be put on a few strategic regional water management problems, while intensifying complementary efforts at the national level to meet the needs of the people of the Disaster Zone and to promote sustainable resource use in the middle and upper basin. The codification of interstate water sharing practices, the quality of water crossing international frontiers and the improvement of data and information exchange were identified as elements of the core regional program, as well as the clarification of the roles and responsibilities of the various regional institutions. The last stage will expand and continue the program already undertaken through the year 2025.

International law was identified as a tool for achieving the objectives of the Aral Sea Basin Program. However, a legitimate question here is what international law can do. On one hand, international law in itself does not provide solutions for conflicts of water uses while, on the other hand, there is no answer to water problems without international law. The actions which have been taken so far regarding the Aral Sea Basin are embedded into this thinking, *i.e.* to establish a sustainable water management system based on an adequate legal framework. A process was therefore put in place for elaborating viable legal instruments.

THE NECESSITY TO AVOID CONFLICT OVER WATER USES

Committed to avoiding conflict over water issues, the five Central Asian States put in place interim arrangements and institutions for water sharing. They were aware of the necessity for elaborating an appropriate institutional and regulatory framework for dealing with water scarcity issues. This framework would formalize the need for the five countries to act together and cooperate to face the catastrophe. All five countries have been going through dramatic economic changes. Water uses should be seen within the frame of these economic changes. For example, states have different needs, the upstream states, in particular, claim water for hydropower uses and the downstream states rely on water mainly for agricultural use.

The 1992 Agreement on Cooperation in the Management, Utilization and Protection of Water Resources in Interstate Sources

During the former Soviet Union era, inter-Republican water resources were managed centrally under the aegis of the Ministry of Water Management. Water uses schemes were developed for the Syr Darya and the Amu Darya river basins based on annual water withdrawals limits. They were calculated on the basis of crop requirements and little attention was paid to water quality. Due to the seasonal variations, the Republics would also enter into a series of bilateral and trilateral agreements to correct water allocations made on the schemes.

With the demise of the former Soviet Union, five new countries emerged in Central Asia all being riparians to the Amu Darya and the Syr Darya rivers. Paradigm shifts had to be operated: The newly established states had to manage two international watercourses in the context of their mutual relationship in accordance with principles and rules of international law as these relationships were no more of a domestic nature. Moreover, the central planning and management system was suddenly withdrawn and had to be replaced by a regional cooperative system. In addition, the five countries regarded by the central Soviet planners, before 1992, as a single agricultural region for economic purposes, have since developed different views with respect to water uses.

All five countries claimed an equitable share of the waters, acknowledging at the same time that this could only be achieved through international negotiations. As a result, the five Central Asian countries jointly declared on September 12, 1991 that mutual water resources management would be a basis for equity and joint benefits. They subsequently concluded the "Agreement on Cooperation in the Management, Utilization and Protection of Water Resources in Interstate Sources" on February 18, 1992.⁴ They thereby acknowledged their commitment to cooperative management of waters in the Aral Sea Basin.

Under this agreement, the five states agreed that they have common interests in the use and protection of shared water resources and equal rights and responsibilities in this respect. The water resources of the region are defined as "common and integral". They codified past practices in promising to provide strict observance of the agreed order in terms of water allocation practices under the Soviet period. They also committed themselves to refraining from conducting activities that would result in a deviation from the agreed water shares, causing water pollution or any deviation likely to detrimentally affect the interests of the five states. They also agreed to carry out joint activities for the solution of the Aral sea crisis and to determine yearly sanitary releases based on water availability for the Aral sea.

The five states established the Interstate Commission for Water Coordination (ICWC). Its members are ministers of water resources of the five states. The Commission constitutes the institutional framework for managing waters, including water allocation issues and the approval of schedules for the operation of reservoirs. It makes unanimous decisions binding on all water users. It should also be mentioned that two river basin agencies, the water management associations (BVOs), were established in 1986 for each of the two rivers. They are vested with executive functions with

⁴ On the need to further improve the institutional framework in the region, see Sergei Vinogradov, *Transboundary Water Resources in the former Soviet Union: Between Conflict and Cooperation*, 36 NAT. RESOURCES J. 393, 411. On institutional aspects, and more generally on the Bank's role in the Aral Sea Crisis, see Syed Kirmany & Guy Le Moigne, *Fostering Riparian Cooperation in International River Basins- The World Bank at its Best in Development Diplomacy* 10-15 (World Bank Technical Paper No. 335, 1997).

respect to the operation of hydraulic structures and installations on the rivers. Both the ICWC and the BVOs are responsible for ensuring compliance with water withdrawal limits and guaranteeing the annual volume of water to be supplied to the Aral Sea and its deltas.

Regional Institutions: The Reinforcing of Interstate Cooperation

Between 1993 and 1995, as steps for reinforcing cooperation among the five states in addition to the ICWC, four intergovernmental institutions were created. These institutions are: (i) The Interstate Council on the Aral Sea Basin (ICAS) intended to set policy, provide intersectoral coordination and review the projects and activities conducted in the Basin, (ii) the Executive Committee of ICAS (EC-ICAS) intended to implement the Aral Sea Program, (iii) the International Fund for the Aral Sea (IFAS) whose purpose was to collect contributions from the five states and donors, and (iv) the Sustainable Development Commission (SDC) to ensure that economic, social and environmental factors are given equal weight in planning decisions.

The establishment of these new institutions contributed to strengthen the willingness, and more importantly, to set the framework for the five countries to jointly decide on water management issues. This institutional structure has since gone through modification, aiming at rationalizing the allocation of responsibilities and streamlining the decision-making process in the Aral Sea Basin, notably for ensuring effective donor grants management. The new International Fund for the Aral Sea (IFAS) is a successor to the former ICAS as well as to the former structure of IFAS. The new IFAS which was established in 1997, has a Board composed of the Deputy Prime Ministers of the five states concerned with agriculture, water and environment. The Board meets regularly to reconcile the views of member states, and decides on the policies, programs, and institutional proposals recommended by the Executive Committee (EC) (renamed as the Executive Committee of IFAS). Moreover, IFAS collects contributions and finances program activities.

The relationship among the new IFAS and the International Commission for Water Coordination (ICWC) and the Sustainable Development Commission (SDC), is not yet entirely clear. However, it appears that the Commissions will provide advice to IFAS on technical and socio-economic and environmental issues respectively, with ICWC and the two water management associations (BVOs) having additional responsibilities for seasonal operational management of water resources at the interstate level.

Annual Bilateral and Multilateral Agreements

A complex system of water storage has been built in the Syr Darya and Amu Darya river basins with the original primary purpose of accumulating water in winter

for its subsequent use in summer, mainly for irrigation and electric power production.⁵ Due to seasonal variations, the states have established a practice of concluding bilateral and multilateral agreements to correct the water allocations.⁶

However, the case of the Toktogul hydro-power station and reservoir located in the Kyrgyz Republic calls for a more formalized agreement with all interested states agreeing on a formula to be codified.

Following independence, the Kyrgyz Republic found itself with an abundance of water and hydroworks and with a severe shortage in energy supply during winter time. The downstream states, Uzbekistan, and Kazakhstan found themselves with an agriculture-based economy with water demands during the summer months but with an upstream neighbor which needed to release the waters during the winter period in order to supply its energy needs. In order to resolve this matter, Uzbekistan, Kazakhstan and the Kyrgyz Republic have entered into a series of annual agreements which tend to establish trade-offs between energy and water: the Kyrgyz Republic agrees to reduce water releases during the winter months in return for Uzbekistan and Kazakhstan supplying it with electricity and fossil fuel during the winter (i.e. water storage for summer irrigation/energy production and delivery of coal and gas in winter).

Clearly, there is a need for settling the operation of the reservoir in a predictable way so that countries can meet the agreed water management objectives. As a first step, an agreement was reached in March 1998, establishing the principle of financial compensation among the concerned countries.

THE NEED FOR STRENGTHENING THE WATER MANAGEMENT LEGAL FRAMEWORK

The Central Asian states have different interests in the use of water, be they oriented towards irrigation needs or hydro-power developments. In this context, although the five states have committed themselves to respecting the agreed order under the Soviet era, there is still room for uncertainties and diverging practices which may be the source of conflicts: The criteria for water sharing are not expressly stated; water resources conservation and planning are not really envisaged; the problem of reservoirs and the economic and social needs at stake in the region are potential sources of conflicts; and water is still used rather inefficiently. It also became more and more apparent that the quantifiable minimal flow of water to the Aral sea will have to be formulated. Finally, in the event of a conflict, there is no real adequate dispute settlement mechanism.

⁵ There are more than 80 water reservoirs, 45 hydropower plants and 57 large dams in the Aral Sea Basin.

⁶ A practice which was also in force during the pre-independence period, see Marcella Nanni, *The Aral Sea Basin: Legal and Institutional Issues*, 5 R.E.C.I.E.L. 130, 131-132 (1996).

Assistance in the Drafting of Water Sharing Agreements

This situation was identified by the European Union (TACIS Program) as a possible area where the donor community could play a role in providing technical and financial assistance.⁷ It was agreed by the five states that the TACIS Program will support the drafting process of water sharing agreements. The program was launched in 1995, relying on the organization of training activities, the setting up of working groups and the advice provided by experts on international water law issues.

Thus far, three draft agreements have been produced, respectively entitled as, "Development of Cooperation and Improvement of Protection, Management and Development of the Water Resources", "Use of Water in Present Conditions" and "Joint Planning of the Use, Development and Protection of the Transboundary Water Resources". At present, it has not been determined whether these draft agreements will remain as three separate agreements or will eventually merge into a single instrument. All three draft agreements deal with regulatory and institutional issues.

The first one covers the functions, powers and responsibilities of the ICWC and its organs, the second one deals with the general principles applicable to the Aral Sea Basin as a whole, and the third one provides for a mechanism for the joint interstate strategic planning of the management, development and protection of transboundary water resources. Although not very precise, they nevertheless provide for quantifiable minimum release of water to the Aral sea and the deltas; set a framework for information sharing on planning activities between states; and prescribe international law principles as reflected in the UN Convention on the Law of Non-Navigational Uses of International Watercourses,⁸ such as the principles of equitable and rational use, the no harm rule and the principle of joint management. The ICWC is in charge of allocating annual limits of water to be used by the parties. Two attachments are supposed to supplement these agreements. The first one deal with the Amu Darya Basin and the second with the Syr Darya Basin. They shall contain water allocation criteria and operational regulations for each of the river basin.

⁷ The European Union assists the states of the Former Soviet Union (FSU) through Technical Assistance to the Commonwealth of Independent States (TACIS). This EU TACIS Program comprises a component on Water Resources Management and Agricultural Production (WARMAP) in the Central Asian Republics. The general objective of the WARMAP Project are: (i) to provide the administrative and technical framework within which policies, strategies, and development programs for utilization, allocation, and management of the water resources of the Aral Sea Basin can be developed; and (ii) to assist at the regional level with the establishment of the institutional structure required to prepare and implement the policies and strategies on water allocation and management. Among the specific objectives is the providing of the legal basis for international and national water resources utilization, giving due recognition to the environmental needs of the Aral Sea Basin.

⁸ For the text of the Convention, see Annex 1 of this Report.

A next step is to organize multisectoral working groups at the domestic level composed of water, energy and agriculture specialists, and to establish regional working groups before the drafts are submitted to the governments for adoption. The EU TACIS Program will support the process for the next two years (1997-1999), as the negotiation of the agreement between the states begins. The conclusion of the agreements, however, will depend in great part on the political determination of the states in adopting such agreements.⁹ The organization of working groups should be seen as forming part of an educational and information-sharing process, so as to consolidate the understanding among the various stakeholders, which is important for negotiating and adopting water agreements.

It was decided that the issue of the quality of the transboundary waters would be negotiated in a separate agreement. There is a crucial need for action to be initiated in this area as there is no water quality management scheme at the moment. Attention has to be paid to key pollutants such as salts, as well as to monitoring and control. It is important that water quantity and quality problems are dealt with together as they are physically linked and intertwined on a managerial level.

The Central Asian Republics also recognized that there is a need for elaborating an agreement on the Toktogul Reservoir. This would put the Toktogul Reservoir on a secure footing, eliminating an important potential source of conflict over water. Work was undertaken with assistance provided by the U.S. Agency for International Development (USAID) to elaborate and negotiate a "Multi-Year interstate Agreement on Management on the Naryn-Syr Darya Cascade" among the four riparian states (Uzbekistan, Kyrgyz Republic, Kazakhstan and Tadjikistan). The agreement would encompass the regulation of the timing of water storage releases from the Toktagul reservoir of the Naryn-Syr Darya Cascade through compensatory schemes based, inter alia, on seasonal water storage and delivery of coal and gas. It also takes into consideration the issue of the valuation of the price of water. The process was launched through a high-level meeting of government officials in December 1996. In March 1998, Uzbekistan, the Kyrgyz Republic and Kazakhstan adopted a framework agreement acknowledging the principle of financial compensation among them. Tadjikistan will be invited to join the agreement. USAID is expected to continue providing technical assistance to the states in further developing the technical basis for the agreement. One question to be resolved is whether the Toktogul Reservoir issue should be dealt with either in the above-mentioned draft agreements or through a separate instrument.

The question of the possibility for Afghanistan becoming a party to the forthcoming agreement should also be dealt with. Afghanistan is an upstream riparian

⁹ The states have made clear that they do not want the agreements to be considered as outputs of the project, as the time-frame for their adoption may be longer than the duration of the project.

of the Amu Darya river and may decide to develop water resources for its own use.¹⁰ Thus, the involvement of Afghanistan is important for ensuring effective long-term management of the waters of the Aral Sea Basin. Such participation should be seen as a continuation of the treaties concluded between Afghanistan and the former USSR to which the five Central Asian Republics are successor.¹¹

Technical and Scientific Activities as Crucial Components for Developing and Implementing Legal Instruments and Strategies

Water quality is emerging as an issue of even greater significance than water quantity over the medium term. Such is the case with the salinity issue. Salt management is realized to be the major challenge to basin water resources management for the next decade. The rivers transport 140 million tons of salt per year, due partly to natural runoff, and partly induced by the extensive irrigation development. As a result of insufficient drainage in some areas and excessively deep drains in others, salt mobilization from the soil profile is much greater than the internationally accepted practice. If no action is taken, the problem of severe salinization will likely spread from the lower watersheds, to the highly productive middle watershed areas.

The salinity problem is complex: there is neither a single source, nor a single solution. In this context, an upcoming World Bank Water and Environmental Management Project, funded by the Global Environment Facility (GEF)¹² and a few other donors, will provide a basis for technical assessment, allowing the collection and analysis of data with a view to develop a salinity strategy.

It is expected that the proposed strategy would form the basis for the Central Asian Republics negotiating a legal agreement which would deal with the salinity management issue. The proposed project will help determine salinity standards and the locations along the two rivers for controlling the salinity amounts. It will also help the various states assess the costs of dealing with different salinity levels that may potentially occur. The latter is important as the downstream states will be the main beneficiaries of a salinity management scheme while the upstream states will have to take stringent measures for addressing the problem. Ultimately, the states could also decide to revise, accordingly, their shares of water.

¹⁰ At present, about 12.5 % of the Aral Sea Basin Program's water resources originate in the country, yet only a fraction of it is used for irrigation. It contributes between 3-5 km³ water per year to the Amu Darya.

¹¹ The treaties concluded between Afghanistan and the former USSR - to which the five Central Asian Republics are successor - provide *inter alia* for regular exchange of technical information and the adoption of joint measures to prevent changes in the course of frontier waters. On these treaties, see Nanni, *supra* note 6, at 131.

¹² The Project is expected to be negotiated during Spring 1998. The five states have formally requested GEF assistance for the Aral Sea Basin program in April 1996. The above-mentioned project with a total costs of US\$ 21.3 and a GEF contribution of US\$ 12 million is likely to constitute the single most important operation at the regional level for the years 1998-2003.

The above-mentioned GEF project reveals one of the roles that financial assistance can play with respect to institutions and regulations. As a matter of fact, the GEF Operational Strategy indicates, *inter alia*, that: “the overall strategic thrust of GEF-funded international waters activities is to meet the agreed incremental costs of: (a) assisting groups of countries to better understand the environmental concerns of their international waters and work collaboratively to address them; (b) building the capacity of existing institutions (or, if appropriate, developing the capacity through new institutional arrangements) to utilize a more comprehensive approach for addressing transboundary water-related environmental concerns; and (c) implementing measures that address the priority transboundary environmental concerns. The goal is to assist countries to utilize the full range of technical, economic, financial, regulatory, and institutional measures needed to operationalize sustainable development strategies for international waters.”¹³

In other words, financial assistance can support the conduct of scientific and technical activities which are of importance for the design of a legal regime: scientific and technical activities contribute to identifying and remedying problems. Financial and technical assistance may open a path for negotiating international agreements; it can also promote setting-up of mechanisms to monitor the regime put in place and to allow for its adaptation to new needs.

Other Frameworks for Addressing Transboundary Water-Related Environmental Concerns

With the Nukus Declaration of September 1995, the heads of states of Central Asia declared their willingness to negotiate a “Sustainable Development Convention”. They further reiterated their decision in February 1997, indicating that they expect UNDP and UNEP to assist them in this task. Although it is not yet certain if the outcome should take the form of a convention or a program of action, such instrument should also contribute to the strengthening of the legal framework for water use management, and its implementation should benefit from financial activities targeted to achieve its objectives.

The Convention on the Protection and use of Transboundary Watercourses and International Lakes,¹⁴ adopted on 17 March 1992 and entered into force on 6 October

¹³ GLOBAL ENVIRONMENTAL FACILITY, GEF OPERATIONAL STRATEGY (1996). On the importance of reaching agreements, see also Chapters 17 and 18 of *Report of the United Nations Conference on Environment and Development, Annex II, Agenda 21*, UN Doc. A/CONF.151/26 (Vol. I-III) (Aug. 12, 1992).

¹⁴ For the text of the Convention, see Annex 3 of this report. See also the statements of the First Meeting of the Parties to the Convention as referred to by Branko Bosnjakovic, UN/ECE Strategies for

1996, provides a framework for developing new strategies to address transboundary water-related environmental concerns. None of the Central Asian states is yet a party to this convention, although it would provide guidance for developing and operationalizing sustainable water policies and strategies. The application of principles such as the polluter-pays-principle (i.e. costs of prevention and reduction measures shall be borne by the polluter) and public participation of all key stakeholders, as proclaimed in the Helsinki Convention¹⁵ are important tools for developing such strategies for efficient water use. Other strategies could embrace the protection of ecosystems in the deltas of the Amu Darya and the Syr Darya rivers and the prevention of desertification in these areas, based on an ecosystem approach in water management as promoted by the Helsinki Convention.¹⁶ The Convention also provides for dispute settlement mechanisms for matters covered by the Convention.

CONCLUSION: DONOR COORDINATION AT STAKE

At the end of the 1980's, the Aral sea crisis attracted international attention. The five Central Asian countries were committed to acting together to face the catastrophe. A wide array of donors, be they bilateral or multilateral, offered their support. However, for financial and technical activities to reach their objectives, a key aspect is coordination among donors. This is particularly true for the design and implementation of an adequate international institutional and regulatory framework.

The Central Asian Republics have recognized the necessity to strengthen the existing institutional and regulatory framework and to adapt it to their new demands, and the donor community has provided assistance for achieving this aim. The European Union, UNDP, the World Bank and other donors have provided substantial support for capacity building at the regional level. However, for legal instruments to achieve their aim, they must be consistent with, and supportive of each other. The proliferation of international legal instruments without a clear relationship among each other could put at risk the sustainability required for an effective water management system.

At the institutional level, there is a need for clarifying the relationship among the various regional organs (IFAS, ICWC and SDC). This would strengthen both the decision-making and implementation processes. It would also be important to refine the institutional set-up so that it reflects the need for integrated management, in particular, for managing together water quantity and quality problems.

Protecting the Environment with Respect to International Watercourses: The Helsinki and Espoo Conventions, Chapter 4 of this Report.

¹⁵ See also the *Rio Declaration on Environment and Development*, UN Doc. A/CONF.15115/Rev.1 (June 13, 1992) reprinted in 31 I.L.M. 874 (1992), and more particularly Principles 10 and 16.

¹⁶ Desertification of the deltas of the two rivers and the exposed bottom of the former sea now covers an area of 20,000 km². This disaster has been caused by a gradual deterioration of river water quality mainly caused by agricultural drain effluent entering the rivers upstream.

Even if there is willingness to negotiate cooperative arrangements and put in place an institutional framework, this is just a starting point in a process aiming at a long-term and sustainable water management system. While activities are undergoing, work remains to be done for achieving this goal, in particular the necessity to establish a comprehensive legal framework for managing the international waters of the Aral Sea Basin in an integrated manner.

CHAPTER 6

Managing International Waters in Africa: Process and Progress*

Rafik Hirji and David Grey**

INTRODUCTION

The management of freshwater resources through the provision of water supplies for multiple uses including municipal, agriculture, industry, mining, livestock, and wildlife, for hydroelectric power generation, navigation, flood control, recreation, and fisheries, as well as for waste disposal, is fundamental for promoting society's social and economic well being. Where water is becoming scarce, access to and control over freshwater resources is diminishing and conflicts between sectoral users are emerging and intensifying. Such conflicts become more complex and difficult to address when they concern waters shared by more than one nation. The complexity and management challenges increase as more riparian countries become involved. Examples of transboundary water resources management disputes include the Colorado River and the Great Lakes in North America, the Aral Sea in Central Asia, the Ganges and Mekong Rivers in South Asia, the Jordan River in the Middle East, Lake Victoria in East Africa and the Zambezi, Orange and Limpopo Rivers in Southern Africa.

African water resources are uniquely characterized by an abundance of transboundary basins, in large part due to the relatively recent drawing of many international boundaries by colonial powers. Most countries in the region lack significant alternatives to the development of international basins, which are increasingly under pressure to fulfill the sum of demands claimed by riparian countries. In many cases, development goals in different countries are premised on mutually exclusive claims for water from international basins. With increasing demand and potential conflicts over the region's shared rivers emerging, as agricultural, urban and

* This Chapter, reflecting the Bank's work in progress, was also presented at the fifth Nile 2002 Conference on "Comprehensive Water Resources Development of the Nile Basin: Basis for Cooperation" held on February 24-28, 1997 in Addis Ababa, Ethiopia.

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industrial development advances across the region, sustainable development of the region's water resources requires joint management of shared river basins.

The strategic approach to promoting resolution of international river basin issues has two central elements. The first element is to build capacity at the national level. The rationale for this is because negotiations on, and subsequent allocation and management of, international waters can only take place effectively where there is a more-or-less 'level playing field' of capacity and information among riparian countries. The second element is to aggregate country 'building blocks', promoting inter-riparian dialogue between countries, and, where appropriate, seeking opportunities for joint management and development of shared watercourses. An underpinning strategy for both these elements is to foster coordinated support from the international community. This is based on the premise that regional projects and programs often require technical assistance and investments which may be beyond the capacity of an individual country to absorb or an individual international agency to support.

This Chapter presents examples of this two-tiered approach for managing transboundary waters which is being developed in different parts of Africa. Examples from Southern Africa, Lake Victoria and the Volta Basin are described. Following this introductory section, the Chapter briefly describes the geographic locations of the three cases (Lake Victoria, Volta Basin and Southern Africa), the stresses that have emerged as a result of uncoordinated use of resources and the capacity imbalances within each case. The ongoing and proposed efforts to foster joint management of these shared waters are summarized next. Finally, the early lessons learned from the three cases are drawn and the implications outlined for developing joint management of the Nile.

TRANSBOUNDARY WATERS IN AFRICA

The African landscape is dominated by transboundary waters, in part due to the scramble for Africa in the late 1800s by European powers, which led to the carving of the continent and its people, irrespective of natural (and ethnic) boundaries. It contains about 80 international river and lake basins. Twenty one of these basins have catchment areas greater than 100,000 square kilometers. Some of the major basins (see Box 1) are shared by four to ten nations. The following paragraphs provide an overview of the geography of the Volta Basin, Lake Victoria and the international rivers within the Southern Africa Development Community (SADC) - the three case studies discussed in this Chapter - and the issues dominating the management of those shared waters. The major issue facing the management in all three cases is access to and control over water resource use.

Box 1: Major International River Basins in Africa

Basin	No. of States	Basin Area 000km²	Basin States
Nile	10	2,850	Egypt, Sudan, Ethiopia, Uganda, Kenya, Tanzania, Rwanda, Burundi, Democratic Republic of Congo, Eritrea
Zaire	9	3,720	Democratic Republic of Congo, Central African Republic, Angola, Republic of Congo, Zambia, Tanzania, Cameroon, Burundi, Rwanda
Niger	9	180	Niger, Nigeria, Mali, Guinea, Burkina Faso, Côte d'Ivoire, Benin, Cameroon, Chad
Zambezi	8	1,420	Zambia, Angola, Malawi, Zimbabwe, Mozambique, Botswana, Tanzania, Namibia
Volta	6	390	Ghana, Burkina Faso, Côte d'Ivoire, Togo, Benin, Mali
Orange	4	950	South Africa, Namibia, Botswana, Lesotho
Sénégal	4	340	Sénégal, Mauritania, Mali, Guinea
Limpopo	4	385	South Africa, Botswana, Mozambique, Zimbabwe

Volta Basin

The Volta River Basin located in West Africa is shared by 6 riparian countries: Ghana, Burkina Faso, Côte d'Ivoire, Togo, Benin and Mali. The major stakeholders are Ghana and Burkina Faso which control 45.5% and 42 % of the basin, respectively. The rest is shared by Togo, Benin, Mali and Côte d'Ivoire. Although the tenth largest river basin in Africa in terms of area (380,000 km²), the Volta has the 2nd highest mean discharge (390 billion m³/yr) after the Zaire (Congo) River. The economies of Burkina Faso and Ghana are intricately entwined with the Volta River. Population growth and economic development are causing a relatively rapid increase in water demand for domestic, agricultural, mining and industrial needs and for hydropower generation, resulting in conflicts between uses. Municipal and industrial (especially mine tailing) pollution and watershed erosion are also reducing water resources availability, and highly variable precipitation and occasional drought exacerbate this situation. Unlike most of the Region's major river basins (the Nile, Senegal River, Chad Basin, Niger, Gambia, Zambezi, etc.), there are no treaties and there is no river basin organization with responsibility for transboundary issues in the Volta Basin. There has, however, been informal and occasional cooperation.

Lake Victoria

Lake Victoria, located in East Africa between the Eastern and Western Rift Valleys and latitudes 1° N and 3° S, is the largest freshwater body in Africa. Kenya, Tanzania and Uganda, respectively, control 6, 49 and 45 percent of the lake surface area, approximately 68,000 square kilometers. The catchment of the lake also encompasses Rwanda and Burundi, which are not riparian countries.

Lake Victoria is an important economic and natural resource for almost 25 million people. The economy of the lake region is worth about US\$ 3-4 billion annually and it is principally based on subsistence and cash crop agriculture, as well as subsistence and export fishery. Fishing currently contributes about US \$ 320 million annually in export revenues. Lake fish is a vital source of local food supply and protein. The lake waters are used for domestic water supply in major urban centers such as Mwanza, Bukoba and Musoma, Jinja, Entebbe and Kisumu, and for thousands of rural settlements in the three countries. A significant portion of the industrial, agricultural and livestock water supply of the region also originates from the lake or from streams draining into the lake. In addition, the lake is used for navigation and recreation and finally as a receptor of municipal, industrial, mining and agricultural wastewater discharges.

The lake ecosystem harbors unique biological resources, which over the past three decades have undergone significant changes that threaten the economic and natural resource base. The cumulative impacts of rapidly increasing populations and their accompanying demands on natural resources in the basin, unregulated land use and disposal of waste byproducts, the introduction of exotic species of fish as well as proliferation of the water hyacinth, have all taken a serious toll on the lake. Although the full nature and extent of these complex problems are not known, their consequences are already significant.

International Rivers of the Southern Africa Development Community

Southern Africa is a water scarce region with numerous transboundary river basins and complex international water rights issues. The region is characterized by: extreme temporal and spatial rainfall variability, resulting in endemic drought and occasional floods; rapidly growing and urbanizing populations, leading to growing water scarcity and water pollution; low coverage of the urban and rural poor with water and sanitation services and consequently high incidence of water-borne diseases and, again, water pollution; heavy dependence on extensive agriculture, with generally very low water use efficiency; degraded watersheds and deteriorating water quality; and a growing importance of hydropower.

Much of Southern Africa is comprised of a high plateau with an average elevation of 1200m. The plateau is largely composed of ancient crystalline rocks of low permeability. The major sedimentary basins, where permeable rocks occur, include the

Kalahari which is very dry and has only minimal present day recharge to deep, fossil groundwaters, and the Mozambique coastal plain, where saline intrusion affects groundwater quality. Groundwater potential is thus very limited, although it is widely available close to human settlement in small but sufficient quantities for domestic water supply and even, locally, for small scale irrigation. Precipitation, which is highly variable (with average departures of about 25% from the long-term annual mean), is lowest in the south and south west of the region, where the climate is predominantly semi-arid, generally increasing northwards and northwest towards the equator. Several major river systems, including the Orange, Limpopo/Save, Okavango, Zambezi and Zaire rivers, rise in uplands above the plateau, and have lengthy runs through dry downstream terrain. Activities in the headwaters can therefore significantly affect flows. The runoff per unit area increases northwards; for the Orange River in the south it is only 12mm, for the Zambezi it increases to 90mm, and for the Zaire it is 300mm. Seasonal and annual flow variations are very large, necessitating on-river storage in reservoirs to regulate flows for many uses, to provide water storage capacity for the 8-9 months a year that much of the region is without rain and to buffer inter-annual variation. Such large scale infrastructure is extremely costly. In addition, all of these river basins are shared by several countries, bringing great complexity to basin management, and threats to downstream riparians. The Southern African water endowment thus presents considerable challenges for water resources management, as well as for general economic and infrastructure investment planning.

EMERGING REGIONAL STRESSES

Effective management of water resources in many parts of Africa is an essential condition for alleviating poverty and enhancing human health, food security, environmental sustainability, overall economic development and regional security. Already, the cumulative impacts of rapidly increasing populations and their accompanying demands on natural resources, unregulated disposal of wastes and poor land use are taking a serious toll on many of the regions' water resources. The resulting stresses are not uniform, but vary depending on the nature and intensity of the dominant factors involved. In the future, the stresses are bound to become more acute as demand grows and scarcity intensifies. Action now will reduce the threat of future conflict and increase the opportunities for regional cooperation in the management of this critical resource.

Water Scarcity

Growing water scarcity is afflicting many African countries. The primary causes are: increasing demand due to population growth and urbanization; and decreasing water resources availability, due to deteriorating water quality because of pollution, to flashier river flows caused by watershed degradation, and possibly to the effects of climate change. There are numerous attempts to quantify scarcity, but poor data and the complexity of reflecting water availability both spatially and temporally, as well as transboundary flows, all make comparisons suspect. Botswana is thus not

apparently water scarce, due to its small population and the large flows of the Okavango, but the water it has is remote from main settlements and has high environmental value (and potential economic value to upstream riparians).

Box 2 shows the scale of the problem in terms of water distribution and water quantity in selected African countries. Only 2 of the countries listed (Angola and Swaziland) will not face serious water scarcity problems in the foreseeable future (by 2025). As economies grow, so will demand; within countries, effective demand management will be essential; between countries, joint management and development of international watercourses will be the only sustainable way forward.

Box 2 Water Scarcity in Selected African Countries		
Country	Distribution issues	Quantity issues
Angola	-	-
Botswana	X	-
Burkina Faso	X	*
Burundi	-	**
Ethiopia	X	***
Ghana	X	**
Kenya	X	***
Lesotho	X	***
Malawi	-	***
Mozambique	-	*
Namibia	X	-
Rwanda	-	**
South Africa	X	***
Sudan	X	-
Swaziland	-	-
Tanzania	X	**
Togo	X	**
Uganda	X	*
Zambia	X	-
Zimbabwe	X	**
<i>Absolute scarcity: *** 2025, ** 2050;</i> <i>Water stress only: * 2025</i>		

Competition for water between sectors and countries is becoming more intense even in countries with relatively abundant supplies, such as Ghana, and water pollution and environmental degradation are intensifying as economies grow. Serious water resources problems are emerging and threatening economic development. The new dam planned at Ziga on the Volta River for Ouagadougou Water Supply in Burkina Faso has required co-riparian notification and 'no objection' from Ghana for World Bank (IDA) funding; such 'no objections' could become increasingly difficult to obtain. Lowered flows at the Akosombo Dam in Ghana are causing disruptions in power production which affect the aluminum industry and municipal electric supply throughout the country. Poor data networks and no transboundary data sharing makes it difficult to identify the nature and cause of flow reduction and to project the need for the development of other sources of energy. There is significant untapped power and irrigation potential, for which integrated planning and development are essential, but inadequate legislation, policy and institutional structures severely constrain the effective management and further development of the Volta Basin.

Drought

Compounding growing water scarcity, drought is endemic in large parts of Africa. Since the 1960s, the Sahel, for example, has received below normal rainfall for more than two decades, and also experienced frequent drought. Droughts have influenced large changes in patterns of human and livestock migration and created additional pressures on an already fragile semi-arid environment. In Southern Africa, severe droughts in the early 1980s and early 1990s have had serious social and environmental impacts, bringing famine, disease, land degradation, loss of domestic stock and wildlife and even loss of human life. Economic impacts have been substantial, with inadequately recognized and analyzed correlations with declining GDP. This is illustrated by the case of Zimbabwe (Box 3), where the stock market declined by 62% and GDP by 11% in the 1991/92 drought, which coincided with entry into a structural adjustment program. During the same drought in South Africa, it is estimated that agricultural production fell by 27%, with a net negative effect of R1.2 billion on the current account of the balance of payments, and a loss of 49,000 agriculture jobs and 20,000 formal sector jobs. Drought management in Southern Africa has generally focused on reactive strategies to single year rainfall failure (crop failure), such as emergency food shipments, rather than more systematic prediction and monitoring systems.

