



Reducing conflict over the Danube waters: equitable utilization and sustainable development

Rhoda Margesson

This paper develops the idea that the principle of equitable utilization must be applied in concert with sustainable water use not only in the resolution of specific disputes but in the cooperative management of water resources in general. It illustrates this point with two different cases involving the use of the Danube River. The first is the conflict over the Gabčíkovo Nagymaros Dam, which now rests before the International Court of Justice. The author argues that a narrow legal ruling that fails to take into account broader issues of equitable utilization as they relate to sustainable development will not satisfactorily address the long-term questions at stake between the parties. The second involves the situation in the Danube Delta where the potential for conflict exists, but may be minimized through the convention and institutional framework developed to address the environmental degradation and pollution of the Danube River basin, which is based in part on the principle of equitable utilization and the goal of achieving more sustainable water use. The paper provides a brief overview of the geographical features of the Danube River and international water law. It then explores the principle of equitable utilization and sustainable water use in light of the two cases and discusses the implications for the resolution and management of conflicts involving internationally shared water courses. © 1997 United Nations

Key words: Danube River, Danube Delta, equitable utilization, sustainable water use, Gabčíkovo-Nagymaros Project, water management, resources disputes, conflict

Much of the world's fresh water is available from international drainage basins, which make up almost fifty percent of the earth's land area.¹ Because these rivers and basins are not typically contained within a single border, the need for collaboration and communication exists in order to meet current needs and to prepare for future use, as well as to manage competing interests and resources better. Long-term sustainable development relies on access to and the efficient use of freshwater. Many of the ways in which rivers are used transcend political and national boundaries and affect questions relating to sovereign interests, thereby contributing to tensions which inevitably arise over shared resources.

The current use of the Danube River is a good case in point. It highlights the fact that the legal principle of

equitable utilization must be applied in concert with sustainable water use both in the resolution of particular disputes and in defining a broad framework for the cooperative management of a river. To illustrate this point the author will examine two separate situations. The first is a specific dispute over the Gabčíkovo-Nagymaros Project where a narrow legal ruling that fails to consider broader issues of equitable utilization as they relate to sustainable development will not address the long-term questions at stake and may well lead to further disputes between the parties. The second case is the environmental degradation of the Danube Delta, where the potential for disputes exists but may well be minimized by the establishment of an institutional and management framework that is based on the principle of equitable utilization in conjunction with the goal of achieving more sustainable development.

In the following discussion, the legal structures in place which govern international rivers in general and the Danube River in particular will be briefly reviewed. Then the use of the principle of equitable utilization in light of the two cases mentioned above is explored. Finally, the implications raised by these cases for resolving disputes and fostering sustainable water use

The author is a Ph.D. candidate at the Fletcher School of Law and Diplomacy, Tufts University, and at present a member of the staff at the Program on International Conflict Analysis and Resolution (PICAR), Center for International Affairs, Harvard University, Cambridge, MA 02138, U.S.A.

¹International rivers flow through or from the boundary between at least two countries. There are an estimated 214 international rivers in the world today. Some of the largest include the Niger, Nile, Zaire, Amazon, La Plata and Ganges Brahmaputra (Gleick, 1993).

LIBRARY IRC

PO Box 93190, 2509 AD THE HAGUE

Tel.: +31 70 30 689 80

Fax: +31 70 35 899 64

BARCODE: 15839

LO: 210 97RE

are considered. Before beginning this discussion the stage will be set with a review of the geographical characteristics of the Danube River basin.

The hydropolitical setting

The Danube flows west to east from its source in the German Black Forest to its outlet in the Black Sea. Covering roughly 1770 miles, it is the second longest river in Europe (Pringle *et al.*, 1993).² It is also one of the most international, passing through at least nine countries.³ Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, and Ukraine. In addition, small tributaries originating in four countries—Albania, Italy, Switzerland and Poland—contribute to the river's flow; thus, the basin as a whole includes parts of 13 countries. Before reaching its final destination, the river empties into a spectacular delta via three main branches.

The entire Danube river basin is typically described in three sections—the upper, middle and lower Danubes—and contains over 300 tributaries (see Figure 1). With the completion of the Rhine–Main–Danube Canal in 1992, the North Sea and Black Sea are now virtually connected. This is an important development as it “opens” the other end of the Danube and expands its commercial use, enabling ships to cross Eastern and Western Europe through a system of connected waterways. It may also create the need for greater regulation, particularly with regard to pollution and navigation. Taken as a whole, this entire water system has a significant impact on the European continent. Recent figures suggest that close to 86 million people live in the drainage area of the Danube River (Pringle *et al.*, 1993).

There are many pressures on the Danube which reveal the fundamental and often conflicting interests of its riparian nations. These include:

- Maintaining adequate river flow for electric power generation and for the dilution of industrial and urban wastes;
- Maintaining and expanding navigable waterways;
- Assuring an adequate supply of water for irrigation, industry and other economic uses;
- Protecting the water quality for drinking, irrigation, fishing, tourism and nature preservation;
- Preventing floods; and
- Protecting the river and its surroundings for recreation, tourism, and conservation of wildlife habitat (Linnerooth, 1990).

The nine riparian countries in the Danube region are all geopolitically and economically diverse, yet must ultimately face these challenges in unison. However, the very differences between the countries create

numerous conflicting upstream and downstream uses. Moreover, the costs and benefits associated with the various uses of the Danube are not evenly distributed among the various riparian states and highlight the power imbalances among them.⁴ There are many national actors with differing agendas, laws and resources with which to address their needs. An uneven emergence of public concern over environmental issues (and the impact of water use) is compounded by government reluctance to share information and reach agreement about scientific data, despite a growing concern about local and transboundary environmental consequences.

Regulation of water use: international law

The potential for conflict over finite freshwater resources like the Danube is ever more likely with increasing populations, the growing demand for food, and the impact of industrialization, urbanization and agricultural practices. This is true even in non-arid regions where water scarcity is not an immediately pressing problem. International law provides one mechanism by which to address these conflicts. While the development of international law has not resulted, strictly speaking, in a universally applicable water law agreeable to all nations, broad agreement nevertheless exists on a number of general principles. Numerous treaties and conventions have been concluded regulating the utilization of shared water resources, and general principles have emerged from international custom. Each has played an important role in preventing conflicts over water or resolving existing disputes. Each has also provided important legal precedents and guidelines. Treaties typically concern a specific shared resource; these can be either bilateral or multilateral agreements, the former being far more common (McCaffrey, 1993). Throughout history they have addressed a wide range of issues such as navigation, water rights and shared management.

The evolution of the law of international rivers has generally been characterized by “a clash between two dominant ideas—that of sovereignty of the riparian states and that of internationalization” (Zachlin and Caflisch, 1981). Within these parameters, four theories have evolved over time that illustrate a wide range of interpretations regarding rights of water use and allocation, from extreme nationalism to regional international cooperation:

- The “Harmon Doctrine,” which supports the notion of absolute sovereignty to upstream riparians;
- “Absolute territorial integrity,” which provides

²The Danube River is one of 13 international river basins worldwide which is shared by more than five nations. Its total basin encompasses an area of 817 000 km² (Gleick, 1993). With regard to length, drainage area and volume of water, the Danube is the largest waterway in Europe to the west of Russia; if Russia is included, then the Volga is the largest river (Gorove, 1964).

³Technically, this may vary if nation-state status depends on recognition by the United Nations.

⁴For example, the upper riparian countries, which are wealthier and more developed, use the river for industrial and municipal waste disposal and energy generation (40 of the 49 planned or existing hydropower stations are located in Germany and Austria). The middle Danube countries have a more limited potential to develop energy and are also the recipients of much polluted water from the upstream countries. Meanwhile, the less developed lower Danube riparians depend on the river for irrigation, fisheries and tourism, but experience the full impact of poor quality and decreasing supplies of water as a result of upstream practices (Linnerooth, 1990).



Figure 1 Catchment of the Danube River.
 Source: EPDRB, 1993.

downstream riparians the use of the river in an unaltered condition;

- "Limited territorial sovereignty," (or "equitable utilization" and "equitable apportionment") which allows the use of a river's waters, provided that the use does not harm other riparian states; and
- "Community of interests," which emphasizes the mutual and cooperative development of a river by all riparian states (Linnerooth, 1990).

Customary law is typically derived from the general practice of states and accepted as law (International Court of Justice, Article 38 (1)(b)). Equitable utilization is increasingly being established as an important principle governing water law today. Several key organizations contributed significantly to its inception: the Institute du Droit International, the International Law Association (ILA) and the United Nations International Law Commission (ILC) (McCaffrey, 1993). Of particular note in this discussion are the Helsinki Rules on the Uses of Waters of International Rivers put forward by the ILA in 1966 and the articles of the Law of the Non-navigational Use of International Watercourses, drafted by the ILC between 1970 and 1994 (McCaffrey, 1993). With different emphases, these instruments put forward the notions of

- reasonable and equitable use;
- obligation not to cause significant harm to other nations;
- the duty to inform and consult with neighbours downstream; and
- the sharing of water data and related information.

An important difference between the ILA and ILC principles and interpretations lies in the priority given to the "equitable utilization" or to the "no harm" principles. Moreover, as Peter Gleick observes, "defining equitable utilization of a shared water supply remains one of the most important and difficult problems facing many nations" (1994, p. 39). As the need for a sustainable water supply becomes more critical, in order to avoid conflict over this resource, it will be important to look not only at past and present use, but at future use as well.

