INTERNATIONAL LAW ASSOCIATION

BERLIN CONFERENCE (2004)

WATER RESOURCES LAW

Members of the Committee:

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Professor Malgosia Fitzmaurice (UK): *Secretary*

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FOURTH REPORT

PART ONE

The Water Resources Committee presented its first report at the 1996 Helsinki Conference of the Association. At that time, the Association, on the recommendation of WRC, adopted two sets of articles, namely the Articles on Private Law Remedies for Transboundary Damage in International Watercourses and the Supplemental Rules on Pollution. The Association also approved the Resolution proposed by the Water Resources Committee on the Further Consideration by the General Assembly of the United Nations of the Draft Articles on the Law of the Non-Navigational Uses of International Watercourses proposed by the International Law Commission, and requested the Secretary General of the Association to transmit the Resolution to the Secretary General of the United Nations Organization with the suggestion that it be circulated to members of the Organization. The Association also requested the Water Resources Committee continue its work, the scope of which should be considered with the Director of Studies of the Association.

Shortly after the Helsinki Conference, Professor Robert Hayton resigned as Rapporteur of the Water Resources Committee and Professor Joseph Dellapenna was appointed Rapporteur. Dr. Patricia Wouters succeeded the late Professor Albert Utton as secretary. The Water Resources Committee did not present a report at the Taipei Meeting,, but continued to meet actively. In its Second Report, prepared for the Millennial Conference in London in 2000, the Water Resources Committee presented the *Campione Consolidated Rules* and an article on Adequate Stream Flows, and a progress report on a project to revise and update the *Helsinki Rules* and the other rules supplementing the *Helsinki Rules.* The *Campione Consolidation* did not represent new work, but rather a compilation and consolidation of the prior work of the Water Resources Committee as approved by the Association over a period of 34 years.

At the Millennial Conference, the Association, at the recommendation of the Working Session of the Water Resources Committee, took no action on the Article on Adequate Stream Flows in favor of including consideration of that proposed article in the revision project. The Association also took note of the *Campione Consolidation* and requested the Water Resources Committee to continue its consideration of possi-

ble new rules on water resources, working on the basis of the Rapporteur's 4th Report to the Committee of January 2000. The Association also acknowledged the contributions of Professor Charles Bourne, thanking him for his years of service in the chair of the Water Resources Committee. Professor Bourne stepped down from the chair after the London meeting, to be replaced by Professor Gerhard Loibl. Dr. Wouters had stepped down as Secretary in February, and was replaced after the London meeting by Professor Malgosia Fitzmaurice.

The Committee presented its Third Report at the Delhi Conference in 2002. It reported its progress on drafting the revision of the Helsinki and related rules, and was charged to complete the project, if possible, in time for the Berlin Conference in 2004.

Over the 14 years of the existence of the Committee, a number of people have served on the Committee who, for various reasons, are no longer active in its work, including HE Ambassador Alan Baker (Israel); Dr. Guillermo J Cano (Argentina); Dr. Dante Caponera (Italy); Professor Sanford D Clark (Australia); Dr. Johan G Lammers (Netherlands); Judge EJ Manner (Finland); Ambassador Marcos Martinez Mendieta (Paragray); Professor Charles O Okidi (Kenya); Professor Shabtai Rosenne (Israel); Dr. Sergei Vinogradov (Russia); Mr. Ludwik A Teclaff (United States); Dr. Todor Tzunov (Yugoslavia); Professor Albert E Utton (United States); Dr. Stanislaw Wajda (Poland). Several persons have also served as consultants to the Committee who are no longer active in that role, including: Mr. David Goldberg (United States); Professor Stephen McCaffrey (United States); Ms. Marcella Nanni (Italy); Mr. Ruan Ping (China); Professor Attila Tanzi (Italy); Dr. Xue Hanqin (China). The Committee particularly honors the contributions of its deceased members who were participants in the drafting of the *Helsinki Rules* approved by the Association in 1966 and who were still contributing to the work of the Committee during this past decade when they passed away: Dr. Guillermo J Cano (Argentina); Dr. Dante Caponera (Italy); Judge EJ Manner (Finland); Mr. Ludwik A Teclaff (United States); and Professor Albert E Utton (United States).