Clearly-articulated mitigation strategies are required both for single year rainfall failures, which might call for drought resistant crop use and buffer stocks, and multiple year rainfall failures, which would affect groundwater supplies and dam storage levels and thus require provision of emergency deep boreholes or other mechanisms for supplementary water delivery. The region must learn to live with periodic droughts, factoring them into water resources management strategies, rather than treating them as emergency occurrences. In Namibia, where the 1991-93 drought caused a 70% drop in cereal production, public campaigns for water conservation have had positive impacts

and the 1992 Drought Relief Plan included livestock subsidies, food-for-work programs, free food for vulnerable groups and an emergency water supply unit. Overall, drought relief programs in southern African countries in 1991-92 are estimated to have cost over US\$ 2 billion - and this in a region where per capita incomes declined by an average of 1.1% annually in 1982-92.

Box 3
The 1991/92 Drought in Zimbabwe

This drought, coinciding with Zimbabwe's launch into ESAP, reduced agricultural production by 40%, with maize yield falling by over 75%. Manufacturing industry declined by 9%. Overall, national income was seriously affected and GDP fell by about 11%. A massive food relief program to 50% of the population added a significant cost burden to Government. Urban water supplies were severely affected, with rationing in many cities. Many rural wells and boreholes were either dry or out-of-order due to heavy use. Power generation was reduced by 15% due to low levels in Lake Kariba and the Kafue river in Zambia. The Zimbabwe stock market declined in value in 1992 by 62%, performing worst of 54 world stock markets. Drought, which extended to 1995, has delayed the beneficial impacts of adjustment and intensified the negative ones. However, early rains in the 95/96 wet season have boosted investor confidence across the board.

Watershed Degradation

The landscape of much of the Southern Africa region is fragile and a combination of poor cultivation practices, deforestation and overgrazing is having a massive impact in those areas where both soil and water resources are scarce and valuable (see the example of Malawi in Box 4). Poor people often live in the headwaters of basins, upstream of major settlements. Water that falls on the land for which they are guardians becomes the life blood of a city downstream. Yet water resource projects that target the rural population rarely take account of their stewardship role, for which they receive little benefit - and thus no incentive to be effective as stewards. If peri-urban and rural areas are not provided for, the future water - and power - costs to urban users are likely to rise due to environmental degradation of precious water sources.

Box 4

Impacts of Land Degradation in the Lake Malawi - Shire River Catchment

Soil erosion due to deforestation and cultivation on steep slopes in the Shire River catchment in Lawawi, Tanzania and Mozambique is seriously affecting water resources. This inhibits fish reproduction and possibly has serious impacts on lake levels. The pondage at Nkula on the Shire River provides the main hydropower plant and pumping station for the entire water supply for Blantyre. Sediment bedload transported during the wet season by tributaries between Liwonde and Nkula is accumulating in the Nkula pondage, affecting power output and water supply. In the short term, the power utility plans to dredge about 500,000 cubic meters of silt at a cost of up to \$ 3 million. Even more serious, recent falls in Lake Malawi levels have threatened to stop flows into the Shire altogether, which would cause total failure of national power generation, Blantyre water supply, major irrigation schemes in the Lower Shire, and wildlife habitats, crippling the national economy. The Malawi Government recognizes the importance of improved water resources management in addressing the threats; but also needs the cooperation of co-riparians Mozambique and Tanzania.

Aquatic Ecosystem Degradation: the Case of Lake Victoria

Degradation of aquatic ecosystems due to unplanned or poorly regulated anthropogenic activities undermines the economic utilization of many freshwater systems. In Lake Victoria, for example, the cumulative impacts of the introduction of exotic fish, pollution from point and non-point sources, proliferation of the water hyacinth and degradation of wetlands have wreaked havoc on this once species rich ecosystem. The consequences include unstable fishery, loss of biodiversity and accelerated eutrophication.

Threatened Biodiversity. Prior to the introduction of the Nile Perch and Nile Tilapia in the 1950s, Lake Victoria had between 350-400 species of the fish family cichlidae, over 90% of which were endemic to the lake. For the two decades following its introduction, the carnivorous Nile Perch was a minor component of the lake fauna. By the early 1980s, however, a dramatic shift occurred which destroyed the community of more than 350 fish species. In 1978, the cichlids contributed about 80% of the biomass and the Nile Perch about 2%, the remainder comprised of the introduced Nile Tilapia and native non-cichlids. By 1983, the Nile Perch comprised 80% of the catch, with the rest composed of Nile Tilapia, a single indigenous species, the omena, and few other native fish. The perch also began cannibalizing younger perch. The explosion of the perch has had several consequences. On the one hand, this has created a major fishing industry exporting to the urban centers of East Africa and Europe. On the other, there are serious questions about the stability of the current fishery. Also, the creation of this lucrative commercial activity, which is influenced by a few powerful interests, has had a profound impact on the local diet of the people. Poor people in the region cannot afford the perch, thus reducing the protein intake in the local diet, which is of concern in a region exporting 500,000 tons of fish a year.

The destruction of the native species has probably accelerated the eutrophication of Lake Victoria. The cichlids in the past helped the lake cope with increased productivity and recycled the biomass and nutrients in the course of migration. They were instrumental in maintaining the resiliency of the lake ecosystem even as its productivity increased over the decades. But with the collapse of the native species, the food web and the trophic structure of the lake have been altered. Decomposition of phytoplankton and algae now exerts a great oxygen demand, contributing to the widespread permanent anaerobic conditions in the bottom parts of the lake.

Water Pollution. Water pollution has contributed to the eutrophication of Lake Victoria and to other changes in water quality. Increased inflow of nutrients (two to three fold since the 1950s) from point and non-point sources of pollution has accelerated the eutrophication of the lake, and resulted in frequent algal blooms. Algal growth since 1960 has increased fivefold, reducing the transparency of lake water. Decomposition of organic wastes from untreated domestic sewage, discharges from agro-processing industries, and from the decomposition of algae and water hyacinth have also depleted the dissolved oxygen in large segments of the lake bottom. This has resulted in anaerobic conditions in large sections of the lake, causing massive and frequent fish kills. Pollution from untreated sewage and industrial effluent and uncontrolled discharges from mercury based gold extraction mining operations are also threatening the potability of the supply of drinking water from the lake, posing a serious threat to public health and the lake fishery.

Water Hyacinth. Lake Victoria has also been affected by the more recent introduction and proliferation of the water hyacinth. The hyacinth entered the lake from the Kagera River in the late 1980s. It is now present in the form of large mats fringing substantial areas of the lake shore. The mats obstruct fish landing sites and village washing areas, foul fishing nets, and block water supply intakes and hydroelectric power generation facilities. The rate of hyacinth growth varies with nutrient availability and ambient conditions. Under favorable conditions the hyacinth population can double in 5-15 days. The hyacinth also affects water quality, since its decomposition depletes dissolved oxygen.

Wetlands Degradation. Wetlands around Lake Victoria have been encroached upon as a result of agricultural expansion and construction activities, undermining important functions. These include: buffering the lake from impacts of nutrients and sediments, providing breeding areas for fish and animals of value to the local population, and protecting local water supply sources. Preserving the wetlands is important for sustaining biodiversity and for maintaining the lake as a functioning and stable ecosystem.

IMBALANCES IN POWER, INFORMATION AND CAPACITY

Effective joint management of transboundary rivers and lakes is a major challenge, requiring treaties and political commitment, institutions and capacity,

information and finance. For riparian nations with multiple transboundary waters, each represents a different stake, which affects the allocation of resources and capacity to address the situation. Often, the primary constraints to achieving effective joint management relate to 'real or perceived' imbalances in economic, military or political power relationships between the riparian countries. Other constraints relate to imbalances in information, management capacity and ability to make and implement informed decisions.

International Waters: Dependencies and Risks

The Southern Africa Region is characterized by few areas of concentrated runoff. Therefore, many downstream countries are dependent on water which originates in rivers from upstream nations. For example, 94% of Botswana's total river flows originate outside the country. This dependency can create insecurity. Interdependencies are not always clear and are affected by many factors. This complexity can be illustrated by examining the Zambezi basin whose characteristics are displayed in Box 5. This shows the relative importance of the Zambezi Basin to its riparian states, and conversely, the relative importance of each state to the basin as a whole. Thus, in terms of area, Zambia is the largest contributor to basin area, but Malawi is the one country completely reliant upon basin surface water resources. In terms of population, Malawi and Zimbabwe have the greatest number using and reliant upon basin waters. However, one should not infer from this table that Angola, Namibia, and Botswana (countries with small proportions of their populations within the basin) do not have strong vested interests in sustainable basin management. Perhaps only 0.8% of Botswana's population lives within the basin, but it is still possible that 100% of Botswana's population has hopes of using Zambezi Basin waters.

South Africa, not even a riparian, has investigated the withdrawal of water from the Zambezi. In addition, Mozambique, as the furthest downstream riparian, stands to lose most by upstream developments unilaterally by any one state or multilaterally by any group of states. A different case is that of Tanzania. Tanzania is riparian to three Great Lakes of Africa (Victoria, Tanganyika and Malawi), Lakes Jipe, Chala and Natron, and the Ruvuma, Kagera, Zambezi, Kagera, Mara, Pangani, and Uмба Rivers, each of which contributes one way or another to the national economy. In contrast, Malawi is primarily dependent on Lake Malawi and its outflowing tributary (the Shire River) for practically all of its hydropower and much of its irrigation and urban water supply needs. Thus, Tanzania and Malawi have different stakes involved in the management of Lake Malawi and it would not be surprising to find that Tanzania may have fewer data on Lake Malawi and may choose to allocate fewer resources than Malawi to the management of the Lake, in part because of limitations in existing capacity and resources to address all of its transboundary waters.

<p style="text-align: center;">Box 5 Share of the Zambezi Drainage Basin and Population Distribution, by State</p>								
State	Area				Population			
	A.	B.	C.	D.	E.	F.	G.	H.
Zambia	753	540	71.8	40.6	8.4	5.9	70.2	22.1
Zimbabwe	391	251	64.3	18.9	10.8	7.8	72.1	29.0
Angola	1,241	145	11.6	10.9	9.2	0.3	3.7	1.3
Mozambique	799	140	17.5	10.5	16.3	3.1	19.2	11.8
Malawi	119	118	100	8.9	8.5	8.5	100	31.6
Botswana	582	84	14.4	6.3	1.3	0.01	0.8	0.04
Tanzania	945	27	2.9	2.1	26.8	1.1	4.2	4.0
Namibia	824	24	2.9	1.8	1.5	0.06	3.7	0.2
Total		1330		100		26.8		100

- A. Area of State (x1000 km²)
B. Area of State in basin (x1000 km²)
C. % of area inside basin / total national area
D. % of area of the State inside basin / basin area (1,330,000 km²)
E. Population of State (millions)
F. Population of State inside the basin
G. % of population inside basin / total national population
H. % of basin population inside State / basin population (26,8 million)

Unlike the cases of Southern Africa and the Volta Basin where water allocation is a dominant issue and where stakes involved vary (for example, upstream and downstream and powerful and less powerful interests), the management of Lake Victoria relates to a common mission of maintaining the health of the lake ecosystem for the purpose of maximizing the social and economic benefits for all riparian countries. A degraded ecosystem would affect the economies of all three nations. Thus, Kenya, Uganda and Tanzania have a common stake in developing a mutually beneficial arrangement for jointly managing this fragile and degraded ecosystem.

International Relations and Information Asymmetry

Increasing demands on, and potential disputes over, Southern Africa's shared rivers are likely to arise, particularly as Mozambique and Angola emerge from war and join others in the region whose medium-term development plans require significant increases in water use. Most countries lack significant alternatives to the development

of international basins, which are increasingly unlikely to be able to fulfill the sum of demands claimed by riparian countries. In many cases, development goals in different countries are premised on mutually exclusive claims for water from international basins. Botswana, Namibia, Zimbabwe and South Africa have all at some time considered large scale abstraction from the Zambezi River.

Negotiations and opportunities for joint development, however, are constrained by considerable capacity imbalances among countries, an inability in many countries to analyze and inform policy positions and decisions, and a threat of hegemony that is posed by the fact that the most powerful nations often face the greatest water scarcity. Information acquisition and sharing is a critical issue in the development of transboundary waters. Where international water resources are concerned, knowledge is power. Without knowledge, riparian states are extremely nervous about threats to sovereignty, especially when another riparian (particularly, but not necessarily upstream) is deemed to have that knowledge (and is therefore 'powerful'). Any attempts at rational negotiations are seriously hindered.

Institutions and Capacity

Institutional structures and capacity for effective water resources management are weak or absent in many countries in Africa, and a legacy of dependency is still common. In many countries, there is only recent and still limited 'ownership' of water resources concepts, policies, strategies, plans, standards, physical investments, and institutions, as a result of major external intervention over decades, which, however benign the intention, has had damaging effects. A key element of the institutional issue is the common intermixing of regulatory ('gamekeeper') functions with service delivery ('poacher') functions, compromising compliance. Solutions must evolve in an adaptive way in response to constitutional and cultural settings, as well as to clear policy objectives and political commitment to policy enforcement. Effective water resources management is complex and requires many skills, a network of capable institutions and significant analytical capacity. Much of the water resources management and development in the region today is being undertaken by the engineers of public sector water institutions. Often well trained, these professionals are commonly over-burdened, under-resourced and poorly recompensed. They generally have limited access to professional associations, peer review, mid-career training, books and journals, and other professional incentives. There is also a critical need to go beyond engineers to incorporate economic skills, in part to overcome the historical bias toward responding to water shortages by increasing supplies through the engineering solutions that are so common in Africa. Limited capacity in the private consulting industry leads to extensive use of international advisers and consultants, who rarely face these constraints. This may yield short term solutions, but it also leads to longer-term problems, through dependency and frustration.

In the Volta Basin, limited data, no sharing of data between riparian states and the absence of specific institutions to address these issues make it difficult to identify

the nature and cause of flow reduction from the Volta River into the Akosombo Dam and to project the need for development of other sources of energy. Thus, although there is significant untapped hydro-power and irrigation potential in the Volta Basin, inadequate legislation, policy and institutional structures severely constrain the effective management and further development of the basin.

Capacity limitations are significant in the case of Lake Victoria because the management of a lake ecosystem is a more challenging undertaking. It entails many unknowns and interrelated variables and there is limited local scientific knowledge and experience in the region to address such complex issues. The existing capacity and data require significant strengthening, particularly in areas such as the development and implementation of a regional water quality and land-use monitoring programme, fisheries management programmes, and programmes for controlling water hyacinth. Difficult decisions will need to be taken to develop ambient water quality and effluent discharge standards which are acceptable to, and enforceable in, all three countries. Also, a well-defined and implementable enforcement programme will need to be developed. Such decisions could have major economic consequences by requiring different degrees of municipal and industrial waste water treatment facilities and investments.

TOWARDS JOINT MANAGEMENT

The World Bank's Strategy: A Process Approach

Despite all the challenges, the governments in all three cases discussed above have begun to take important steps toward developing frameworks for jointly managing their water resources. The World Bank is supporting activities in all of the cases. The Bank's strategy for promoting the management of shared waters has focused on building on foundations that are in place at national, regional and international levels.

International Consensus on Principles of Sound Water Resources Management. The Bank played a role at the 1992 Dublin Conference and the UNCED Earth Summit in developing consensus on the principles of sound water resources management. These principles include: placing greater emphasis on integrated, cross-sectoral water resources management; recognizing land use management as an integral part of sustainable water management; using river basins as management units; recognizing water as a scarce economic good and promoting cost-effective interventions; supporting participatory efforts to manage water resources; focusing on actions to improve the lives of people and the quality of their environment; adopting positive policies to address women's needs and empower women; and incorporating mechanisms for conflict prevention and resolution. The principles form the core of the Bank's 1993 water resources management policy paper and its guide to the formulation of water resources strategy, and were adapted in the Bank's African water resources management strategy. The latter strategy stresses: that water must be viewed as a limited resource, to be managed in an integrated manner to achieve national economic,

social, environmental and security objectives, rather than as an input into specific sectors; that institutional reform and capacity building are critical to sustaining policies; and that international water issues will be given particular attention. As a consequence of a sharpened international focus on the issues and internal pressures for reform, many countries in the region are currently going through or about to start a lengthy process of water sector reform, commonly including: building national water resources management policies and institutions (particularly to encourage more efficient water allocation and use, and the involvement of water users and other stakeholders both in water resource and land use management, and in the planning, operation and maintenance of water facilities); addressing the issues of international waters; protecting /managing vulnerable terrestrial and coastal waters; restructuring (always commercializing, sometimes privatizing) urban services; introducing unconventional approaches to urban sanitation; and developing national rural water supply and sanitation programs.

A Strategic Approach. The general guidelines supported by the international community and the Bank's policy on water management provide a broad framework for a water management strategy within sub-Saharan Africa. A sub-regional strategy, however, must take explicit account of the specific area's climate, geography and history, within the institutional and political framework of the individual countries. The strategic approach proposed has two central elements. The first element is to enhance the quality of the dialogue on water resources in individual countries wherever and whenever possible, building capacity for integrated water resources management at the national level. The rationale for this element is both its key role within the overall management of the national economy under conditions of relative water scarcity, as well as the recognition that negotiations on, and subsequent allocation and management of, international waters can only take place effectively where there is a more-or-less 'level playing field' of capacity and information among riparian countries. The second element of the strategy is to aggregate these country building blocks within a region or basin, and seek opportunities for joint management and development of international watercourses. An underpinning strategy for both these elements is to foster coordinated support from the international community. This is based on the premise that regional projects and programs often require technical assistance and investments which may be beyond the capacity of an individual country to absorb or an individual international agency to support.

The Bank's strategy places particular emphasis on viable institutional, legal and policy frameworks at the national and international level, as well as on economic and environmental sustainability. It is based on a long-term perspective, recognizing water as an increasingly scarce and valuable resource whose use has significant economic, social and environmental dimensions. Cross-sectoral issues, such as irrigation, health, power, and poverty impacts, are explicitly examined and incorporated in project designs. Broader discussion and participation is promoted, both within and among countries, as is greater donor coordination. To address these dimensions, an integrated, cross-sectoral and participatory basin approach is proposed. The strategic approach also

explicitly focuses on poverty reduction, by enhancing water resources management through: improved access to water and sanitation services in urban and rural areas; improved food production and agricultural productivity; reductions in water-borne diseases and water pollution; and environmental management - often building upon traditional practice - of watersheds and wetlands

Actions at the National Level. At the national level, the Bank has initiated substantive dialogue with individual governments on water resources management, within the framework of both macroeconomic and sectoral analysis and operations. The Bank has also been involved in promoting dialogue on natural resources management in general, through support for preparation of National Environmental Action Plans. All sectors that use water provide the opportunity for this: water supply and sanitation, power, agriculture, environment, urban etc. In Southern Africa, this dialogue is already significant in Lesotho, South Africa, Malawi, Mozambique, Zimbabwe and Tanzania and is just commencing in Namibia, Zambia and Angola. In the Volta Basin, the dialogue is significant in Ghana and Burkina Faso and is about to commence in Togo. In the Lake Victoria basin, the dialogue involves Kenya, Uganda and Tanzania. By and large, the Bank's dialogue is contributing to a major shift in government perspectives and policies. The Bank has accumulated unique exposure to, and experience in, water resources management in many parts of the world in recent years, and can therefore play a key role in facilitating the transfer of lessons learned. The Bank's role is that of a supportive partner, offering advisory services, project finance and knowledge of international best practices, to assist in policy reform and project design.

Actions at the Regional Level: Moving Towards Opportunities. At the regional level, the Bank is promoting environmentally sound, equitable and mutually beneficial management of international water resources. The Bank has attempted to facilitate a balanced dialogue among riparian countries, based on reliable information and targeted to support sustainable, joint exploitation of water resources for the benefit of all riparians. Facilitating this process requires significant capacity building and information gathering in countries whose current capacities preclude their effective participation in balanced international negotiations. It also requires strengthening of those fora most appropriate for such discussion, for example, the East African Corporation.

A range of unexploited aspects of regional cooperation in water resources management exists in the region, such as: collaboration on improved drought management and mitigation strategies; exploration of hydropower potential; joint development on the major rivers; and promotion of tourism through protection and preservation of wetland and water ecosystems. Economic integration could also be a medium-term goal, for example if it led to the movement of agricultural and industrial production in response to water availability and pricing signals.

Southern Africa Water Resources Management

There are a number of important regional water resources initiatives which are laying the foundations for further cooperative action. The most significant regional development is the 1995 adoption by the member states of the *SADC Protocol on Shared Watercourse Systems*¹ (see Box 6).

Box 6 The SADC Protocol

The 1995 SADC Protocol on Shared Water Course Systems has the following elements:

- Adoption and recognition of general principles (Article 2), including: respect for customary international law principle of equitable utilization; promotion of information exchange; maintaining balance between resource development and environmental conservation; and, requirement of national permits for waste discharge.
- Establishment of river basin management organizations (RBOs), and delineation of objectives and functions (Articles 3,4, and 5), entailing: a monitoring unit in the SADC Environment and Land Management Sector (ELMS); RBOs in multinational basins which implement protocol and multilateral projects, harmonize national legislation, and undertake research and data collection.
- Dispute settlement (Article 7) is managed by SADC tribunal for adjudication, with final and binding authority.

As follow-up, SADC convened a meeting of regional water ministers in Pretoria in November 1995 to discuss opportunities for greater cooperation. The Pretoria meeting recommended the establishment of a Water Sector within SADC (water is currently within the portfolio of the Environment and Land Management Sector - ELMS, a part of the Food, Agriculture and Natural Resources Sector - FANR), with the same status of FANR. This proposal has been approved by FANR Ministers and was submitted to the SADC Summit in August 1996, where it was approved. The new Sector is located in Lesotho.

One of the first cooperative initiatives is ZACPLAN, the SADC-led program for cooperative management and development of the Zambezi, which was launched in 1987. While progress has been slow, there are now two ZACPLAN projects underway: ZACPRO 2, which is developing regional legislation and is proposing the formation of a river basin commission (ZAMCOM); and ZACPRO 6, which is executed by the Zambezi River Authority and is developing an integrated water resources management plan for the basin. The SADC Protocol is also a product of ZACPRO 2.

Several regional hydrometeorological projects are having significant impact, particularly in building mutual understanding and capacity. The Sub-Saharan African Hydrological Assessment has identified the needs for investment in hydrological data

¹ At the time of finalization of this Report, all members of SADC, except Angola, had signed the Protocol.

networks and services. This is being followed up by SADC-HYCOS, which will use telemetry networks and a satellite-based data collection network to provide real-time data for stations of key national and regional importance. The Southern African FRIEND project is developing a common hydrological database architecture standard for national hydrological services. Zimbabwe hosts a drought monitoring center, under the Drought Monitoring Project.

Lake Victoria Environment Management Program

The Lake Victoria Environmental Management Project (LVEMP) is the first phase of a longer term program. The LVEMP will (a) provide the necessary information to improve the management of the lake ecosystem, (b) establish mechanism for cooperative management by the 3 countries, and (c) identify and demonstrate practical, self sustaining remedies, while simultaneously building capacity for ecosystem management. The key elements of the project were conceptualized during the preparation of the National Environmental Actions Plans developed by the three Governments (see Box 7). Early project preparation began with the pilot study to quantify the point sources of discharge and evaluate treatment options carried out by an inter-ministerial team from Tanzania in early 1994.

Box 7

Elements of the Lake Victoria Environmental Management Project

The Lake Victoria Environmental Management Project comprises the following components:

- Fisheries Management
- Fisheries Research
- Fisheries Extension, Policies, Laws & Enforcement
- Fish Trust Levy
- Water Hyacinth Control
- Water Quality and Ecosystem Management
- Industrial and Municipal Waste Management
- Land Use and Wetlands Management
- Institutional Framework

The Tripartite Agreement (signed August 5, 1994) between the Governments of Kenya, Uganda and Tanzania formally set in motion a collaborative process of project preparation and the agreement also provided for project implementation. The tripartite agreement established three National Secretariats, each headed by a high level officer selected by the respective government. These secretariats served an essential coordination role during project preparation, and will continue this role during project implementation.

The Lake Victoria Fisheries Organization will assume overall coordination for components associated with fisheries and the Regional Policy and Steering Committee will be responsible for overall program coordination. The various national

organizations will implement components of the project as follows. The three national fisheries research institutes will play lead roles in all sub-components of fisheries research, and will collaborate with Fisheries Departments of the respective governments in fisheries extension, and with the Ministries of Water in the Water Quality components. For the latter components, the Ministries of Water will be the lead agencies, and they in turn will collaborate closely with the Ministries of Environment, Natural Resources and Agriculture in their implementation of the components on land use and wetlands management.

Volta Basin Water Resources Management Initiative

The objective of the proposed Volta Basin Water Resources Management Initiative is to respond to the expressed demand of the riparian states for support in the development of implementable, country-owned and driven water resources management strategies and related investment programs in Ghana, Burkina Faso, Togo and Côte d'Ivoire, in line with the principles of the Bank's Africa Water Resources Management Strategy Paper. The initiative seeks to build capacity through country-based analytical work and strategic planning in the allocation/regulation of water resources between different sectors and the environment, the economic pricing of water, the effective monitoring and assessment of both surface and groundwaters in major watersheds, and stakeholder participation in watershed and water resources management. At the basin level, the process is intended to foster regional dialogue, understanding and trust between riparian countries, and to identify possible joint development initiatives. It might also facilitate the dialogue needed to address the allocation of water resources between Ghana and Burkina Faso. This new approach of linking lending operations to integrated water resources management, while building local capacity and ensuring ownership, goes to the heart of the Bank's environmentally sustainable development policy.

The approach that is being taken in Ghana's 2 year Water Resources Management Study, where the initiative has been launched, is one of participation and capacity building. The study is directed by an intersectoral-steering committee, managed day-to-day by a national study coordinator, and advised by a study forum of stakeholders from the public, private and NGO sectors. Each of 6 'building block' studies is being prepared by consortia of local consultants and sector personnel who interact with a broader group of interested professionals and citizens through a series of workshops. A leading international specialist has been identified to serve as peer reviewer, without necessarily traveling to Ghana. In addition, each country would encourage the participation of representatives of neighboring states in its consultative activities. The study is guided by the World Bank and UNDP, with additional support from Denmark, UK, Canada, France and Germany. The study is very process-oriented, and is guided by a broad based Study Forum representing the public, private and NGO sectors with the aim of establishing consultation and consensus building so that the Study will reflect the perspectives of the different stakeholders.

Coordinated International Support

Coordinated international intervention can have a greater impact in effectively mobilizing and utilizing scarce resources. There is considerable donor interest in supporting national and international water resources efforts and a number of vehicles recently established to promote a coordinated approach. The Global Environment Facility's International Waters Program provided the basis for establishing the Lake Victoria Environmental Management Project. The recently established Global Water Partnership has been instrumental in facilitating and advancing dialogue on Water Resources Management in Southern Africa. In the Volta Basin, the Bank and UNDP together are facilitating support from various bilateral agencies for the development of coordinated projects and programs.

Global Environmental Facility. The GEF is a key funding mechanism to help developing countries meet environmental protection goals. The GEF, which is based upon a tripartite agreement between UNDP, UNEP and the World Bank, can function as an important mechanism for dispute resolution. It may be used as a basis for promoting dialogue on watershed degradation or other environmental issues affecting international waters. The Lake Victoria Environmental Management Project was prepared through GEF support. It is the first project of its kind within the region, addressing a complex set of managerial, scientific, technical and financial resources, and seeking to establish an acceptable institutional and legal framework to successfully carry out its endeavor.

Global Water Partnership. The GWP, still in its infancy, is another initiative that can be used to provide a coordinated response to global water resources management issues. The partnership provides knowledge and assistance, and helps countries make critical linkages necessary to bring about often difficult reforms. The GWP promotes integrated programs at the national and regional levels, capacity building, sustainable investments and learning across frontiers. The partnership has identified Southern Africa as the region with the highest priority for initial action. The partnership held a meeting of its Technical Advisory Committee in Namibia in the fall of 1996, to focus on the need of Southern Africa.

CONCLUSION: SOME LESSONS LEARNED AND IMPLICATIONS FOR THE NILE BASIN

Although the cases discussed are all in early stages, nonetheless, there are some useful lessons which can be learned and a number of implications for the Nile basin.

At the National Level: 'Level the Playing Field'

Build national capacity and identify national priorities. A locally-driven and participatory process of preparing national water resources assessment and policy/strategy development engages politicians, the professions and civil society in a

process of analysis and learning. By identifying and utilizing existing skills, as well as building new ones, the process can be a powerful instrument for building capacity. It will also result in the evaluation of national priorities, as well as an assessment of the relative importance of each transboundary water within the national context.

Correct information asymmetry. Knowledge is power. A further objective of building national capacity must be to address the asymmetry in data collection, analysis and its interpretation for policy formulation and decision making. It is important that all riparians provide, analyze and interpret river basin data. This will give the confidence needed to participate in basin-wide analysis and negotiation.

At the International Level: Move from Dialogue to Actions

Develop dialogue on different tracks: e.g. information, capacity, technology. It is important to engage in and expand basin-wide dialogue on diverse issues, with the goal of seeking common ground. Information sharing is a critical issue in the development of transboundary waters. Thus, it is in the interests of both powerful and less powerful riparians to seek a balance of capacity. Moreover, it is important to replace the impressions of hegemony with trust and partnership - recognizing and sharing common goals. At times this can mean counter-intuitive behavior by a powerful riparian - ceding leadership on issues and taking a back seat. Building confidence and capacity is a slow process, and the issues will be with us for decades; however efforts to build capacity and confidence cannot wait.

Start with the achievable and avoid getting bogged down with formulae. It may be worthwhile focusing on simpler issues and achievable goals first, before addressing more complex and challenging concerns. This may mean finding common ground for establishing dialogue on several tracks, then, as working relationships and trust develop between professionals, moving to formulating principles, institutional structures and arbitration mechanisms, and only then seeking to conclude the most difficult issues (such as rights). Seeking to establish formulae at the outset for sharing a resource, or for sharing the costs for managing a resource, could hinder the process of developing a workable mechanism for managing shared waters. In the case of Lake Victoria, for example, if the three concerned countries had begun negotiations about establishing the mechanism for joint management of the lake using formulae derived from the proportions of the lake each controls, the proportion of fish each country extracts from the lake, and the different pollutant loads each contributes to the lake, negotiations could have been contentious and lasted much longer. Instead, the three countries chose to focus on common considerations (which was the need to establish a joint mechanism for studying, rehabilitating and protecting the lake ecosystem) for the mutual benefit of all the countries. This approach led to quick resolution, both in terms of signing the Tripartite Agreement and in preparing the Lake Victoria Environment Management Project. Similarly, the development of the SADC Protocol, which established principles without prejudicing rights, should facilitate the resolution of allocation and rights issues

on individual basins in the region; the road would likely have been a longer and more difficult one if the riparian nations set out to resolve water rights issues at the outset.

Recognize that progress on complex water systems may be slow, but dialogue needs to be sustained and trust needs to be established. At the outset, it is also important to realize that progress on complex shared water systems is generally slow. Nonetheless, it is imperative that progress and dialogue is sustained. It took the United States and Canada (two nations with very high levels of capacity, information and resources) more than a decade and a half to establish a joint basis for managing the North American Great Lakes. The Indus Water Treaty took about 12 years to be signed from the time the dispute surfaced between India and Pakistan. By contrast in the case of Lake Victoria, the Tripartite Agreement was developed in a relatively short period of four years, after the scientific community sounded the alarm about the alarming rate of ecosystem degradation. The Nile Basin is perhaps the most complex basin in the world, with 10 riparians with multiple interests and agenda involved. Even if it appears that little progress is being made, it is important that dialogue be maintained. Such dialogue can easily be undermined, or even derailed, by unilateral actions which contradict the spirit of cooperation.

Seek opportunities for mutually beneficial programs or projects. A useful way to sustain dialogue is to seek opportunities for mutual benefits. There are a number of opportunities that could be explored. For example, the question of protecting degraded watersheds is a vital one, especially where reservoirs and canals are suffering from severe sediment deposition, caused by severe land degradation and increased soil erosion in the headwaters. Although the causes and effects of this problem appears to be relatively straightforward, the difficulty lies in developing an acceptable arrangement for sharing the cost of soil conservation and watershed management. Another opportunity may lie in exploring joint investments for hydropower development to meet demands of countries within (and even outside) the basin, as considerable hydropower potential is untapped and there is a growing opportunity for raising private capital for economically-sound infrastructure projects. Opportunities may also exist for improving the efficiency of food production, through regional markets and enhanced irrigation efficiency. The potential for upstream river regulation of peak and low flows may bring major 'win-win' opportunities, with significant benefits to both upstream and downstream riparians. The threat of dispute must be transformed into an opportunity for cooperation - this is a necessity.

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PART IV

CONFLICT RESOLUTION OF

INTERNATIONAL WATERCOURSES

CHAPTER 7

Watercourses, Environment and the International Court of Justice: The Gabčíkovo-Nagymaros Case

Philippe Sands*

In September 1997 the International Court of Justice gave judgement in the case concerning the Gabčíkovo-Nagymaros Project, between Hungary and Slovakia.¹ The case has important implications for the law of international watercourses and international environmental law, and consequently for the activities of multilateral lending institutions such as the World Bank.

BACKGROUND

This case concerned a dispute over whether or not to build two barrages on the Danube shared by Hungary and Czechoslovakia. In 1977, by treaty, the two countries had agreed to build two barrages which would then be jointly operated. The Treaty envisaged the diversion of waters from the Danube, where it was a boundary river, onto Czechoslovak territory and the operation of the dual system of barrages by “peak-power” (rather than “run-of-river” mode). Construction began and proceeded more slowly than had been originally envisaged. In the mid-1980s political opposition in Hungary focused on the environmental aspects of the barrage as a means of achieving broader political change.

In May 1989, great public pressure led Hungary to suspend work on large parts of the project. The two countries sought to reach an agreement as to how to proceed. Both were intransigent and committed to different approaches. Czechoslovakia took the view that the barrages posed no serious threat to the environment, Hungary was certain they would lead to significant environmental harm to water supplies and to biodiversity. Absent an agreed resolution of the problem, Czechoslovakia decided in

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¹ Case Concerning the Gabčíkovo-Nagymaros Project (Hung./Slovk.), 1997 I.C.J. 92 (Sept. 25); 37 I.L.M. 162 (1998); <<http://www.icj-cij.org/idoCKET/ihs/ihsjudgment/ihsjudcontent.html>> [hereinafter Case Concerning the Gabčíkovo-Nagymaros Project]. For background, see 32 I.L.M. 1293 (1993); also PHILIPPE SANDS, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* 351-4 (1995). The Summary of the Judgment appears as an attachment at the end of this Chapter.