*Legal institutions governing the Danube River*⁵

Prior to World War II, the European Commission administered the Danube River. It was replaced by the Belgrade Convention on 18 August 1948, which restored the river to the exclusive sovereignty of the riparians. The Danube is currently administered under the legal authority of the Danube Commission established by this Convention, which puts navigation under the control of the riparian countries (which were at that time Bulgaria,

Czechoslovakia, Hungary, Romania, the Ukrainian SSR, the Soviet Union and Yugoslavia). Austria was invited in a consultative capacity (and later joined the Convention), and Germany was given observer status. Until recently, the former Soviet Union dominated the Commission, since most of the riparian countries were Soviet satellites.⁶ The Danube Commission has quasi-legislative authority over river navigation, river inspection and flood control. Under Article 20 of the Convention, the Special River Administration (consisting of representatives from adjacent riparian states—Romania and the former USSR) was established in the Lower Danube between the mouth of the Sulina channel and Braila. It was given jurisdiction over the tributaries of the river, the lateral canals and two of the three mouths of the river to regulate hydraulic engineering works and navigation (Focas, 1987). Over the past 45 years a number of individual countries along the Danube have also entered into bilateral agreements with each other (Linnerooth, 1990).

While the Belgrade Convention and Danube Commission are very much in effect as legal structures, their influence over water-use issues outside of navigation and flood control has been minimal. Moreover, the Commission is not—and was not intended to be—a river basin regime covering broader river management questions. This has meant little multilateral decision making and authority over other pressing issues relating to water use and development. Thus, when a heated dispute broke out between Hungary and Slovakia, the Danube Commission could do little to mitigate or resolve the conflict.

Equitable utilization and sustainable development

The Gabčíkovo–Nagymaros project

In 1977 Hungary and Czechoslovakia signed a treaty⁷ outlining a plan for the construction and operation of the Gabčíkovo–Nagymaros (GN) project and use of the Danube as a source of hydroelectric power. Since

⁵John Fitzmaurice (29 March 1994) has observed that "the political situation in the Danube region makes the old 1948 Convention obsolete." One important question involves that of membership in light of the political changes that have taken place— who should be members, the riparian nations or others utilizing the resources of the river as well? The Czech Republic, no longer a riparian nation, is a good case in point. In addition, with the opening of the Rhine–Main–Danube canal, German membership, once excluded for political reasons, now needs to be addressed. Moreover, the war in Bosnia–Herzegovina has until very recently presented difficulties with the UN sanctions imposed against the former Yugoslavia, which includes Serbia (a riparian nation). As of October 1996 the sanctions were lifted; however, until the long-term situation in Bosnia–Herzegovina becomes clearer, it is unlikely that anything very meaningful can be done to work out the terms of another convention. According to Fitzmaurice, in April 1993 at the meeting of the Danube Commission in Budapest, Hungary, an agreement was reached on a provisional solution to the issue of membership. All Danubian states, including Russia and the Czech Republic will be considered riparian, and all former signatories of the 1948 Convention will remain.

⁷Treaty Between the Hungarian People's Republic and the Czechoslovak Socialist Republic Concerning the Construction and Operation of the Gabčíkovo Nagymaros System of Locks" (16 September 1977, Budapest), *International Legal Materials*, 32:5 (September 1993).

⁵Due to the limits of this article an historical account of the legal structures governing the Danube is not possible. However, a review of the pattern of some of the significant treaties and conventions, which essentially determined how the Danube would be governed and by whom, emphasizes, particularly in its latest phase, the importance of this river's link between East and West and may have present and future policy-bearing significance. See Gorove (1964).

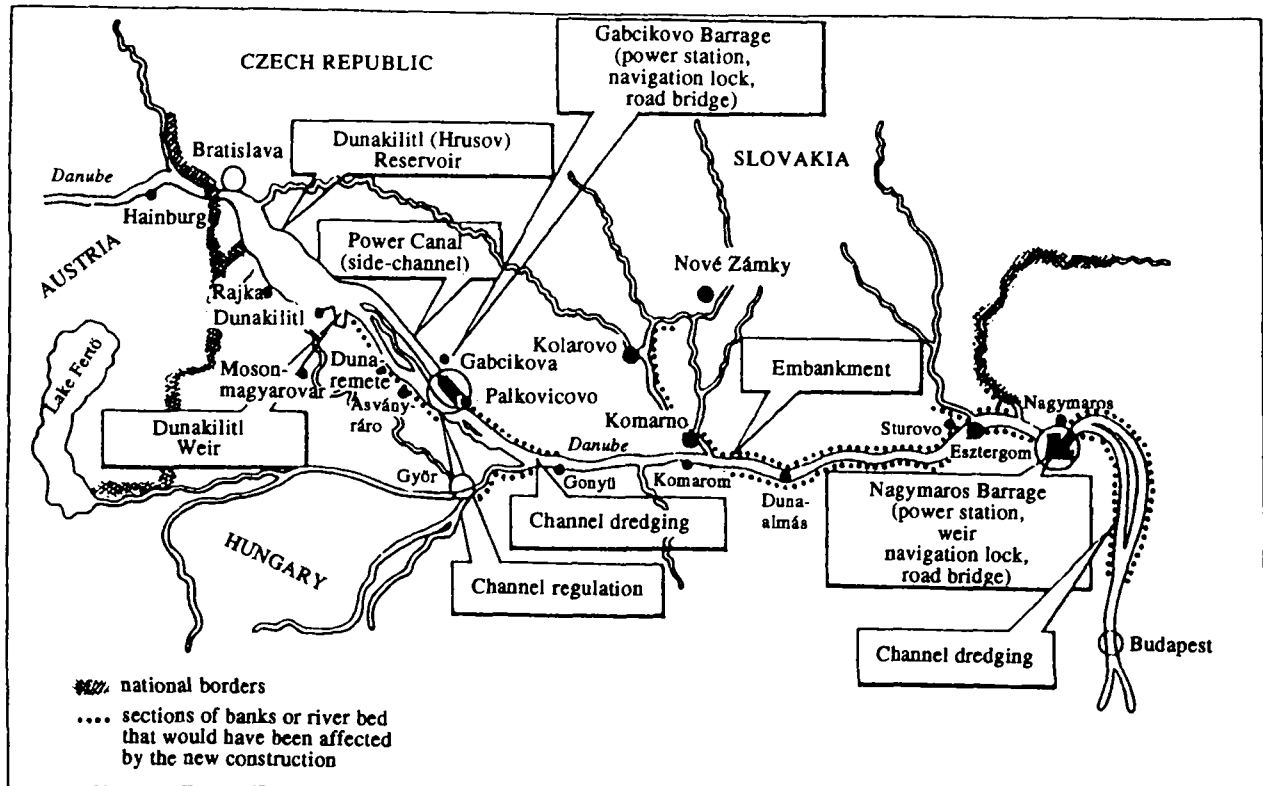


Figure 2 General layout of the Gabčíkovo–Nagymaros project.

Source: Fleischer, 1993, p. 431.

then the underlying positions and interests of the signatory governments⁸ have changed dramatically, resulting in a bitter dispute over the implementation of the dam project and posing a potential threat to regional stability. Slovakia and Hungary share a common border which runs through the middle section of the Danube River. The Danube thus represents an international boundary, the alteration of which was inherent in the implementation of the GN project. It is the planned use of this part of the river that has become the subject of dispute (see Figure 2). While the legal dispute centres on whether Hungary was within its rights in repudiating the 1977 treaty, and subsequent actions taken by the parties, a significant issue embedded in the conflict is each nation's perception of its "reasonable and equitable share" (Weiss *et al.*, 1991) of the water resources under the current plan for its development. It also points to a related principle, the obligation not to cause harm to other nations, and the degree to which each side has complied with its obligation to cooperate in good faith over the use of a transboundary resource.

When it was designed (see Figure 2) the project involved construction of a 17-km diversion canal and the creation of two hydroelectric power stations along

the Danube River. One was to be constructed at Gabčíkovo, in the former Czechoslovakia, the other at Nagymaros, Hungary. In addition, three dams were to be built, one upstream of the power stations and one at each plant site at Gabčíkovo and Nagymaros. The entire plan constituted "a single and indivisible operational system of works".⁹

A dam was to be built at Dunakiliti in order to flood an area of 60 km up to Bratislava. This would cause the water level of the reservoir to rise 6.5 m above ground at Dunakiliti. From this newly-created reservoir and dam, an artificial channel running parallel to the Danube (5 km inside the border of present Slovakia)¹⁰ was to flow to a second dam and an electric power station and lock at Gabčíkovo. Once the water passed through the turbines, it was to be transported back to the original bed of the Danube through a channel. From this channel 100 km downstream, where the Danube turns southward into a steeper valley, a third dam, with another hydroelectric power station, was to be built at Nagymaros, Hungary to counterbalance the fluctuation of water flow caused by the operations upstream, and to produce additional electricity (Galambos, 1992).