PART TWO

Revision of the Helsinki and other International Law Association Rules on International Water Resources

One of the areas for which the International Law Association is best known is the articulation of cogent and compelling statements of the customary international law relating to fresh water resources. Working over a span of nearly 50 years, the Association has produced a series of rules addressing various topics relating to the overall field of international water law.

The *Campione Consolidation* did not consider whether the rules approved by the International Law Association over the preceding 34 years needed to be revised to correspond to the present state of the customary international law regarding non-maritime waters. The question of whether and how to proceed with possible revision of the work of the Association regarding the waters of international drainage basins or other non-maritime waters was discussed extensively in meetings of the Committee at Rome, Italy (June 1997), Rotterdam, The Netherlands (March 1998), Campione d'Italia (June 1999), and Dundee, Scotland (February 2000). At each of these meetings, the Rapporteur presented draft reports that developed possible revisions of parts of the International Law Association Rules. These discussions cumulated in the Millennial Conference in London in 2000, where the Association requested the Water Resources Committee to proceed to complete the review and revision process by 2004.

Since the Millennial Conference, the Water Resources Committee met six times: in Washington, DC (April 2001), in London, United Kingdom (January 2002), in Novi Sad, Serbia (November 2002), in Vienna, Austria (June 2003), in Rome, Italy (November 2003), and in Gent, Belgium (March 2004). The Rapporteur presented draft reports for consideration by the Water Resources Committee at each meeting. After a total of ten drafts, the Committee is ready to submit a comprehensive revision of the *Helsinki Rules* and related rules approved from time to time by the Association. Some of the rules already approved by the Association were being carried forward with very little revision. Others have been extensively revised. New rules were also developed that address new matters not previously addressed by the Association in its various rule regarding water resources. The whole represents a major development of the rules relating to water resources, integrating the traditional rules regarding transboundary waters with rules derived from the customary international environmental law and international human rights law that apply to all waters, national as well as international. The Rules presented here present a comprehensive collection of all the rele-

vant customary international law that a water manager or a court or other legal decision maker would have to take into account in resolving issues relating to the management of water resources.

At the conclusion of the Gent meeting, the 11 members in attendance voted unanimously to present the attached Rules to the International Law Association in the Berlin meeting. One member of the Committee not in attendance indicated by e-mail that he was opposed to presenting the Rules to the Association. The Rules presented here represent the view of the majority of the Committee, including most who participated in the work of the Committee. As it often true in the product of a Committee effort, few members individually agree with each and every provision of these Rules. Some members opposed any effort to revise the earlier work of the Committee.

In view of the limited time available, the Committee could not consider the Commentary in the preparation of the final text prepared by the Rapporteur. The Commentary provides the Rapporteur's explanations of the *Rules*. There is an additional document (*Sources of the International Law Association Rules on Water Resources*) available through the Committee's webpage the excerpts extensively from representative international agreements. These agreements are sources of and examples of the principles incorporated into these *Rules.* That document is too extensive to include in the report of the International Law Association but should be consulted for evidence of the increasing acceptance of the *Rules* set forth here in the practice of States.

THE BERLIN RULES ON WATER RESOURCES

Preface

In a world in which demand for water grows exponentially but the supply essentially is constant or even declining because of deteriorating quality, severe challenges have emerged over the allocation and protection of water resources. Disputes among neighboring water users and communities proliferate, while the need to protect the integrity of the aquatic environment has become critical. The prospect of global climate change could worsen this situation dramatically. Therefore, States sharing waters must create and implement legal mechanisms for cooperative management of the resource and for resolving disputes peacefully.

The International Law Association, with the *Helsinki Rules on the Use of Waters of International Rivers* (1966), played a key role in formulating the rule of equitable and reasonable utilization as the basic rule of international law for the transboundary use and development of waters. Today, the situation is significantly different than in 1966. The steady decline in the water available *per capita* in much of the world by itself poses serious challenge to the international law as it had developed until 1966. Moreover, the emergence of a body of international law addressing significant environmental problems and the protection of basic human rights since 1966 has broadened and deepened the role of customary international law applicable to the world's waters. The International Law Association approved supplemental rules from time to time to respond to some of these new realities. The General Assembly of the United Nations in May 1997 approved the *United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses,* referred to by the International Court of Justice in that same year—in the *Gabcíkovo-Nagymoros Project Case (Hungary v. Slovakia),* 1997 ICJ No. 92, ¶¶ 78, 85, 141—as expressing, at least in part, contemporary customary international law governing internationally shared waters.