1991 to proceed unilaterally with a provisional solution referred to as "Variant C", comprising a single barrage on the Czechoslovakian side, but requiring the diversion of 80% of the shared water on its territory. It argued that this was justified by the 1977 Treaty which, in effect, gave it rights over that amount of water for the purposes of operating a barrage on its side. As "Variant C" proceeded in late 1991 and early 1992 Hungary took the view that it had no option but to terminate the 1977 Treaty, which apparently provided the sole basis upon which Czechoslovakia claimed to be able to proceed to its unilateral and provisional solution. A complicated situation became even more complicated in December 1992 when Czechoslovakia split into two countries, and agreed as between themselves that Slovakia would succeed to ownership of the Czechoslovak part of the project. In October 1992 Czechoslovakia dammed the Danube and diverted over 80 percent of the waters of the Danube into a bypass canal on Slovak territory. In April 1993, largely under the pressure of the Commission of the European Communities, the two countries agreed to refer the matter to the International Court of Justice.

THE JUDGMENT

The Court was presented with an opportunity to address a wide range of international legal issues, including the law of treaties, the law of state responsibility, the law of international watercourses, the law of the environment, and the inter-relation of these areas. The Court was specifically asked to address three questions posed by the parties. What did it rule? First, it found that Hungary was not entitled in 1989 to suspend or terminate - on environmental grounds - work on the joint project. Second, it ruled that Czechoslovakia (and subsequently Slovakia) was not entitled to operate from October 1992 a unilateral solution diverting the Danube without the agreement of Hungary (although it ruled that construction prior to operation was not unlawful). Third, the Court went on to say that Hungary was not entitled in May 1992 to terminate the 1977 Treaty, which remained in force to this day. As to the future, the Court indicated the basis for co-operation and agreement which it hoped the Parties might pursue, suggesting that the preservation of the *status quo* - one barrage not two, jointly operated, no peak power - would be an appropriate solution, in effect rewriting the 1977 Treaty.

IMPLICATIONS

The judgment sheds some interesting light on the law of watercourses and international environmental obligations. However, it is important to recall that the Court applied the law in these areas in the context of the 1977 Treaty, which itself provided for the protection of water quality and the protection of nature (in its articles 15 and 19). The judgement may represent a "coming of age" for international environmental law, particularly in that part of the judgment which relates to the basis for future co-operation between the two states. Although the Court was plainly unpersuaded by the merits of Hungary's environmental concerns - at least as they stood in 1989 - it nevertheless accepted that there existed a principle of "ecological

necessity” whereby a state may seek to preclude responsibility for otherwise wrongful acts by invoking the law of State responsibility.² It accepted that concerns for the natural environment represented an “essential interest” of the State,³ indicating that the test to be applied in determining whether a state of “ecological necessity” existed was that there must be proven “a real”, grave and imminent peril at the time it is invoked, and that the measures taken are the only possible response to avoid that peril.⁴ However, the Court found that the peril was not sufficiently certain and therefore imminent in 1989 to justify the invocation of necessity. It is noticeable that in establishing the test to be applied the Court did not take an opportunity to integrate the precautionary principle (or approach), which had emerged in the late 1960s and on which there was a large measure of agreement between the parties.

In respect of the illegality of the unilateral assumption by Czechoslovakia of control of a part of the Danube, a shared resource, the Court justified its conclusion principally by reference to the law of international watercourses, with only a passing mention of the adverse environmental consequences of the seizure. For the purposes of the law of watercourses it is especially noteworthy that the Court has extended to non-navigational uses the principle applied by the Permanent Court of International Justice in its Judgment on the River Oder case to the effect that “[the] community of interests in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian states in the user of the whole course of the river”.⁵

What the Court said is:

Modern development of international law has strengthened this principle for non-navigational uses of international watercourses as well, as evidenced by the adoption of the Convention of 21 May 1997 on the Law of Non-Navigational Uses of International Watercourses by the United Nations General Assembly.

The Court considers that Czechoslovakia, by unilaterally assuming control of a shared resource, and thereby depriving Hungary of its right to an equitable and reasonable share of the natural resources of the Danube with the continuing effect of the diversion of these waters on the ecology of the riparian area of the Szigetkoz [wetland in Hungary] -

² Case Concerning the Gabčíkovo-Nagymaros Project, paras. 51-3.

³ *Id.*, para. 53.

⁴ *Id.*, para. 54.

⁵ Territorial Jurisdiction of the International Commission of the River Oder, Judgment No. 16, 1929, PCIJ, (Ser. A) No. 23, at 27.

failed to respect the proportionality which is required by international law.⁶

It is notable that the Court has based this conclusion most directly on the international law of watercourses, rather than on principles of environmental co-operation (for example the provision of information on measures likely to cause transboundary environmental consequences, the application of environmental impact assessment etc). Moreover, it has done so by reference to a recently adopted global convention which Hungary but not Slovakia had signed, rather than the regional 1994 Agreement on Co-operation on the Protection and Sustainable use of the Danube, which both countries have signed and which will shortly enter into force.

In relation to treaty termination, the Court addressed the relationship between the 1977 Treaty and subsequent norms of environmental law, and had interesting points to make which are of relevance to the World Bank and other multilateral lending institutions which are required to apply environmental standards. The Court said that newly developed norms of environmental law "are relevant for the implementation" of the 1997 Treaty, and that although Articles 15 and 19 of the Treaty do not contain specific obligations of performance, they do require the parties to ensure that the quality of the water is not impaired and that nature is protected, and "to take new environmental norms into consideration when agreeing upon the means" to implement the Treaty.⁷

The Court returned to this theme in that part of its judgment which addressed future co-operation between the parties. It found that "what might have been a correct application of the law in 1989 or 1992 ... could be a miscarriage of justice if prescribed in 1997".⁸ This indicates an important recognition of one feature of environmental law, including in the context of projects making use of watercourses: its propensity to evolve rapidly. Accordingly, the Court proposed that given the project's impact upon and implications for the environment - of necessity "a key issue", it said - in evaluating environmental risk "new norms have to be taken into consideration, and ... new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past".⁹ These words are potentially of great significance, even radical, indicating that long-term projects should be adapted to new standards as they evolve. However, the Court was not willing to descend into too much detail as to how this approach might be operationalised. Indeed, it was unable to bring itself to use the words "environmental impact assessment", simply calling on the Parties to "look afresh at the effects on the environment of the operation of the Power

⁶ *Supra* note 1, para. 85.

⁷ *Id.* para. 112.

⁸ *Id.* para. 140.

⁹ *Id.*

Plant".¹⁰ It did not indicate any standards to be applied. And it invoked the "concept of sustainable development" (possibly implying that it has a legal component), but without indicating what it meant in practical terms.

CONCLUSION

In conclusion, the Court has gone some considerable way towards developing the law in relation to watercourses and the need to protect the environment. As to the former, in its first case on international watercourses it has confirmed the cardinal principles of equitable and reasonable use, underscoring the importance of obtaining agreement between riparian states having an interest in the non-navigational use of an international watercourse. And as to the latter, it has brought international environmental of age, confirming its place in the mainstream rules of public international law, even if in so doing it has exercised a high degree of discretion in indicating applicable principles and standards.

¹⁰ *Id.*

Case concerning Gabcikovo-Nagymaros Project (Hungary/Slovakia)

Summary of the Judgment of 25 September 1997*

Review of the proceedings and statement of claims (paras. 1-14)

The Court begins by recalling that proceedings had been instituted on 2 July 1993 by a joint notification, by Hungary and Slovakia, of a Special Agreement, signed at Brussels on 7 April 1993. After setting out the text of the Agreement, the Court recites the successive stages of the proceedings, referring, among other things, to its visit, on the invitation of the parties, to the area, from 1 to 4 April 1997. It further sets out the submissions of the Parties.

History of the dispute (paras. 15-25)

The Court recalls that the present case arose out of the signature, on 16 September 1977, by the Hungarian People's Republic and the Czechoslovak People's Republic, of a treaty "concerning the construction and operation of the Gabcikovo-Nagymaros System of Locks" (hereinafter called the "1977 Treaty"). The names of the two contracting States have varied over the years; they are referred to as Hungary and Czechoslovakia. The 1977 Treaty entered into force on 30 June 1978. It provides for the construction and operation of a System of Locks by the parties as a "joint investment". According to its Preamble, the system was designed to attain "the broad utilization of the natural resources of the Bratislava-Budapest section of the Danube river for the development of water resources, energy, transport, agriculture and other sectors of the national economy of the Contracting Parties". The joint investment was thus essentially aimed at the production of hydroelectricity, the improvement of navigation on the relevant section of the Danube and the protection of the areas along the banks against flooding. At the same time, by the terms of the Treaty, the contracting parties undertook to ensure that the quality of water in the Danube was not impaired as a result of the Project, and that compliance with the obligations for the protection of nature arising in connection with the construction and operation of the System of Locks would be observed.

The sector of the Danube river with which this case is concerned is a stretch of approximately 200 kilometres, between Bratislava in Slovakia and Budapest in Hungary. Below Bratislava, the river gradient decreases markedly, creating an alluvial

* International Court of Justice Communiqué (unofficial), No. 97/10 bis, 25 September 1997.

plain of gravel and sand sediment. The boundary between the two States is constituted, in the major part of that region, by the main channel of the river. Cunovo and, further downstream, Gabčíkovo, are situated in this sector of the river on Slovak territory, Cunovo on the right bank and Gabčíkovo on the left. Further downstream, after the confluence of the various branches, the river enters Hungarian territory. Nagymaros lies in a narrow valley at a bend in the Danube just before it turns south, enclosing the large river island of Szentendre before reaching Budapest (see sketch-map No. 1).

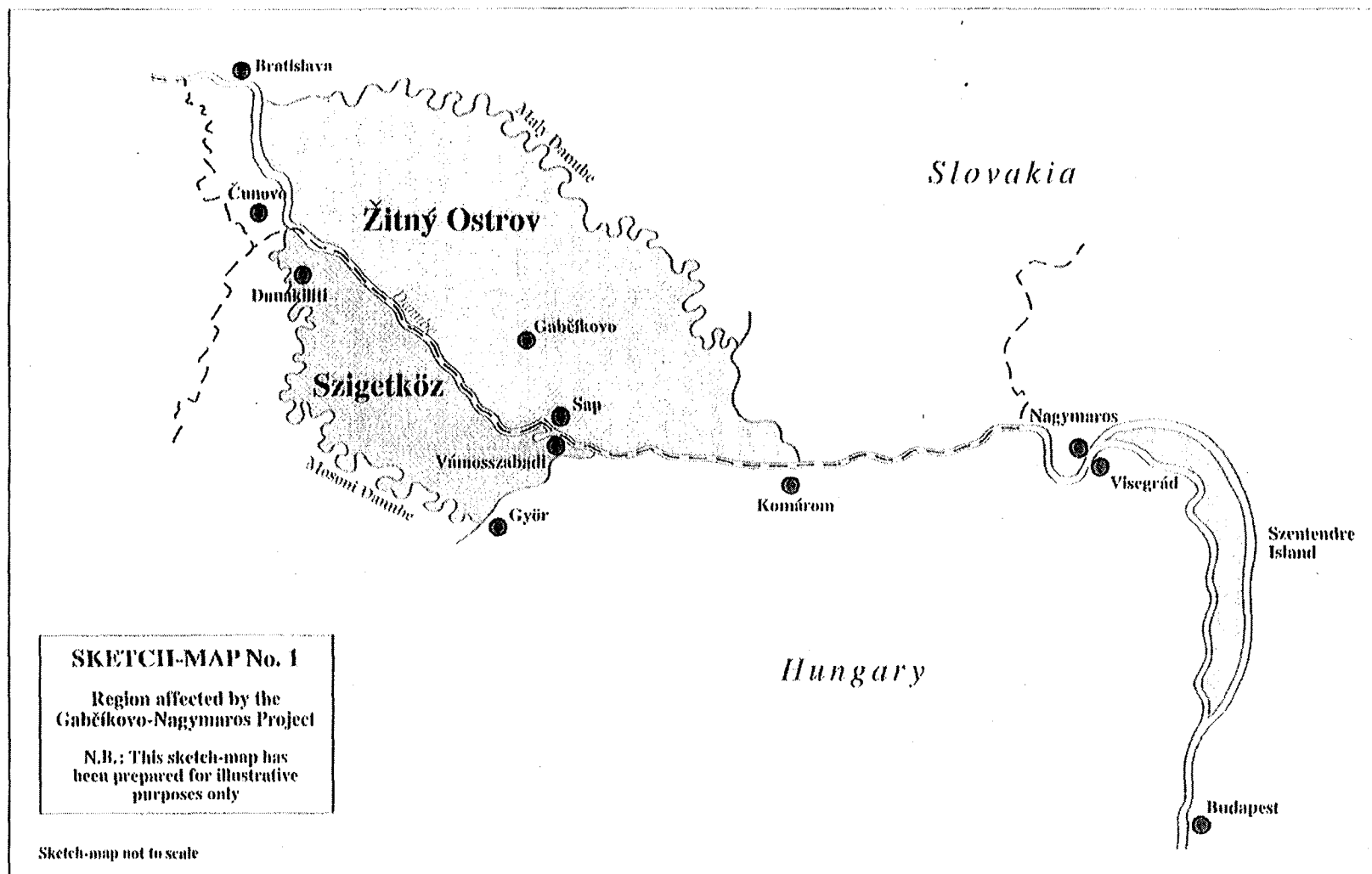
The 1977 Treaty describes the principal works to be constructed in pursuance of the Project. It provided for the building of two series of locks, one at Gabčíkovo (in Czechoslovak territory) and the other at Nagymaros (in Hungarian territory), to constitute "a single and indivisible operational system of works" (see sketch-map No. 2). The Treaty further provided that the technical specifications concerning the system would be included in the "Joint Contractual Plan" which was to be drawn up in accordance with the Agreement signed by the two Governments for this purpose on 6 May 1976. It also provided for the construction, financing and management of the works on a joint basis in which the Parties participated in equal measure.

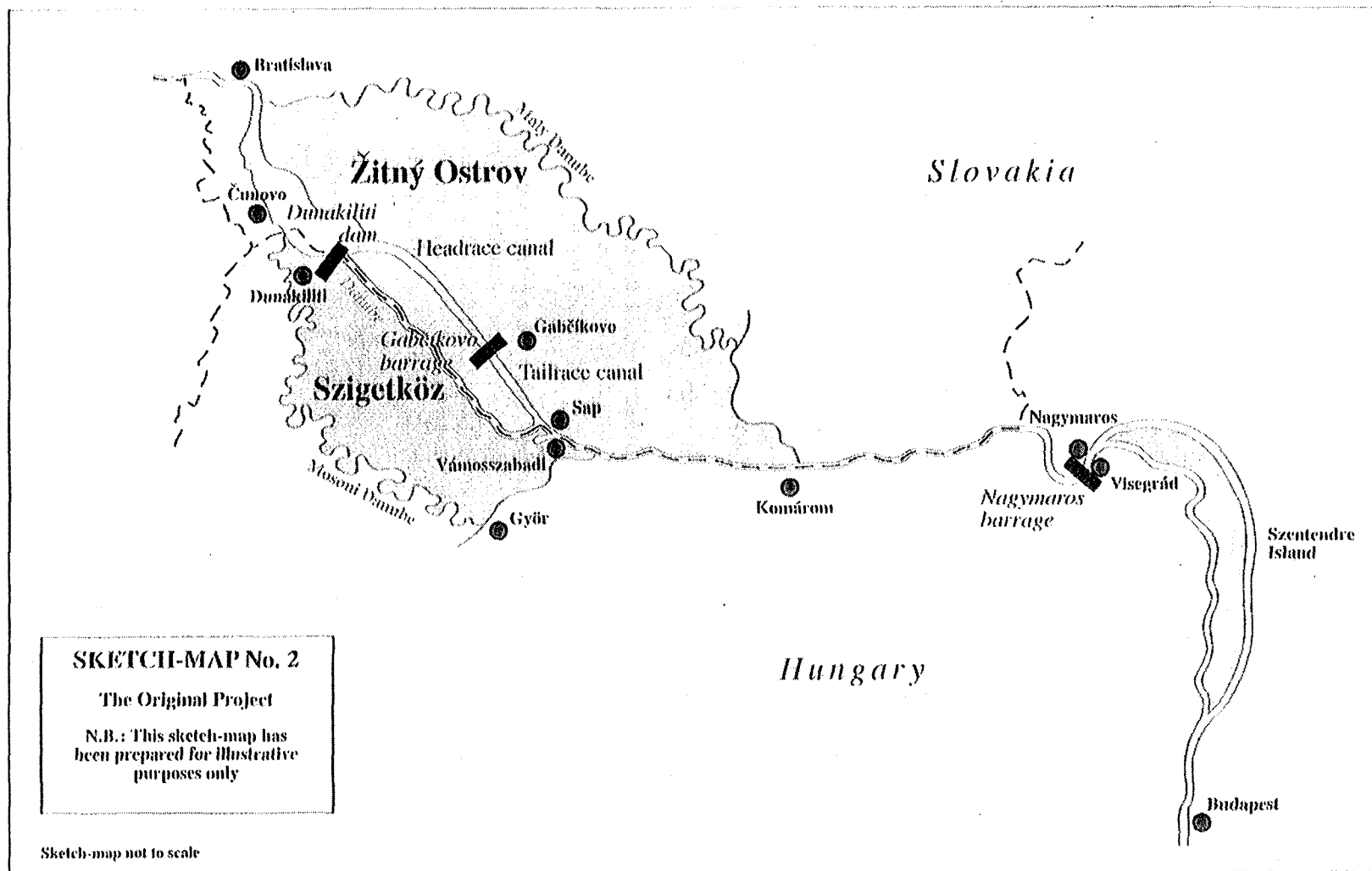
The Joint Contractual Plan, set forth, on a large number of points, both the objectives of the system and the characteristics of the works. It also contained "Preliminary Operating and Maintenance Rules", Article 23 of which specified that "The final operating rules [should] be approved within a year of the setting into operation of the system."

The Court observes that the Project was thus to have taken the form of an integrated joint project with the two contracting parties on an equal footing in respect of the financing, construction and operation of the works. Its single and indivisible nature was to have been realized through the Joint Contractual Plan which complemented the Treaty. In particular, Hungary would have had control of the sluices at Dunakiliti and the works at Nagymaros, whereas Czechoslovakia would have had control of the works at Gabčíkovo.

*

The schedule of work had for its part been fixed in an Agreement on mutual assistance signed by the two parties on 16 September 1977, at the same time as the Treaty itself. The Agreement made some adjustments to the allocation of the works between the parties as laid down by the Treaty. Work on the Project started in 1978. On Hungary's initiative, the two parties first agreed, by two Protocols signed on 10 October 1983 to slow the work down and to postpone putting into operation the power plants, and then, by a Protocol signed on 6 February 1989 to accelerate the Project.





As a result of intense criticism which the Project had generated in Hungary, the Hungarian Government decided on 13 May 1989 to suspend the works at Nagymaros pending the completion of various studies which the competent authorities were to finish before 31 July 1989. On 21 July 1989, the Hungarian Government extended the suspension of the works at Nagymaros until 31 October 1989, and, in addition, suspended the works at Dunakiliti until the same date. Lastly, on 27 October 1989, Hungary decided to abandon the works at Nagymaros and to maintain the status quo at Dunakiliti.

During this period, negotiations took place between the parties. Czechoslovakia also started investigating alternative solutions. One of them, an alternative solution subsequently known as "Variant C", entailed a unilateral diversion of the Danube by Czechoslovakia on its territory some 10 kilometres upstream of Dunakiliti (see sketch-map No. 3). In its final stage, Variant C included the construction at Cunovo of an overflow dam and a levee linking that dam to the south bank of the bypass canal. Provision was made for ancillary works.

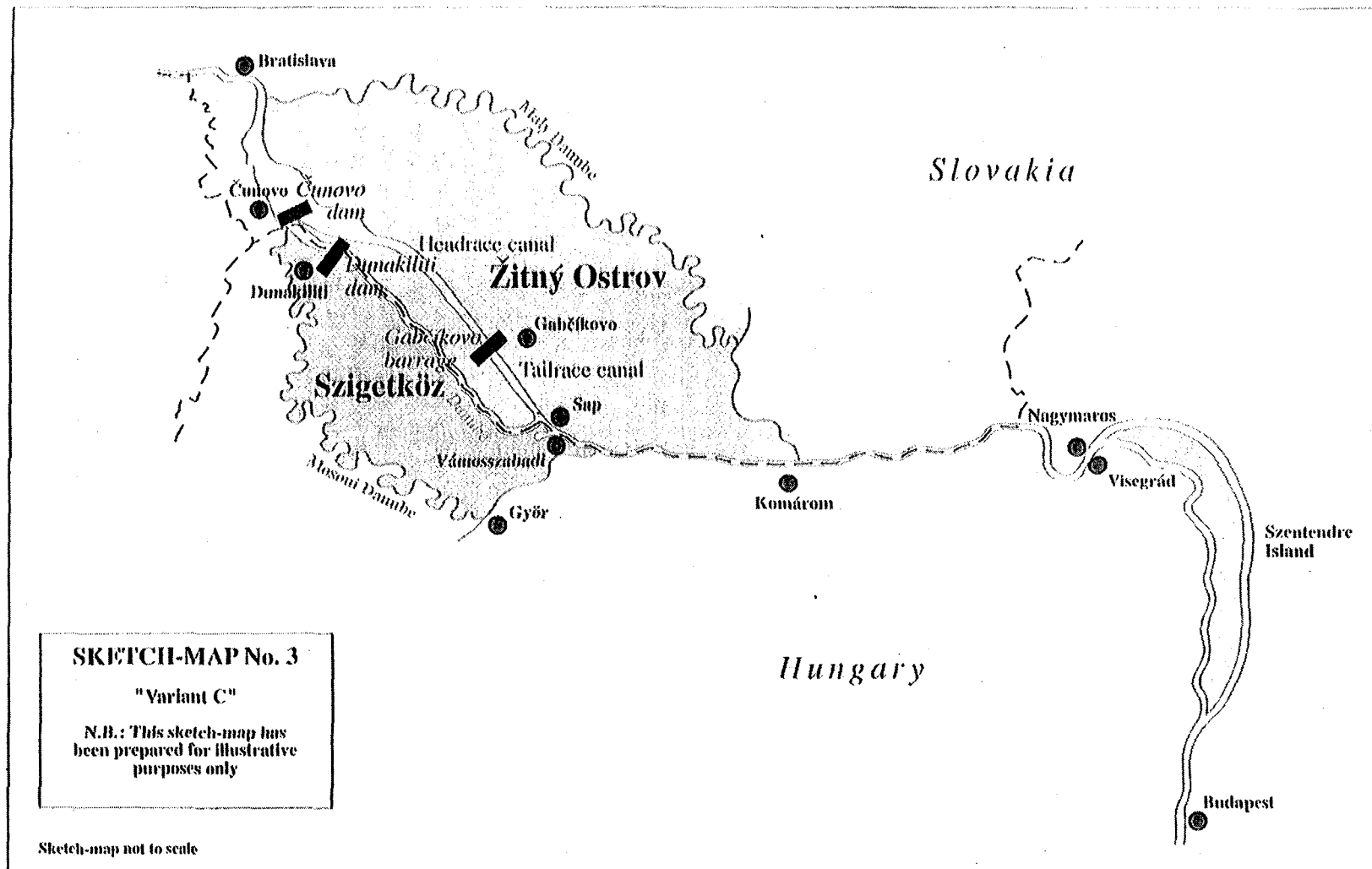
On 23 July 1991, the Slovak Government decided "to begin, in September 1991, construction to put the Gabčíkovo Project into operation by the provisional solution". Work on Variant C began in November 1991. Discussions continued between the two parties but to no avail, and, on 19 May 1992, the Hungarian Government transmitted to the Czechoslovak Government a Note Verbale terminating the 1977 Treaty with effect from 25 May 1992. On 15 October 1992, Czechoslovakia began work to enable the Danube to be closed and, starting on 23 October, proceeded to the damming of the river.

The Court finally takes note of the fact that on 1 January 1993 Slovakia became an independent State; that in the Special Agreement thereafter concluded between Hungary and Slovakia the Parties agreed to establish and implement a temporary water management régime for the Danube; and that finally they concluded an Agreement in respect of it on 19 April 1995, which would come to an end 14 days after the Judgment of the Court. The Court also observes that not only the 1977 Treaty, but also the "related instruments" are covered in the preamble to the Special Agreement and that the Parties, when concentrating their reasoning on the 1977 Treaty, appear to have extended their arguments to the "related instruments".

Suspension and abandonment by Hungary, in 1989, of works on the Project
(paras. 27-59)

In terms of Article 2, paragraph 1 (a), of the Special Agreement, the Court is requested to decide first

"whether the Republic of Hungary was entitled to suspend and subsequently abandon, in 1989, the works on the Nagymaros Project and



on the part of the Gabčíkovo Project for which the Treaty attributed responsibility to the Republic of Hungary”.

The Court observes that it has no need to dwell upon the question of the applicability or non-applicability in the present case of the Vienna Convention of 1969 on the Law of Treaties, as argued by the Parties. It needs only to be mindful of the fact that it has several times had occasion to hold that some of the rules laid down in that Convention might be considered as a codification of existing customary law. The Court takes the view that in many respects this applies to the provisions of the Vienna Convention concerning the termination and the suspension of the operation of treaties, set forth in Articles 60 to 62. Neither has the Court lost sight of the fact that the Vienna Convention is in any event applicable to the Protocol of 6 February 1989 whereby Hungary and Czechoslovakia agreed to accelerate completion of the works relating to the Gabčíkovo-Nagymaros Project.

Nor does the Court need to dwell upon the question of the relationship between the law of treaties and the law of State responsibility, to which the Parties devoted lengthy arguments, as those two branches of international law obviously have a scope that is distinct. A determination of whether a convention is or is not in force, and whether it has or has not been properly suspended or denounced, is to be made pursuant to the law of treaties. On the other hand, an evaluation of the extent to which the suspension or denunciation of a convention, seen as incompatible with the law of treaties, involves the responsibility of the State which proceeded to it, is to be made under the law of State responsibility.

The Court cannot accept Hungary's argument to the effect that, in 1989, in suspending and subsequently abandoning the works for which it was still responsible at Nagymaros and at Dunakiliti, it did not suspend the application of the 1977 Treaty itself or then reject that Treaty. The conduct of Hungary at that time can only be interpreted as an expression of its unwillingness to comply with at least some of the provisions of the Treaty and the Protocol of 6 February 1989, as specified in the Joint Contractual Plan. The effect of Hungary's conduct was to render impossible the accomplishment of the system of works that the Treaty expressly described as “single and indivisible”.

The Court then considers the question of whether there was, in 1989, a state of necessity which would have permitted Hungary, without incurring international responsibility, to suspend and abandon works that it was committed to perform in accordance with the 1977 Treaty and related instruments.

The Court observes, first of all, that the state of necessity is a ground recognized by customary international law for precluding the wrongfulness of an act not in conformity with an international obligation. It considers moreover that such ground for precluding wrongfulness can only be accepted on an exceptional basis. The following basic conditions set forth in Article 33 of the Draft Article on the

International Responsibility of States by the International Law Commission are relevant in the present case: it must have been occasioned by an “essential interest” of the State which is the author of the act conflicting with one of its international obligations; that interest must have been threatened by a “grave and imminent peril”; the act being challenged must have been the “only means” of safeguarding that interest; that act must not have “seriously impair[ed] an essential interest” of the State towards which the obligation existed; and the State which is the author of that act must not have “contributed to the occurrence of the state of necessity”. Those conditions reflect customary international law.

The Court has no difficulty in acknowledging that the concerns expressed by Hungary for its natural environment in the region affected by the Gabčíkovo-Nagymaros Project related to an “essential interest” of that State.

It is of the view, however, that, with respect to both Nagymaros and Gabčíkovo, the perils invoked by Hungary, without prejudging their possible gravity, were not sufficiently established in 1989, nor were they “imminent”; and that Hungary had available to it at that time means of responding to these perceived perils other than the suspension and abandonment of works with which it had been entrusted. What is more, negotiations were under way which might have led to a review of the Project and the extension of some of its time-limits, without there being need to abandon it.

The Court further notes that Hungary when it decided to conclude the 1977 Treaty, was presumably aware of the situation as then known; and that the need to ensure the protection of the environment had not escaped the parties. Neither can it fail to note the positions taken by Hungary after the entry into force of the 1977 Treaty. Slowly, speeded up. The Court infers that, in the present case, even if it had been established that there was, in 1989, a state of necessity linked to the performance of the 1977 Treaty, Hungary would not have been permitted to rely upon that state of necessity in order to justify its failure to comply with its treaty obligations, as it had helped, by act or omission to bring it about.

In the light of the conclusions reached above, the Court finds that Hungary was not entitled to suspend and subsequently abandon, in 1989, the works on the Nagymaros Project and on the part of the Gabčíkovo Project for which the 1977 Treaty and related instruments attributed responsibility to it.

Czechoslovakia’s proceeding, in November 1991, to “Variant C” and putting into operation, from October 1992, this Variant (paras. 60-88)

By the terms of Article 2, paragraph 1 (b), of the Special Agreement, the Court is asked in the second place to decide

“(b) whether the Czech and Slovak Federal Republic was entitled to proceed, in November 1991, to the ‘provisional solution’ and to put into operation from October 1992 this system”.

Czechoslovakia had maintained that proceeding to Variant C and putting it into operation did not constitute internationally wrongful acts; Slovakia adopted this argument. During the proceedings before the Court, Slovakia contended that Hungary’s decision to suspend and subsequently abandon the construction works at Dunakiliti had made it impossible for Czechoslovakia to carry out the works as initially contemplated by the 1977 Treaty and that the latter was therefore entitled to proceed with a solution which was as close to the original Project as possible. Slovakia invoked what it described as a “principle of approximate application” to justify the construction and operation of Variant C. It explained that this was the only possibility remaining to it “of fulfilling not only the purposes of the 1977 Treaty, but the continuing obligation to implement it in good faith”.

The Court observes that it is not necessary to determine whether there is a principle of international law or a general principle of law of “approximate application” because, even if such a principle existed, it could by definition only be employed within the limits of the treaty in question. In the view of the Court, Variant C does not meet that cardinal condition with regard to the 1977 Treaty.

As the Court has already observed, the basic characteristic of the 1977 Treaty is, according to Article 1, to provide for the construction of the Gabčíkovo-Nagymaros System of Locks as a joint investment constituting a single and indivisible operational system of works. This element is equally reflected in Articles 8 and 10 of the Treaty providing for joint ownership of the most important works of the Gabčíkovo-Nagymaros project and for the operation of this joint property as a co-ordinated single unit. By definition all this could not be carried out by unilateral action. In spite of having a certain external physical similarity with the original Project, Variant C thus differed sharply from it in its legal characteristics. The Court accordingly concludes that Czechoslovakia, in putting Variant C into operation, was not applying the 1977 Treaty but, on the contrary, violated certain of its express provisions, and, in so doing, committed an internationally wrongful act.

The Court notes that between November 1991 and October 1992, Czechoslovakia confined itself to the execution, on its own territory, of the works which were necessary for the implementation of Variant C, but which could have been abandoned if an agreement had been reached between the parties and did not therefore predetermine the final decision to be taken. For as long as the Danube had not been unilaterally dammed, Variant C had not in fact been applied. Such a situation is not unusual in international law or, for that matter, in domestic law. A wrongful act or offence is frequently preceded by preparatory actions which are not to be confused with the act or offence itself. It is as well to distinguish between the actual commission of a

wrongful act (whether instantaneous or continuous) and the conduct prior to that act which is of a preparatory character and which “does not qualify as a wrongful act”.

Slovakia also maintained that it was acting under a duty to mitigate damages when it carried out Variant C. It stated that “It is a general principle of international law that a party injured by the non-performance of another contract party must seek to mitigate the damage he has sustained.” But the Court observes that, while this principle might thus provide a basis for the calculation of damages, it could not, on the other hand, justify an otherwise wrongful act. The Court further considers that the diversion of the Danube carried out by Czechoslovakia was not a lawful countermeasure because it was not proportionate.

In the light of the conclusions reached above, the Court finds that Czechoslovakia was entitled to proceed, in November 1991, to Variant C in so far as it then confined itself to undertaking works which did not predetermine the final decision to be taken by it. On the other hand, Czechoslovakia was not entitled to put that Variant into operation from October 1992.

Notification by Hungary, on 19 May 1992, of the termination of the 1977 Treaty and related instruments (paras. 89-115)

By the terms of Article 2, paragraph 1 (c), of the Special Agreement, the Court is asked, thirdly, to determine

“what are the legal effects of the notification, on 19 May 1992, of the termination of the Treaty by the Republic of Hungary”.

During the proceedings, Hungary presented five arguments in support of the lawfulness, and thus the effectiveness, of its notification of termination. These were the existence of a state of necessity; the impossibility of performance of the Treaty; the occurrence of a fundamental change of circumstances; the material breach of the Treaty by Czechoslovakia; and, finally, the development of new norms of international environmental law. Slovakia contested each of these grounds.

State of necessity

The Court observes that, even if a state of necessity is found to exist, it is not a ground for the termination of a treaty. It may only be invoked to exonerate from its responsibility a State which has failed to implement a treaty.

Impossibility of performance

The Court finds that it is not necessary to determine whether the term “object” in Article 61 of the Vienna Convention of 1969 on the Law of Treaties (which speaks of “permanent disappearance or destruction of an object indispensable for the execution

of the treaty” as a ground for terminating or withdrawing from it) can also be understood to embrace a legal régime as in any event, even if that were the case, it would have to conclude that in this instance that régime had not definitively ceased to exist. The 1977 Treaty -- and in particular its Articles 15, 19 and 20 -- actually made available to the parties the necessary means to proceed at any time, by negotiation, to the required readjustments between economic imperatives and ecological imperatives.