The Gabčíkovo plant was planned to have a capacity of 720 MW. The Nagymaros plant was intended to have a capacity of 158 MW. According to the 1977 Treaty, both Czechoslovakia and Hungary would share the labour

⁸Under the Communist regime the original signatory governments were Hungary and Czechoslovakia. One of the complicating factors taking place during this conflict was the separation of Czechoslovakia, which was to become the Czech Republic and Slovak Republic on 1 January 1993. This transition created new political difficulties and it appears that some internal confusion ensued as to who was in charge (and responsible for) the project.

⁹16 September 1977 Treaty, p. 1249.

¹⁰The plan called for 95% of the river to be routed from its natural course into this canal.

and costs of construction and upon completion, both would benefit equally from the electricity generated (expected to produce 3775 million kW-hours per year) (Galambos, 1992). In addition to providing a domestic, renewable source of energy, the GN project was supposed to improve navigation,¹¹ flood protection and enhance water supplies for irrigation.

The natural course of the river in this section, due partly to draining of cataracts in the lower Danube and also to shallows characterizing this section of the river, has historically been problematic. These natural conditions impact the passage of ships through the trans-European waterway. Indeed, in order to comply with their obligations under the Danube Convention, Czechoslovakia and Hungary needed to improve navigation in this section of the river. In addition, due to the topography in the region, serious flooding in the past half century has affected the communities on both banks of the river, the most recent series of devastating floods hit Czechoslovakia in the 1960s.

*The Gabčíkovo–Nagymaros dispute*¹²

Construction at the Gabčíkovo dam began in 1978, while the work at Nagymaros did not start until 1988. The parties have been in open disagreement over the GN project since May 1989 when Hungary unilaterally halted construction at Nagymaros and later that year decided to stop work at the Gabčíkovo facility, claiming, in both instances, environmental reasons.¹³ Although Hungary abandoned its share of the project, Czechoslovakia, which was much further along in its completion of the Gabčíkovo facility (and had already spent over \$2 billion on it) did not. Instead, it decided to continue unilaterally with construction of a provisional solution known as "Variant C" and began discussing claims for compensation against Hungary.

The governments pursued bilateral talks to try to work out these differences, but were unsuccessful. The European Community (EC) offered its "good offices" to help settle the growing conflict, but with the stipulation that technical experts consider the effect of the planned dam project on the environment.¹⁴ These efforts failed as well. In April 1992, Czechoslovakia denounced the Hungarian request for the cancellation of its unilateral construction work and responded that without a provision for termination, a treaty could not

be unilaterally terminated. It also made public its intention to divert the river and block the Danube River bed by the end of October the same year. In May 1992 Hungary declared that it would terminate the 1977 Treaty unless the issues could be resolved.¹⁵ After an unsuccessful meeting with the EC in which both parties expressed opposing positions about the effects of the project, Hungary announced that it would invoke the crisis mechanism through the Conference on Security and Cooperation of Europe (CSCE); it also filed a complaint with the International Court of Justice (ICJ), citing the Helsinki Rules. In October 1992, a trilateral meeting between representatives of both governments and the EC was held in London and resulted in the London Protocol,¹⁶ which among its other provisions required that construction be temporarily halted by all disputants. Several days later, Czechoslovakia began its operations at the Gabčíkovo plant.

In January 1993, Czechoslovakia split into the Czech and Slovak Republics. The GN project, located in the southern end of the former Czechoslovakia, therefore came under the jurisdiction of the Slovak Republic. On 2 July 1993 the Governments of Hungary and the Slovak Republic signed a "Special Agreement" submitting their case over the GN project to the ICJ for settlement. A decision is not expected to be awarded until 1997. In the interim, the parties agreed to "establish and implement a temporary water management regime" (*International Legal Materials*, 1993) for the section of the Danube River in question. When the case goes before the ICJ it will be to decide "on the basis of the Treaty and rules and principles of general international law, as well as such other treaties as the Court may find applicable" (*International Legal Materials*, 1993) the following main issues:

- whether Hungary was entitled unilaterally to suspend and later abandon the works on the Nagymaros and Gabčíkovo parts of the project to which it was attributed responsibility under the terms of the 1977 Treaty;
- whether the Czech and Slovak Republics were entitled to proceed with the "provisional solution" in

¹¹The Danube River is currently navigable all year except for three months when it becomes impassable between Bratislava and Nagymaros.

¹²Due to the limited scope of this article, this complex case is presented in summary fashion and is not intended to be a legal analysis of the dispute.

¹³Ironically, environmental protests over the GN project were influential in bringing an end to the Communist dictatorship in Hungary and served as a main focal point of growing national sentiment during the 1980s.

¹⁴The EC Commission stated three conditions for its involvement, asking that the parties: (1) request external arbitration in writing; (2) make a commitment to accept the findings of the experts as binding, and (3) agree that until the completion of the investigations, neither would take measures that would affect the negotiations (in other words, they would suspend construction of the GN project). The EC's proposal was an attempt to provide a mechanism so that neither party would take an individual initiative to a point where negotiation under this framework would be useless.

¹⁵This declaration cited the following reasons for termination: "The barrage systems is causing ecological and environmental damage; the CSFR "provisional solution" to divert the natural course of the Danube is dangerous and violates Hungary's territorial integrity. See "Declaration of the Government of the Republic of Hungary on the Termination of the Treaty Concluded Between the People's Republic of Hungary and the Socialist Republic of Czechoslovakia on the Construction and Joint Operation of the Gabčíkovo Nagymaros Barrage System, Signed in Budapest on 16 September 1977" (25 May 1992). *International Legal Materials* 32.5 (September 1993).

¹⁶The Protocol outlined a four-point plan as a basis for settling the dispute. The parties agreed (1) to stop work at the construction site temporarily; (2) accept binding arbitration; (3) retain a certain volume percentage of water in the original Danube River bed; (4) set up a small 5-member group, consisting of three EC experts and one representative each from Hungary and Slovakia, respectively, to examine the consequences of damming. See "Czech and Slovak Federation-European Commission-Hungary: London Agreement on the Gabčíkovo–Nagymaros Project" (28 October 1992). *International Legal Materials*. 32.5 (September 1993): 1291–1292.

November 1991 and to put this system into operation in October 1992; and

- the legal effects of Hungary's notification to terminate the 1977 Treaty in May 1992.

The ICJ was also asked to decide the overall legal and other consequences arising from its Judgement on the issues in the case (*International Legal Materials*, 1993).

Although this article is not intended to provide a detailed analysis of the legal issues involved in the dispute over the GN project, it is important to consider generally the possible outcomes that might result from the limited set of questions before the ICJ. Without suggesting what the ICJ might do, it may be helpful to consider possible outcomes for each side. The questions before the Court concern the legality of specific actions taken by the parties with regard to the project and Treaty, and ask for consideration of the overall legal implications and compensatory damages that may have been incurred. While it is quite possible that one or both parties may raise the issue of equitable utilization in their arguments (and this may be considered by the Judges) the final outcome is limited to a ruling on the questions put forward and therefore will not address the broader issues of sustainable development.

Should Hungary be granted the relief it seeks, it would be allowed to dismantle its project at Nagymaros, prevent the continuation of the provisional solution, terminate the Treaty and receive compensation from Slovakia. On the other hand, should Slovakia be granted the relief it seeks the circumstances would, of course, be very different. Hungary would not be entitled to stop the project; the provisional solution might be allowed to continue, or if the Treaty were upheld, the project might be endorsed, thereby "maximizing" the gains of both hydroelectric facilities. Finally, Hungary would owe Slovakia compensatory damages for its actions.

It is impossible to predict what the ICJ's determination will be on these questions, what other legal or technical issues it might raise and how much each party will win or lose on each point. Both parties are legitimately concerned with actions of the past in order to determine how to proceed with current use of the river. However, the end result is that the ruling will almost certainly reflect the "zero-sum" nature of the questions put forward; there is little room to expand options for mutual gain in these issues. Neither party is in a position to pay large compensation for damages to the other, nor can they afford to give up the benefits to be derived from the river. Thus, the underlying tensions will likely remain, with neither party completely satisfied with the outcome because their long-term interests will not have been met. Moreover, this may lead to other conflicts over shared use in the future.

All along the parties have perceived their interests in "zero-sum" terms. According to Thomas Homer Dixon this often occurs with water systems: "These renewable resources seem particularly likely to spark conflict because their scarcity is increasing rapidly in some regions, they are often essential for human survival, and they can be physically seized or controlled" (1991). The dispute between Hungary and

Slovakia has similar themes. Moreover, as journalist Robert Kaplan suggests, it is "a classic case of how environmental disputes fuse with ethnic and historical ones" (1994). As the lines of the conflict were drawn, the dispute over the GN project escalated and precipitated other issues between the parties which only added a deeply entrenched, highly-charged layer of politics, nationalism and ethnic tensions to the legal and environmental issues already at stake. A narrow ruling on whether the dam project should be implemented is not likely to resolve these issues, and in all probability they will stand in the way of future cooperation.

A further exploration of the long-term questions between the parties highlights the need for a consideration of the broader issue of sustainable development. Indeed, this element is implicit in the parties' positions: in terms of environmental consequences, Hungary has claimed that the GN project will result in pollution of drinking water for millions of people in both countries, alter water tables and ruin unique marshlands.¹⁷ At the same time it maintains that the project will only produce a small amount (three to five percent) of the energy being sought by the project. Hungary has also objected to the project because it moves the main Danube stream, currently the accepted international border between Hungary and Slovakia, and so violates its territorial integrity.¹⁸ Moreover, Hungary is concerned about its minority in Slovakia, which it claims will be most affected by the diversion and the project. Given that environmental demands were a chief part of the Hungarian anti-communist opposition, the GN project is a very important issue politically, to which the government is committed.