Fundamental change of circumstances

In the Court’s view, the prevalent political conditions were not so closely linked to the object and purpose of the Treaty that they constituted an essential basis of the consent of the parties and, in changing, radically altered the extent of the obligations still to be performed. The same holds good for the economic system in force at the time of the conclusion of the 1977 Treaty. Nor does the Court consider that new developments in the state of environmental knowledge and of environmental law can be said to have been completely unforeseen. What is more, the formulation of Articles 15, 19 and 20 is designed to accommodate change. The changed circumstances advanced by Hungary are thus, in the Court’s view, not of such a nature, either individually or collectively, that their effect would radically transform the extent of the obligations still to be performed in order to accomplish the Project.

Material breach of the Treaty

Hungary’s main argument for invoking a material breach of the Treaty was the construction and putting into operation of Variant C. The Court pointed out that it had already found that Czechoslovakia violated the Treaty only when it diverted the waters of the Danube into the bypass canal in October 1992. In constructing the works which would lead to the putting into operation of Variant C, Czechoslovakia did not act unlawfully. In the Court’s view, therefore, the notification of termination by Hungary on 19 May 1992 was premature. No breach of the Treaty by Czechoslovakia had yet taken place and consequently Hungary was not entitled to invoke any such breach of the Treaty as a ground for terminating it when it did.

Development of new norms of international environmental law

The Court notes that neither of the Parties contended that new peremptory norms of environmental law had emerged since the conclusion of the 1977 Treaty; and the Court will consequently not be required to examine the scope of Article 64 of the Vienna Convention on the Law of Treaties (which treats of the voidance and termination of a treaty because of the emergence of a new peremptory norm of general international law (*jus cogens*)). On the other hand, the Court wishes to point out that newly developed norms of environmental law are relevant for the implementation of the Treaty and that the parties could, by agreement, incorporate them through the application of Articles 15, 19 and 20 of the Treaty. These articles do not contain specific obligations of performance but require the parties, in carrying out their

obligations to ensure that the quality of water in the Danube is not impaired and that nature is protected, to take new environmental norms into consideration when agreeing upon the means to be specified in the Joint Contractual Plan. By inserting these evolving provisions in the Treaty, the parties recognized the potential necessity to adapt the Project. Consequently, the Treaty is not static, and is open to adapt to emerging norms of international law. By means of Articles 15 and 19, new environmental norms can be incorporated in the Joint Contractual Plan. The awareness of the vulnerability of the environment and the recognition that environmental risks have to be assessed on a continuous basis have become much stronger in the years since the Treaty's conclusion. These new concerns have enhanced the relevance of Articles 15, 19 and 20. The Court recognizes that both Parties agree on the need to take environmental concerns seriously and to take the required precautionary measures, but they fundamentally disagree on the consequences this has for the joint Project. In such a case, third-party involvement may be helpful and instrumental in finding a solution, provided each of the Parties is flexible in its position.

Finally, the Court is of the view that although it has found that both Hungary and Czechoslovakia failed to comply with their obligations under the 1977 Treaty, this reciprocal wrongful conduct did not bring the Treaty to an end nor justify its termination.

In the light of the conclusions it has reached above, the Court finds that the notification of termination by Hungary of 19 May 1992 did not have the legal effect of terminating the 1977 Treaty and related instruments.

Dissolution of Czechoslovakia (paras. 117-124)

The Court then turns to the question of whether Slovakia became a party to the 1977 Treaty as successor to Czechoslovakia. As an alternative argument, Hungary contended that, even if the Treaty survived the notification of termination, in any event it ceased to be in force as a treaty on 31 December 1992, as a result of the "disappearance of one of the parties". On that date Czechoslovakia ceased to exist as a legal entity, and on 1 January 1993 the Czech Republic and the Slovak Republic came into existence.

The Court does not find it necessary for the purposes of the present case to enter into a discussion of whether or not Article 34 of the 1978 Vienna Convention on Succession of States in respect of treaties (in which a rule of automatic succession to all treaties is provided for) reflects the state of customary international law. More relevant to its present analysis is the particular nature and character of the 1977 Treaty. An examination of this Treaty confirms that, aside from its undoubted nature as a joint investment, its major elements were the proposed construction and joint operation of a large, integrated and indivisible complex of structures and installations on specific parts of the respective territories of Hungary and Czechoslovakia along the Danube. The Treaty also established the navigational régime for an important sector of an

international waterway, in particular the relocation of the main international shipping lane to the bypass canal. In so doing, it inescapably created a situation in which the interests of other users of the Danube were affected. Furthermore, the interests of third States were expressly acknowledged in Article 18, whereby the parties undertook to ensure “uninterrupted and safe navigation on the international fairway” in accordance with their obligations under the Convention of 18 August 1948 concerning the Régime of Navigation on the Danube.

The Court then refers to Article 12 of the 1978 Vienna Convention on Succession of States in respect of Treaties, which reflects the principle that treaties of a territorial character have been regarded both in traditional doctrine and in modern opinion as unaffected by a succession of States. The Court considers that Article 12 reflects a rule of customary international law; and notes that neither of the Parties disputed this. It concludes that the content of the 1977 Treaty indicates that it must be regarded as establishing a territorial régime within the meaning of Article 12 of the 1978 Vienna Convention. It created rights and obligations “attaching to” the parts of the Danube to which it relates; thus the Treaty itself could not be affected by a succession of States. The Court therefore concludes that the 1977 Treaty became binding upon Slovakia on 1 January 1993.

Legal consequences of the Judgment (paras. 125-154)

The Court observes that the part of its Judgment which answers the questions in Article 2, paragraph 1, of the Special Agreement has a declaratory character. It deals with the past conduct of the Parties and determines the lawfulness or unlawfulness of that conduct between 1989 and 1992 as well as its effects on the existence of the Treaty. Now the Court has, on the basis of the foregoing findings, to determine what the future conduct of the Parties should be. This part of the Judgment is prescriptive rather than declaratory because it determines what the rights and obligations of the Parties are. The Parties will have to seek agreement on the modalities of the execution of the Judgment in the light of this determination, as they agreed to do in Article 5 of the Special Agreement.

In this regard it is of cardinal importance that the Court has found that the 1977 Treaty is still in force and consequently governs the relationship between the Parties. That relationship is also determined by the rules of other relevant conventions to which the two States are party, by the rules of general international law and, in this particular case, by the rules of State responsibility; but it is governed, above all, by the applicable rules of the 1977 Treaty as a *lex specialis*. The Court observes that it cannot, however, disregard the fact that the Treaty has not been fully implemented by either party for years, and indeed that their acts of commission and omission have contributed to creating the factual situation that now exists. Nor can it overlook that factual situation - or the practical possibilities and impossibilities to which it gives rise -- when deciding on the legal requirements for the future conduct of the Parties. What is essential, therefore, is that the factual situation as it has developed since 1989 shall be placed

within the context of the preserved and developing treaty relationship, in order to achieve its object and purpose in so far as that is feasible. For it is only then that the irregular state of affairs which exists as the result of the failure of both Parties to comply with their treaty obligations can be remedied.

The Court points out that the 1977 Treaty is not only a joint investment project for the production of energy, but it was designed to serve other objectives as well: the improvement of the navigability of the Danube, flood control and regulation of ice-discharge, and the protection of the natural environment. In order to achieve these objectives the parties accepted obligations of conduct, obligations of performance, and obligations of result. The Court is of the opinion that the Parties are under a legal obligation, during the negotiations to be held by virtue of Article 5 of the Special Agreement, to consider, within the context of the 1977 Treaty, in what way the multiple objectives of the Treaty can best be served, keeping in mind that all of them should be fulfilled.

It is clear that the Project's impact upon, and its implications for, the environment are of necessity a key issue. In order to evaluate the environmental risks, current standards must be taken into consideration. This is not only allowed by the wording of Articles 15 and 19, but even prescribed, to the extent that these articles impose a continuing -- and thus necessarily evolving -- obligation on the parties to maintain the quality of the water of the Danube and to protect nature. The Court is mindful that, in the field of environmental protection, vigilance and prevention are required on account of the often irreversible character of damage to the environment and of the limitations inherent in the very mechanism of reparation of this type of damage. New norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. For the purposes of the present case, this means that the Parties together should look afresh at the effects on the environment of the operation of the Gabčíkovo power plant. In particular they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms on both sides of the river.

What is required in the present case by the rule pacta sunt servanda, as reflected in Article 26 of the Vienna Convention of 1969 on the Law of Treaties, is that the Parties find an agreed solution within the co-operative context of the Treaty. Article 26 combines two elements, which are of equal importance. It provides that "Every treaty in force is binding upon the parties to it and must be performed by them in good faith". This latter element, in the Court's view, implies that, in this case, it is the purpose of the Treaty, and the intentions of the parties in concluding it, which should prevail over its literal application. The principle of good faith obliges the Parties to apply it in a reasonable way and in such a manner that its purpose can be realized.

The 1977 Treaty not only contains a joint investment programme, it also establishes a régime. According to the Treaty, the main structures of the System of Locks are the joint property of the Parties; their operation will take the form of a co-ordinated single unit; and the benefits of the project shall be equally shared. Since the Court has found that the Treaty is still in force and that, under its terms, the joint régime is a basic element, it considers that, unless the Parties agree otherwise, such a régime should be restored. The Court is of the opinion that the works at Cunovo should become a jointly operated unit within the meaning of Article 10, paragraph 1, in view of their pivotal role in the operation of what remains of the Project and for the water-management régime. The dam at Cunovo has taken over the role which was originally destined for the works at Dunakiliti, and therefore should have a similar status. The Court also concludes that Variant C, which it considers operates in a manner incompatible with the Treaty, should be made to conform to it. It observes that re-establishment of the joint régime will also reflect in an optimal way the concept of common utilization of shared water resources for the achievement of the several objectives mentioned in the Treaty.

Having thus far indicated what in its view should be the effects of its finding that the 1977 Treaty is still in force, the Court turns to the legal consequences of the internationally wrongful acts committed by the Parties, as it had also been asked by both Parties to determine the consequences of the Judgment as they bear upon payment of damages.

The Court has not been asked at this stage to determine the quantum of damages due, but to indicate on what basis they should be paid. Both Parties claimed to have suffered considerable financial losses and both claim pecuniary compensation for them.

In the Judgment, the Court has concluded that both Parties committed internationally wrongful acts, and it has noted that those acts gave rise to the damage sustained by the Parties; consequently, Hungary and Slovakia are both under an obligation to pay compensation and are both entitled to obtain compensation. The Court observes, however, that given the fact that there have been intersecting wrongs by both Parties, the issue of compensation could satisfactorily be resolved in the framework of an overall settlement if each of the Parties were to renounce or cancel all financial claims and counter-claims. At the same time, the Court wishes to point out that the settlement of accounts for the construction of the works is different from the issue of compensation, and must be resolved in accordance with the 1977 Treaty and related instruments. If Hungary is to share in the operation and benefits of the Cunovo complex, it must pay a proportionate share of the building and running costs.

The operative paragraphs reads as follows:

“155. For these reasons,

THE COURT,

(1) Having regard to Article 2, paragraph 1, of the Special Agreement,

A. Finds, by fourteen votes to one, that Hungary was not entitled to suspend and subsequently abandon, in 1989, the works on the Nagymaros Project and on the part of the Gabčíkovo Project for which the Treaty of 16 September 1977 and related instruments attributed responsibility to it;

IN FAVOUR: President Schwebel; Vice-President Weeramantry; Judges Oda, Bedjaoui, Guillaume, Ranjeva, Shi, Fleischhauer, Koroma, Vereshchetin, Parra-Aranguren, Kooijmans, Rezek; Judge ad hoc Skubiszewski;

AGAINST: Judge Herczegh;

B. Finds, by nine votes to six, that Czechoslovakia was entitled to proceed in November 1991, to the “provisional solution” as described in the terms of the Special Agreement;

IN FAVOUR: Vice-President Weeramantry; Judges Oda, Guillaume, Shi, Koroma, Vereshchetin, Parra-Aranguren, Kooijmans; Judge ad hoc Skubiszewski;

AGAINST: President Schwebel; Judges Bedjaoui, Ranjeva, Herczegh, Fleischhauer, Rezek;

C. Finds, by ten votes to five, that Czechoslovakia was not entitled to put into operation, from October 1992, this “provisional solution”;

IN FAVOUR: President Schwebel; Vice-President Weeramantry; Judges Bedjaoui, Guillaume, Ranjeva, Herczegh, Shi, Fleischhauer, Kooijmans, Rezek;

AGAINST: Judges Oda, Koroma, Vereshchetin, Parra-Aranguren; Judge ad hoc Skubiszewski;

D. Finds, by eleven votes to four, that the notification, on 19 May 1992, of the termination of the Treaty of 16 September 1977 and related instruments by Hungary did not have the legal effect of terminating them;

IN FAVOUR: Vice-President Weeramantry; Judges Oda, Bedjaoui, Guillaume, Ranjeva, Shi, Koroma, Vereshchetin, Parra-Aranguren, Kooijmans; Judge ad hoc Skubiszewski;

AGAINST: President Schwebel; Judges Herczegh, Fleischhauer, Rezek;

(2) Having regard to Article 2, paragraph 2, and Article 5 of the Special Agreement,

A. Finds, by twelve votes to three, that Slovakia, as successor to Czechoslovakia, became a party to the Treaty of 16 September 1977 as from 1 January 1993;

IN FAVOUR: President Schwebel; Vice-President Weeramantry; Judges Oda, Bedjaoui, Guillaume, Ranjeva, Shi, Koroma, Vereshchetin, Parra-Aranguren, Kooijmans; Judge ad hoc Skubiszewski;

AGAINST: Judges Herczegh, Fleischhauer, Rezek;

B. Finds, by thirteen votes to two, that Hungary and Slovakia must negotiate in good faith in the light of the prevailing situation, and must take all necessary measures to ensure the achievement of the objectives of the Treaty of 16 September 1977, in accordance with such modalities as they may agree upon;

IN FAVOUR: President Schwebel; Vice-President Weeramantry; Judges Oda, Bedjaoui, Guillaume, Ranjeva, Shi, Koroma, Vereshchetin, Parra-Aranguren, Kooijmans, Rezek; Judge ad hoc Skubiszewski;

AGAINST: Judges Herczegh, Fleischhauer;

C. Finds, by thirteen votes to two, that, unless the Parties otherwise agree, a joint operational régime must be established in accordance with the Treaty of 16 September 1977;

IN FAVOUR: President Schwebel; Vice-President Weeramantry; Judges Oda, Bedjaoui, Guillaume, Ranjeva, Shi, Koroma, Vereshchetin, Parra-Aranguren, Kooijmans, Rezek; Judge ad hoc Skubiszewski;

AGAINST: Judges Herczegh, Fleischhauer;

D. Finds, by twelve votes to three, that, unless the Parties otherwise agree, Hungary shall compensate Slovakia for the damage sustained by Czechoslovakia and by Slovakia on account of the suspension and abandonment by Hungary of works for which it was responsible; and Slovakia shall compensate Hungary for the damage it has sustained on account of the putting into operation of the "provisional solution" by Czechoslovakia and its maintenance in service by Slovakia;

IN FAVOUR: President Schwebel; Vice-President Weeramantry; Judges Bedjaoui, Guillaume, Ranjeva, Herczegh, Shi, Fleischhauer, Parra-Aranguren, Kooijmans, Rezek; Judge ad hoc Skubiszewski;

AGAINST: Judges Oda, Koroma, Vereshchetin;

E. Finds, by thirteen votes to two, that the settlement of accounts for the construction and operation of the works must be effected in accordance with the relevant provisions of the Treaty of 16 September 1977 and related instruments, taking due account of such measures as will have been taken by the Parties in application of points 2 B and C of the present operative paragraph.

IN FAVOUR: President Schwebel; Vice-President Weeramantry; Judges Oda, Bedjaoui, Guillaume, Ranjeva, Shi, Koroma, Vereshchetin, Parra-Aranguren, Kooijmans, Rezek; Judge ad hoc Skubiszewski;

AGAINST: Judges Herczegh, Fleischhauer.”

*

President SCHWEBEL and Judge REZEK append declarations to the Judgment of the Court.

Vice-President WEERAMANTRY, Judges BEDJAOUÏ and KOROMA append separate opinions to the Judgment of the Court.

Judges ODA, RANJEVA, HERCZEGH, FLEISCHHAUER, VERESHCHETIN and PARRA-ARANGUREN, and Judge ad hoc SKUBISZEWSKI append dissenting opinions to the Judgment of the Court.

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The above summary of the Judgment has been prepared by the Registry for the use of the Press and in no way involves the responsibility of the Court. It cannot be quoted against the text of the Judgment, of which it does not constitute an interpretation.

CHAPTER 8

Sharing the Ganges Waters between India and Bangladesh: An Analysis of the 1996 Treaty

Salman M. A. Salman*

INTRODUCTION

On December 12, 1996, India and Bangladesh signed in New Delhi, India, a treaty known as the "Treaty Between the Government of the Republic of India and the Government of the People's Republic of Bangladesh on Sharing of the Ganga/Ganges Waters at Farakka."¹ The signing of this Treaty is a landmark in the recent history of the two neighbors, and a major breakthrough in the attempts to resolve the long standing dispute that persisted for more than two decades on the sharing of the waters of the Ganges river. The dispute emerged as a result of the construction by India of a barrage, known as the Farakka Barrage, to divert some of the waters of the Ganges river during the dry season to Calcutta, the capital of the Indian state of West Bengal, to flush the silt in the Hooghly river. Prior to concluding the Treaty, and during the period of more than twenty years since the Barrage was commissioned, four agreements were concluded between India and Bangladesh on sharing the waters of the Ganges during the dry season, and on attempts to reach an agreement on augmenting its flow during such season. However, each of those four agreements, as we shall see, was a short-lived one, and each was viewed by both parties as an interim arrangement during the search for the long term solution of augmenting the flow of the Ganges during the dry season which, unfortunately, has not yet materialized. The last of those interim agreements, the 1985 Memorandum of Understanding (MOU), expired on May 31, 1988, leaving behind a vacuum that lasted for more than eight years. This vacuum has now been filled by the signing of the Treaty on December 12, 1996.

This is the first time that an agreement between the two countries on the Ganges river has been called a "treaty." The previous agreements² were called either

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¹ For the full text of the Treaty, see 36 I.L.M. 523 (1997). This Treaty will be referred to throughout this Chapter as "the Treaty."

² The term "previous agreements", as used in this Chapter, refers to the 1977 Agreement, and each of the 1982 and 1985 Memorandum of Understanding (MOU), all between India and Bangladesh on the sharing of the waters of the Ganges river. In addition to those agreements, India and Bangladesh reached an agreement in 1975, also for sharing the waters of the Ganges. *See infra* notes 15-19 and accompanying text. However, for reasons discussed later, this agreement is not included in the term "previous agreements."

agreement or memorandum of understanding. Although the designation given to an international agreement, according to international law, is usually insignificant,³ the change in the designation from "agreement" or "MOU" to "treaty" should be read to imply a stronger commitment on the part of the signatories. Moreover, whereas the previous agreements were signed by ministers from each of the two countries, the Treaty was signed by the two Prime Ministers, at that time, themselves, Mr. H. D. Deve Gowda, Prime Minister of India, and Sheikh Hasina Wajed, Prime Minister of the People's Republic of Bangladesh, and it entered into force and effect upon signature.⁴ This has sent a clear signal of a strong political commitment to the Treaty. In addition, the Treaty is to remain in force for a period of thirty years, and "shall be renewable on the basis of mutual consent."⁵ On the other hand, each of the previous agreements, as we shall see, remained in force for a short period of time, for a total of about eleven years. Another distinguishing factor between the previous agreements and the Treaty is that the Treaty prescribes, as we shall see, an actual formula for sharing the waters of the Ganges between the two countries, in addition to including an indicative schedule giving the implication of the sharing arrangements under the formula, whereas the previous agreements included only a schedule for sharing the waters of the Ganges.

It should be added, however, that both the previous agreements and the Treaty deal only with the issue of sharing the waters of the Ganges during the dry, or lean, season that usually starts at the beginning of January, and ends at the end of May, of each year. The remaining part of the year, June through December, is the rainy season, or the monsoon, when water in the Ganges is abundant, causing in some years serious floods and destruction; and during this time of the year the issue is not the sharing of the waters of the Ganges, but rather, the flood control. Moreover, like the previous agreements, the Treaty also recognizes, both in the preamble and the main body, the necessity of augmenting the flow of the Ganges during the dry season as the long term solution to the problem of shortage of the waters of the Ganges during such season.

The signing of the Treaty was preceded by an official visit to Bangladesh by Mr. Jyoti Basu, the Chief Minister of the Indian State of West Bengal, about two weeks before the Treaty was concluded. During this visit he held extensive talks with government officials and ministers, including the Prime Minister, on the issue of sharing the waters of the Ganges. That visit paved the way for the conclusion of the

³ The Vienna Convention on the Law of Treaties which entered into force in 1980, 8 I.L.M. 679 (1969), 63 A.J.I.L. 875 (1969), defines in Article 2.1 (a) the term "treaty" as "an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation."

⁴ See Article XII of the Treaty which states that "[t]his Treaty shall enter into force upon signature", thus indicating that the Treaty does not require ratification by either of the two countries.

⁵ See Article XII of the Treaty.

Treaty⁶ because West Bengal, which borders Bangladesh to the east, is the key player in the dispute as the Barrage was built there to divert some of the waters of the Ganges to Calcutta, the capital of West Bengal. The role played by Mr. Basu during and after his visit to Bangladesh confirmed the relative strength of the states of India on the issue of water, even when the matter relates to an international treaty which is the responsibility solely of the central government.

The purpose of this Chapter is to review and analyze the main features of the Treaty and compare them with those of the previous agreements concluded between India and Bangladesh on the Ganges river. The Chapter argues that, although the Treaty provides a fair and equitable framework⁷ for sharing the waters of the Ganges river between India and Bangladesh during the dry season, implementation of the sharing arrangements under the Treaty will depend to a large extent on the availability of sufficient water in the Ganges during such season to meet the share of each country under the Treaty, which, judging by the flow of the Ganges during the dry season in 1997, may not always be the case. Hence, the Chapter argues, an agreement on how to augment the flow of the Ganges during the dry season seems to be the most viable solution to the problem of the dry season flow. Nonetheless, the Treaty has created a conducive atmosphere for reaching an agreement on the issue of augmentation of the

⁶ The change of governments in both Delhi and Dhaka during 1996 has facilitated the conclusion of the Treaty. In Delhi, the United Front Government which represents 13 regional parties, and which announced that better relations with India's neighbors was one of its foreign relations priorities, took over power. In Dhaka, the Awami League, which had close ties to India in the past, was returned to power for the first time since 1975. Both Prime Ministers met in Rome during the World Food Summit in November 1996. That meeting was preceded by an official visit by the Foreign Minister of each country to the capital of the other country.

⁷ Equitable utilization has been defined as "the division of the waters of an international river among the coriparian states in accordance with the legitimate economic and social needs of each, in such a manner as to achieve the maximum benefits for all with a minimum of detriment to each." See Jerome Lipper, *Equitable Utilization*, in *THE LAW OF INTERNATIONAL DRAINAGE BASINS*, 63 (A. H. Garretson, R. D. Hayton & C. J. Olmstead eds., 1967). The United Nations "Convention on the Law of the Non-Navigational Uses of International Watercourses", opened to signature on May 21, 1997, U.N. Doc. A-51-869 (Apr. 11, 1997), 36 I.L.M. 700 (1997), states in Article 6(1) that "[u]tilization of an international watercourse in an equitable and reasonable manner within the meaning of article 5 requires taking into account all relevant factors and circumstances, including:

- (a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
- (b) The social and economic needs of the watercourse states concerned;
- (c) The population dependent on the watercourses in the watercourses state;
- (d) The effects of the use or uses of the watercourses in one watercourse State on other watercourses States;
- (e) Existing and potential uses of the watercourses;
- (f) Conservation, protection, development and economy of the water resources of the watercourse and the cost of measures taken to that effect;
- (g) The availability of alternatives, of comparable value, to a particular planned or existing use."

It should be added that while Bangladesh voted in favor of the Convention, India abstained. The Convention was adopted by a vote of 103 in favor, 3 against (Burundi, China and Turkey), and 27 abstentions.

dry season flow of the Ganges, and for cooperation with regards to the other joint rivers between the two countries.

Before embarking on the purpose of the Chapter, a short description of the Ganges basin and the origin of the dispute between the two countries is needed to facilitate understanding the context of the previous agreements and the Treaty.

The Ganges Basin

The Ganges basin,⁸ known in India as the Ganga, and in Bangladesh as the Padma, is an international river to which India, Bangladesh, Nepal and to a small extent China are the riparian states. Within India the river is an inter-state river shared by the states of Uttar Pradesh, Himachal Pradesh, Rajasthan, Haryana, Madhya Pradesh, Bihar, West Bengal, and the National Capital Territory of Delhi.⁹ It is the largest river basin in India. It originates in the state of Uttar Pradesh where it is known as the Bhagirathi, and is joined by a number of tributaries originating inside India such as the Yamuna, the Tons and the Gomti. It is also joined by other tributaries originating in Nepal such as the Kamala and the Bagmati, and in the Nepal-China border, in Tibet, such as the Kosi and Gandak.

The delta of the Ganges starts at Farakka, in the state of West Bengal. Downstream from Farakka the river splits into two: the Padma which flows eastward into Bangladesh, and the Bhagirathi which continues to flow southward into West Bengal. After the Bhagirathi is joined by the Jalangi river, it is known as the Hooghly river. Calcutta city, the capital of West Bengal and one of India's most important ports, is situated on the Hooghly river. South of Calcutta, the Hooghly is joined by the Damodar river and flows into the Bay of Bengal.¹⁰

In Bangladesh, the Ganges, which is known as the Padma, is joined by both the Brahmaputra river, which is known in Bangladesh as the Jamuna river, and also by the

⁸ Whereas both the 1977 Agreement and the 1982 MOU referred to the river as the Ganga, which is the name of the river within India, the 1985 MOU and the Treaty refer to the Ganges as the "Ganga/Ganges". See *infra* notes 14-19 and accompanying text. The use of the name "the Ganges" throughout this Chapter is in line with the name given to the river internationally, and does not imply a preference for, or a bias in favor of, that name.

⁹ The implications of the Ganges being an inter-state river in India are also significant because the competing demands of such states on inter-states rivers, if not resolved through an agreement, would have to be adjudicated by a special inter-states water dispute tribunal. On May 12, 1994, the States of Haryana, Uttar Pradesh, Rajasthan, Himachal Pradesh and the National Capital Territory of Delhi signed an agreement on the sharing of the waters of the Yamuna, one of the tributaries of the Ganges. Although tribunal awards have been issued thus far on five major rivers (the Krishna, Narmada, Ravi and Beas, Godavari, and the interim award on the Cauvery), none of the awards relates to the Ganges or any of its tributaries.

¹⁰ For a detailed description of the Ganges basin, see B.R. CHAUHAN, SETTLEMENT OF INTERNATIONAL AND INTER-STATE WATER DISPUTES IN INDIA (1992). See also note 13 *infra*.

Meghna river.¹¹ The combination of the three rivers, which continues to be called the Padma, splits downstream into a number of channels, all flowing into the Bay of Bengal.

The total length of the Ganges is about 1,600 miles (about 2,500 kilometers.) About 80% of the Ganges basin is in India, about 18% in Bangladesh and about 2% is in Nepal and China. The Ganges basin is one of the most densely populated basins in the world, with a total population of more than 300 million, of whom about 10 million are in Nepal, about 40 million in Bangladesh, and the rest, about 250 million, are in India. This heavy population density has, inter alia, caused the Ganges basin to be one of the most polluted rivers in the world.

No treaty on the Ganges amongst the four riparian states was ever concluded, nor has any joint river basin management forum for all riparian states been set. It should be noted, however, that both the 1977 Agreement and the Treaty include provisions regarding the other riparian states. In the preambles to both the 1977 Agreement and the Treaty it is stated that the desire for finding a fair solution to the question before India and Bangladesh should not affect "the rights and entitlements of either country other than those covered by this Agreement" or "this Treaty." Moreover, the Side Letter to the 1977 Agreement, included, as we shall see, a reference to Nepal.

The Farakka Barrage

The dispute over the sharing of the waters of the Ganges between India and Bangladesh erupted as a result of the decision of India to construct a barrage in West Bengal, known as the Farakka Barrage, about ten miles from the borders with Bangladesh. The Farakka Barrage, India contended, is needed to divert enough waters from the Ganges to the Hooghly river to maintain the flow of the Hooghly river and make it navigable, and Calcutta port accessible, by flushing down the silt that gradually deposits in the Calcutta port, to overcome the problem of salinity, and to provide water to Calcutta for irrigation, domestic and municipal purposes.

The decision to construct the Farakka Barrage was taken in 1951. Actual work on the Barrage, which is about 2,240 meters long, started in 1961, and was completed in 1971. The feeder canal from the Barrage, which is about 25 miles long, was completed in 1975, and the Barrage came into operation on April 21, 1975. The purpose of the Barrage was to ensure that the Hooghly river would receive, however low the flow of the Ganges may be, up to 40,000 cubic feet per second (cusecs) of

¹¹ Both the Brahmaputra river and the Meghna river are international rivers. The riparian states for the Brahmaputra are China, Bhutan, India and Bangladesh. The Meghna river is shared only by India and Bangladesh. The Chapter uses the name "Brahmaputra" as it is the name used internationally for that river.

water diverted from the Ganges. With the assumption that the availability of water in the Ganges at Farakka in the worst lean season would be around 50,000 to 55,000 cusecs, the remaining 10,000 to 15,000 cusecs would be released to Bangladesh.

During the fifties and sixties, Pakistan strongly opposed the construction of the Barrage, and tried different diplomatic channels to stop its construction.¹² In 1971 the People's Republic of Bangladesh emerged as an independent nation. Despite the initial close ties between Bangladesh and India, the Farakka Barrage remained a thorny issue, and Bangladesh opposed it vehemently. In opposing the Barrage, Bangladesh insisted that the lean flow of the Ganges of 50,000 to 55,000 cusecs constituted its normal and basic requirements for irrigation, domestic, municipal and other uses, and any decrease in the flow of the Ganges would negatively affect irrigation, water supply, fishery production, groundwater tables, and river navigation which is the mostly used mode of transportation in Bangladesh, and would worsen the problem of salinity.¹³ Bangladesh raised the issue of the Farakka Barrage at a number of regional and international summits, including the 31st session of the U. N. General Assembly in 1976, complaining of the negative effects of the Barrage. Since the emergence of Bangladesh as an independent nation, the issue of the Farakka Barrage has been one of the most dominant and important elements in the Indo-Bangladesh relationship.

However, despite India's determination to use the Farakka Barrage to supply the Hooghly river with 40,000 cusecs, on the one hand, and the opposition of Bangladesh to the Barrage and its contention of the negative impact on Bangladesh, on the other hand, a number of agreements were reached between India and Bangladesh prior to the 1996 Treaty, on sharing the waters of the Ganges during the dry season. The first agreement was arrived at on April 18, 1975, only three days prior to the commissioning of the Farakka Barrage on April 21, 1975, but expired forty one days later, on May 31, 1975. It was followed by a vacuum of two years during which there was no agreement between India and Bangladesh on the sharing of the waters of the Ganges. The second agreement, called "Agreement Between the Government of the Republic of India and the Government of the People's Republic of Bangladesh on Sharing of the Ganga Waters at Farakka and on Augmenting its Flows"¹⁴ was signed on

¹² It should be noted that at the time India and Pakistan were deadlocked over the Ganges river, negotiations over the Indus Basin, which were mediated by the World Bank, were proceeding well. The Indus Waters Treaty was signed on September 19, 1960. See Treaty Between the Government of India and the Government of Pakistan Concerning the Most Complete and Satisfactory Utilisation of the Water of the Indus System of Rivers, Sept. 19, 1960, India-Pak., INDIA BILATERAL TREATIES AND AGREEMENT, vol. 3, 427 (1997).

¹³ For a detailed history of the Farakka Barrage and the dispute, and for the arguments of each country, see (i) BEN CROW, SHARING THE GANGES - THE POLITICS AND TECHNOLOGY OF RIVER DEVELOPMENT (1995); (ii) FARAKKA - A GORDIAN KNOT, PROBLEMS ON SHARING THE GANGA WATER (Sunil Sen Sarma ed., 1986); (iii) B.M. ABBAS, THE GANGES WATER DISPUTE (1982); and (iv) B.G. VERGHESE, WATERS OF HOPE, INTEGRATED WATER RESOURCE DEVELOPMENT AND REGIONAL COOPERATION WITHIN THE HIMALAYAN-GANGA-BRAHMAPUTRA-BARAK BASIN (1990).

¹⁴ For the full text of the Agreement, see 17 I.L.M. 103 (1978).

November 5, 1977, and covered the five lean seasons of 1978 through 1982. The third agreement, which was called "Indo-Bangladesh Memorandum of Understanding"¹⁵ was signed on October 7, 1982, and lasted for two years, covering the lean seasons of 1983 and 1984. There was a vacuum of one year, and the lean season of 1985 was not covered by any agreement. The fourth agreement, again called "Indo-Bangladesh Memorandum of Understanding"¹⁶ was signed on November 22, 1985, and lasted for three years, covering the three lean seasons of 1986, 1987, and 1988, to expire on May 31, 1988. Following the expiry of that MOU, a vacuum resulted, and lasted for more than eight years until the Treaty was concluded in December 1996.

WATER SHARING: WITHDRAWAL BY INDIA AND RELEASE TO BANGLADESH

The commissioning of the Farakka Barrage on April 21, 1975 was preceded by an eleventh hour agreement between India and Bangladesh on the sharing the flow of the Ganges for the remaining part of the dry season of 1975. This agreement was announced in Dhaka "in the form of a joint press release"¹⁷ on April 18, 1975, and dealt basically with the issue of sharing the waters of the Ganges during the remaining 41 days of the dry season (April 21 to May 31) of 1975. The announcement of the agreement marked the acceptance by Bangladesh of the Farakka Barrage as a reality,¹⁸ and moved the dispute to the realm of who gets how much out of the dry season available waters of the Ganges, rather than whether there should be a barrage or not.

The temporary allocation arrived at under that agreement, covering the remaining 41 days of the dry season of 1975, is set out in Table 1.¹⁹

¹⁵ The 1982 MOU (on file with the author) set out the understandings reached during the meeting that was held in Delhi between Mr. H. M. Ershad, the then President of the Council of Ministers, Government of the People's Republic of Bangladesh, and Mrs. Indira Gandhi, Prime Minister of the Republic of India at that time.