Quite apart from its financial investment in the project, Slovakia perceives Gabčíkovo to be of primary importance to its energy supply. Otherwise deprived of hydroelectric power from the Danube, Slovakia hopes that the project will produce half of its energy requirements. Anticipating growing power needs and recognizing a demand that older nuclear and thermal facilities be retired, Slovakia views Gabčíkovo as a vital and necessary project, but one that will only be most productive in conjunction with Nagymaros. Supporters of the project stand in stark contrast to the opposing Hungarian view, insisting it will enable full utilization of the Danube for all-year shipping and prevent flooding. In addition they claim it will halt the drying up of marshlands, reduce the fluctuations in aquifer levels and prevent lowering of the water table.

Gabčíkovo has also become an important political issue, symbolizing national independence — particularly since the "velvet divorce" of January 1993. Although the Hungarians have argued that the legal implications

¹⁷The Danube currently supplies 60% of Hungary's water, or 1 million cm a day. Hungary claims that damage to wildlife as a result of diverting the river may destroy 80–90% of the 5000 species that inhabit the area. The fish population is predicted to fall by 25%; commercial fishing may fall by 90% (Galambos, 1992).

¹⁸Hungary has claimed that Slovakia is in violation of the Paris Peace Treaty of 1947.

of this political change imply that a new contract needs to be negotiated, Slovakia perceives the commitment of both countries to the 1977 Treaty as absolute and binding. Furthermore, Slovakia does not believe the GN project entails the harm or risk that Hungary says it might. It does not accept the view that the alleged environmental concerns, which it sees as unsubstantiated in environmental impact assessments and studies, should take precedence over a viable project to meet its need for energy production and self sufficiency.

Behind the strong disagreements over technological data, environmental consequences and legal principles lie needs for new sources of energy supplies and clean water, uninterrupted and improved navigation, flood control, development of water resources and environmental protection. When the GN project was first conceived in the 1950s, some of these issues were central to the decision to proceed with the project as the best way of meeting the multiple needs of the parties. Over time, the positions and interests of the parties on how their needs should be met evolved. The changing interest in the agreement—the 1977 Treaty—between the two riparians has resulted in a heated dispute that apparently cannot be resolved without recourse to the ICJ. These needs could perhaps be addressed in a variety of alternative ways—for example, introducing energy-saving methods, devising alternative patterns of agricultural production, and developing parks and protected areas. However, the differing beliefs of the parties have left little room for consideration of their common needs and the mutual gain that might be derived from addressing these problems jointly and cooperatively.

A ruling by the ICJ on the dam and 1977 Treaty may be effective in the short term to the extent that it might resolve some of the immediate issues in dispute and settle specific claims of the past. However, at the heart of this matter is equitable utilization, not only with regard to the current dispute, but for implementing sustainable practices in the future. Simply pursuing the legal remedies described will not resolve the long-term issues, and may even contribute to further unrest. Thus, a narrow legal ruling cannot be truly effective as a policy tool for resolving this dispute because it will not enable the parties to move from their stated positions to the collaborative effort required.

Lessons from the Danube Delta

The degradation of the Danube Delta poses another set of variables, which could potentially give way to conflict. Making up part of the lower Danube, the delta lies at the end of the river's long journey. From there it empties into the Black Sea via three main branches: the Kiliya (Bratul Chilia), the Sulina (Bratul Sulina) and the St George (Bratul Sfintu Gheorghe). Between these branches are lakes and channels, which are also divided into three sections: the lake complex, the fluvial zone and the maritime zone (see Figure 3).

As Europe's largest wetland ecosystem, the Danube Delta is recognized for its wildlife, much of which is threatened throughout the rest of Europe. Covering

roughly 580 700 ha (80 percent of which is in Romania and the rest in Ukraine) the delta is a reserve for rare birds, fish and plants. Also contained within its boundaries is perhaps one of the largest expanses of reed beds in the world (Pringle *et al.*, 1993). The delta acts as a filtering system and habitat for many plants and animal species and is central to the ecological health of this region.

Damage to the delta is extensive and varied. One of the primary causes has been excessive pollution. Drinking water resources in the region have been adversely affected as large groundwater aquifers located in the delta have become degraded. The delta is especially threatened as it is the outlet of the entire basin and is immediately downstream of the most highly polluted sub-basins (Pringle *et al.* 1993). Many of its problems are negative effects of distal use and development, which decreases the river's purifying capacity, increases its pollution and causes a decline in overall water quality. Specific examples of the environmental problems include:

- Highly polluted loads in the Danube River upstream of (as well as from sources close to and within) the Delta. Significant contamination comes from agricultural run off, municipal waste, copper, mercury, lead, detergents and oil products. Many cities and towns bordering the river lack sewage treatment facilities for waste disposal;
- Decreased retention, nutrient cycling and purification capabilities of the wetlands. This is a result of increased use of engineering works such as dikes, dams, cut-offs and channelization, and development practices such as the creation of polders (areas drained for agriculture). These activities have affected the river's self-cleaning capacity and reduced its retention capability by 25%, forcing water filled with nutrients to flow directly into the Black Sea with harmful consequences to aquatic ecosystems;
- Changed hydraulic practices in the Danube River. As a result of these practices, flood peaks have been decreasing; the loss of the flood plain in the lower Danube (by at least 290 000 ha, resulting in a loss of 4.3 km³ of water retention) in particular has reduced the water-holding capacity of the river system, causing a decline in water circulation and increased coastal erosion (up to 17 m per year). Siltation and separation of lakes have accelerated eutrophication;
- Disturbed aquatic ecosystems, biodiversity and habitat. Primary causes stem largely from human activities and include mechanized and intensive agriculture, fish farming and other aquaculture, and reed harvesting. These practices require the use of nutrients and pesticides and impoundments of certain areas in the delta, which ultimately impact the food web of the entire ecosystem.¹⁹

The environmental deterioration has, in broad terms, compromised the delta's aquatic ecosystems. increased coastal erosion and eutrophication, posed health hazards and contributed to economic decline. Although

¹⁹For greater detail and explanation about these effects, please see DDRG, 1991; IUCN, 1992; and Pringle *et al.*, 1993.

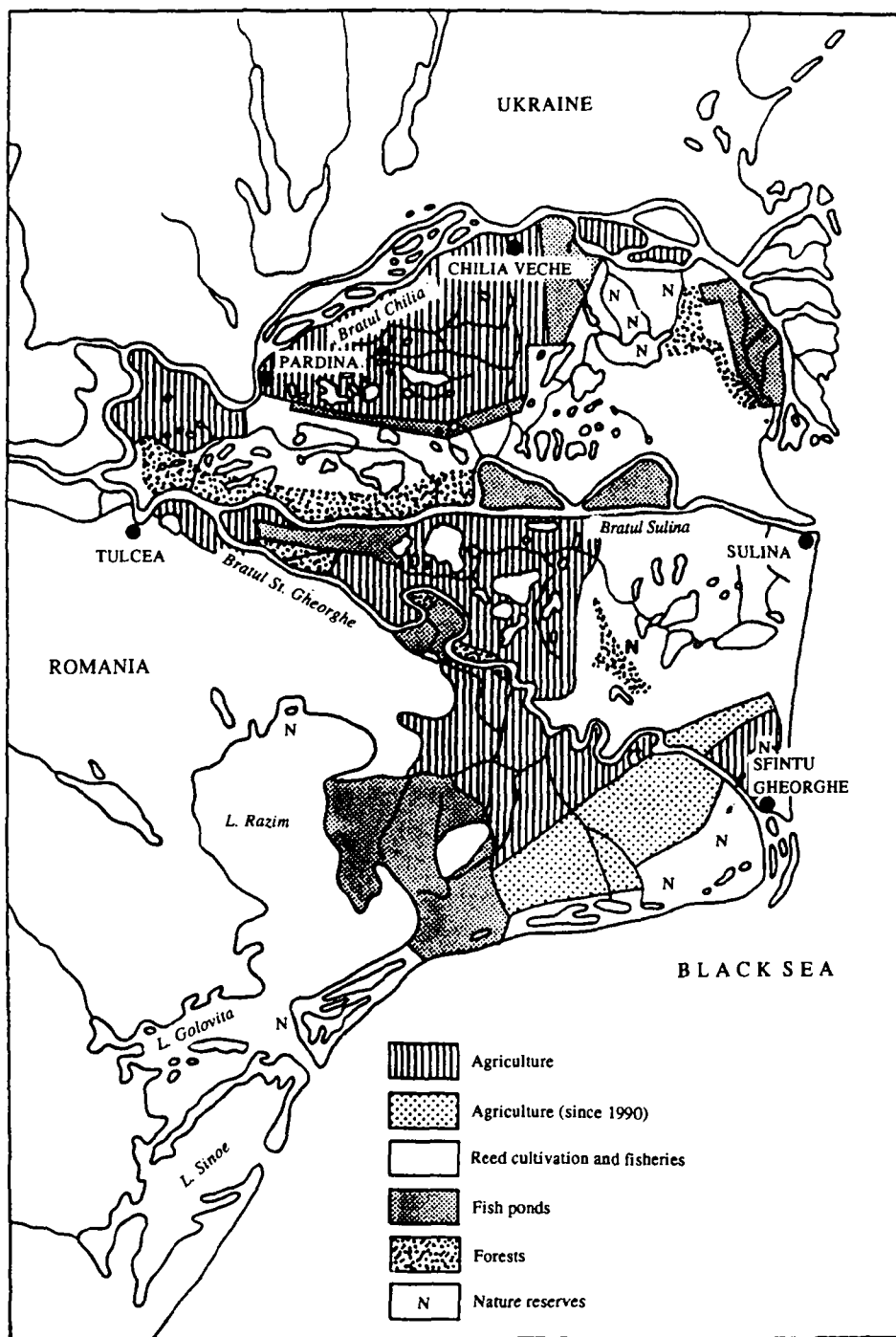


Figure 3(a) Map of the Danube Delta: Land use.
Source: IUCN, 1992.

some of the delta has been protected²⁰ serious environmental problems remain.