¹⁶ The 1985 MOU (on file with the author) set out the understandings reached between the then President of Bangladesh, Mr. H. M. Ershad, and the then Prime Minister of India, Mr. Rajiv Gandhi, during their meeting at Nassau, the Bahamas in 1985.

¹⁷ See ABBAS, *supra* note 13, at 41, where an abstract from the agreement, including the amounts of water to be diverted to the Hooghly river is included. For a description of the political climate that facilitated the conclusion of the 1975 Agreement, see B.C. UPRETI, *POLITICS OF THE HIMALAYAN RIVER WATERS, AN ANALYSIS OF THE RIVER WATER ISSUES OF NEPAL, INDIA AND BANGLADESH* (1993).

¹⁸ An official Bangladesh delegation attended the commissioning of the Farakka Barrage on April 21, 1975, following the announcement of the 1975 Agreement (on file with the author); see ABBAS, *supra* note 13, at 42.

¹⁹ This table is reproduced from UPRETI, *supra* note 17, at 134. The amounts of water specified for India in this table are similar to those included in ABBAS, *supra* note 13. In addition, the amounts to be released to Bangladesh are similar to those included in the 1977 Agreement, *supra* note 14.

TABLE I

Sharing of Lean Season Flow at Farakka (Amount in Cusecs)

10 Days Period	Dependable supplies at Farakka	Amount agreed upon for Hooghly	Remaining flow for Bangladesh
21 to 30 April, 1975	55,000	11,000	44,000
1 to 10 May, 1975	56,500	12,000	44,500
11 to 20 May, 1975	59,250	15,000	44,250
21 to 31 May, 1975	65,500	16,000	49,500

Under this Agreement, India's share during each of the four ten-day periods was far less than the 40,000 cusecs it initially demanded, and varied between 20%-25% of the available water. On the other hand, the share of Bangladesh ranged between 75%-80% of the available water. The share of Bangladesh during those 41 days represented about 77% of the total amount of water for that period, while the share of India for the same period was about 23%. The Agreement expired on May 31, 1975 and was not renewed or followed by any agreement, as Bangladesh had expected, and hoped. Instead, it was followed by a vacuum that lasted for about two years, and the sharing of the lean flow of the Ganges during the dry seasons of 1976 and 1977 was not regulated by any agreement between the two countries.²⁰

Attempts continued during those two years to try to reach an agreement, propelled by the urging of the United Nations General Assembly to the two countries to negotiate a settlement to the dispute. Those attempts resulted in the signing of an agreement between the two countries in Dhaka, on November 5, 1977. The Agreement dealt with the sharing of the Ganges water at Farakka, and also included other substantive and procedural provisions, including provisions for attempting to solve the long term problem of augmentation of the flow of the Ganges during the dry season. The share of each country between January 1 and May 31, for the years 1978 to 1982, was agreed upon, as in Table 2 below.

²⁰ The political climate that facilitated the conclusion of the 1975 Agreement, *supra* note 17, changed dramatically following the assassination of the president of Bangladesh, Sheikh Mujibur Rahman on August 15, 1975, and the army takeover.

TABLE 2**Sharing of Waters at Farakka Between the 1st January and the 31st May Every**

1		2	3	4
Period		Flows reaching Farakka (based on 75 % availability from observed data (1948-73))	Withdrawal by India at Farakka	Release to Bangladesh
		Cusecs	Cusecs	Cusecs
January	1-10	98,500	40,000	58,500
	11-20	89,750	38,500	51,250
	21-31	82,500	35,000	47,500
February	1-10	79,250	33,000	46,250
	11-20	74,000	31,500	42,500
	21-28/29	70,000	30,750	39,250
March	1-10	65,250	26,750	38,500
	11-20	63,500	25,500	38,000
	21-31	61,000	25,000	36,000
April	1-10	59,000	24,000	35,000
	11-20	55,500	20,750	34,750
	21-30	55,000	20,500	34,500
May	1-10	56,500	21,500	35,000
	11-20	59,250	24,000	35,250
	21-31	65,500	26,750	38,750

Those two agreements established two parameters that had been adhered to in all the subsequent agreements, including the Treaty: first, the quantum of water to be released by India to Bangladesh would be at Farakka, and, second, the water to be withdrawn by India, and those to be released to Bangladesh would be in ten-day periods (with eleven-day periods in the case of the 31 day months) from the first of January to the 31st of May. The previous agreements, established the flows at Farakka based on 75% availability of the average flow of the Ganges from observed data for twenty five years covering the period 1948 to 1973. On the other hand, the Treaty, as we shall see, established the flow at Farakka based on 100% availability of the average flow of the Ganges for the period 1949 to 1988.

A comparison of the share of each country under the two agreements indicate that the share of Bangladesh under the 1977 Agreement decreased in comparison with its share under the 1975 Agreement, as follows:

(i) The total amount agreed for release to Bangladesh under the 1975 Agreement from April 21 to May 31, 1975, represented about 77% of the total amount of the available water for that period, whereas the release for the same period to Bangladesh under the 1977 agreement decreased to about 61%. On the other hand, withdrawal by India at Farakka for the same period under the 1975 Agreement was about 23%, but increased under the 1977 Agreement, for the same period, to about 39%.

(ii) The total amount agreed for release to Bangladesh under the 1977 Agreement for each dry season, represented about 59% of the total availability, whereas withdrawals by India during the same period was about 41% of the total availability.

However, the most notable feature of the 1977 Agreement, as discussed later, was that it included a clause guaranteeing Bangladesh a minimum of 80% of its share during any ten day period, irrespective of how low the flow of the Ganges may be during such a period.²¹

Both the 1982 MOU and the 1985 MOU between India and Bangladesh on the sharing of the waters of the Ganges reiterated the allocations agreed upon in the 1977 Agreement, with minor adjustments to some of the figures during some of the ten-day periods, but with the total amounts of water withdrawn by India, and those released to Bangladesh at Farakka, remaining the same, as shown in Table 3 below. However, the guarantee clause of the 1977 Agreement was not included in either of the MOUs.

²¹ See Article II (ii) of the 1977 Agreement.

TABLE 3**Sharing of Waters at Farakka Between the 1st January and the 31st May**

1		2	3	4
Period		Flows reaching Farakka (based on 75% availability from observed data (1948-73))	Withdrawal by India at Farakka	Release to Bangladesh
		Cusecs	Cusecs	Cusecs
January	1-10	98,500	40,000	58,500
	11-20	89,750	38,000	51,750
	21-31	82,500	35,500	47,000
February	1-10	79,250	33,000	46,250
	11-20	74,000	31,250	42,750
	21-28/29	70,000	31,000	39,000
March	1-10	65,250	26,500	38,750
	11-20	63,500	25,500	38,000
	21-31	61,000	25,250	35,750
April	1-10	59,000	24,000	35,000
	11-20	55,500	20,750	34,750
	21-30	55,000	20,500	34,500
May	1-10	56,500	21,500	35,000
	11-20	59,250	24,250	35,000
	21-31	65,500	26,500	39,000

Although the Treaty maintained two of the three parameters stated above,²² it has altered the manner in which the Ganges waters would be shared between the two countries. Annexure 1 to the Treaty (Table 4 below) established a formula which included thresholds of the water available at Farakka, and the share of each country is stated either as a percentage, or as an amount, of that threshold, as follows:

TABLE 4

<u>Availability at Farakka</u>	<u>Share of India</u>	<u>Share of Bangladesh</u>
70,000 cusecs or less	50%	50%
70,000 - 75,000 cusecs ²³	Balance of flow	35,000 cusecs
75,000 cusecs or more	40,000 cusecs	Balance of flow

Subject to the condition that India and Bangladesh each shall receive guaranteed 35,000 cusecs of water in alternate three 10-day periods during the period March 1 to May 10.

In addition to the above formula, Annexure II to the Treaty included an indicative schedule (Table 5 below) of the share of each country between the period of January 1, to May 31, of each year.

²² The Treaty maintained the parameters that (i) the quantum of waters to be released by India to Bangladesh would be at Farakka, and (ii) the waters to be withdrawn by India, and those to be released to Bangladesh, would be in ten-day periods. However, whereas the previous agreements indicated that the flows at Farakka would be based on 75% availability of the average flow of the Ganges from observed data for the period 1948 to 1975, the Treaty states that the flows at Farakka are based on the average total flow for the period 1949 to 1988. The implications of this are discussed in more detail below.

²³ It should be noted that the figure "70,000" has been repeated in both the first and second lines of Annexure 1 above, and the figure "75,000" is also repeated in both the second and third lines above. As such, if availability at Farakka is exactly 70,000 cusecs, the formula in the first or second line could apply. Similarly, if the availability is exactly 75,000 cusecs, the formula in the second or third line could apply. Perhaps a better way of drafting could have been for the first line to read "less than 70,000 cusecs" and for the third line to read "more than 75,000."

TABLE 5**Sharing of Waters at Farakka Between the 1st January and the 31st May Every**

The opening paragraph of the schedule states that if actual availability corresponds to average flows of the period 1949 to 1988, the implication of the formula in Annexure I for the share of each side is:

1	2	3	4
Period	Average of total flow 1949-88 (Cusecs)	India's Share (Cusecs)	Bangladesh's share (Cusecs)
Jan			
1-10	107,516	40,000	67,516
11-20	97,673	40,000	57,673
21-31	90,154	40,000	50,154
Feb			
1-10	86,323	40,000	46,323
11-20	82,859	40,000	42,859
21-28	79,106	40,000	39,106
March			
1-10	74,419	39,419	35,000
11-20	68,931	33,931	35,000*
21-31	64,688	35,000*	29,688
April			
1-10	63,180	28,180	35,000*
11-20	62,633	35,000*	27,633
21-30	60,992	25,992	35,000*
May			
1-10	67,351	35,000*	32,351
11-20	73,590	38,590	35,000
21-31	81,854	40,000	41,854

(* Three ten-day periods during which 35,000 cusecs shall be provided).

Under the indicative schedule (Table 5), India's total share during the lean season amounts to about 48% of the total available water, whereas Bangladesh's share represents about 52%.²⁴ The schedule also specifies the three ten-day periods during which 35,000 cusecs shall be provided, alternately, to each of the two countries. For Bangladesh those dates are March 11-20, April 1 to 10, and April 21 to 30, whereas for India they are March 21 to 31, April 11 to 20, and May 1 to 10. The period from March 11 to May 10 is considered the critical period of the lean season because the flow of the Ganges during this period is usually the lowest of the lean season.

Reading Annexure 1 and Annexure II (Tables 4 and 5) together, the following is noted:

(i) Out of the fifteen ten-day periods of the dry season, there are six ten-day periods which would be governed by the first part of the sharing formula in Annexure 1 (included in the first line of the Annexure) which allocates 50% of the available water (70,000 cusecs or less) to each of the two countries. However, those six ten-day periods correspond to the period in which each country is guaranteed, according to the indicative schedule, to receive 35,000 cusecs in alternate three ten-day periods. As such the first part of the formula is not being applied. However, that part of the formula would still apply if the availability of water at Farakka goes down to 70,000 cusecs or less during any of the remaining nine ten-day periods.

(ii) The indicative schedule shows that there are two ten-day periods in which availability of water at Farakka is between 70,000 and 75,000 cusecs. On those two occasions, the second part of the sharing formula (second line of Annexure 1) has been applied, and Bangladesh's share is 35,000 cusecs, with the remaining balance going to India.

(iii) The third part of the sharing formula (third line of the Annexure) has been applied to the remaining seven ten-day periods, and India's share is 40,000 cusecs, with the remaining balance of the flow going to Bangladesh.

On the other hand, on comparing the share of each country under the earlier agreements and the Treaty, it is worth noting that the share of Bangladesh decreased from about 59% under the 1977 Agreement and each of the 1985 and 1982 MOUs, to about 52% under the Treaty. Correspondingly, India's share increased from about 41% under the 1977 Agreement, and the 1982 and 1985 MOUs to about 48% under the Treaty.

²⁴ It is noteworthy that the titles of the third column in Annexure I, and the fourth column in Annexure II to the Treaty (Tables 4 and 5 of this Chapter), have both used the term "Bangladesh's Share", whereas the heading of the Annexures of the previous agreements used the term "Release to Bangladesh." This change, implies, in my view, a clear recognition on the part of India that what Bangladesh is getting is its share, and not merely a release by India.

It should be added, however, that the sharing arrangements under the Treaty are not binding on the parties for the entire thirty year period of the Treaty. Article X of the Treaty states that “[t]he sharing arrangements under this Treaty shall be reviewed by the two governments at five years’ interval, or earlier as required by either party, and needed adjustments, based on principles of equity, fairness and no harm to either party made thereto. If necessary, it would be open to either party to seek the first review after two years to assess the impact and the working of the sharing arrangements as contained in this Treaty.”²⁵ In addition, Article XI stipulates that for the period of the Treaty “in the absence of mutual agreement on adjustments following reviews as mentioned in Article X, India shall release downstream of Farakka Barrage, water at a rate not less than 90% (ninety per cent) of Bangladesh’s share according to the formula referred to in Article II, until such time as mutually agreed flows are decided upon.”

Read together, those two articles guarantee the application of the sharing arrangements referred to above only for the first five years, and if either party requests an earlier review, which could be requested after two years from the date of the Treaty, then adjustments may be introduced to the sharing arrangements. If the two parties fail to agree on new arrangements, then India will release to Bangladesh water at a rate not less than 90% of Bangladesh’s original share under the Treaty. It is worth noting that the 1977 Agreement also included a clause stating that “the Agreement will be reviewed by the two Governments at the expiry of three years from the date of coming into force of this Agreement. Further reviews shall take place six months before the expiry of this Agreement or as may be agreed upon between the two Governments.”²⁶ However, there was no mention of the possibility of a change to the share of either country as a result of such a review under that Article.

Moreover, the Treaty includes a provision, which was also included in the 1977 Agreement, that waters released to Bangladesh at Farakka would not be reduced below Farakka up to the point where the Ganges enter Bangladesh, “except for reasonable uses of waters, not exceeding 200 cusecs, by India....”²⁷

²⁵ The principles “equity, fairness and no harm to either party” are also referred to in Article IX of the Treaty on the conclusion of water sharing agreements with regards to other common rivers. In addition, Article II (iii) of the Treaty on emergency situations (flow at Farakka falling below 50,000 cusecs) provides, *inter alia*, for applications of the principles of “equity, fair play and no harm to either party.” It is not clear why this Article used “fair play,” whereas Articles IX and X used “fairness.” It seems that the principles of “equity, fairness and no harm to either party” are meant to reconcile the principles of “equitable utilization” on the one hand, and “no appreciable harm” on the other hand.

²⁶ Article XIII of the 1977 Agreement, *supra* note 14.

²⁷ Article III of the 1977 Agreement, *supra* note 14, and Article III of the Treaty. It is not clear from the wording of the two articles whether the amount of 200 cusecs would apply to the amount released each ten-day period, or on daily basis. Judging from the fact that releases are measured on ten-day periods, it would seem that the 200 cusecs would apply to each of the ten-day periods, and not on a daily basis.

Implementation of the Sharing Arrangements: The Joint Committee

Under both the previous agreements and the Treaty, a committee consisting of equal number of representatives nominated by the two governments, called the Joint Committee, is established. It is authorized to set up suitable teams at both Farakka in West Bengal, and Hardinge Bridge in Bangladesh, to observe and record at Farakka the daily flows below Farakka Barrage, in the Feeder Canal, and the Hardinge Bridge. The Treaty added a third point for observing and recording the daily flows of the Ganges at the Navigation Lock in Bangladesh.²⁸ The Committee is also authorized to decide on its own procedures and method of functioning, and is required to submit to the two governments all the data collected, in addition to an annual report. The Treaty includes a paragraph, not included in the previous agreements, requiring the two governments to meet at appropriate levels, following submission of such reports, to decide upon any further action as may be needed.

The main responsibility of the Committee, as described in both the previous agreements and the Treaty, is implementation of the arrangements contained therein, "and examining any difficulty arising out of the implementation of those arrangements, and of the operation of the Farakka Barrage."²⁹ If the Committee failed to resolve any difference or dispute, then under the previous agreements, such difference or dispute would be referred to a panel of equal number of experts, and if this panel also failed to resolve such dispute, then it would be referred to the two governments, who would handle the issue at the appropriate level. However, the Treaty has revived the Indo-Bangladesh Joint Rivers Commission³⁰ and instructed the Joint Committee to refer to it any difference or dispute that the Joint Committee could not resolve. If the Joint Rivers Commission fails to resolve such a difference or dispute, then the Treaty directs that the matter "be referred to the Governments which shall meet urgently at the appropriate level to resolve it by mutual discussion."³¹ As such, the parties opted for political means, and not arbitration, as the method for resolving any difference or dispute arising out of the implementation of the Treaty.³²

Excess and Deficit Flows

The previous agreements, like most treaties on sharing the waters of an international waterway, included a mechanism for sharing excess or deficit flows of the Ganges. Those agreements stated that if the actual availability of water at Farakka

²⁸ Article IV of the 1977 Agreement, and Article IV of the Treaty.

²⁹ Article VII of the Treaty.

³⁰ The role of the Indo-Bangladesh Joint Rivers Commission is discussed in more detail below.

³¹ Article VII of the Treaty.

³² Similarly, none of the previous agreements specified arbitration as a method of dispute settlement over the Ganges. This is in contrast to the recently concluded Treaty on the Mahakali river between India and Nepal (1996), and also the Indus Waters Treaty, *supra* note 12, both of which included detailed provisions on arbitration.

during a ten-day period is higher or lower than the quantum shown in column 2 of the schedule, it shall be shared in the proportion applicable at that period.

In addition, the previous agreements included provisions dealing with the cases of exceptionally low flow of the Ganges. The 1977 Agreement included a clause which guaranteed Bangladesh a minimum of 80% of its share during each ten-day period, however low the flow of the Ganges may be during that period. Describing how the guarantee clause was supposed to work, the 1977 Agreement stated that, "if during a particular 10-day period the Ganga flows at Farakka come down to such a level that the share of Bangladesh is lower than 80% of the value shown in column 4, the release of waters to Bangladesh during that 10-day period shall not fall below 80 per cent of the value shown in column 4."³³

However, the guarantee clause was a short lived one. It was not included in either of the 1982 or 1985 MOUs. Instead it was agreed by the two parties, under both MOUs, that in case of exceptionally low flow of the Ganges, the two governments would "hold immediate consultation and decide how to minimise the burden to either country."³⁴ Each of the MOUs included an Annexure entitled "Agreement on Sharing of Exceptionally Low Flow at Farakka."³⁵ The Annexure established 75% of the standard flow³⁶ of the Ganges during a ten-day period as the threshold and stated that:

(i) If the flow at Farakka is up to and above 75% of the standard flow for the corresponding ten-day period, the release to Bangladesh would be prorated to the release agreed upon for such ten-day period.

(ii) If the flow at Farakka is below 75% of the standard flow for the corresponding ten-day period, release to Bangladesh would be calculated as follows: (a) calculate the release to Bangladesh at 75% of the standard flow; (b) calculate pro rata release for Bangladesh at the actual flow; (c) "a" minus "b" would be termed the burden; (d) the burden would be shared by India and Bangladesh on 50:50 basis; i.e. 50% of (c) would be added to (b).

The Treaty does not include, in the case of exceptionally low flow of the Ganges, any guarantee to Bangladesh, either similar to the guarantee clause in the 1977

³³ Article II (ii) of the 1977 Agreement.

³⁴ See the 1982 MOU, page 2 (the paragraphs of this MOU were not numbered), and the 1985 MOU, paragraph 5.

³⁵ The Annexure to the 1982 MOU was signed on July 20th, 1983, about nine months after the MOU itself was signed. That Annexure was signed by a secretary to each government, rather than a minister. A similar Annexure was agreed upon, and attached to the 1985 MOU, and was signed on the same day the MOU was signed. However, that Annexure, again, was signed by a secretary to each of the two governments, and not the ministers who signed the MOU.

³⁶ Standard flow was defined in the Annexure to each of the MOUs as "the flow reaching Farakka for the various ten-day periods which are incorporated in the Memorandum of Understanding".

Agreement, or even the burden sharing arrangements included in the MOUs. Instead, the Treaty addressed the situation where the flow at Farakka falls below 50,000 cusecs in any ten-day period, and states that, in such a situation, "the two governments will enter into immediate consultations to make adjustments on an emergency basis, in accordance with the principles of equity, fair play and no harm to either party."³⁷ The guarantee clause could have had a significant meaning for Bangladesh as the flow of the Ganges during the critical period of the low season could be lower than what the 1977 prescribed.

WATER AVAILABILITY - EXPERIENCE OF THE 1997 LEAN SEASON

One of the most important features distinguishing the previous agreements and the Treaty is the basis for calculating the flows of the Ganges reaching Farakka during the lean season. Under the previous agreements, the average flow of the Ganges reaching Farakka was based on 75% water availability from observed data for the 25 year period between 1948 to 1973. Under the Treaty, the figures under the indicative schedule are based on the average total flow (and not 75% availability) of the Ganges during the 40 year period between 1949 to 1988.³⁸ As a result, the average total flow of the Ganges under the Treaty for each ten-day period exceeds the average flow under the previous agreements for the same period by a margin of almost 10% for each such period, which means that the Treaty assumed a higher level of water availability than the previous agreements. Moreover, the Treaty states that "[e]very effort would be made by the upper riparian to protect flows of Farakka as in the 40-years average availability mentioned above."³⁹

However, as it turned out a few months after the Treaty was concluded, actual availability during the first lean season of the Treaty was far less than the average flow of the Ganges for the period 1949-1988, as reiterated in the indicative schedule under the Treaty. The first reports of a decline in the flow of the Ganges at Farakka started circulating during the last ten days of February 1997, when the flow was supposed to favor Bangladesh. During that period, Bangladesh stated that it had received only 24,559 cusecs, instead of 39,106 cusecs stipulated in the Treaty.⁴⁰ The situation became quite serious in late March, and on March 27, the Ganges flow in Bangladesh recorded

³⁷ Article II (iii) of the Treaty.

³⁸ Apparently the year 1988 was chosen because it was the last year in which daily flows of the Ganges at Farakka were observed and recorded by the India/Bangladesh Joint Committee under the 1985 MOU.

³⁹ Article II (ii) of the Treaty.

⁴⁰ See Ibne Mahfuz, *Water Treaty Remains As Elusive as Ever?*, DIALOGUE, April 14, 1997, at 5. See also, Asadullah Khan, *Implementation of the Ganges Treaty, a View from Dhaka*, PEOPLE'S REV. NEWSPAPER, (Bangladesh), May 8, 1997, Opinion page, where it was stated "In the last ten days of February, 39,106 cusecs of water should have been available at the Hardinge Bridge point. But Bangladesh got 27,906 cusecs on 22nd of February, 23,094 cusecs on the 23rd Feb., 22,295 cusecs on 24 Feb., 25,654 cusecs on the 25th Feb., 23,006 cusecs on 26th Feb., and 24,559 cusecs on 27th Feb., and on March 27, the flow was lowest in recent times, recording 6,457 cusecs."

only 6,500 cusecs, the lowest ever.⁴¹ By early April, the flow kept fluctuating between 10,000 and 25,000 cusecs,⁴² and by early May water availability at Farakka was only about 40,000 cusecs, instead of the 67,351 cusecs specified in the Treaty.⁴³ It is ironic to note that this substantially low flow occurred during the period in which "India and Bangladesh shall receive guaranteed 35,000 cusecs of water in alternate three 10-day periods"⁴⁴ and the indicative schedule under the Treaty shows the average availability of more than 60,000 cusecs.

Since the flow of the Ganges continued to be below 50,000 cusecs, Bangladesh, without a guarantee clause similar to that of the 1977 Agreement, or burden sharing arrangements like those of the 1982 and 1985 MOUs, asked India for "immediate consultation to make adjustments on an emergency basis" as stipulated under Article II (iii) of the Treaty. India agreed to hold immediate consultation with Bangladesh, and a series of meetings were held in both Dhaka and New Delhi. During those meetings Bangladesh demanded that India should ensure that Bangladesh receive the 35,000 cusecs guaranteed under Annexure 1 of the Treaty, and also wanted to know what India was doing to protect the flow of water at Farakka, as per Article II (ii) of the Treaty. On the other hand, India confirmed that the flow at Farakka had slowed down but attributed this situation to the normal hydrological cycle that occurs every four to five years,⁴⁵ and argued that it is fulfilling its obligations under the Treaty by agreeing to immediate consultation. However, aside from reiterating the commitment of the two countries to the Treaty, those meetings did not result in any adjustments to the share of either country, nor in any concrete actions on how to handle the situation.⁴⁶

Meanwhile, and by mid May "unseasonal spring rains have eased the crisis, with the river at Hardinge Bridge back to levels that normally develop later in the spring, when rising summer heat on the north Indian Plains melts snow in the Himalayas."⁴⁷ In mid June an expert-level meeting of the Indo-Bangladesh Joint Rivers Commission was held in Dhaka. After three days of discussions that centered around

⁴¹ See John F. Burns, *Sharing Ganges Waters, India and Bangladesh Test the Depth of Cooperation*, N.Y. TIMES, May 25, 1997, at 6.

⁴² Reuters report from Dhaka dated April 4, 1997.

⁴³ *Supra* note 40, at 5.

⁴⁴ Annexure I to the Treaty. This paragraph is unusual in that it does not specify who is the guarantor that such amounts will actually be delivered. Once the availability came down to such low level, the inoperativeness of the guarantee became discernible.

⁴⁵ See Mahfuz, *supra* note 40. The Minister of Water Resources in Bangladesh told Reuters on April 1, 1997, that India informed him that "ice in the Hamalayas where the Ganges originates is not melting enough to raise the level."

⁴⁶ On April 11, 1997, the ten month old government headed by Mr. Deve Gowda was voted out of office, and it was not until April 21, that Mr. Inder Kumar Gujral was selected as a Prime Minister. The political vacuum, and later, the transition, might have hindered Bangladesh's efforts to resolve the problem through political means. This was manifested by the cancellation of the meeting of the Indo-Bangladesh Joint Rivers Commission that was supposed to take place in April 1997.

⁴⁷ See Burns, *supra* note 41.

the Treaty, the two sides recommended the formation of a scientific committee to study the causes of the low flow of the Ganges during the critical period of the dry season. The unusual seasonal variations of water that is one of the main characteristics of the Ganges river continued, and by early August 1997, the Flood Information Center in Bangladesh started issuing messages that the Ganges flow was above the danger mark, and that certain areas could soon be flooded. Thus the 1977 dry season ended with mixed results, a reasonable flow of the Ganges during the beginning and the end of the dry season, and an unusually low flow during the critical period of the dry season.⁴⁸ Yet, unlike the previous dry seasons when similar problems of low flow of the Ganges persisted, this time the parties were actively engaged in discussions, under the umbrella of the Treaty, on how to handle the situation. It is also perhaps too early to tell whether this unusually low flow of the Ganges river during the dry season of 1997 was an isolated phenomenon which could be attributed to natural causes, or will continue to be the trend.

THE JOINT RIVERS COMMISSION AND THE AUGMENTATION STUDY

The Indo-Bangladesh Joint Rivers Commission was established by the two governments in 1972.⁴⁹ The main functions of the Commission, according to its Statute, include maintaining liaison between the two countries "in order to ensure the most effective joint efforts in maximizing the benefits from common river system to both countries."⁵⁰ Other functions include formulation of flood control works, and proposals for advance warnings, and study of flood control and irrigation projects. The Statute also endows the Commission with a broad mandate of performing "such other functions as the two governments may, by mutual agreement, direct it to do."⁵¹

The two governments identified and recorded in the 1977 Agreement the problem they were facing as being the low flow of the Ganges river during the dry season, and recognized the need to cooperate with each other in finding a way for augmenting the flow during such dry season. Using the above quoted broad mandate, the two governments, under the 1977 Agreement, entrusted the Joint Rivers Commission with the responsibility of carrying out investigations and study of schemes relating to the augmentation of the dry season flow of the Ganges river, and presenting its recommendations to the two governments within a period of three years.⁵² Unfortunately, no agreement was reached during the life of the 1977 agreement.

⁴⁸ The Daily Star Newspaper in Bangladesh reported in mid May that the Minister of Water Resources admitted in parliament that the country had received less than the agreed quantum of the Ganges water in some of the ten-day cycles during the last four months, but quoted him as saying "we got more water than mentioned in the agreement in some cycles, while less in others."

⁴⁹ Aside from the major rivers of the Ganges, the Brahmaputra and the Meghna, there are 50 other rivers shared between India and Bangladesh, with India being the upper riparian for all of them.

⁵⁰ See Statute of the Indo-Bangladesh Joint Rivers Commission, Article IV (i) (a).

⁵¹ *Id.*, Article 4 (ii).

⁵² See Articles VIII and IX of the 1975 Agreement.

The 1982 MOU reiterated the same issue, and stated that "the basic problem of inadequate flow of waters in the Ganga available at Farakka imposed sacrifices on both countries" and that "the long term solution lay in augmenting the flow available at Farakka...."⁵³ This MOU gave the Joint Rivers Commission 18 months from the date of the MOU of October 7, 1982, for completing the pre-feasibility study and deciding upon the optimum solution, and at the end of this period, the two governments would immediately implement the augmentation proposal agreed upon by the Joint Rivers Commission. The MOU recorded a high note of optimism when it stated that "[i]t was agreed that a further and final sharing agreement would be reached immediately after completion of the pre-feasibility study of augmentation, in the light of the decision on the optimum solution for augmentation that would be implemented following the pre-feasibility study."⁵⁴ However, again the 1982 MOU, like the 1977 agreement, expired, and no agreement on augmentation of the flow of the Ganges during the dry season was reached.

In addition to reiterating the schedule for sharing the waters of the Ganges during the dry season agreed upon under the 1982 MOU, the 1985 MOU dealt basically with the joint study on the available water resources common to both countries. The MOU stated that "the Irrigation Ministers of the two countries met at New Delhi from November 8 to 22, 1985 to set out the Terms of Reference of a joint study to be undertaken by experts of the two sides, of the available river water resources common to both countries, with a view to identifying alternatives for the sharing of the same to mutual benefit, including a long-term scheme/schemes for augmentation of the flows of the Ganga/Ganges at Farakka...."⁵⁵ As such the scope of the study was expanded, and the augmentation schemes formed only a part of that larger study.

After setting out the objectives of the study, the MOU stated that the study would be undertaken by a Joint Committee of Experts consisting of the secretaries concerned of the two governments, and the two engineering members of the Joint Rivers Commission from each side. Having failed its mandate under the two previous agreements, the Joint Rivers Commission was not assigned the responsibility for the joint study under the 1985 MOU. Even the selection of two of its engineers in the newly established Joint Committee of Experts was to represent their respective government, rather than to represent the Joint Rivers Commission.

The 1985 MOU set out two areas to be covered by the study, and the terms of reference for such a study, as follows:⁵⁶

⁵³ See the 1982 MOU, page 1, second paragraph. The MOU criticized the 1977 Agreement, and stated in the preamble that the two leaders "agreed that it had not proved suitable for finding a satisfactory and durable solution, and that with its termination fresh efforts were necessary to arrive at such a solution."

⁵⁴ See page 2 of the 1982 MOU.

⁵⁵ Preamble to the 1985 MOU.

⁵⁶ See Paragraph 3 (iii) of the 1985 MOU.

(i) Sharing the available river water resources common to both countries: The Joint Committee of Experts was required to ascertain the available river water resources common to both countries, based on the collection, collation and analysis of relevant hydro-meteorological data in both countries; study the alternatives for sharing the available river water resources; and identify the location of the points of sharing the rivers, and periods and schedules of sharing.

(ii) Identification of scheme/schemes for augmentation of the dry season flow of the Ganges at Farakka by optimal utilization of the surface water resources of the region available to the two countries.

The MOU specified the time frame for completion of the study as 12 months from the date of the MOU, with an interim ministerial review after six months from the starting date, and a summit level meeting of the heads of the two states at the end of the 12th month, to take a decision on the proposed scheme of augmentation.

The 1985 MOU expired on May 31, 1988, and proved quite optimistic on both areas of its mandate. The joint study whose scope and terms of reference were detailed in this MOU was not carried out because of the failure of the representatives of the two governments in the Joint Committee of Experts to arrive at common grounds for this study. As regards the scheme for augmenting the flow of the Ganges at Farakka, each side had a different proposal. India's proposal consisted of a plan to construct a link canal to connect the Brahmaputra river with the Ganges river at a point above the Farakka Barrage. The link canal, according to the plan proposed by India, would augment the Ganges flow during the dry season by diverting water to the Ganges river from the Brahmaputra river. This proposal was rejected by Bangladesh, who feared the environmental, social, political and economic consequences of the proposal. Bangladesh was also concerned that the link canal may further exacerbate the flood situation in the country during the monsoon season. Instead, Bangladesh proposed building storage reservoirs at the upper reaches of the Ganges in both India and Nepal to store water during the monsoon season, for release during the dry season. In turn, this proposal was rejected by India who wanted to reserve the upstream waters of the Ganges for its future needs. Moreover, India preferred the bilateral approach and did not want to regionalize the issue by involving another riparian, in this case Nepal.⁵⁷ It is worth noting that India's proposal centered around using the Brahmaputra to solve the problems of the Ganges, whereas Bangladesh's proposal aimed at using the Ganges itself to solve the problems of the Ganges. Summarized differently, "Bangladesh argued that water is best transferred over time; India that it is best transferred over space."⁵⁸ It is also noteworthy that each proposal involves the use of the territory of the

⁵⁷ For discussion of the proposal of each country for augmentation of the dry season flow, see BEN CROW, *supra* note 13. See also, WATER RESOURCES COOPERATION IN THE GANGES - BRAHMAPUTRA RIVER BASIN" (Lyndon Johnson School of Public Affairs, Policy Research Project Report Number 101, 1993).

⁵⁸ See BEN CROW, *supra* note 13, at 163.

other country. Part of the link canal proposed by India would be constructed in Bangladesh, and part of the storage reservoirs proposed by Bangladesh would be built in India.