For the countries within or adjacent to the Delta a “reasonable and equitable share in the beneficial uses” (Weiss *et al.*, 1991) of the river have been greatly minimized. Moreover, it could be argued that the impact of upstream users has caused “significant harm” (Weiss *et al.*, 1991) to these states. To date, conflicts over water use have not erupted into hostilities and the provisions of equitable utilization

²⁰There are several areas in the Danube Delta which are now protected under the Danube Delta Biosphere Reserve. Although this will not be the focus of this article, for further details about this management program see IUCN (1991). The Danube Delta Research and Design Institute and the Braila Research Station for Aquatic Ecosystems of the University of Bucharest have been monitoring the water of the Danube River and Delta (see IUCN, 1992). While Romanian scientists have been gathering and analyzing data in the last decade, their work has not been published outside Romania. Recent research collaborations between the U.S. and Romania (such as the Danube Delta Research Group) show promise of greater sharing of information in this region.

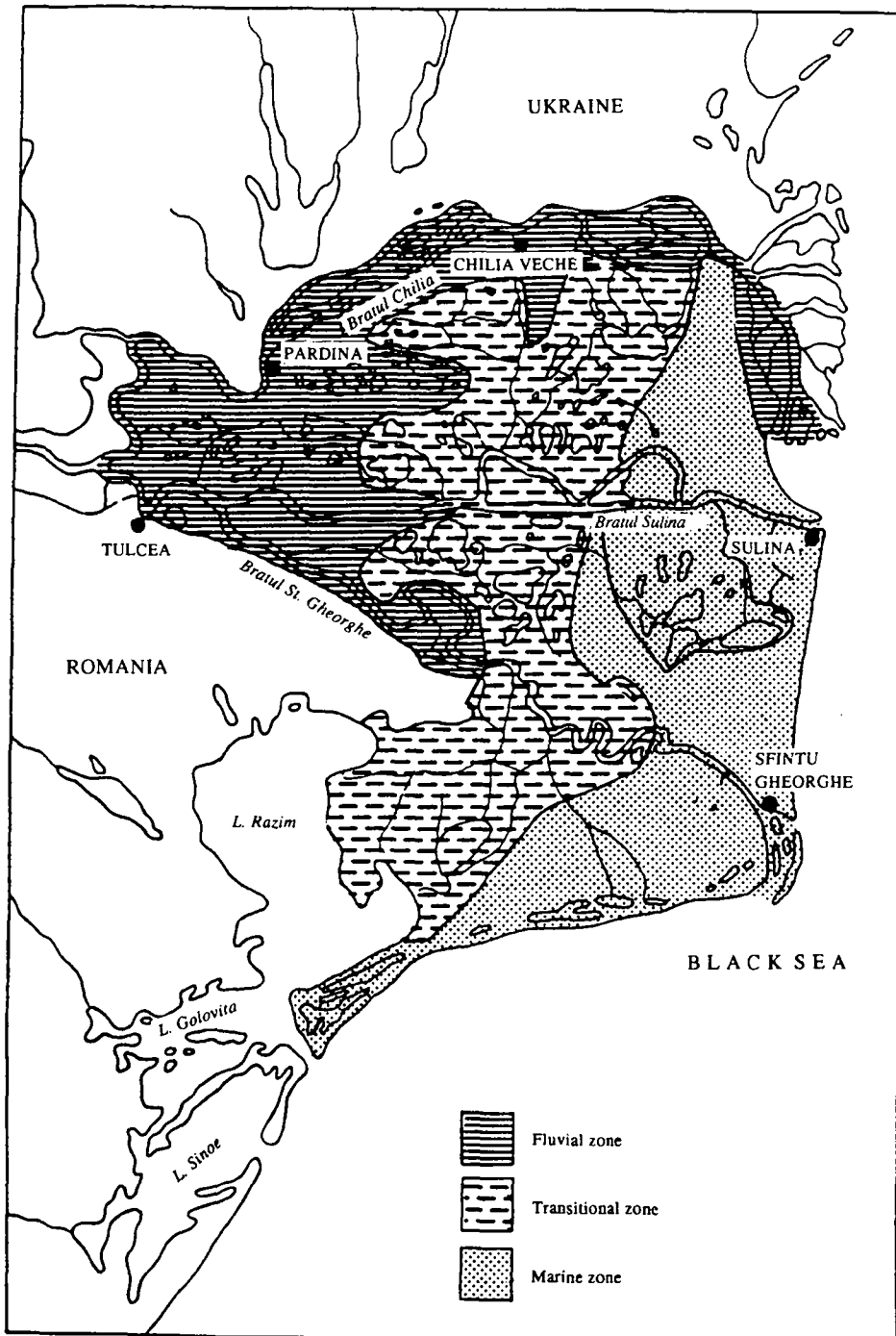


Figure 3(b) Map of the Danube Delta: physiographical, pedological and ecological zones.
Source: IUCN, 1992.

outlined by the ILA and ILC have not been cited. Nevertheless, the potential for dispute remains.

The delta is an excellent example of the benefits provided by using the principle of equitable utilization in conjunction with the goal of achieving more sustainable development. This has been very effective as a policy tool for addressing the deteriorating condition of the Danube Delta and river basin in two ways. First, it has established the Convention on Cooperation for the Protection and Sustainable Use of the Danube

River, the legal instrument which speaks directly to sustainable and equitable water management. Second, it has formed a cooperative regional arrangement that builds on these principles. The main purpose of the Convention and the Environmental Programme for the Danube River Basin (EPDRB) is to protect the Danube and control its negative effect on the Black Sea. Determining how to remedy existing damage and at the same time to deter future harm requires not only an examination of the causes that lie within the Delta

ecosystem itself, but those that are external to it. In order to achieve this goal, the political cooperation of all riparian nations is necessary. The combination of a regional environmental treaty, supervised by its own commission and supported by effective national and regional programs to explore the necessary technical aspects, has resulted in a comprehensive framework for planning and managing this resource.

The EPDRB was put into effect in September 1991 when environmental officials from several Danube nations met in Sophia, Bulgaria to begin planning the reclamation of the Danube Basin. This meeting was co-sponsored by the Global Environment Facility (GEF) and the European Community.²¹ The EPDRB is designed to provide the plan for strategic action which is to be implemented under the new environmental Convention and its Commission.²² Until the new Convention is in place, the Program will function without any legal (institutional) basis. It is being coordinated and giving priority to the coordination of interests (EPDRB, 1993) with a parallel unit set up in Istanbul called the Programme for the Environmental Management and Protection of the Black Sea. While EPDRB's focus is on the delta region, it is strongly committed to working on the transboundary issues along the river as well. The significant links between the river, its delta and the Black Sea (EPDRB, 1993) make this program "a truly regional one in which it was foreseen that a high level of coordination and cooperation between all parties concerned is vital" (EPDRB, 1993).

The EPDRB's initial work, to be developed over a three-year period, is focused on setting up the coordination plan required to address immediate needs and to establish the basis upon which long-term strategic action can be implemented. These efforts include developing a process for environmental management through review of administrative practices, legislative planning and environmental policies; conducting a series of diagnostic missions to identify key pollution sources from which potential investment projects will be selected; documenting national reviews from the riparian countries to ascertain their overall water environment situation; and setting up an emergency warning alarm system for the Danube and its major river tributaries to help control or prevent pollution as a result of accidents (EPDRB, 1993).

The long-term strategic plan will be an ongoing effort to gather information as the basis for a multi-year program of work in order to "coordinate the activities of local and national authorities, international financial institutions and regional and nongovernmental organizations (NGO) towards a set of common goals" (EPDRB, 1993). An Integrated Regional Study produced from surveys,

diagnostic missions and national reviews to form the basis of a series of recommendations on the regional action to be taken and strategy to be developed for protection and sustainable development (EPDRB, 1993). Because of the wide variety of pollution to be assessed, the integrated approach will provide an analysis of the priorities and uses of the Danube catchment, such as drinking water supply, fisheries and sensitive ecosystems; the effects of pollution on the environment, such as eutrophication, hazardous pollution of soils, contaminated sediments and groundwater, and disposal of wastes; and the factors contributing to these effects, namely agriculture, transport, industry and the population (EPDRB, 1993). For consistent quality assurance, the main activities will be to develop improved lab and inventory capabilities. This will include establishing monitoring and data management systems; updating equipment, and training manpower.²³ Long-term plans to improve the regional network include developing greater public participation, conducting workshops for governments and NGOs, building on investment opportunities in the region and harmonising legislation and standards (Rodda, 1993).