The augmentation proposals put forward by each of India and Bangladesh represented the position each country adopted from the start of the search for a solution. The 1977 Agreement stated that "The Indo-Bangladesh Joint Rivers Commission established by the two governments in 1972 shall carry out investigations and study of schemes relating to the augmentation of the dry season flows, proposed or to be proposed by either Government with a view to finding a solution which is economical and feasible. It shall submit its recommendations to the two governments within a period of three years."⁵⁹ The Side Letters annexed to the 1977 Agreement dealt with an understanding by Bangladesh, confirmed by India, that the words "proposed or to be proposed by either Government" under Article IX of the 1977 Agreement "relate to any schemes which may have been proposed by Bangladesh or India and do not exclude any scheme or schemes for building storages in the upper reaches of the Ganges in Nepal."⁶⁰ Both Side Letters clarified further that all the proposals designed to find a solution of the long term problem shall be treated on an equal footing and accorded equal priority.

Although India and Bangladesh have clearly and consistently agreed since 1977 on the need for augmentation of the dry season flow of the Ganges, they could not agree on how such augmentation can be achieved. As such, the issue of augmentation of the flows of the Ganges during the dry season remained unresolved, and the expansion of the scope of the joint study, and the change of the entity entrusted with the study, from the Joint Rivers Commission to the Joint Committee of Experts, did not seem to have made any difference.

Moreover, although the Treaty recognizes the need for cooperation by the two governments "in finding a solution to the long-term problem of augmenting the flows of the Ganga/Ganges during the dry season,"⁶¹ it has not laid down any terms of reference or time frame for a joint study, nor has it set or entrusted any committee with the responsibility of carrying out this study.

⁵⁹ Article IX of the 1977 Agreement.

⁶⁰ See Side Letter to the Agreement: 1, dated 5th November, 1977, and confirmed by Side Letter to the Agreement: 2, of the same date (on file with the author). The mention of Nepal in the Side Letter is unusual because, as a matter of international law, the contracting parties do not have the right to oblige a third party without its consent.

⁶¹ Article VIII of the Treaty. See also the preamble to the Treaty.

CONCLUSION

Despite the considerably low flow of the Ganges during the critical period of the low season of 1997, it is still a major breakthrough that India and Bangladesh have succeeded in signing a long-term treaty on the sharing of the waters of the Ganges during the dry season, thus filling the vacuum that prevailed since the expiry of the 1985 MOU on May 31, 1988. The most important outcome of the Treaty is that it has created a conducive atmosphere for discussing and deliberating on a number of water related issues between the two countries, including the issue of augmentation of the dry season flow of the Ganges, and possibly reaching agreements on some of those issues.

The first sign of such an atmosphere for discussing water related issues manifested itself in the meeting of the Indo-Bangladesh Joint Rivers Commission in Dhaka on July 19-20, 1997. This was the first meeting for the Commission in more than seven years,⁶² as the last meeting was held in June 1990, and the delegation of each country was headed by the respective Minister of Water Resources. The Commission agreed to monitor and observe the implementation of the Treaty, and to undertake "joint scientific studies in accordance with terms of reference, which have been jointly finalized by the technical teams of the two countries,"⁶³ and to work towards an agreement on sharing the waters of the Teesta river.⁶⁴ It is noteworthy that the Treaty stresses in the Preamble the desire of the parties for sharing by mutual agreement the waters of the other international rivers when it states that, "Guided by the principles of equity, fairness and no harm to the other party, both the Governments agree to conclude water sharing Treaties/Agreements with regard to other common rivers."⁶⁵

One of the long outstanding issues between India and Bangladesh related to the Ganges river that the Treaty seems to have assisted in resolving is the issue of the

⁶² This was the 32nd meeting since the Commission was established in 1972.

⁶³ See *Joint Communiqué of the 32nd Session of the Indo-Bangladesh Joint Rivers Commission*, THE HINDU NEWSPAPER (New Delhi), July 21, 1997.

⁶⁴ The Teesta river is another important river shared between India and Bangladesh. In 1983 India and Bangladesh agreed to share, for the years 1983, 1984 and 1985, the waters of the Teesta river with 30% of the waters going to Bangladesh, 36% to India, and the rest of the waters remaining unallocated until a study for determining the available waters in the Teesta was completed. Those arrangements expired in 1985, and no further agreement on the Teesta river was concluded. See CHAUHAN, *supra* note 10, at 102.

⁶⁵ Article IX of the Treaty. However, it should be noted that the preamble to the Treaty, like the preamble to the 1977 Agreement, states that the desire of India and Bangladesh for finding a fair and just solution for the Ganges river should not be considered as "establishing any general principles of law or precedent." It is difficult to imagine the two countries discussing and trying to conclude treaties on any of the other fifty three common rivers without one of the parties citing some of the provisions the Treaty. It seems that India, as the upper riparian to all the common rivers with Bangladesh, is the one who introduced this provision, as a similar provision is included in Article 11, Paragraph 2 of the Indus Waters Treaty, *supra* note 12.

Ganges Barrage that Bangladesh has been seeking to build on the Ganges river since 1963. Bangladesh has sought to build the Ganges Barrage to store the wet season flow of the Ganges for use during the dry season. India had in the past opposed the construction of the Ganges Barrage and saw it as a retaliatory measure against the Farakka Barrage, and claimed that large areas of Indian territory would be submerged as a result of back-water effect. Following the conclusion of the Treaty and further discussion on the Barrage, specially its location,⁶⁶ India has agreed to the construction of the Barrage by Bangladesh. Bangladesh now plans to build this Barrage at Pangsha, 90 miles west of Dhaka, and presents the Barrage as the best way for guaranteeing the success of the Treaty because the Barrage would enable Bangladesh to utilize its share of the water. According to the feasibility study for the Barrage:

- The Barrage would allow Bangladesh to make optimum use of the water that would be available under the Ganges Water Treaty, December, 1996.
- The Ganges river is the main potential source of surface water in the Southwest (SW) and South Central (SC) regions. With the construction of the Ganges Barrage, the irrigated area will cover most of the SW and the SC and North Western (NW) regions.
- Water supplies through the Gorai river will reduce saline intrusion around Khulna which will help solve the existing socio-economic and environmental impacts of the areas.
- Augmentation of the flows in all distributories and other rivers in the South-West region so that natural environment can be restored with regards to fisheries, navigation, groundwater, forestry and human health through supply of upland flow and reduction in salinity.⁶⁷

The Barrage is expected "to irrigate an area of about 1.35 million hectare of land, and to protect another 1.44 million from floods...."⁶⁸ Bangladesh also hopes that the Barrage will assist in reducing salinity caused by intrusion of the waters of the Bay of Bengal. Bangladesh has officially sought financial assistance for building the Barrage from a number of bilateral and multilateral donors. It is perhaps too early to speculate on the role that the Ganges Barrage may play in alleviating the problems of availability of water in the Ganges basin in Bangladesh during the dry season, and whether the

⁶⁶ Bangladesh had initially sought to build the Ganges Barrage at the current location of the Hardinge Bridge, close to the Indian borders. However, the current proposed location is at Pangsha, about 40 miles down stream from the Hardinge Bridge, and as such further down stream than the Hardinge Bridge from the borders with India.

⁶⁷ See GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH, TECHNICAL ASSISTANCE PROJECT PROFORMA (TAPP) FOR THE FEASIBILITY STUDY AND DETAILED ENGINEERING DESIGN OF THE GANGES BARRAGE PROJECT 6 (May 1997, Recast, June 1997).

⁶⁸ See Reuters report from Dhaka, August 24, 1997, quoting the Minister of Water Resources of Bangladesh, following a meeting with the President of the Asian Development Bank in Dhaka. The figure of "1.35 million hectare" is close to the figure of "1.31 million hectare" specified in the TAPP, *id.*

Barrage may have any bearing on the proposals for augmenting the dry season flow of the Ganges.⁶⁹

The Joint Communiqué of the Joint Rivers Commission on its 32nd meeting⁷⁰ stated that India indicated its intention to consider providing technical assistance through power and water consultancy to the project. The Commission decided to meet in November 1997 in New Delhi to follow up on the issues discussed during this session. As a follow up to this meeting, experts from both countries met in early August for further discussion on water sharing arrangements for the Teesta river, and agreed to build a 1.75 kilometer embankment on the south bank of the Teesta river.⁷¹

It may be argued that the share of Bangladesh on the waters of the Ganges has been decreasing steadily with each agreement signed, including the Treaty, while the share of India has been increasing correspondingly. Although this is true, it should be noted that during most of each of the dry seasons of the eight years of vacuum between 1988 to 1996, prior to signing the Treaty, Bangladesh "has received only 18,000 cusecs a day."⁷² A similar situation arose earlier during the dry seasons of 1976 and 1977, following the expiry of the 1975 Agreement; when "the dry season flow which averaged 64,000 cusecs at Hardinge bridge before 1975, fell to 23,200 cusecs in March 1976, the lowest ever."⁷³ Accordingly, and despite the low flow of the Ganges during the dry season of 1997, Bangladesh is still far better off under the Treaty than before Treaty.

The Treaty also mentions some of the other related issues such as flood management during the monsoon season (when water sharing is not an issue), irrigation, river basin development and generation of hydroelectric power for the mutual benefit of the peoples of the two countries.⁷⁴ Although no details on any of those areas have been spelled out in the Treaty, the momentum created by the Treaty, and the fact that those issues have been brought to the forefront, and more importantly, the revival of the Joint Rivers Commission, could signal the start of serious

⁶⁹ It is interesting to note that the TAPP, *supra* note 67, included as one objective of the Barrage "augmentation of the flows of in all distributories and other rivers in the South-West region."

⁷⁰ *Supra* note 63.

⁷¹ Following the decision of the 32nd session of the Joint Rivers Commission concerning working towards an agreement on the Teesta river, the Water Resources Secretaries of India and Bangladesh met in the last week of August 1997 to discuss a formula for sharing the waters of the Teesta river, and to prepare a draft agreement for consideration by the 33rd session of the Commission which was scheduled to take place in November 1997. However, this meeting did not take place.

⁷² See John Cherian, *A Historic Accord, Sharing Ganga Water with Bangladesh*, FRONTLINE, January 10, 1997, 47 at 49.

⁷³ See R. GOODLAND, ENVIRONMENTAL ASSESSMENT OF DECREASED GANGES FLOW IN BANGLADESH, A STUDY BY INTERNATIONAL ENGINEERING COMPANY, (1977). See also, UPRETI, *supra* note 17, where he stated on page 135 that "The 1975 Agreement expired on May 31, 1975. India began to unilaterally withdraw water (40,000 cusecs) at Farakka."

⁷⁴ See the preamble to the Treaty.

deliberations on those issues, and on an overall Ganges basin development plan. The positive atmosphere created by the Treaty could also assist in resolving the other outstanding issues such as the transit facility through Bangladesh of Indian goods going to, or coming from its Northeastern states,⁷⁵ and the free trade between the two countries.

It may also be argued that the Treaty centers around the issue of sharing of the Ganges waters during the dry season, without laying the grounds for resolving the larger problem of augmentation of its flow during the dry season, which is the real issue that needs to be addressed. This contention is certainly true. Aside from recognizing the need for cooperation for finding a solution to the long term problem of augmenting the flow of the Ganges during the dry season, no other details on how to handle the augmentation issue are spelled out in the Treaty. However, it should be remembered that the detailed provisions on the terms of reference and schedule for the augmentation study in the 1977 agreement, and in each of the 1982 and 1985 MOUs, particularly the latter MOU, had yielded no results as far as the augmentation study is concerned. As such the issue is not how much details are spelled out in the Treaty, but rather, whether the momentum created by the conclusion of the Treaty can result in an agreement on augmentation schemes. Such a momentum, specially with the revival of the Joint Rivers Commission and the agreement of India to the Ganges Barrage, seems more likely to lead to an agreement by both parties on a proposal for augmentation of the flow of the Ganges during the dry season, and implementation of such a proposal. The dynamics of the flow of the Ganges during the dry season of 1997 has confirmed that an agreement on the augmentation of the Ganges, rather than the sharing arrangements, is the central theme to any attempt towards resolving the conflict over sharing the waters of the Ganges. Still, the conclusion of the Treaty has, in my view, created an atmosphere conducive for reaching such an agreement.

⁷⁵ Except for a small stretch of land about 20 to 30 miles wide falling between Nepal and Bangladesh and forming part of India, the Northeastern states are separated from the rest of India by Bangladesh.

CHAPTER 9

The Role of the World Bank in Enhancing Cooperation and Resolving Conflict on International Watercourses: The Case of the Indus Basin

G.T. Keith Pitman*

INTRODUCTION

The Indus Water Treaty of 1960 is one of the few examples of a successful settlement of a major international river basin conflict. It is the view of some that, had the treaty not been concluded, it would have remained another major contentious issue between India and Pakistan, and massive economic aid for subsequent development might have been wholly or partially withheld.¹ The World Bank volunteered to act as a benign go-between. The original approach was to exploit the Basin's economic potential for the optimum benefit of both countries and operate the infrastructure in an integrated way. Politicization of the issues made the integrated approach intractable, and the resulting treaty bifurcated the headwaters of the Indus between the two countries.

The Indus Basin in undivided India contained one of the oldest and largest integrated irrigation systems in the world - 10.6 million ha compared with USA's 9.3 million ha. At Partition in 1947 the Indus Basin was split. Most of the water-rich headwater went to India, and Pakistan was left as the water-short lower riparian. This jeopardized Pakistan's agricultural production from the canal system that was its greatest asset. A pre-Partition dispute over development of the waters of the Indus Basin between the Government of Sind [now in Pakistan] and the Government of Punjab [eastern part now in India] was unresolved, and this complicated the difficult task of an equitable division of the water between the two new countries. The ensuing debate and posturing between India and Pakistan - the Indus Dispute - lasted thirteen years until a treaty was concluded in 1960. The World Bank played a pivotal role in designing and guiding the process that led to the treaty. This Chapter describes the basis of the dispute and how it was resolved.

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¹ Jagat S. Mehta, *The Indus Water Treaty: A Case Study in the Resolution of an International River Basin Conflict*, NAT. RESOURCES FORUM 69 (1988).

ANTECEDENTS TO THE DISPUTE

Under the British Raj, the Indus and each of its five eastern tributaries in Punjab had been developed independently to provide run-of-the-river perennial irrigation. By the late 19th century this accounted for 36 percent of all irrigation in India and was an extremely productive and profitable commercial venture. Famine in 1899-1900 prompted the formation of an Indian Irrigation Commission in 1901-1903 to investigate ways to improve and expand irrigation. The Commission found that Punjab, located in the south-eastern part of the Indus Basin, had the highest potential for expansion of perennial irrigation, but that only the Indus, Sutlej and Beas rivers had water to spare. However, diverting this water to Punjab would have reduced the flow to Sind Province whose primary water source was the River Indus. Thus, the Government of Bombay, on behalf of Sind Province, formally objected that more irrigation in Punjab would prejudice existing flood irrigation and proposed schemes to divert water for perennial irrigation.²

As a result, the Commission recognized, for the first time in water resources planning, that no large-scale water development could take place without consideration of all riparians. In a landmark decision that set the precedent for a debate that would last 60 years, the Commission recommended that the surplus waters of the Jhelum, the most northerly of Punjab's five rivers, be transferred by contour canals southward to replenish the Chanab, Ravi and Sutlej rivers.

This transfer allowed the headwaters of the Indus to be used for irrigation in southeastern Punjab, while western Punjab was to be irrigated by the transferred water. These link canals, that eventually irrigated about 1 million ha of Punjab, were completed by 1915. In addition, two large projects were sanctioned in 1921-23 for completion by 1932: the Sukkar Barrage on the lower Indus for Sind and the Sutlej water storage project for Punjab

Together, these irrigation works completely used the free-flowing waters of the Indus Basin. The idea of building storage reservoirs on the upper Beas and Sutlej rivers in Punjab - first mooted around 1900 - was seen as the solution to provide additional water. Eventual approval of the Sukkur Barrage in 1923 contained two important riders:

- that a basin-wide hydrometric network had to be installed to enable measurement of the impact of Punjab withdrawals on Sind at Sukkur³, and

² Sind Province was administered by the Government of Bombay at that time.

³ The decision to install a basin-wide hydrometric network was a far-sighted one. Without the data thus collected, it would have been impossible to undertake the detailed planning that led to the Indus Treaty.

- all future Punjab schemes would have to be carefully examined to determine their effect on Sukkur.

Punjab formally objected to the Sukkur Barrage because the Barrage restricted its right to develop its rivers, and the debate continued for the next 24 years with few positive outcomes. With Provincial autonomy in 1935, Punjab stepped-up its planning efforts for additional irrigation schemes including new diversions and storage.⁴ Sind became increasingly concerned and in October 1939 it requested the Government of India (GOI) to appoint a national commission to investigate its complaints. In September 1941, the Indus Commission (also known as the "Rau Commission" after its Chairman) was formed.

Eminent lawyers were appointed by Punjab and Sind to appear before the Commission. This marked a new phase in the Indus water discussions as formerly, all water negotiations had been carried at a technical level among engineers. The Commission reported and recommended in July 1942 that Punjab's proposed projects were "*likely to cause material injury to Sind's inundation canals*", and two additional barrages on the lower Indus in Sind (at Gudu and Harjipur) would probably be required if Punjab built storage schemes. That being the case, *the Commission recommended that Punjab in particular make a contribution towards the cost of these works*. However, neither side accepted its findings or recommendations.

Failing agreement, Punjab and Sind appealed to the Government of India against the findings and recommendations. Meanwhile, the Chief Engineers of Punjab and Sind had informally prepared a draft agreement by September 1945 but the Provincial governments could not reach an accord. The matter was referred to London in early 1947 but all further decisions were eclipsed by Indian Independence in August, 1947.

INDEPENDENCE AND PARTITION

Partition put 80 percent of the Indus Basin's irrigated area in Pakistan, yet the population was fairly evenly split between them: 25 million in Pakistan and 21 million in India. The massive dislocation of Hindu, Sikh and Muslim populations - possibly as many as 6 million people - put tremendous strains on the new countries. The spark that started the international dispute was India's cutting off water supplies to some canals in March 1948 at the start of the summer (kharif) irrigation season. That affected 5.5 percent of Pakistan's irrigated area and was a serious blow when there were hundreds of thousands of refugees to be fed.

⁴ Through the Government of India Act of 1935, water became a subject of provincial jurisdiction from 1 April 1937. Prior to this Act, the Government of India had the power to resolve inter-state conflicts by executive order. After the Act, the Governor-General could only become involved if one province officially complained against another. If the Governor-General felt unable to resolve the dispute, it was referred to the British Government in London for resolution.

Partition of India took only 73 days. In the Punjab, a Boundary Commission under Sir Cyril Radcliffe set-out to divide the Province but found that the issue was "complicated by the existence of canal systems, so vital to the life of Punjab, but developed only under the conception of a single administration." Radcliffe contacted both the leaders of India and Pakistan, Nehru and Jinnah, with the idea that the "Punjab water system should be a joint venture run by both countries." However, Radcliffe was:

rewarded for his suggestion by a joint Hindu-Muslim rebuke. Jinnah told him to get on with his job and inferred that he would rather have Pakistan desert than fertile fields watered by courtesy of Hindus. Nehru curtly informed him that what India did with India's rivers was India's affair. Both leaders were obviously furious with him and hinted he was playing politics.⁵

Under the Partition Stand-Still Agreements,⁶ which expired at the end of March 1948, East Punjab [India] claimed it had every legal right to cut supplies because West Punjab [Pakistan] had taken no steps to renew the agreement. It was the East Punjab's contention that the proprietary rights in the waters of the rivers in East Punjab vest wholly in the East Punjab Government, and that West Punjab could not claim any share of these waters as a right. This was despite the fact that the few canals in India (12 compared with 133 in Pakistan) used only 11 percent of the Indus Basin's available water and at a lower water use intensity (66 percent).

Quickly the issue became a nationalist cause. The then Secretary-General of Pakistan (and later Prime Minister) Chaudhri Muhammed Ali, stated:

On the side of East Punjab [India] there was Machievellian duplicity. On the part of West Punjab [Pakistan] there was a neglect of duty, complacency, and lack of prudence - which had disastrous consequences for Pakistan.

After a Pakistan delegation to India negotiated a new agreement at Simla, water supplies were restored on April 30, 1948 and the new agreement was signed following an inter-Dominion Conference in New Delhi on May 4, 1948.

The Simla Agreement was between the states of East and West Punjab and was valid only until October 15, 1948. It contained seven clauses which established the conditions under which East Punjab would supply water to West Punjab. Among the most important, West Punjab recognized East Punjab's anxiety to develop its water-

⁵ LEONARD MOSLEY, *THE LAST DAYS OF THE BRITISH RAJ* at 198-199 (1962).

⁶ The Standstill Agreements established the division of assets, infrastructure and resources at Partition but recognized that it would take some time for the division to be implemented.

scarce areas which were undeveloped relative to West Punjab. In return, East Punjab gave an undertaking not to withhold water suddenly without giving West Punjab time to tap alternative sources. However, it was recognized that East Punjab would progressively diminish water supplies to the disputed canals giving West Punjab time to tap alternative sources.

Two conditions were disputed by West Punjab and a decision on these was postponed: East Punjab (i) claimed a proprietary right to the headwaters, and proposed to charge for water supplied under the agreement. Pending resolution of the disputed items, the Prime Minister of India was given the authority to specify an *ad hoc* sum of money to be deposited by West Punjab with the Reserve Bank of India. Part of this *ad hoc* sum represented the undisputed charges for operation and maintenance of water supply headworks, but the balance, East Punjab's *seigniorage charge* for water, was put into escrow.

CONFRONTATION 1948-1952

Later, Pakistan argued that she had signed the Simla Agreement under duress (Gulahti, 1973):

With millions of people facing loss of their herds, the ruin of their crops and eventual starvation from lack of water, Pakistan was under compulsion to accept whatever India proposed.

Pakistan proposed that the dispute be put to third-party adjudication at the International Court of Justice. India disagreed and proposed an *ad hoc* bilateral tribunal consisting of two judges from each country: In a landmark statement that set the policy of India's relationship with its neighbors, Jawaharlal Nehru⁷ stated:

To think, *ab initio*, of a third party will lessen the sense of responsibility of the judges and will also be a confession of our continued dependence on others. This would hardly be becoming of a proud and self-respecting independent nations.

THE WORLD BANK INTERVENES 1951-1960

Why did the World Bank become involved? First, the dispute was creating lending problems for the Bank: India objected to the Bank financing the Kotri Barrage on the Indus while Pakistan objected to the Bank financing the Bakhra Dam Project on the Sutlej river. Second, based upon economic and humanitarian concerns, David Lilienthal (former Chairman of the Tennessee Valley Authority (TVA) and the U.S. Atomic Energy Commission), a close friend of Eugene Black, the President of the

⁷ October 8, 1950.

Bank, believed that the growing unease between India and Pakistan over water could be a potential flashpoint for war.

Lilienthal also argued his case in the influential *Collier's* magazine article, "Another 'Korea' in the Making," that an early solution of the Indus water problem could lessen the threat of war over Kashmir and accelerate development of the region. Lilienthal was of the strong opinion that dividing the assets of the Indus Basin between Pakistan and India would be economically sub-optimal. As a result, in September 1951 President Black wrote to the Prime Ministers of Pakistan and India "offering the Bank's good offices for discussion of the Indus water dispute and negotiation of a settlement." It was, however, with conditions. Both parties had to accept three "essential principles":

- The Indus Basin's water resources are sufficient to continue all existing uses and to meet future needs;
- The water resources should be cooperatively developed and used in such a manner as to most effectively promote the economic development of the Indus Basin viewed as a unit; and,
- The problem of development and use of the Indus Basin water resources should be solved on a functional and not a political plan, without relations to past negotiations and past claims, and independently of political issues.

The Bank also outlined the process to achieve resolution. A Working Party would decide on the procedures to be followed and the timetable to develop a plan to manage the Basin in an integrated way. India and Pakistan would each designate an engineer to prepare, jointly with the designee of the other, a comprehensive long-range plan. An engineer selected by the Bank would be continuously available during the planning stage to participate as an impartial adviser, free to express his views, but without being in the position of an arbitrator. The Bank would act as the "post office" for both parties.

Pakistan and India had some reservations about the Bank's proposal. But rather in the style of 1990's shuttle diplomacy, President Black then visited both Prime Ministers separately to discuss the matter personally. Ultimately, both parties agreed to the Bank's proposals in March 1952 and the first Working Party met at the Bank in Washington DC in May 1952.

Stalemate 1952-1954

Regrettably, the Working Party meetings could not find a mutually acceptable basis for agreement on procedure. Fundamental were problems over defining existing uses. In September 1953, General Wheeler, the Bank's Engineering Adviser, suggested that each side present its own version of a comprehensive plan, and these were submitted in Washington in October 1953.

The Pakistani plan was for only its part of the basin but it effectively took all the water. India's plan was for the whole basin but all the water of the three eastern rivers (Sutlej, Beas and Ravi) would go to India plus 7 percent of the remainder. Given this impasse, the Bank put forward its own plan for settling the dispute: "In the circumstances, the Bank Representative feels he has a responsibility to put forward a proposal ... to serve as the basis of a comprehensive plan."

The Bank's Plan (February 1954)

The Bank's plan consisted basically of three parts: (i) historic withdrawals must be continued, but not necessarily from the same sources; (ii) the three eastern rivers were assigned to India and the three western rivers to Pakistan; and (iii) Pakistan would have a transition period of 5 years to construct link canals to allow replacement of water supplies from India. Left out was the issue of storage reservoirs in Pakistan.

President Black wrote to the Prime Ministers endorsing the proposed plan. While India accepted the Bank's plan as a basis for agreement in March 1954, Pakistan in May 1954 stated that "while it was in accord with the principles ... the plan ... does not meet the test of fairness laid down by the Bank." In particular, it objected to cutting-off the three eastern rivers. The Bank stood firmly behind its plan and Pakistan continued to press its case for fairness. India then gave an ultimatum to Pakistan that unless it accepted the plan, the cooperative arrangements agreed with the Bank in 1952 would lapse in June 1954.

Following pressure from the Bank, Pakistan finally accepted the Bank's proposals in principle (July 1954) and stated: "It is our understanding that, if it is clear that such a workable plan cannot be prepared, the Bank will use its good offices to bring about reasonable adjustments, no feasible means ... being excluded from consideration." India welcomed this sea-change and urged the Bank to clarify some aspects of the plan and to send representatives to the sub-continent to negotiate an agreement for the next phase of cooperation. President Black responded with a detailed terms of reference (TOR) and procedure for the next round of discussions and negotiations resumed in Washington, December 1954 on the Bank's terms. The revised TOR took account of Pakistan's concerns, recognizing the needs of the Sukkur and the prospective Gudu projects on the Indus. It stated that "if flow supplies are ... inadequate (taking into account inter-linked canals) ... the plan will outline the feasible means that might be adopted to meet any deficiencies." Thus the way was open to consider reservoir storage schemes

Inaugurating the new series of negotiations, President Black gave it a higher profile and replaced General Wheeler with a Bank generalist, stating:

For our part we intend to give the Indus Basin work our top priority. *Nothing we have on our desks is of equal importance* ... However, I have decided that the management will have to play not only a more

active, but also a more continuous role than it did in the earlier phase ... and therefore Mr. Iliff will represent the management as the day-to-day head of the Bank team....⁸

As a first step, the Bank's new team also brokered several new agreements for the day-to-day transitional regulation of canal water supplies. These replaced the May 1948 agreement from June 1955 and removed a chronic irritant to the negotiations.

Towards an "Optimal" Plan

The reason the Bank changed its position on storage reservoirs in the new TOR is that, following Pakistan's complaint, it engaged a Panel of Experts to independently examine the Bank's proposal. They found that the Bank's 1951 principle that stated there was sufficient flowing water for the future needs of the Indus Basin was unsound. In line with this new reality, the Bank asked both sides, in August 1955, to develop plans allowing for storage reservoirs.

Now that storage could be considered, Pakistan turned its attention away from the eastern rivers and concentrated on maximizing the potential of the western rivers. India became concerned that she may have to pay for more than link canals to ensure replacement of the eastern rivers and expressed concern to the Bank. Foreseeing that the dispute was likely to accelerate because of these financial concerns, President Black approached the USA and Commonwealth nations and asked if they would be willing to provide financial assistance. Informal discussions were held at the Bank with USA, UK, Canada, Australia and New Zealand. President Black and Vice-President Illif then undertook "shuttle diplomacy" among participants to facilitate agreement. However, none of the potential donors would provide financing until a comprehensive plan was agreed upon. And simultaneously, the individual plans developed by India and Pakistan became increasingly divergent in terms of scale and cost. Effectively, negotiations became "rupees for water." India argued (November 1958) that it could guarantee water to Pakistan at much lower cost. Pakistan refused to be dependent on India and pressed for its own solution (US\$1.12 billion in 1958).

Again, the Bank developed its own compromise plan recognizing that Pakistan would not be dependent on India to regulate its water supply. India was to receive the rights of the waters of the eastern river, and its share of the costs of replacement works in Pakistan was to be manageable. For Pakistan, replacement and new development works became inseparable, and thus it was necessary to agree on a set of works, and then procure funds for their development.

⁸ Mr. Iliffe was promoted to Vice-President and managed the Bank team in 1954-60.

THE FINAL STAGE

President Black and Vice-President Iliff again visited India and Pakistan in May 1959 to fine-tune the basis for the plan and secure the respective Prime Minister's concurrence. The Bank's plan was put forward as a "Heads of Agreement:"

- Division of waters as the Bank proposal of 1954;
- A system of replacement and development works in Pakistan without Indian participation and agreement;
- A 10-year transition period and some additional Indian withdrawals;
- An Indus Basin Development Commission with a neutral Chairman;
- An *ad hoc* but fixed financial contribution by India; and,
- An Indus Basin Development Fund to be established and administered by the Bank.

To persuade India, Black guaranteed that their financial contribution to the plan would be a fixed amount and promised financial assistance for the Beas Dam. In August 1959, President Black convinced the USA, Canada, United Kingdom, West Germany, Australia and New Zealand to underwrite a water settlement that would cost almost US\$1.0 billion. This included, \$541 million from the donor consortium as grants; \$150 million as loans from the Bank and USA, and a single payment from India of \$174 million. A supplementary agreement provided an additional \$315 million to Pakistan.

THE INDUS TREATY

The final treaty took only 15 months after the Heads of Agreement were finally drafted. The first draft was completed in Washington in just three weeks starting in October 1959. Following comments from the India and Pakistan governments in March 1960, a second draft was prepared. Just as all seem agreed, Pakistan insisted on rights for the western rivers in the parts of Kashmir and Jammu under Pakistan's *de facto* control. This was the last straw, and President Black took a hard stand and stated that if the negotiations failed at the twelfth hour, the Bank would make the reasons known. Pakistan withdrew its last minute amendments and the second draft of the treaty was agreed in April 1960.

After further minor amendments the third draft was completed by June 1960. Large disagreements emerged over the nature of the transition arrangements and Vice-President Iliff made a quick visit to meet the Prime Ministers and broker agreement. A final draft was prepared by August 1960. The treaty was signed on September 19, 1960 at Karachi by Prime Minister Nehru, President Ayub Khan and President Black.

CONCLUSION: WHY THE BANK'S ROLE WAS SUCCESSFUL

Buoyed by the success of the post-war reconstruction efforts in Europe, the Bank was not reticent about taking a lead role. It saw a unique opportunity to foster development and the Bank did not wait to be invited by the disputants. President Black gave it his highest priority and undertook shuttle diplomacy as needed. He stayed the course for the whole period 1951-1960 despite massive set-backs. The Bank's approach was pragmatic and flexible - it abandoned the concept of integrated Basin operation and management when it became clear this was politically infeasible. When it was obvious there were insurmountable differences, the Bank took the lead and proposed a solution. This involved continuous diplomacy at the highest levels backed by sound and independent technical analysis. Critically, it had the power to persuade and lead a consortium of partners to finance the treaty implementation, without which a treaty would not have been agreed. Askit Biswas (1992) summarized the lessons for today succinctly:

Leadership has basically become 'risk averse'. Clearly, major international organizations and bilateral aid agencies could play an important role on possible resolution of conflicts in many watercourses in developing countries. They need to play a more direct and catalytic role than has been witnesses in recent decades. Otherwise Mark Twain's perceptive comment that whisky is for drinking but water is for fighting might come true.

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CHAPTER 10

CONCLUSION

International Watercourses: Enhancing Cooperation and Managing Conflict

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The preceding chapters have clearly underscored the fact that water is a scarce resource characterized by both spatial and seasonal variations. It is a resource with no substitute and on which there is total dependency. In many parts of the world today demand for water is approaching supply, and in other parts such demand has already surpassed supply. This situation is, to a large extent, a direct result of the fast population growth and the consequential negative impact of such growth on both the quantity and quality of available water, and on the environment as a whole.

The competing demands over the limited supply of water emanate from a wide array of users, starting with the earliest competitors: nature and man. Nature, which was the dominant user for thousands of years, has gradually been marginalized by man, with the ecosystem downgraded to the bottom of the list of users in many parts of the world. At the local scene of most societies the available supply of water faces competing demands from domestic, agriculture, industry and municipal uses, and equally fierce internal competition among the different users within each of these sectors. At another level, there could also be competing demands over water between the different provinces, states or districts within the same country. However, the most difficult competing demands are those arising between different sovereign states. They are most difficult because they have been escalated in a number of regions into tensions and disputes between the states sharing the same international watercourses. Those disputes are not confined to the issue of quantitative allocation, but they also extend to water quality and regulation of the international watercourses. Some of those disputes have defied resolution for a long time.

The failure to address and resolve these disputes has been blamed, *inter alia*, on the absence of a comprehensive set of international legal norms dealing with international watercourses, as well as on the lack of political will to address these disputes. However, because water is an inter-disciplinary resource, international legal norms cannot by themselves provide resolution to disputes over international watercourses. Equally important is the fact that there can be no resolution of water disputes without international legal norms on international watercourses. As a matter of historical fact, the conclusion of bilateral and multilateral agreements has always been

instrumental in reducing conflict among different riparians. Arrangements providing for cooperative management schemes have shown their virtue for enhancing cooperation as well as for managing conflict, especially when all the riparians of an international watercourse are parties to such arrangements.

Recognition by the international community of the importance of bilateral, regional and multilateral legal strategies has manifested itself in the recent conclusion of a number of treaties, protocols and conventions on international watercourses. Such instruments include: the 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes; the 1994 Convention on the Cooperation for the Protection and Sustainable Use of the Danube River; the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin; the 1995 Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region; the 1996 Mahakali and Ganges treaties; and, more recently, the adoption in 1997 by the United Nations General Assembly of the Convention on the Non-Navigational Uses of International Watercourses. The conclusion of these various instruments is a clear and strong evidence of both, the recognition by the international community of the importance of international legal norms for enhancing cooperation and managing conflict, and the need for cooperative arrangements to resolve the quantitative and qualitative problems associated with water sharing.

However, because of the competing demands over the scarce available water resources, and the conflicting interests in the different parts of the world, difficulties have been encountered for a long time in reaching an agreement at the global level on international legal norms that could provide a framework for managing international watercourses. Because of these conflicting interests, the work on the codification of the law of international watercourses has not been an easy one. The United Nations International Law Commission which started working on the Convention on the Non-Navigational Uses of International Watercourses in the early seventies took almost three decades to finish its work. The Convention was finally adopted by the United Nations General Assembly in May 1997.

Although the UN Convention is the result of compromises between the various interests, it nevertheless provides a reasonable framework for governing non-navigational uses of international watercourses. Its value-added rests mainly on its codification of customary international law rules of core interest for different groups of states, and its comprehensive approach to the issues pertinent to international watercourses. Such issues include water sharing principles, obligation not to cause harm, environmental obligations, institutional arrangements and cooperation mechanisms, including notification and exchange of information. Another important feature of the Convention is the expanded coverage of the term "watercourse" which is defined as "a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus." Inclusion of groundwater in the definition of "watercourse" is another significant step

in the development of the law of international watercourses. This took place despite the opposition of some states, and despite the technical difficulties that characterize groundwater. The relevance and importance of the Convention have already been underscored by the International Court of Justice when it quoted some of its provisions in its decision on the Gabčíkovo-Nagymaros case in September 1997, only four months after the adoption of the Convention.

In parallel, the World Bank, being an international financial cooperative institution, proceeded slowly and cautiously on the issue of financing of projects on international watercourses. The policies established by the Bank in this regard did not grow in isolation, but were developed in tandem with the development of the international legal norms in this area. Those policies were influenced by, and had their own influence on, the development of international legal norms in the arena of international watercourses, most notably with respect to notification for planned measures - or projects - on such watercourses. It has been a gradual and subtle process of cross-fertilization. Even at the time when transboundary groundwater was not part of the slowly developing field of the law of international watercourses, the Bank addressed the issue of groundwater on an *ad hoc* basis, when it came up, rather than avoiding it.

At the regional level, a number of attempts were made for regulating the use of international watercourses. These attempts, however, vary in their scope and depth. The recent adoption of the Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region, beside affirming the need for equitable use of shared watercourses, provides for the establishment of a framework for cooperative management of regional water resources. It also provides for the establishment of national institutions for facilitating regional cooperation in support of the Protocol. On a more general basis, the strategies for managing international waters in Africa center around two themes, both based on, and aiming at, enhancing cooperation. Those strategies are: building capacity at the national level and promoting inter-riparian dialogue, with a view of paving the way for effective management and development of the shared watercourses.

The need for cooperation in the management, utilization and protection of international watercourses has led the Aral Sea Basin States to negotiate interstate water sharing agreements and set up regional institutions. There is, however, still the need for strengthening the existing legal framework and for developing new strategies to address transboundary water-related environment concerns. The objective to be achieved is an integrated management scheme, in particular for managing both water quantity and quality problems, such as the salinity issue. The 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes paves the way for integrating such environmental concerns. The Convention also reflects a number of principles enunciated in the Rio Declaration on Environment and Development. Financial assistance, such as grants from the Global Environment

Facility, are needed to support activities which are necessary for designing an appropriate legal framework, and for implementation of such a framework.

The recent trend towards enhanced cooperation on international watercourses is also apparent in the settlement of a number of bilateral disputes, some of which have defied resolution for a long time. The sharing of the waters of the Ganges river between India and Bangladesh has been a difficult issue eluding a viable solution for the last two decades. Direct negotiations in 1996 resulted in the signing of the Ganges Treaty which paved the way for resolution of the dispute. Mediation by a third party which is seen as an honest broker by both disputants, and which can assist in implementing the outcome of the mediation, has been the main reason for the success of the World Bank's efforts in the Indus Basin dispute between India and Pakistan. Although the Bank played a role in enhancing cooperation over the Aral Sea and the Mekong River Basin, the experience of managing conflict over the Indus Basin has, unfortunately, not been replicated. The decision of Hungary and Slovakia to refer the Gabčíkovo-Nagymaros dispute over the Danube River to the International Court of Justice added another important dimension to dispute settlement mechanisms over international watercourses. For the first time in its history, the International Court of Justice was called upon to decide a dispute over an international watercourse. The decision, no doubt, is a landmark, and could influence the thinking of many disputants over international watercourses when considering means for dispute settlement.

The UN Convention and the various regional and bilateral instruments, with their varying scope and depth, underscore the importance of international legal norms in enhancing cooperation and managing conflict over international watercourses. These instruments also illustrate the recent trend towards more comprehensive strategies for managing and protecting international watercourses - a trend that we hope will continue and expand with the view of addressing the issues of water scarcity and quality for the benefit of the more than two billion people who either depend on, or stand to benefit from, international watercourses throughout the world.

ANNEXES

Convention on the Law of the Non-Navigational Uses of International Watercourses

The Parties to the present Convention,

Conscious of the importance of international watercourses and the non-navigational uses thereof in many regions of the world,

Having in mind Article 13, paragraph 1 (a), of the Charter of the United Nations, which provides that the General Assembly shall initiate studies and make recommendations for the purpose of encouraging the progressive development of international law and its codification,

Considering that successful codification and progressive development of rules of international law regarding non-navigational uses of international watercourses would assist in promoting and implementing the purposes and principles set forth in Articles 1 and 2 of the Charter of the United Nations,

Taking into account the problems affecting many international watercourses resulting from, among other things, increasing demands and pollution,

Expressing the conviction that a framework convention will ensure the utilization, development, conservation, management and protection of international watercourses and the promotion of the optimal and sustainable utilization thereof for present and future generations,

Affirming the importance of international cooperation and good-neighborliness in this field,

Aware of the special situation and needs of developing countries,

Recalling the principles and recommendations adopted by the United Nations Conference on Environment and Development of 1992 in the Rio Declaration and Agenda 21,

Recalling also the existing bilateral and multilateral agreements regarding the non-navigational uses of international watercourses,

Mindful of the valuable contribution of international organizations, both governmental and non-governmental, to the codification and progressive development of international law in this field,

Appreciative of the work carried out by the International Law Commission on the law of the non-navigational uses of international watercourses,

Bearing in mind United Nations General Assembly resolution 49/52 of December 9, 1994,

Have agreed as follows:

PART I. INTRODUCTION

Article 1

Scope of the present Convention

1. The present Convention applies to uses of international watercourses and of their waters for purposes other than navigation and to measures of protection, preservation and management related to the uses of those watercourses and their waters.
2. The uses of international watercourses for navigation is not within the scope of the present Convention except insofar as other uses affect navigation or are affected by navigation.

Article 2

Use of terms

For the purposes of the present Convention:

- (a) “Watercourse” means a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus;
- (b) “International watercourse” means a watercourse, parts of which are situated in different States;
- (c) “Watercourse State” means a State Party to the present Convention in whose territory part of an international watercourse is situated, or a Party that is a regional economic integration organization, in the territory of one or more of whose Member States part of an international watercourse is situated;
- (d) “Regional economic integration organization” means an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which

has been duly authorized in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it.

Article 3

Watercourse agreements

1. In the absence of an agreement to the contrary, nothing in the present Convention shall affect the rights or obligations of a watercourse State arising from agreements in force for it on the date on which it became a party to the present Convention.

2. Notwithstanding the provisions of paragraph 1, parties to agreements referred to in paragraph 1 may, where necessary, consider harmonizing such agreements with the basic principles of the present Convention.

3. Watercourse States may enter into one or more agreements, hereinafter referred to as “watercourse agreements”, which apply and adjust the provisions of the present Convention to the characteristics and uses of a particular international watercourse or part thereof.

4. Where a watercourse agreement is concluded between two or more watercourse States, it shall define the waters to which it applies. Such an agreement may be entered into with respect to an entire international watercourse or any part thereof or a particular project, programme or use except insofar as the agreement adversely affects, to a significant extent, the use by one or more other watercourse States of the waters of the watercourse, without their express consent.

5. Where a watercourse State considers that adjustment and application of the provisions of the present Convention is required because of the characteristics and uses of a particular international watercourse, watercourse States shall consult with a view to negotiating in good faith for the purpose of concluding a watercourse agreement or agreements.

6. Where some but not all watercourse States to a particular international watercourse are parties to an agreement, nothing in such agreement shall affect the rights or obligations under the present Convention of watercourse States that are not parties to such an agreement.

Article 4

Parties to watercourse agreements

1. Every watercourse State is entitled to participate in the negotiation of and to become a party to any watercourse agreement that applies to the entire international watercourse, as well as to participate in any relevant consultations.
2. A watercourse State whose use of an international watercourse may be affected to a significant extent by the implementation of a proposed watercourse agreement that applies only to a part of the watercourse or to a particular project, programme or use is entitled to participate in consultations on such an agreement and, where appropriate, in the negotiation thereof in good faith with a view to becoming a party thereto, to the extent that its use is thereby affected.

PART II. GENERAL PRINCIPLES

Article 5

Equitable and reasonable utilization and participation

1. Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.
2. Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention.

Article 6

Factors relevant to equitable and reasonable utilization

1. Utilization of an international watercourse in an equitable and reasonable manner within the meaning of article 5 requires taking into account all relevant factors and circumstances, including:
 - (a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;

- (b) The social and economic needs of the watercourse States concerned;
- (c) The population dependent on the watercourse in each watercourse State;
- (d) The effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
- (e) Existing and potential uses of the watercourse;
- (f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
- (g) The availability of alternatives, of comparable value, to a particular planned or existing use.

2. In the application of article 5 or paragraph 1 of this article, watercourse States concerned shall, when the need arises, enter into consultations in a spirit of cooperation.

3. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

Article 7

Obligations not to cause significant harm

1. Watercourse States shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States.

2. Where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.

Article 8

General obligation to cooperate

1. Watercourse States shall cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse.
2. In determining the manner of such cooperation, watercourse States may consider the establishment of joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in the light of experience gained through cooperation in existing joint mechanisms and commissions in various regions.

Article 9

Regular exchange of data and information

1. Pursuant to article 8, watercourse States shall on a regular basis exchange readily available data and information on the condition of the watercourse, in particular that of a hydrological, meteorological, hydrogeological and ecological nature and related to the water quality as well as related forecasts.
2. If a watercourse State is requested by another watercourse State to provide data or information that is not readily available, it shall employ its best efforts to comply with the request but may condition its compliance upon payment by the requesting State of the reasonable costs of collecting and, where appropriate, processing such data or information.
3. Watercourse States shall employ their best efforts to collect and, where appropriate, to process data and information in a manner which facilitates its utilization by the other watercourse States to which it is communicated.

Article 10

Relationship between different kinds of uses

1. In the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses.
2. In the event of a conflict between uses of an international watercourse, it shall be resolved with reference to articles 5 to 7, with special regard being given to the requirements of vital human needs.

PART III. PLANNED MEASURES

Article 11

Information concerning planned measures

Watercourse States shall exchange information and consult each other and, if necessary, negotiate on the possible effects of planned measures on the condition of an international watercourse.

Article 12

Notification concerning planned measures with possible adverse effects

Before a watercourse State implements or permits the implementation of planned measures which may have a significant adverse effect upon other watercourse States, it shall provide those States with timely notification thereof. Such notification shall be accompanied by available technical data and information, including the results of any environmental impact assessment, in order to enable the notified States to evaluate the possible effects of the planned measures.

Article 13

Period for reply to notification

Unless otherwise agreed:

(a) A watercourse State providing a notification under article 12 shall allow the notified States a period of six months within which to study and evaluate the possible effects of the planned measures and to communicate the findings to it;

(b) This period shall, at the request of a notified State for which the evaluation of the planned measures poses special difficulty, be extended for a period of six months.

Article 14

Obligations of the notifying State during the period for reply

During the period referred to in article 13, the notifying State:

(a) Shall cooperate with the notified States by providing them, on request, with any additional data and information that is available and necessary for an accurate evaluation; and

(b) Shall not implement or permit the implementation of the planned measures without the consent of the notified States.

Article 15

Reply to notification

The notified States shall communicate their findings to the notifying State as early as possible within the period applicable pursuant to article 13. If a notified State finds that implementation of the planned measures would be inconsistent with the provisions of articles 5 or 7, it shall attach to its finding a documented explanation setting forth the reasons for the finding.

Article 16

Absence of reply to notification

1. If, within the period applicable pursuant to article 13, the notifying State receives no communication under article 15, it may, subject to its obligations under articles 5 and 7, proceed with the implementation of the planned measures, in accordance with the notification and any other data and information provided to the notified States.
2. Any claim to compensation by a notified State which has failed to reply within the period applicable pursuant to article 13 may be offset by the costs incurred by the notifying State for action undertaken after the expiration of the time for a reply which would not have been undertaken if the notified State had objected within that period.

Article 17

Consultations and negotiations concerning planned measures

1. If a communication is made under article 15 that implementation of the planned measures would be inconsistent with the provisions of articles 5 or 7, the notifying State and the State making the communication shall enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation.
2. The consultations and negotiations shall be conducted on the basis that each State must in good faith pay reasonable regard to the rights and legitimate interests of the other State.
3. During the course of the consultations and negotiations, the notifying State shall, if so requested by the notified State at the time it makes the communication,

refrain from implementing or permitting the implementation of the planned measures for a period of six months unless otherwise agreed.

Article 18

Procedures in the absence of notification

1. If a watercourse State has reasonable grounds to believe that another watercourse State is planning measures that may have a significant adverse effect upon it, the former State may request the latter to apply the provisions of article 12. The request shall be accompanied by a documented explanation setting forth its grounds.

2. In the event that the State planning the measures nevertheless finds that it is not under an obligation to provide a notification under article 12, it shall so inform the other State, providing a documented explanation setting forth the reasons for such finding. If this finding does not satisfy the other State, the two States shall, at the request of that other State, promptly enter into consultations and negotiations in the manner indicated in paragraphs 1 and 2 of article 17.

3. During the course of the consultations and negotiations, the State planning the measures shall, if so requested by the other State at the time it requests the initiation of consultations and negotiations, refrain from implementing or permitting the implementation of those measures for a period of six months unless otherwise agreed.

Article 19

Urgent implementation of planned measures

1. In the event that the implementation of planned measures is of the utmost urgency in order to protect public health, public safety or other equally important interests, the State planning the measures may, subject to articles 5 and 7, immediately proceed to implementation, notwithstanding the provisions of article 14 and paragraph 3 of article 17.

2. In such case, a formal declaration of the urgency of the measures shall be communicated without delay to the other watercourse States referred to in article 12 together with the relevant data and information.

3. The State planning the measures shall, at the request of any of the States referred to in paragraph 2, promptly enter into consultations and negotiations with it in the manner indicated in paragraphs 1 and 2 of article 17.

PART IV. PROTECTION, PRESERVATION AND MANAGEMENT

Article 20

Protection and preservation of ecosystems

Watercourse States shall, individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses.

Article 21

Prevention, reduction and control of pollution

1. For the purpose of this article, "pollution of an international watercourse" means any detrimental alteration in the composition or quality of the waters of an international watercourse which results directly or indirectly from human conduct.

2. Watercourse States shall, individually and, where appropriate, jointly, prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse. Watercourse States shall take steps to harmonize their policies in this connection.

3. Watercourse States shall, at the request of any of them, consult with a view to arriving at mutually agreeable measures and methods to prevent, reduce and control pollution of an international watercourse, such as:

- (a) Setting joint water quality objectives and criteria;
- (b) Establishing techniques and practices to address pollution from point and non-point sources;
- (c) Establishing lists of substances the introduction of which into the waters of an international watercourse is to be prohibited, limited, investigated or monitored.

Article 22

Introduction of alien or new species

Watercourse States shall take all measures necessary to prevent the introduction of species, alien or new, into an international watercourse which may have effects detrimental to the ecosystem of the watercourse resulting in significant harm to other watercourse States.

Article 23

Protection and preservation of the marine environment

Watercourse States shall, individually and, where appropriate, in cooperation with other States, take all measures with respect to an international watercourse that are necessary to protect and preserve the marine environment, including estuaries, taking into account generally accepted international rules and standards.

Article 24

Management

1. Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism.
2. For the purposes of this article, “management” refers, in particular, to:
 - (a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and
 - (b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.

Article 25

Regulation

1. Watercourse States shall cooperate, where appropriate, to respond to needs or opportunities for regulation of the flow of the waters of an international watercourse.
2. Unless otherwise agreed, watercourse States shall participate on an equitable basis in the construction and maintenance or defrayal of the costs of such regulation works as they may have agreed to undertake.

3. For the purposes of this article, “regulation” means the use of hydraulic works or any other continuing measure to alter, vary or otherwise control the flow of the waters of an international watercourse.

Article 26

Installations

1. Watercourse States shall, within their respective territories, employ their best efforts to maintain and protect installations, facilities and other works related to an international watercourse.

2. Watercourse States shall, at the request of any of them which has reasonable grounds to believe that it may suffer significant adverse effects, enter into consultations with regard to:

(a) The safe operation and maintenance of installations, facilities or other works related to an international watercourse; and

(b) The protection of installations, facilities or other works from wilful or negligent acts or the forces of nature.

PART V. HARMFUL CONDITIONS AND EMERGENCY SITUATIONS

Article 27

Prevention and mitigation of harmful conditions

Watercourse States shall, individually and, where appropriate, jointly, take all appropriate measures to prevent or mitigate conditions related to an international watercourse that may be harmful to other watercourse States, whether resulting from natural causes or human conduct, such as flood or ice conditions, water-borne diseases, siltation, erosion, salt-water intrusion, drought or desertification.

Article 28

Emergency situations

1. For the purpose of this article, “emergency” means a situation that causes, or poses an imminent threat of causing, serious harm to watercourse States or other States and that results suddenly from natural causes, such as floods, the breaking up of ice, landslides or earthquakes, or from human conduct, such as industrial accidents.

2. A watercourse State shall, without delay and by the most expeditious means available, notify other potentially affected States and competent international organizations of any emergency originating within its territory.

3. A watercourse State within whose territory an emergency originates shall, in cooperation with potentially affected States and, where appropriate, competent international organizations, immediately take all practicable measures necessitated by the circumstances to prevent, mitigate and eliminate harmful effects of the emergency.

4. When necessary, watercourse States shall jointly develop contingency plans for responding to emergencies, in cooperation, where appropriate, with other potentially affected States and competent international organizations.

PART VI. MISCELLANEOUS PROVISIONS

Article 29

International watercourses and installations in time of armed conflict

International watercourses and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and non-international armed conflict and shall not be used in violation of those principles and rules.

Article 30

Indirect procedures

In cases where there are serious obstacles to direct contacts between watercourse States, the States concerned shall fulfil their obligations of cooperation provided for in the present Convention, including exchange of data and information, notification, communication, consultations and negotiations, through any indirect procedure accepted by them.

Article 31

Data and information vital to national defence or security

Nothing in the present Convention obliges a watercourse State to provide data or information vital to its national defence or security. Nevertheless, that State shall cooperate in good faith with the other watercourse States with a view to providing as much information as possible under the circumstances.

Article 32

Non-discrimination

Unless the watercourse States concerned have agreed otherwise for the protection of the interests of persons, natural or juridical, who have suffered or are under a serious threat of suffering significant transboundary harm as a result of activities related to an international watercourse, a watercourse State shall not discriminate on the basis of nationality or residence or place where the injury occurred, in granting to such persons, in accordance with its legal system, access to judicial or other procedures, or a right to claim compensation or other relief in respect of significant harm caused by such activities carried on in its territory.

Article 33

Settlement of disputes

1. In the event of a dispute between two or more Parties concerning the interpretation or application of the present Convention, the Parties concerned shall, in the absence of an applicable agreement between them, seek a settlement of the dispute by peaceful means in accordance with the following provisions.

2. If the parties concerned cannot reach agreement by negotiation requested by one of them, they may jointly seek the good offices of, or request mediation or conciliation by, a third party, or make use, as appropriate, of any joint watercourse institutions that may have been established by them or agree to submit the dispute to arbitration or to the International Court of Justice.

3. Subject to the operation of paragraph 10, if after six months from the time of the request for negotiations referred to in paragraph 2, the Parties concerned have not been able to settle their dispute through negotiation or any other means referred to in paragraph 2, the dispute shall be submitted, at the request of any of the parties to the dispute, to impartial fact-finding in accordance with paragraphs 4 to 9, unless the Parties otherwise agree.

4. A Fact-finding Commission shall be established, composed of one member nominated by each Party concerned and in addition a member not having the nationality of any of the Parties concerned chosen by the nominated members who shall serve as Chairman.

5. If the members nominated by the Parties are unable to agree on a Chairman within three months of the request for the establishment of the Commission, any Party concerned may request the Secretary-General of the United Nations to appoint the Chairman who shall not have the nationality of any of the parties to the dispute or of any riparian State of the watercourse concerned. If one of the Parties fails to nominate

a member within three months of the initial request pursuant to paragraph 3, any other Party concerned may request the Secretary-General of the United Nations to appoint a person who shall not have the nationality of any of the parties to the dispute or of any riparian State of the watercourse concerned. The person so appointed shall constitute a single-member Commission.

6. The Commission shall determine its own procedure.

7. The Parties concerned have the obligation to provide the Commission with such information as it may require and, on request, to permit the Commission to have access to their respective territory and to inspect any facilities, plant, equipment, construction or natural feature relevant for the purpose of its inquiry.

8. The Commission shall adopt its report by a majority vote, unless it is a single-member Commission, and shall submit that report to the Parties concerned setting forth its findings and the reasons therefor and such recommendations as it deems appropriate for an equitable solution of the dispute, which the Parties concerned shall consider in good faith.

9. The expenses of the Commission shall be borne equally by the Parties concerned.

10. When ratifying, accepting, approving or acceding to the present Convention, or at any time thereafter, a Party which is not a regional economic integration organization may declare in a written instrument submitted to the Depository that, in respect of any dispute not resolved in accordance with paragraph 2, it recognizes as compulsory ipso facto and without special agreement in relation to any Party accepting the same obligation:

(a) Submission of the dispute to the International Court of Justice; and/or

(b) Arbitration by an arbitral tribunal established and operating, unless the parties to the dispute otherwise agreed, in accordance with the procedure laid down in the annex to the present Convention.

A Party which is a regional economic integration organization may make a declaration with like effect in relation to arbitration in accordance the subparagraph (b).

PART VII. FINAL CLAUSES

Article 34

Signature

The present Convention shall be open for signature by all States and by regional economic integration organizations from 21 May 1997 until 20 May 2000 at United Nations Headquarters in New York.

Article 35

Ratification, acceptance, approval or accession

1. The present Convention is subject to ratification, acceptance, approval or accession by States and by regional economic integration organizations. The instruments of ratification, acceptance, approval or accession shall be deposited with the Secretary-General of the United Nations.
2. Any regional economic integration organization which becomes a Party to this Convention without any of its member States being a Party shall be bound by all the obligations under the Convention. In the case of such organizations, one or more of whose member States is a Party to this Convention, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under the Convention. In such cases, the organization and the member States shall not be entitled to exercise rights under the Convention concurrently.
3. In their instruments of ratification, acceptance, approval or accession, the regional economic integration organizations shall declare the extent of their competence with respect to the matters governed by the Convention. These organizations shall also inform the Secretary-General of the United Nations of any substantial modification in the extent of their competence.

Article 36

Entry into force

1. The present Convention shall enter into force on the ninetieth day following the date of deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession with the Secretary-General of the United Nations.
2. For each State or regional economic integration organization that ratifies, accepts or approves the Convention or accedes thereto after the deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the ninetieth day after the deposit by such State or regional

economic integration organization of its instrument of ratification, acceptance, approval or accession.

3. For the purposes of paragraphs 1 and 2, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States.

Article 37

Authentic texts

The original of the present Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned plenipotentiaries, being duly authorized thereto, have signed this Convention.

DONE at New York, this 21st day of May one thousand nine hundred and ninety-seven.

ANNEX

ARBITRATION

Article 1

Unless the parties to the dispute otherwise agree, the arbitration pursuant to article 33 of the Convention shall take place in accordance with articles 2 to 14 of the present annex.

Article 2

The claimant party shall notify the respondent party that it is referring a dispute to arbitration pursuant to Article 33 of the Convention. The notification shall state the subject matter of arbitration and include, in particular, the articles of the Convention, the interpretation or application of which are at issue. If the parties do not agree on the subject matter of the dispute, the arbitral tribunal shall determine the subject matter.

Article 3

1. In disputes between two parties, the arbitral tribunal shall consist of three members. Each of the parties to the dispute shall appoint an arbitrator and the two arbitrators so appointed shall designate by common agreement the third arbitrator, who shall be the Chairman of the tribunal. The latter shall not be a national of one of the parties to the dispute or of any riparian State of the watercourse concerned, nor have his or her usual place of residence in the territory of one of these parties or such riparian State, nor have dealt with the case in any other capacity.
2. In disputes between more than two parties, parties in the same interest shall appoint one arbitrator jointly by agreement.
3. Any vacancy shall be filled in the manner prescribed for the initial appointment.

Article 4

1. If the Chairman of the arbitral tribunal has not been designated within two months of the appointment of the second arbitrator, the President of the International Court of Justice shall, at the request of a party, designate the Chairman within a further two-month period.
2. If one of the parties to the dispute does not appoint an arbitrator within two months of the receipt of the request, the other party may inform the President of the International Court of Justice, who shall make the designation within a further two-month period.

Article 5

The arbitral tribunal shall render its decisions in accordance with the provisions of this Convention and international law.

Article 6

Unless the parties to the dispute otherwise agree, the arbitral tribunal shall determine its own rules of procedure.

Article 7

The arbitral tribunal may, at the request of one of the Parties, recommend essential interim measures of protection.

Article 8

1. The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, using all means at their disposal, shall:

- (a) Provide it with all relevant documents, information and facilities; and
- (b) Enable it, when necessary, to call witnesses or experts and receive their evidence.

2. The parties and the arbitrators are under an obligation to protect the confidentiality of any information they receive in confidence during the proceedings of the arbitral tribunal.

Article 9

Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the costs of the tribunal shall be borne by the parties to the dispute in equal shares. The tribunal shall keep a record of all its costs, and shall furnish a final statement thereof to the parties.

Article 10

Any Party that has an interest of a legal nature in the subject matter of the dispute which may be affected by the decisions in the case, may intervene in the proceedings with the consent of the tribunal.

Article 11

The tribunal may hear and determine counterclaims arising directly out of the subject matter of the dispute.

Article 12

Decisions both on procedure and substance of the arbitral tribunal shall be taken by a majority vote of its members.

Article 13

If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue the proceedings and to make its award. Absence of a party or a failure of a party to defend its case shall not constitute a bar to the proceedings. Before rendering its final decision, the arbitral tribunal must satisfy itself that the claim is well founded in fact and law.

Article 14

1. The tribunal shall render its final decision within five months of the date on which it is fully constituted unless it finds it necessary to extend the time limit for a period which should not exceed five more months.
2. The final decision of the arbitral tribunal shall be confined to the subject matter of the dispute and shall state the reasons on which it is based. It shall contain the names of the members who have participated and the date of the final decision. Any member of the tribunal may attach a separate or dissenting opinion to the final decision.
3. The award shall be binding on the parties to the dispute. It shall be without appeal unless the parties to the dispute have agreed in advance to an appellate procedure.
4. Any controversy which may arise between the parties to the dispute as regards the interpretation or manner of implementation of the final decision may be submitted by either party for decision to the arbitral tribunal which rendered it.



Projects on International Waterways

Applicability of Policy

1. The Bank's¹ operational policy covers the following types of international waterways:

- (a) any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more states, whether Bank members or not;
- (b) any tributary or other body of surface water that is a component of any waterway described in (a) above; and
- (c) any bay, gulf, strait, or channel bounded by two or more states or, if within one state, recognized as a necessary channel of communication between the open sea and other states--and any river flowing into such waters.

2. The policy applies to the following types of projects:

- (a) hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways as described in para. 1 above; and
- (b) detailed design and engineering studies of projects under para. 2(a) above, including those to be carried out by the Bank as executing agency or in any other capacity.

¹ "Bank" includes IDA, and "loans" includes credits.

Note: OP, BP, and GP 7.50 together replace OD 7.50, *Projects on International Waterways*, and OD 7.50.01, *Maps for Projects on International Waterways*. They also draw on the Operational Memoranda Revisions in Operational Instructions, 11/26/91, and Revisions in Operational Instructions, 1/7/93. Questions may be addressed to the International Law Adviser, LEGOP.

Agreements/Arrangements

3. Projects on international waterways may affect relations between the Bank and its borrowers² and between states (whether members of the Bank or not). The Bank recognizes that the cooperation and goodwill of riparians is essential for the efficient utilization and protection of the waterway. Therefore, it attaches great importance to riparians' making appropriate agreements or arrangements for these purposes for the entire waterway or any part thereof. The Bank stands ready to assist riparians in achieving this end. In cases where differences remain unresolved between the state proposing the project (beneficiary state) and the other riparians, prior to financing the project the Bank normally urges the beneficiary state to offer to negotiate in good faith with the other riparians to reach appropriate agreements or arrangements.

Notification

4. The Bank ensures that the international aspects of a project on an international waterway are dealt with at the earliest possible opportunity. If such a project is proposed, the Bank requires the beneficiary state, if it has not already done so, formally to notify the other riparians of the proposed project and its Project Details (see BP 7.50, para. 3). If the prospective borrower indicates to the Bank that it does not wish to give notification, normally the Bank itself does so. If the borrower also objects to the Bank's doing so, the Bank discontinues processing of the project. The executive directors concerned are informed of these developments and any further steps taken.

5. The Bank ascertains whether the riparians have entered into agreements or arrangements or have established any institutional framework for the waterway concerned. In the latter case, the Bank ascertains the scope of the institution's activities and functions and the status of its involvement in the proposed project, bearing in mind the possible need for notifying the institution.

6. Following notification, if the other riparians raise objections to the proposed project, the Bank in appropriate cases may appoint one or more independent experts to examine the issues in accordance with BP 7.50, paras. 8-12. Should the Bank decide to proceed with the project despite the objections of the other riparians, the Bank informs them of its decision.

Exceptions to Notification Requirement

7. The following exceptions are allowed to the Bank's requirement that the other riparian states be notified of the proposed project:

² "Borrower" refers to the member country in whose territory the project is carried out, whether the country is the borrower or the guarantor.

- (a) For any ongoing schemes, projects involving additions or alterations that require rehabilitation, construction, or other changes that in the judgment of the Bank
 - (i) will not adversely change the quality or quantity of water flows to the other riparians; and
 - (ii) will not be adversely affected by the other riparians' possible water use.

This exception applies only to minor additions or alterations to the ongoing scheme; it does not cover works and activities that would exceed the original scheme, change its nature, or so alter or expand its scope and extent as to make it appear a new or different scheme. In case of doubt regarding the extent to which a project meets the criteria of this exception, the executive directors representing the riparians concerned are informed and given at least two months to reply. Even if projects meet the criteria of this exception, the Bank tries to secure compliance with the requirements of any agreement or arrangement between the riparians.

- (b) Water resource surveys and feasibility studies on or involving international waterways. However, the state proposing such activities includes in the terms of reference for the activities an examination of any potential riparian issues.
- (c) Any project that relates to a tributary of an international waterway where the tributary runs exclusively in one state and the state is the lowest downstream riparian, unless there is concern that the project could cause appreciable harm to other states.

Presentation of Loans to the Executive Directors

8. For every project on an international waterway, the Staff Appraisal Report (SAR) and Memorandum and Recommendation of the President (MOP) deal with the international aspects of the project, and state that Bank staff have considered these aspects and are satisfied that

- (a) the issues involved are covered by an appropriate agreement or arrangement between the beneficiary state and the other riparians; or
- (b) the other riparians have given a positive response to the beneficiary state or Bank, in the form of consent, no objection, support to the project, or confirmation that the project will not harm their interests; or

- (c) in all other cases, in the assessment of Bank staff, the project will not cause appreciable harm to the other riparians, and will not be appreciably harmed by the other riparians' possible water use. The MOP also contains in an annex the salient features of any objection and, where applicable, the report and conclusions of the independent experts.

Maps

9. Documentation for a project on an international waterway includes a map that clearly indicates the waterway and the location of the project's components. This requirement applies to the SAR, the MOP, the Project Information Document (PID), and any internal memoranda that deal with the riparian issues associated with the project. Maps are provided for projects on international waterways even when notification to riparians is not required by the provisions of OP 7.50. Maps are prepared and cleared in accordance with Administrative Manual Statement 7.10, *Cartographic Services*, and its annexes.

10. However, the inclusion of maps in the cited documents, except internal memoranda, is subject to any general instruction or decision of the Regional Vice President, taken in consultation with the Senior Vice President and General Counsel, to omit maps of the beneficiary state in entirety or in part.



Bank Procedures

Projects on International Waterways

1. A potential international water rights issue is assessed as early as possible in identification¹ and described in all project documents starting with the Project Information Document (PID). The cover memorandum for the preappraisal package including the PID is prepared in collaboration with the Legal Department (LEG) to convey all relevant information on international aspects of the project; the memorandum is addressed to the vice president of the Region processing the project (RVP) and copied to the Senior Vice President and General Counsel (LEGVP). Throughout the project cycle, the country department (CD) director, in consultation with LEG, keeps the managing director concerned (MD) abreast of international aspects of the project and related events, through the RVP.

Notification

2. As early as possible during identification, the Bank² advises the state proposing the project on an international waterway (beneficiary state) that, if it has not already done so, it should formally notify the other riparians of the proposed project, including the Project Details (see para. 3). However, if the prospective borrower³ indicates to the Bank that it does not wish to give notification, normally the Bank itself does so. If the beneficiary state also objects to the Bank's doing so, the Bank discontinues processing of the project. The executive directors concerned (EDs) are informed of these developments and any further steps taken.