The new Convention (signed by riparians²⁴ in Sophia, Bulgaria in June 1994) establishes the institutional, legal and technical framework for cooperation in order to address some of the Danube region's water pollution problems. A number of key environmental agreements provided important historical and legal precedents.²⁵ These multilateral agreements not only speak to environmental protection, but address broader concerns relating to equitable and sustainable water use.

As the first regional agreement to deal with these issues specifically in the Danube region, this 1994 Convention is striking in its implications for multilateral cooperation. Furthermore, it sets up the environment as the

²³ Researchers and scientists gathering data face varying standards of record keeping, data analysis, etc. from individual countries. One way this is being addressed is through the efforts of the Europe Bureau of the USAID, which has begun to institutionalize computer country databases and software through DEMDESS, a comprehensive water pollution data management system. The program has been used in water quality pre-investment studies in four Danube River tributary basins in Bulgaria, Romania, Hungary and Slovakia (USAID, 1993).

²⁴ Current signatories include Austria, Germany, Croatia, Slovak Republic, Czech Republic, Hungary, Bulgaria, Romania and the EC. Ukraine is expected to endorse the Convention. Serbia has not been a party to the discussions since the onset of the war in the former Yugoslavia.

²⁵ These include the December 1985, Bucharest Declaration; the December 1987 agreement between the Federal Republic of Germany, the Republic of Austria and the European Economic Community on Cooperative Management of Water Resources in the Danube Basin; and the March 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes signed by ECE states, under the United Nations Economic Commission for Europe. Interview with Vittoria DiBucci, European Commission Legal Counsel, 23 March 1994. For a full review of these texts, please see Official Journal of the European Communities, "Agreement Between the Federal Republic of Germany and the European Economic Community, and the Republic of Austria on Cooperation of Management of Water Resources in the Danube Basin", Council Decision of 22 March 1990, L90, 5 April 1990, and United Nations, Economic and Social Council, Economic Commission for Europe, Convention on the Protection and Uses of Transboundary Watercourses and International Lakes (E/ECE/1267), 17 March 1992.

²¹ This program will receive funding from both multilateral and bilateral sources. Initial funding commitments equal \$50 million. The overall clean up effort will involve financing from the EC-PHARE program, the World Bank, the UNDP, the UNEP and the EBRD. The Task Force (composed of roughly 50 participants who meet once a year) has developed a work plan, the day-to-day responsibilities of which are run by a coordination unit (Rodda, 1993).

²² The details of this program are put forward in several reports; one of the most comprehensive is the Environmental Programme for the Danube River Basin *Annual Report* (EPDRB, 1993).

ideological framework or principle which requires collective action for it to be effective. The political commitment to this agenda by the riparian nations represents a new phase of ordering in the region which goes far beyond the past power struggles for control of the river. The environment has now become the controlling factor through which mutual benefit may be derived as a result of cooperation.

It is the combination of law and politics that has produced a comprehensive management program for the delta. While it is unrealistic to assume that this arrangement will avert every conflict over water use in the future, it will go a long way towards reducing the potential for conflict between upstream and downstream countries, and between riparians in the delta and along the Black Sea.

Conclusion

The two cases involving the current use of the Danube River serve to illustrate the limits of the principle of equitable utilization alone in resolving or preventing water disputes. As this discussion has shown, its application together with sustainable water use is critical to long-term cooperation between parties. Law and institutions will continue to play an important role in the development of broad international agreements and principles. The effectiveness of these legal guidelines remains dependent upon many factors, such as national politics, social forces and economic realities. They must therefore be adapted to the unique characteristics of a particular region and accepted by its riparian nations. However, the broader principle of sustainable development must also be applied in order for particular disputes to transcend "zero-sum" win/lose solutions.

Consider for a moment how differently the dispute over the GN project might be resolved if it had arisen under the 1994 Sofia Convention. The goal of the Convention is to implement preventive rather than reactive solutions. The process of resolving the dispute over the GN project would, under the Convention, involve scientific research, exchange of data and consultation among the parties — as well as other affected nations — and consider the long-term implications of the project. A likely result would be much better communication and understanding of, if not agreement about, the environmental consequences at stake weighed against the costs and benefits of development for domestic purposes. Utilizing the International Commission (a body made up of member states and created through the Convention) would provide an opportunity for negotiation. Thus, instead of the opposing positions taken by Slovakia and Hungary, a collaborative approach might instead have been possible, bringing some rationale to the demands each country placed on the river and providing a forum for creating efficient use of the supplies already available to them.

Hypothetical settings aside, the new Convention could not in all probability change a treaty in force. It could be argued that the methods outlined above were not only stated in the 1977 Treaty but utilized as well. During the planning and implementation of the GN project, scientific

studies were conducted and there were opportunities for exchange of data. Even though these provisions existed, a dispute arose and quickly escalated, and the mechanisms for reaching a resolution before submitting the case to the ICJ did not work. The Treaty did perhaps reflect the efforts of both parties to achieve an equitable allocation of the uses and benefits of the river, but over time, it failed to continue to meet their changing needs, interests and concerns in light not only of equitable use but of the principle of sustainable development as well. Furthermore, a narrow legal ruling is unlikely to satisfy these broader questions. The hope is that the Danube Convention represents a more adaptive system that can respond to changes in river flow regimes and incorporate not only the principle of equitable utilization, but the goal of sustainable development practices as a model for future water resource management.

Abbreviations

| | |
|--------|---|
| DDBRA | Danube Delta Biosphere Reserve Authority |
| DDRG | Danube Delta Research Group |
| DEMESS | Danube Emissions Management Decision Support System |
| EBRD | European Bank for Reconstruction and Development |
| EU | European Union (formerly EC, European Community) |
| EPDRB | Environmental Programme for the Danube River Basin |
| GN | Gabcikovo-Nagymaros |
| GEF | Global Environmental Facility |
| ICJ | International Court of Justice |
| ILA | International Law Association |
| ILC | United Nation's International Law Commission |
| IUCN | International Union for Conservation of Nature |
| OSCE | Organization for Security and Cooperation in Europe (formerly CSCE, Conference on Security and Cooperation in Europe) |
| PHARE | Program of Assistance for Economic Restructuring in the Countries of Central and Eastern Europe |
| UNDP | United Nations Development Program |
| UNEP | United Nations Environment Program |
| USAID | United States Agency for International Development |

Appendix A

Detailed chronology of significant events surrounding the Gabcikovo-Nagymaros project

1910-1988

1910
Plans for the utilization of the hydroelectric power of the Danube emerge.

1920
Treaty of Trianon, through which Hungary lost territory to Czechoslovakia, including the territory in Slovakia.

- 1948
The Danube Convention signed by riparian nations, requiring signatory countries to maintain their sections of the river navigable for big ships, in order keep the river navigable throughout its length.
- 1950
October
Suggestion at the meeting of the Hungarian Academy of Science that contact be made with Czechoslovakia to examine the possibility of building a power plant together.
- 1958
A Hungarian-Czechoslovakian joint expert Committee recommends building a system comprised of two dams, one with an elevated side channel.
- 1963
Intergovernmental committees approve the two-dam system agreeing to a completion date of 1975.
- 1964-73
Project designs and programs are developed.
- 1977
15 September
Leaders of the communist parties in each country announce the decision to go ahead with the project.
- 16 September
The Prime Ministers from Czechoslovakia and Hungary sign the "Treaty Concerning the Construction and Operation of the GN System of Locks," an interstate agreement outlining a plan for two stages, one at Gabčíkovo and the other at Nagymaros.
- 1978
Documents of ratification of the 1977 Treaty exchanged between the parties.
Construction begins on the Gabčíkovo power station, with a completion deadline of July 1990.
- 1981
September
Following criticism from various professional engineers and biologists, an agreement is reached with the Czechoslovak government temporarily halting construction work on their side (which is more advanced than work on the Hungarian side).
- 1981
November
The environmental movement in Hungary sees its true beginnings with the publication of the influential article written by Janos Vargha, which strongly criticizes the GN project.
- 1983
10 October
The parties modify the 1977 Treaty by signing a protocol in Prague which postpones the operation of the power generators by 5 years. Deadline for completion is moved to 1995.
- 20 December
Council of the Hungarian Academy of Sciences completes its report and calls for a halt to construction, pending an investigation of environmental consequences.
- 1984
Growing public concern in Austria and Hungary over the environmental impact of the GN project.
Danube Circle (Duna Kör), an unofficial pressure group opposed to the GN project, is formed.
- 1985
Hungary concludes a private contract with an Austrian company for financing the construction. The dam at Dunakiliti is to be built mainly by Austrian companies. Another contract is concluded with a Yugoslavian company for the dredging of the downstream channel. Ignoring growing protests, Hungary reaffirms that construction will continue.
- 1986
Environmental groups apply further pressure in Hungary.
- 28 May
Hungarian and Austrian companies sign four contracts committing Austria to both finance and execute the bulk of construction work at Nagymaros in return for electricity deliveries starting in 1996.
- 1987
August
The parties sign a statement pledging to speed up construction.
- 1987
International protest actions take place which influence the Hungarian government.
- 1988
12 September
First mass demonstration against the GN project in Hungary.
- 6-7 October
The first Hungarian Parliament debate over GN project places strict environmental protection conditions on further construction work at and operation of the GN project.
- 1989
6 February
The parties sign another protocol to speed up construction.
- 13 May
The Hungarian government suspends the works at Nagymaros (about 30% complete) with a two-month moratorium.
- 24 May
The Hungarian and Czechoslovak Prime Ministers negotiate in Prague on amending the project. The Czechoslovak government insists on completing the GN project according to the terms of the original Treaty — no agreement is achieved.
- 2 June
The Hungarian government is authorized to enter into negotiations on the modification or termination of the 1977 Treaty.
- 20 July
The prime ministers from each country meet. Hungary announces it will extend the suspension of the Nagymaros construction until 31 October and offers alternatives for joint revision. It decides against allowing diversion of the Danube to a new canal built on Slovak territory, thereby preventing the filling of the Dunakiliti Reservoir, the main source of water for the Gabčíkovo plant. Czechoslovakia refuses the Hungarian proposals.
- 18 August
Official note of protest from Czechoslovakia, which also threatens to demand \$2 billion in compensation.
- 31 August
The Czechoslovak Prime Minister rejects the Hungarian proposal and outlines a provisional solution, proposing to unilaterally divert the Danube on Czechoslovak land (described as the "C Option"); this would involve a smaller reservoir and allow the entire project to operate within Slovak territory. This is seen by Czechoslovakia as protection in case Hungary decides to suspend the construction forever.
- 1 September
The Hungarian government responds, justifying its own position and warning that the proposed action might hurt the relations between the two countries.
- September
Following the agreement of deputy prime ministers, technical and legal experts of the two countries meet without success to overcome the controversies.
- 22 September
The Hungarian government decides to end work at Nagymaros, which increases the hours to almost continuous operation at Gabčíkovo.
- 4 October
Hungary protests against the unilateral provisional solution from Czechoslovakia.
- 11 October
The two prime ministers meet to settle the issue. Hungary stresses the environmental arguments, Czechoslovakia disapproves of them emphasizing possible claims for compensation and threatening unilateral diversion.

31 October

The Hungarian Parliament adopts a resolution to abandon the peak operation mode of the Gabčíkovo dam and the construction of the Nagymaros dam. The Hungarian parliament passes a resolution authorizing the government to renegotiate the 1977 Treaty guided by an ecological approach, solid scientific findings and priority of national interests.

November

Hungary terminates its agreement with the Austrian contractor.

A mass demonstration is held at Gabčíkovo with Czech and Slovak organizations.

30 November

The Hungarian government proposes a new international governmental agreement retaining part of the dam system with ecological guarantees prior to putting the plants in operation. Czechoslovakia never formally responds.

1990

1990-92

A number of negotiations between the two countries take place but with no progress. Hungary aims at an agreement to abandon or at least suspend the project until the ecological risks are sufficiently investigated; Czechoslovakia wants the project to be completed stating that for economic reasons it cannot afford suspension.

10 January

Hungary sends a letter to the new Czechoslovak Prime Minister, revoking the Hungarian proposal for treaty modification and announcing that Hungary will stop any activity directed at the completion of the system, including the Hungarian engagement on Czechoslovak territory and suggesting that the other party should follow suit. He refers to the radical changes of the recent period and proposes that the final decision be left to the new governments to be formed after the free elections in both countries. The Czechoslovak Prime Minister's response is negative, demanding that the entire system be set to operation in 1991.

5 February

A large group of protesters express their sentiments against the project in Czechoslovakia.

22 May

The new Hungarian government publishes its general political program, which disapproves of the project and states it will start restoring the site at Nagymaros.

31 May

The Hungarian government submits details of the government program relating to the GN project.

June

Hungary terminates its agreement with the Yugoslavian contractor and reaches a compensation arrangement.

For the rest of the year practically no major move on the issue. The Minister for Environment of Czechoslovakia submits a proposal of seven alternatives ranging from the execution of the original plan, to the demolition of all the new structures and restoration of the original situation to the maximum extent possible. Negotiations resume on a low-level of government commissioners for the project, leading to the transmittal of scientific reports justifying the decision of the Hungarian government to withdraw from the plan.

14 November

The Hungarian government agrees to recompense the Austrian company contracted to build the dam at Nagymaros.

December

Unpublished decision of the Hungarian government to start negotiations with the Czechoslovak government in order to terminate the Treaty concluded in 1977 on the establishment and operation of the GN project.

1991

January

Trilateral consultations of ministers for foreign affairs of Czechoslovakia, Hungary and Poland take place in Hungary, but no agreement seems to have been achieved.

22-23 April

The two parties meet again at the inter-governmental level in order to discuss the official standpoints of their governments. The standpoints differ significantly. No written documents are exchanged.

15 July

The parties meet in Bratislava each restating their positions.

23 July

Following further bilateral meetings, the Slovak government announces its decision to proceed with Option C to divert the Danube, which the Hungarian government claims would be a violation of the 1947 Paris Peace Treaty's ruling of the Danube's main shipping lane as the border between the two countries. Slovak legal experts respond that the 1977 Treaty had itself envisioned diverting water from the Danube.

24 July

A decision to prepare plans for construction according to Option C, to be effective starting in October 1992, is made formally by the Slovak government.

July and August

A number of local people organize demonstrations on both sides of the conflict.

November

Czechoslovakia begins construction of Option C.

December

An intergovernmental meeting takes place in Budapest. The parties agree that the GN project involves a complex technical-scientific problem and that a joint expert committee should be convened to review it. Both parties agree to include an expert from the EC as a third party. The parties cannot agree on the issue of suspension of the construction, highlighting the gap between the two sides: the Slovaks will only consider options which will allow the power station at Gabčíkovo to function, while the Hungarians threaten unilateral annulment of the 1977 Treaty.

1992

24 March

Second resolution by the Hungarian parliament authorizing the government to renegotiate the 1977 Treaty.

April

An Austrian company agrees to lend to the Slovak state construction firm to complete the project, which leads to protests by the Hungarian government and demonstrations outside the Austrian Embassy in Budapest.

13 April

The EC Commission offers its "good offices" to provide a committee of experts in order to settle the growing conflict. The Vice President of the EC expresses the readiness of the EC to take part in the resolution of the dispute.

23 April

Denouncing the Hungarian request aiming at the cancellation of unilateral construction work, Czechoslovakia announces it will start its operation on 31 October 1992.

4 May

The EC Commissioner responds to calls from both sides for an outside committee of experts by stipulating three conditions to be met before the EC can become involved: a letter requesting external arbitration; a commitment to accept the findings as binding, and promises not to prejudice the outcome of the enquiry in any way (which would mean suspending the work on the project on the Slovak side) until the completion of the investigations.

7 May

The Hungarian government announces that unless the issue can be resolved beforehand, it will unilaterally annul the 1977 Treaty on the building of the GN project on 25 May.

9 May

Czech and Slovak governments reject the Hungarian decision. A government official admits that the dispute is having a "disturbing effect" on a new Hungarian-Czechoslovak Friendship Treaty, which has been approved by both sides but still awaits signing.

19 May
Hungary submits its declaration on the termination of the 1977 Treaty.

25 May
Hungary sends a report with an explanation for the termination to Prague.

8 June
Hungarian parliament approves the decision.

12 August
Hungary reaffirms its position over the termination of the Treaty but shows willingness to conclude another agreement; it also emphasizes that if Option C is pursued, Hungary will consider this a border violation.

20 October
EC invites Hungary and Slovakia to talks on 22 October to try to end the dispute over the dam by offering its "good offices" and technical expertise.

22 October
Meeting in Brussels between the Secretaries of Foreign Affairs for both countries and senior officials from the EC Commission. Hungary states the project is too dangerous from an environmental point of view; Czechoslovakia contends that serious problems will occur if the dam is not built. Talks break up with Czechoslovakia refusing to accept the basic conditions proposed by the EC. Hungary announces it will invoke the crisis mechanism of the CSCE.

23 October
The Slovak project operator decides to block the Danube river bed.

24 October
The water is diverted into the storage lake and the Gabčíkovo canal. Hungary files a complaint with the ICJ.

28 October
The "London Protocol" is signed by Czechoslovakia, Hungary and the EC Commission, in which Czechoslovakia agrees to maintain at least 95% of the water in the original river bed, to stop all works on Option C until the 20 November 1992 and refrain from operating the power plant.

2 November
The Gabčíkovo plant starts "test operations" and begins diverting 80-90% of the water into the canal.

24 November
A mediocre Danube flood cannot be held back by the dikes of the Cuonovo diversion weir which is still under construction.

27 November
A working group of experts nominated by the EC, Hungary and Czechoslovakia produce a report on their on-site inspection.

10 December
Hungarian-Czechoslovak EC talks held in Brussels are unsuccessful.

December
The Gabčíkovo project operator starts construction of a giant irrigation project which aims at diverting some water from the canal into a modified drainage system in the dried-out wetland on the Slovak side. The artificial irrigation/drainage system is expected to operate in late spring 1993.