¹ See BP 10.00, *Investment Lending: Identification to Board Presentation*, step 1.

² "Bank" includes IDA, and "loans" includes credits.

³ "Borrower" refers to the member country in whose territory the project is carried out, whether the country is the borrower or the guarantor.

Note: OP, BP, and GP 7.50 together replace OD 7.50, *Projects on International Waterways*, and OD 7.50.01, *Maps for Projects on International Waterways*. They also draw on the *Operational Memoranda Revisions in Operational Instructions*, 11/26/91, and *Revisions in Operational Instructions*, 1/7/93. Questions may be addressed to the International Law Adviser, LEGOP.

3. The notification contains, to the extent available, sufficient technical specifications, information, and other data (Project Details) to enable the other riparians to determine as accurately as possible whether the proposed project has potential for causing appreciable harm through water deprivation or pollution or otherwise. Bank staff should be satisfied that the Project Details are adequate for making such a determination. If adequate Project Details are not available at the time of notification, they are made available to the other riparians as soon as possible after the notification. If, in exceptional circumstances, the Region proposes to go ahead with project appraisal before Project Details are available, the CD director, via a memorandum prepared in consultation with LEG and copied to the LEGVP, notifies the RVP of all relevant facts on international aspects and asks approval to proceed. In making this decision, the RVP seeks the advice of the MD.

4. The other riparians are allowed a reasonable period, normally not exceeding six months from the dispatch of the Project Details, to respond to the beneficiary state or Bank.

Responses/Objections

5. After giving notice, if the beneficiary state or Bank receives a positive response from the other riparians (in the form of consent, no objection, support to the project, or confirmation that the project will not harm their interests), or if the other riparians have not responded within the stipulated time, the CD director, in consultation with LEG and other departments concerned, addresses a memorandum to the RVP. The memorandum reports all relevant facts, including staff assessment of whether the project would (a) cause appreciable harm to the interests of the other riparians, or (b) be appreciably harmed by the other riparians' possible water use. The memorandum asks approval for further action. In making this decision, the RVP seeks the advice of the MD.

6. If the other riparians object to the proposed project, the CD director, in collaboration with LEG and other departments concerned, sends a memorandum on the objections to the RVP and copies it to the LEGVP. The memorandum addresses

- (a) the nature of the riparian issues;
- (b) the Bank staff's assessment of the objections raised, including the reasons for them and any available supporting data;
- (c) the staff's assessment of whether the proposed project will cause appreciable harm to the interests of the other riparians, or be appreciably harmed by the other riparians' possible water use;

- (d) the question of whether the circumstances of the case require that the Bank, before taking any further action, urge the parties to resolve the issues through amicable means such as consultations, negotiations, and good offices (which will normally be resorted to when the other riparians' objections are substantiated); and
- (e) the question of whether the objections are of such a nature that it is advisable to obtain an additional opinion from independent experts in accordance with paras. 8-12.

7. The RVP seeks the advice of the MD and the LEGVP, and decides whether and how to proceed. Based on these consultations, the RVP may ask the Loan Committee to consider the matter. The CD director then acts upon either the Loan Committee's instructions, which are issued by the chairman, or the RVP's instructions, and reports the outcome in a memorandum prepared in collaboration with LEG and other departments concerned. The memorandum, sent to the RVP and copied to the LEGVP, includes recommendations for processing the project further.

Seeking the Opinion of Independent Experts

8. If independent expert opinion is needed before further processing of the project (see OP 7.50, para. 6), the RVP requests the Vice President, Environmentally Sustainable Development (ESDVP) to initiate the process. The Office of the ESDVP maintains a record of such requests.

9. The ESDVP, in consultation with the RVP and LEG, selects one or more independent experts from a roster maintained by ESDVP (see para. 12). The experts selected may not be nationals of any of the riparians of the waterways in question, and also may not have any other conflicts of interest in the matter. The experts are engaged and their terms of reference prepared jointly by the offices of the ESDVP and the RVP. The latter finances the costs associated with engaging the experts. The experts are provided with the background information and assistance needed to complete their work efficiently.

10. The experts' terms of reference require that they examine the Project Details. If they deem it necessary to verify the Project Details or take any related action, the Bank makes its best efforts to assist. The experts meet on an ad hoc basis until they submit their report to the ESDVP and the RVP. The ESDVP or RVP may ask them to explain or clarify any aspect of their report.

11. The experts have no decision-making role in the project's processing. Their technical opinion is submitted for the Bank's purposes only, and does not in any way determine the rights and obligations of the riparians. Their conclusions are reviewed by the RVP and ESDVP, in consultation with the LEGVP.

12. The ESDVP maintains, in consultation with the RVPs and LEG, the roster of highly qualified independent experts, which consists of 10 names and is updated at the beginning of each fiscal year.

Good Practices

Projects on International Waterways

1. When changes occur in international boundaries, some surface waters that formerly were national in character become international waterways, requiring increased vigilance in identifying riparian issues. Regional staff assigned to handle any project covered in OP 7.50, para. 2--whether financed by the Bank, the Global Environment Facility, or any trust fund--should immediately check whether the surface waters involved are of international character. When in doubt, Regional staff should check with the lawyer concerned in the Legal Department (LEG).
2. Often, state authorities advised by Bank staff to notify other riparians in accordance with OP 7.50 have questioned aspects of and sought the reasons for the Bank's riparian policy. In responding, staff should seek the assistance of the Legal Adviser, International Law Issues (Operations), who should join in discussions with the state authorities.
3. Every effort should be made to allow the notified riparians six months to respond to the notification. A lesser period is advisable only in cases of emergency.
4. Upon being notified that a riparian may seek additional information or clarification, staff should make every effort to provide it and allow a reasonable period for study and response.
5. When the Office of the Vice President, Environmentally Sustainable Development (ESDVP) updates the roster of independent experts each fiscal year (see BP 7.50, paras. 8-12), the roster is communicated to the Senior Vice President and General Counsel (LEGVP).

Note: OP, BP, and GP 7.50 together replace OD 7.50, *Projects on International Waterways*, and OD 7.50.01, *Maps for Projects on International Waterways*. They also draw on the *Operational Memoranda Revisions in Operational Instructions*, 11/26/91, and *Revisions in Operational Instructions*, 1/7/93. Questions may be addressed to the International Law Adviser, LEGOP.

**Convention on the Protection and Use of Transboundary
Watercourses and International Lakes**

done at Helsinki, on 17 March 1992

Preamble

The Parties to this Convention,

Mindful that the protection and use of transboundary watercourses and international lakes are important and urgent tasks, the effective accomplishment of which can only be ensured by enhanced cooperation,

Concerned over the existence and threats of adverse effects, in the short or long term, of changes in the conditions of transboundary watercourses and international lakes on the environment, economies and well-being of the member countries of the Economic Commission for Europe (ECE),

Emphasizing the need for strengthened national and international measures to prevent, control and reduce the release of hazardous substances into the aquatic environment and to abate eutrophication and acidification, as well as pollution of the marine environment, in particular coastal areas, from land-based sources,

Commending the efforts already undertaken by the ECE Governments to strengthen cooperation, on bilateral and multilateral levels, for the prevention, control and reduction of transboundary pollution, sustainable water management, conservation of water resources and environmental protection,

Recalling the pertinent provisions and principles of the Declaration of the Stockholm Conference on the Human Environment, the Final Act of the Conference on Security and Cooperation in Europe (CSCE), the Concluding Documents of the Madrid and Vienna Meetings of Representatives of the Participating States of the CSCE, and the Regional Strategy for Environmental Protection and Rational Use of Natural Resources in ECE Member Countries covering the Period up to the Year 2000 and Beyond,

Conscious of the role of the United Nations Economic Commission for Europe in promoting international cooperation for the prevention, control and reduction of transboundary water pollution and sustainable use of transboundary waters, and in this regard recalling the ECE Declaration of Policy on Prevention and Control of Water Pollution, including Transboundary Pollution; the ECE Declaration of Policy on the Rational Use of Water; the ECE Principles Regarding Cooperation in the Field of

Transboundary Waters; the ECE Charter on Groundwater Management; and the Code of Conduct on Accidental Pollution of Transboundary Inland Waters,

Referring to decisions I (42) and I (44) adopted by the Economic Commission for Europe at its forty-second and forty-fourth sessions, respectively, and the outcome of the CSCE Meeting on the Protection of the Environment (Sofia, Bulgaria, 16 October - 3 November 1989),

Emphasizing that cooperation between member countries in regard to the protection and use of transboundary waters shall be implemented primarily through the elaboration of agreements between countries bordering the same waters, especially where no such agreements have yet been reached,

Have agreed as follows:

Article 1

DEFINITIONS

For the purposes of this Convention,

1. "Transboundary waters" means any surface or groundwaters which mark, cross or are located on boundaries between two or more States; wherever transboundary waters flow directly into the sea, these transboundary waters end at a straight line across their respective mouths between points on the low-water line of their banks;

2. "Transboundary impact" means any significant adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party. Such effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those factors;

3. "Party" means, unless the text otherwise indicates, a Contracting Party to this Convention;

4. "Riparian Parties" means the Parties bordering the same transboundary waters;

5. "Joint body" means any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties;

6. "Hazardous substances" means substances which are toxic, carcinogenic, mutagenic, teratogenic or bio-accumulative, especially when they are persistent;

7. "Best available technology" (the definition is contained in annex I to this Convention).

PART I

PROVISIONS RELATING TO ALL PARTIES

Article 2

GENERAL PROVISIONS

1. The Parties shall take all appropriate measures to prevent, control and reduce any transboundary impact.

2. The Parties shall, in particular, take all appropriate measures:

(a) To prevent, control and reduce pollution of waters causing or likely to cause transboundary impact;

(b) To ensure that transboundary waters are used with the aim of ecologically sound and rational water management, conservation of water resources and environmental protection;

(c) To ensure that transboundary waters are used in a reasonable and equitable way, taking into particular account their transboundary character, in the case of activities which cause or are likely to cause transboundary impact;

(d) To ensure conservation and, where necessary, restoration of ecosystems.

3. Measures for the prevention, control and reduction of water pollution shall be taken, where possible, at source.

4. These measures shall not directly or indirectly result in a transfer of pollution to other parts of the environment.

5. In taking the measures referred to in paragraphs 1 and 2 of this article, the Parties shall be guided by the following principles:

(a) 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;

(b) The polluter-pays principle, by virtue of which costs of pollution prevention, control and reduction measures shall be borne by the polluter;

(c) Water resources shall be managed so that the needs of the present generation are met without compromising the ability of future generations to meet their own needs.

6. The Riparian Parties shall cooperate on the basis of equality and reciprocity, in particular through bilateral and multilateral agreements, in order to develop harmonized policies, programmes and strategies covering the relevant catchment areas, or parts thereof, aimed at the prevention, control and reduction of transboundary impact and aimed at the protection of the environment of transboundary waters or the environment influenced by such waters, including the marine environment.

7. The application of this Convention shall not lead to the deterioration of environmental conditions nor lead to increased transboundary impact.

8. The provisions of this Convention shall not affect the right of Parties individually or jointly to adopt and implement more stringent measures than those set down in this Convention.

Article 3

PREVENTION, CONTROL AND REDUCTION

1. To prevent, control and reduce transboundary impact, the Parties shall develop, adopt, implement and, as far as possible, render compatible relevant legal, administrative, economic, financial and technical measures, in order to ensure, *inter alia*, that:

(a) The emission of pollutants is prevented, controlled and reduced at source through the application of, *inter alia*, low- and non-waste technology;

(b) Transboundary waters are protected against pollution from point sources through the prior licensing of waste-water discharges by the competent national authorities, and that the authorized discharges are monitored and controlled;

(c) Limits for waste-water discharges stated in permits are based on the best available technology for discharges of hazardous substances;

(d) Stricter requirements, even leading to prohibition in individual cases, are imposed when the quality of the receiving water or the ecosystem so requires;

(e) At least biological treatment or equivalent processes are applied to municipal waste water, where necessary in a step-by-step approach;

(f) Appropriate measures are taken, such as the application of the best available technology, in order to reduce nutrient inputs from industrial and municipal sources;

(g) Appropriate measures and best environmental practices are developed and implemented for the reduction of inputs of nutrients and hazardous substances from diffuse sources, especially where the main sources are from agriculture (guidelines for developing best environmental practices are given in Annex II to this Convention);

(h) Environmental impact assessment and other means of assessment are applied;

(i) Sustainable water-resources management, including the application of the ecosystems approach, is promoted;

(j) Contingency planning is developed;

(k) Additional specific measures are taken to prevent the pollution of groundwaters;

(l) The risk of accidental pollution is minimized.

2. To this end, each Party shall set emission limits for discharges from point sources into surface waters based on the best available technology, which are specifically applicable to individual industrial sectors or industries from which hazardous substances derive. The appropriate measures mentioned in paragraph 1 of this article to prevent, control and reduce the input of hazardous substances from point and diffuse sources into waters, may, *inter alia*, include total or partial prohibition of the production or use of such substances. Existing list of such industrial sectors or industries and of such hazardous substances in international conventions or regulations, which are applicable in the area covered by this Convention, shall be taken into account.

3. In addition, each Party shall define, where appropriate, water-quality objectives and adopt water-quality criteria for the purpose of preventing, controlling and reducing transboundary impact. General guidance for developing such objectives and criteria is given in annex III to this Convention. When necessary, the Parties shall endeavour to update this annex.

Article 4

MONITORING

The Parties shall establish programmes for monitoring the conditions of transboundary waters.

Article 5

RESEARCH AND DEVELOPMENT

The Parties shall cooperate in the conduct of research into and development of effective techniques for the prevention, control and reduction of transboundary impact. To this effect, the Parties shall, on a bilateral and/or multilateral basis, taking into account research activities pursued in relevant international forums, endeavour to initiate or intensify specific research programmes, where necessary, aimed, *inter alia*, at:

- (a) Methods for the assessment of the toxicity of hazardous substances and the noxiousness of pollutants;
- (b) Improved knowledge on the occurrence, distribution and environmental effects of pollutants and the processes involved;
- (c) The development and application of environmentally sound technologies, production and consumption patterns;
- (d) The phasing out and/or substitution of substances likely to have transboundary impact;
- (e) Environmentally sound methods of disposal of hazardous substances;
- (f) Special methods for improving the conditions of transboundary waters;
- (g) The development of environmentally sound water-construction works and water-regulation techniques;
- (h) The physical and financial assessment of damage resulting from transboundary impact.

The results of these research programmes shall be exchanged among the Parties in accordance with article 6 of this Convention.

Article 6

EXCHANGE OF INFORMATION

The Parties shall provide for the widest exchange of information, as early as possible, on issues covered by the provisions of this Convention.

Article 7

RESPONSIBILITY AND LIABILITY

The Parties shall support appropriate international efforts to elaborate rules, criteria and procedures in the field of responsibility and liability.

Article 8

PROTECTION OF INFORMATION

The provisions of this Convention shall not affect the rights or the obligations of Parties in accordance with their national legal systems and applicable supranational regulations to protect information related to industrial and commercial secrecy, including intellectual property, or national security.

PART II

PROVISIONS RELATING TO RIPARIAN PARTIES

Article 9

BILATERAL AND MULTILATERAL COOPERATION

1. The Riparian Parties shall on the basis of equality and reciprocity enter into bilateral or multilateral agreements or other arrangements, where these do not yet exist, or adapt existing ones, where necessary to eliminate the contradictions with the basic principles of this Convention, in order to define their mutual relations and conduct regarding the prevention, control and reduction of transboundary impact. The Riparian Parties shall specify the catchment area, or part(s) thereof, subject to cooperation. These agreements or arrangements shall embrace relevant issues covered by this Convention, as well as any other issues on which the Riparian Parties may deem it necessary to cooperate.

2. The agreements or arrangements mentioned in paragraph 1 of this article shall provide for the establishment of joint bodies. The tasks of these joint bodies shall

be, *inter alia*, and without prejudice to relevant existing agreements or arrangements, the following:

(a) To collect, compile and evaluate data in order to identify pollution sources likely to cause transboundary impact;

(b) To elaborate joint monitoring programmes concerning water quality and quantity;

(c) To draw up inventories and exchange information on the pollution sources mentioned in paragraph 2 (a) of this article;

(d) To elaborate emission limits for waste water and evaluate the effectiveness of control programmes;

(e) To elaborate joint water-quality objectives and criteria having regard to the provisions of article 3, paragraph 3 of this Convention, and to propose relevant measures for maintaining and, where necessary, improving the existing water quality;

(f) To develop concerted action programmes for the reduction of pollution loads from both point sources (e.g. municipal and industrial sources) and diffuse sources (particularly from agriculture);

(g) To establish warning and alarm procedures;

(h) To serve as a forum for the exchange of information on existing and planned uses of water and related installations that are likely to cause transboundary impact;

(i) To promote cooperation and exchange of information on the best available technology in accordance with the provisions of article 13 of this Convention, as well as to encourage cooperation in scientific research programmes;

(j) To participate in the implementation of environmental impact assessments relating to transboundary waters, in accordance with appropriate international regulations.

3. In cases where a coastal State, being Party to this Convention, is directly and significantly affected by transboundary impact, the Riparian Parties can, if they all so agree, invite that coastal State to be involved in an appropriate manner in the activities of multilateral joint bodies established by Parties riparian to such transboundary waters.

4. Joint bodies according to this Convention shall invite joint bodies, established by coastal States for the protection of the marine environment directly

affected by transboundary impact, to cooperate in order to harmonize their work and to prevent, control and reduce the transboundary impact.

5. Where two or more joint bodies exist in the same catchment area, they shall endeavour to coordinate their activities in order to strengthen the prevention, control and reduction of transboundary impact within that catchment area.

Article 10

CONSULTATIONS

Consultations shall be held between the Riparian Parties on the basis of reciprocity, good faith and good-neighbourliness, at the request of any such Party. Such consultations shall aim at cooperation regarding the issues covered by the provisions of this Convention. Any such consultations shall be conducted through a joint body established under article 9 of this Convention, where one exists.

Article 11

JOINT MONITORING AND ASSESSMENT

1. In the framework of general cooperation mentioned in article 9 of this Convention, or specific arrangements, the Riparian Parties shall establish and implement joint programmes for monitoring the conditions of transboundary waters, including floods and ice drifts, as well as transboundary impact.

2. The Riparian Parties shall agree upon pollution parameters and pollutants whose discharges and concentration in transboundary waters shall be regularly monitored.

3. The Riparian Parties shall, at regular intervals, carry out joint or coordinated assessments of the conditions of transboundary waters and the effectiveness of measures taken for the prevention, control and reduction of transboundary impact. The results of these assessments shall be made available to the public in accordance with the provisions set out in article 16 of this Convention.

4. For these purposes, the Riparian Parties shall harmonize rules for the setting up and operation of monitoring programmes, measurement systems, devices, analytical techniques, data processing and evaluation procedures, and methods for the registration of pollutants discharged.

Article 12

COMMON RESEARCH AND DEVELOPMENT

In the framework of general cooperation mentioned in article 9 of this Convention, or specific arrangements, the Riparian Parties shall undertake specific research and development activities in support of achieving and maintaining the water-quality objectives and criteria which they have agreed to set and adopt.

Article 13

EXCHANGE OF INFORMATION BETWEEN RIPARIAN PARTIES

1. The Riparian Parties shall, within the framework of relevant agreements or other arrangements according to article 9 of this Convention, exchange reasonably available data, *inter alia*, on:

- (a) Environmental conditions of transboundary waters;
- (b) Experience gained in the application and operation of best available technology and results of research and development;
- (c) Emission and monitoring data;
- (d) Measures taken and planned to be taken to prevent, control and reduce transboundary impact;
- (e) Permits or regulations for waste-water discharges issued by the competent authority or appropriate body.

2. In order to harmonize emission limits, the Riparian Parties shall undertake the exchange of information on their national regulations.

3. If a Riparian Party is requested by another Riparian Party to provide data or information that is not available, the former shall endeavour to comply with the request but may condition its compliance upon the payment, by the requesting party, of reasonable charges for collecting and, where appropriate, processing such data or information.

4. For the purposes of the implementation of this Convention, the Riparian Parties shall facilitate the exchange of best available technology, particularly through the promotion of: the commercial exchange of available technology; direct industrial contacts and cooperation, including joint ventures; the exchange of information and experience; and the provision of technical assistance. The Riparian Parties shall also

undertake joint training programmes and the organization of relevant seminars and meetings.

Article 14

WARNING AND ALARM SYSTEMS

The Riparian Parties shall without delay inform each other about any critical situation that may have transboundary impact. The Riparian Parties shall set up, where appropriate, and operate coordinated or joint communication, warning and alarm systems with the aim of obtaining and transmitting information. These systems shall operate on the basis of compatible data transmission and treatment procedures and facilities to be agreed upon by the Riparian Parties. The Riparian Parties shall inform each other about competent authorities or points of contact designated for this purpose.

Article 15

MUTUAL ASSISTANCE

1. If a critical situation should arise, the Riparian Parties shall provide mutual assistance upon request, following procedures to be established in accordance with paragraph 2 of this article.

2. The Riparian Parties shall elaborate and agree upon procedures for mutual assistance addressing, *inter alia*, the following issues:

- (a) The direction, control, coordination and supervision of assistance;
- (b) Local facilities and services to be rendered by the Party requesting assistance, including, where necessary, the facilitation of border-crossing formalities;
- (c) Arrangements for holding harmless, indemnifying and/or compensating the assisting Party and/or its personnel, as well as for transit through territories of third Parties, where necessary;
- (d) Methods of reimbursing assistance services.

Article 16

PUBLIC INFORMATION

1. The Riparian Parties shall ensure that information on the conditions of transboundary waters, measures taken or planned to be taken to prevent, control and reduce transboundary impact, and the effectiveness of those measures, is made

available to the public. For this purpose, the Riparian Parties shall ensure that the following information is made available to the public:

- (a) Water-quality objectives;
- (b) Permits issued and the conditions required to be met;
- (c) Results of water and effluent sampling carried out for the purposes of monitoring and assessment, as well as results of checking compliance with the water-quality objectives or the permit conditions.

2. The Riparian Parties shall ensure that this information shall be available to the public at all reasonable times for inspection free of charge, and shall provide members of the public with reasonable facilities for obtaining from the Riparian Parties, on payment of reasonable charges, copies of such information.

PART III

INSTITUTIONAL AND FINAL PROVISIONS

Article 17

MEETING OF PARTIES

1. The first meeting of the Parties shall be convened no later than one year after the date of the entry into force of this Convention. Thereafter, ordinary meetings shall be held every 3 years, or at shorter intervals as laid down in the rules of procedure. The Parties shall hold an extraordinary meeting if they so decide in the course of an ordinary meeting or at the written request of any Party, provided that, within 6 months of it being communicated to all Parties, the said request is supported by at least one third of the Parties.

2. At their meetings, the Parties shall keep under continuous review the implementation of this Convention, and, with this purpose in mind, shall:

(a) Review the policies for and methodological approaches to the protection and use of transboundary waters of the Parties with a view to further improving the protection and use of transboundary waters;

(b) Exchange information regarding experience gained in concluding and implementing bilateral and multilateral agreements or other arrangements regarding the protection and use of transboundary waters to which one or more of the Parties are party;

(c) Seek, where appropriate, the services of relevant ECE bodies as well as other competent international bodies and specific committees in all aspects pertinent to the achievement of the purposes of this Convention;

(d) At their first meeting, consider and by consensus adopt rules of procedure for their meetings;

(e) Consider and adopt proposals for amendments to this Convention;

(f) Consider and undertake any additional action that may be required for the achievement of the purposes of this Convention.

Article 18

RIGHT TO VOTE

1. Except as provided for in paragraph 2 of this article, each Party to this Convention shall have one vote.

2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States which are Parties to this Convention. Such organizations shall not exercise shall not exercise their right to vote if their member States exercise theirs, and vice versa.

Article 19

SECRETARIAT

The Executive Secretary of the Economic Commission for Europe shall carry out the following secretariat functions:

(a) The convening and preparing of meetings of the Parties;

(b) The transmission to the Parties of reports and other information received in accordance with the provisions of this Convention;

(c) The performance of such other functions as may be determined by the Parties.

Article 20

ANNEXES

Annexes to this Convention shall constitute an integral part thereof.

Article 21

AMENDMENTS TO THE CONVENTION

1. Any Party may propose amendments to this Convention.
2. Proposals for amendments to this Convention shall be considered at a meeting of the Parties.
3. The text of any proposed amendment to this Convention shall be submitted in writing to the Executive Secretary of the Economic Commission for Europe, who shall communicate it to all Parties at least ninety days before the meeting at which it is proposed for adoption.
4. An amendment to the present Convention shall be adopted by consensus of the representatives of the Parties to this Convention present at a meeting of the Parties, and shall enter into force for the Parties to the Convention which have accepted it on the ninetieth day after the date on which two thirds of those Parties have deposited with the Depositary their instruments of acceptance of the amendment. The amendment shall enter into force for any other Party on the ninetieth day after the date on which that Party deposits its instrument of acceptance of the amendment.

Article 22

Settlement of Disputes

1. If a dispute arises between two or more Parties about the interpretation or application of this Convention, they shall seek a solution by negotiation or by any other means of dispute settlement acceptable to the parties to the dispute.
2. When signing, ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a Party may declare in writing to the Depositary that, for a dispute not resolved in accordance with paragraph 1 of this article, it accepts one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation:
 - (a) Submission of the dispute to the International Court of Justice;
 - (b) Arbitration in accordance with the procedure set out in annex IV.

3. If the parties to the dispute have accepted both means of dispute settlement referred to in paragraph 2 of this article, the dispute may be submitted only to the International Court of Justice, unless the parties agree otherwise.

Article 23

SIGNATURE

This Convention shall be open for signature at Helsinki from 17 to 18 March 1992 inclusive, and thereafter at United Nations Headquarters in New York until 18 September 1992, by States members of the Economic Commission for Europe as well as States having consultative status with the Economic Commission for Europe pursuant to paragraph 8 of Economic and Social Council resolution 36 (IV) of 28 March 1947, and by regional economic integration organizations constituted by sovereign States members of the Economic Commission for Europe to which their member States have transferred competence over matters governed by this Convention, including the competence to enter into treaties in respect of these matters.

Article 24

DEPOSITARY

The Secretary-General of the United Nations shall act as the Depositary of this Convention.

Article 25

RATIFICATION, ACCEPTANCE, APPROVAL AND ACCESSION

1. This Convention shall be subject to ratification, acceptance or approval by signatory States and regional economic integration organizations.

2. This Convention shall be open for accession by the States and organizations referred to in article 23.

3. Any organization referred to in article 23 which becomes a Party to this Convention without any of its member States being a Party shall be bound by all the obligations under this Convention. In the case of such organizations, one or more of whose member States is a Party to this Convention, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under this Convention. In such cases, the organization and the member States shall not be entitled to exercise rights under this Convention concurrently.

4. In their instruments of ratification, acceptance, approval or accession, the regional economic integration organizations referred to in article 23 shall declare

the extent of their competence with respect to the matters governed by this Convention. These organizations shall also inform the Depositary of any substantial modification to the extent of their competence.

Article 26

ENTRY INTO FORCE

1. This Convention shall enter into force on the ninetieth day after the date of deposit of the sixteenth instrument of ratification, acceptance, approval or accession.

2. For the purposes of paragraph 1 of this article, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States members of such an organization.

3. For each State or organization referred to in article 23 which ratifies, accepts or approves this Convention or accedes thereto after the deposit of the sixteenth instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the ninetieth day after the date of deposit by such State or organization of its instrument of ratification, acceptance, approval or accession.

Article 27

WITHDRAWAL

At any time after three years from the date on which this Convention has come into force with respect to a Party, that Party may withdraw from the Convention by giving written notification to the Depositary. Any such withdrawal shall take effect on the ninetieth day after the date of its receipt by the Depositary.

Article 28

AUTHENTIC TEXTS

The original of this Convention, of which the English, French and Russian texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto, have signed this Convention.

DONE at Helsinki, this seventeenth day of March one thousand nine hundred and ninety-two.

ANNEXES

ANNEX I

Definition of the term "best available technology"

1. The term "best available technology" is taken to mean the latest stage of development of processes, facilities or methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste. In determining whether a set of processes, facilities and methods of operation constitute the best available technology in general or individual cases, special consideration is given to:

(a) Comparable processes, facilities or methods of operation which have recently been successfully tried out;

(b) Technological advances and changes in scientific knowledge and understanding;

(c) The economic feasibility of such technology;

(d) Time limits for installation in both new and existing plants;

(e) The nature and volume of the discharges and effluents concerned;

(f) Low- and non-waste technology.

2. It therefore follows that what is "best available technology" for a particular process will change with time in the light of technological advances, economic and social factors, as well as in the light of changes in scientific knowledge and understanding.

ANNEX II

Guidelines for developing best environmental practices

1. In selecting for individual cases, the most appropriate combination of measures which may constitute the best environmental practice, the following graduated range of measures should be considered:

(a) Provision of information and education to the public and to users about the environmental consequences of the choice of particular activities and products, their use and ultimate disposal;

(b) The development and application of codes of good environmental practice which cover all aspects of the product's life;

(c) Labels informing users of environmental risks related to a product, its use and ultimate disposal;

(d) Collection and disposal systems available to the public;

(e) Recycling, recovery and reuse;

(f) Application of economic instruments to activities, products or groups of products;

(g) A system of licensing, which involves a range of restrictions or a ban.

2. In determining what combination of measures constitute best environmental practices, in general or in individual cases, particular consideration should be given to:

(a) The environmental hazard of:

(i) The product;

(ii) The product's production;

(iii) The product's use;

(iv) The product's ultimate disposal;

(b) Substitution by less polluting processes or substances;

(c) Scale of use;

(d) Potential environmental benefit or penalty of substitute materials or activities;

(e) Advances and changes in scientific knowledge and understanding;

(f) Time limits for implementation;

(g) Social and economic implication.

3. It therefore follows that best environmental practices for a particular source will change with time in the light of technological advances, economic and

social factors, as well as in the light of changes in scientific knowledge and understanding.

ANNEX III

Guidelines for developing water-quality objectives and criteria

Water-quality objectives and criteria shall:

- (a) Take into account the aim of maintaining and, where necessary, improving the existing water quality;
- (b) Aim at the reduction of average pollution loads (in particular hazardous substances) to a certain degree within a certain period of time;
- (c) Take into account specific water-quality requirements (raw water for drinking-water purposes, irrigation, etc.);
- (d) Take into account specific requirements regarding sensitive and specially protected waters and their environment, e.g. lakes and groundwater resources;
- (e) Be based on the application of ecological classification methods and chemical indices for the medium- and long-term review of water-quality maintenance and improvement;
- (f) Take into account the degree to which objectives are reached and the additional protective measures, based on emission limits, which may be required in individual cases.

ANNEX IV

Arbitration

1. In the event of a dispute being submitted for arbitration pursuant to article 22, paragraph 2 of this Convention, a party or parties shall notify the secretariat of the subject-matter of arbitration and indicate, in particular, the articles of this Convention whose interpretation or application is at issue. The secretariat shall forward the information received to all Parties to this Convention.

2. The arbitral tribunal shall consist of three members. Both the claimant party or parties and the other party or parties to the dispute shall appoint an arbitrator, and the two arbitrators so appointed shall designate by common agreement the third arbitrator, who shall be the president of the arbitral tribunal. The latter shall not be a national of one of the parties to the dispute, nor have his or her usual place of residence

in the territory of one of these parties, nor be employed by any of them, nor have dealt with the case in any other capacity.

3. If the president of the arbitral tribunal has not been designated within two months of the appointment of the second arbitrator, the Executive Secretary of the Economic Commission for Europe shall, at the request of either party to the dispute, designate the president within a further two-month period.

4. If one of the parties to the dispute does not appoint an arbitrator within two months of the receipt of the request, the other party may so inform the Executive Secretary of the Economic Commission for Europe, who shall designate the president of the arbitral tribunal within a further two-month period. Upon designation, the president of the arbitral tribunal shall request the party which has not appointed an arbitrator to do so within 2 months. If it fails to do so within that period, the president shall so inform the Executive Secretary of the Economic Commission for Europe, who shall make this appointment within a further two-month period.

5. The arbitral tribunal shall render its decision in accordance with international law and the provisions of this Convention.

6. Any arbitral tribunal constituted under the provisions set out in this annex shall draw up its own rules of procedure.

7. The decisions of the arbitral tribunal, both on procedure and on substance, shall be taken by majority vote of its members.

8. The tribunal may take all appropriate measures to establish the facts.

9. The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, using all means at their disposal, shall:

(a) Provide it with all relevant documents, facilities and information;

(b) Enable it, where necessary, to call witnesses or experts and receive their evidence.

10. The parties and the arbitrators shall protect the confidentiality of any information they receive in confidence during the proceedings of the arbitral tribunal.

11. The arbitral tribunal may, at the request of one of the parties, recommend interim measures of protection.

12. If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue

the proceedings and to render its final decision. Absence of a party or failure of a party to defend its case shall not constitute a bar to the proceedings.

13. The arbitral tribunal may hear and determine counter-claims arising directly out of subject-matter of the dispute.

14. Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the expenses of the tribunal, including the remuneration of its members, shall be borne by the parties to the dispute in equal shares. The tribunal shall keep a record of all its expenses, and shall furnish a final statement thereof to the parties.

15. Any Party to this Convention which has an interest of a legal nature in the subject-matter of the dispute, and which may be affected by a decision in the case, may intervene in the proceedings with the consent of the tribunal.

16. The arbitral tribunal shall render its award within five months of the date on which it is established, unless it finds it necessary to extend the time limit for a period which should not exceed five months.

17. The award of the arbitral tribunal shall be accompanied by a statement of reasons. It shall be final and binding upon all parties to the dispute. The award will be transmitted by the arbitral tribunal to the parties to the dispute and to the secretariat. The secretariat will forward the information received to all Parties to this Convention.

18. Any dispute which may arise between the parties concerning the interpretation or execution of the award may be submitted by either party to the arbitral tribunal which made the award or, if the latter cannot be seized thereof, to another tribunal constituted for this purpose in the same manner as the first.

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