1993
January
The former Czechoslovakia splits up and the Czech Republic and the Slovak Republic are formed.

19 January
Talks between the EC, Hungary and Slovakia end inconclusively with the parties agreeing only to set a date for future negotiations. The aim of the meeting is to resolve temporarily issues tied to navigation and water levels before the ICJ hears the case.

February
Construction of an operation road along the Danube river bed is started. Works at Cuonovo weir are interrupted.

16 February
Trilateral negotiations on a joint Slovak-Hungarian agreement to submit the dispute to the International Court of Justice and on an interim water management for the Danube end without result. The EC compromise proposal is accepted only by Hungary.

24 February
The Slovak Premier reports from his visit with the EC President that the non-solution might affect the voting on the association contract with the EC.

2 March
A Slovak state attorney states it will investigate the actions of the Gabčíkovo operator company.

12 March
The European Parliament votes on a resolution urgently asking the Slovak government to become more flexible and to cooperate in the search for solutions to open questions, asking the EC to explore specific options concerning financial compensation, a comprehensive environment impact assessment by independent experts, and to propose the creation of an international nature reserve in the unique floodplain forests bordering Hungary and Slovakia.

7 April
Slovakia and Hungary sign the Special Agreement submitting the GN project case to the ICJ.

23 April
The Slovak parliament ratifies this Agreement.

28 June
The ratification documents are exchanged in Brussels.

2 July
The parties inform the ICJ of the Special Agreement.

July
A group of three experts is appointed by the EC(EU) Commission, plus one Slovak and one Hungarian, its work to be funded by the Commission.

December
The group of experts submits its final report. Bilateral consultation take place between the Commission and the Slovak and Hungarian Foreign Ministers. The final proposal is largely accepted by Hungary, while the Slovaks request more time for internal consultations.

1994
8 February
Slovakia gives its final answer to be assessed by the Commission experts. The Commission to then inform the Member States of the parties' responses.

Source: The preceding dates and descriptions which make up this chronology of events is compiled from: "Damning Evidence?" *East European Reporter*, September-October 1992, pp. 76-82; Interview with Dennis Bowdoin, Secretary of Politics, Hungarian Foreign Relations, US Embassy, Budapest, 23 March 1994; Interview with H.E.P. Tomka Deputy Permanent Representative to the United Nations, Permanent mission of the Slovak Republic to the United Nations, New York, 14 March 1994; general information obtained from news articles, all of which confirmed the same basic data.

References

- Agence France Presse (1992) 27 October.
- Aschenbach, J. (1993) The World's Rivers of Discontent. *Chicago Tribune*, 4 March.
- BBC Report (1992) 24 October, sec. EE/1520: 42.
- Berber, F. J. (1959) *Rivers in International Law*. Stevens, London.
- Bierman, D.E. and Rydzkowski, W. (1988) Contemporary problems of European waterways. *Transportation Quarterly* April, 289-306.
- Bowdoin, D. (1994) Secretary of Politics, Hungarian Foreign Relations, U.S. Embassy, Budapest. Interview by author, 23 March.
- Bryson, B. (1992) Linking Europe's waterways. *National Geographic* August, 3-31.
- Chelminski, R. (1990) Not so quiet flows the new Danube. *Smithsonian* July, 32-42.

- Cohen, L. (1994) United States, State Department (Europe). Interview by author, 24 March.
- Danube Delta Research Group (1991) *Scientific Report of the U.S.-Romanian Summer Program for Young Investigators in Ecology/Environmental Sciences*.
- De Bardeleben, J. (ed.) (1991) *To Breathe Free: Eastern Europe's Environmental Crisis*. The Woodrow Wilson Centre Press, Washington, D.C.
- DiBucci, V. (1994) European Commission Legal Counsel. Interview by author, 23 March.
- East European Reporter* (1992) Damning evidence? September-October, 76-82.
- Eastern Europe Report* (1991) Danube Cleanup Effort May Cost \$10 Billion. 23 December, p. 3.
- Environmental Programme for the Danube River Basin (EPDRB) (1993) *Annual Report*. Brussels, Belgium, September.
- European Report* (1992) EC/Danube: Commission powerless to act in Hungaro-Slovakian dam row. 28 October, sec. V.
- Fitzmaurice, J. (1994) European Commission. Personal letter to author and interview by author, 29 March and 10 April.
- Fleischer, T. (1993) Jaws on the Danube: Water management, regime change and the movement against the middle Danube hydroelectric dam. *International Journal of Urban and Regional Research* 17, 429-443.
- Focas, S.G. (1987) *The Lower Danube River*. East European Monographs. Columbia University Press, Boulder, Colo.
- Galambos, J. (1992) Political aspects of an environmental conflict: the case of the Gabcikovo-Nagyymaros dam system. In *Perspectives on Environmental Conflict and International Relations*, ed. J. Kakonen. Pinter, London.
- Garretson, A. H., Hayton, R. D. and Olmstead, C. J. (1967) *The Law of International Drainage Basins*. Oceana, Dobbs Ferry, N.Y.
- Gleick, P. H., ed. (1993) *Water in Crisis*. Oxford University Press, New York.
- Gleick, P.H. (1994) Water, war and peace in the Middle East. *Environment* 37, 7-42.
- Gorove, S. (1964) *Law and Politics of the Danube*. Martinus Nijhoff, The Hague.
- Homer-Dixon, T. F. (1991). On the threshold: environmental changes as causes of acute conflict. *International Security* 16.2, 76-117.
- Ingram, J. (1991) Romania's Danube Delta risk. *Christian Science Monitor* 6 November, p. 12.
- International Court of Justice. Statute of the International Court of Justice, New York. United Nations Department of Public Information, n.d.
- International Legal Materials* 32.5 (September 1993), pp. 1247-1297.
- International Union for Conservation of Nature (IUCN) (1991) *Danube Delta Biosphere Reserve Management Objectives*. Gland, Switzerland.
- International Union for Conservation of Nature (IUCN) (1992) *Conservation Status of the Danube Delta*, (Environmental Health Reports, Vol. 4). The Nature Conservation Bureau, Berkshire.
- Kaplan, R. D. (1994) The coming anarchy. *The Atlantic Monthly*, 273, (2), 44-65.
- Lakatos, A. (1994) Counsellor, Permanent Mission of Hungary to the United Nations, New York. Interview by author, 14 March.
- Linnerooth, J. (1990) The Danube River basin: negotiating settlements to transboundary environmental issues. *Natural Resources Journal* 30, 629-660.
- McCaffrey, S.C. (1993) Water, politics and international law. In *Water in Crisis*, ed. P. H. Gleick, p. 97. Oxford University Press, New York.
- Official Journal of the European Communities* (1990) Agreement Between the Federal Republic of Germany and the European Community, and the Republic of Austria on Cooperation and Management of Water Resources in the Danube Basin. Council Decision of 22 March 1990, L 90, 5 April 1990.
- Painton, F. (1990) Where the sky stays dark: the lifting of the Iron Curtain reveals the planet's most polluted river. *Time Magazine*, 28 May, p. 40.
- Postel, S. (1992) *Last Oasis: Facing Water Scarcity*. Norton, New York.
- Pringle, C., Vellidis, G., Heliotis, F., Bandacu, D. and Cristofor, S. (1993) Environmental problems in the Danube Delta. *American Scientist* July-August, 350-361.
- Reuter Library Report* (1992) Hungary brings CSCE into row over Danube, 23 October.
- Rich, V. (1993) The murky politics of the Danube. *The World Today* August-September, 151-152.
- Rich, V. (1991) Neighbours meet to keep the Danube blue. *New Scientist* 16 March, p. 13.
- Ridgeway, J. (1992) Watch on the Danube. *Audubon* July-August, pp. 47-54.
- Rodda, D. (1993) Task Force Director, Environmental Programme for the Danube River Basin, Brussels, Belgium. Interview by author, 17 November.
- Sands, P., ed. (1994) *Greening International Law*. The New Press, Norton, New York.
- Schachter, O. (1977) *Sharing the World's Resources*. Columbia University Press, New York.
- Shapiro, M. (1990) The New Danube. *Mother Jones*, April-May.
- Simons, M. (1990) Evolution in Europe: befouled to its romantic depths, Danube reaches a turning point. *New York Times*, 7 May.
- Tomka, H.E.P. (1994) Deputy Permanent Representative to the United Nations, Permanent Mission of the Slovak Republic to the United Nations, New York. Interview by author, 14 March.
- United Nations (1992) Economic and Social Council, Economic Commission for Europe. *Convention on the Protection and Uses of Transboundary Watercourses and International Lakes*. E/ECE/1267, 17 March.
- United States Agency for International Development (USAID) (1993) *Water Quality Pre-Investment Studies in Four Danube River Tributary Basins*. WASH Field Report No. 407. Washington, D.C.
- Verzijl, J.H. (1970) *International Law in Historical Perspective*. Sijthoff, Leyden.
- Weiss, E.B., Magraw, D.B. and Szasz, P.C. (1991) *International Environmental Law: Basic Instruments and References*. Transnational, Dobbs Ferry, N.Y.
- Zacklin, R. and Caffisch, L. (eds) *The Legal Regime of International Rivers and Lakes*. Martinus Nijhoff, The Hague.