In 1997, at its meeting in Rome, the Water Resources Committee of the International Law Association agreed that the changes are so profound as to justify revising the *Helsinki Rules* and its supplemental rules. The Committee undertook to summarize the current state of the relevant customary international law for three reasons. First, none of the most disputed internationally shared fresh waters are covered by an agreement among all the interested States. Second, the process of ratification of the *UN Convention* has been slow. States will need to continue to apply customary international law, and there are questions as to whether the *UN Convention* always correctly states that law.[1] These *Rules* set about to provide a clear, cogent, and coherent statement of the customary international law that applies to waters of international drainage basins, and to the extent that customary international law applies to waters entirely within a State,

[1] *See, e.g.,* Malgosia Fitzmaurice, *Convention on the Law of Non-Navigational Uses of International Watercourses,* 10 LEIDEN J. INT'L L. 501 (1997); Reaz Rahman, *The Law of International Uses of International Watercourses: Dilemma for Lower Riparians,* 19 FORDHAM INT'L L.J. 9 (1995); Attila Tanzi, *The UN Convention on International Watercourses as a Framework for the Avoidance and Settlement of Waterlaw Disputes,* 11 LEIDEN J. INT'L L. 441 (1998).

to all waters as well. These *Rules* also undertake the progressive development of the law needed to cope with emerging problems of international or global water management for the twenty-first century.

Professor Joseph Dellapenna, Rapporteur of the Committee, drafted these *Rules.* Several members of the Committee helped to revise particular Articles: Klaus Cuperus of the Netherlands and Gerhard Loibl of Austria (integrated management); Malgosia Fitzmaurice of the United Kingdom and André Nollkaemper of the Netherlands (environmental harm); Harald Hohmann of Germany (integrated management; environmental issues; flood control); Kazimierz Równy of Poland (education); and Robbie Sabel of Israel (the relation of the "no harm" rule to the principle of equitable utilization; armed conflict). Kerstin Mechlem of Germany, a consultant to the Committee, contributed to Chapter VIII on groundwater, with the assistance of Jacob Burke, a senior water policy officer at FAO.

The Water Resources Committee developed these rules through a series of 10 meetings from 1997 to 2004 as well as presenting its work to the general membership at the International Law Association conferences in London and New Delhi. At its meeting at Campione d'Italia (June 1999), the Committee approved the *Campione Consolidation* of the previous work of the Committee in order to bring together in a single document the original *Helsinki Rules* and the supplemental rules approved in the 30 years between 1966 and 1996, without changing the content of those rules. This provided the Committee with a benchmark for its work of revision. The Association took note of the *Campione Consolidation* at its Millennium Conference in London in July 2000 and charged the Committee to complete the revision in time for the biennial conference in Berlin in August 2004.

These *Rules* incorporate the experience of the nearly four decades since the *Helsinki Rules* were adopted, taking into account the development of important bodies of international environmental law, international human rights law, and the humanitarian law relating to the war and armed conflict, as well as the adoption by the General Assembly of the United Nations of the *UN Convention.* This revision does not address the substantive rights and duties of international organizations, the accountability of such organizations, or the dispute settlement procedures applicable to such organizations.

Usage Note

Readers of these Rules must keep certain drafting points in mind. First, when appropriate, these *Rules* express the customary international law applicable to the management of waters, and not just to the waters of the waters of an international drainage basin. These *Rules* both express rules of law as they presently stands and, to a small extent, rules not yet binding legal obligations but which, in the judgment of the Association, are emerging as rules of customary international law. In other words, some of these *Rules* express the progressive development of the relevant international law. Following the recent practice of International Law Commission and reflecting the conclusion of the Committee that such progressively developed *Rules* will become settled customary international law in the near future, all *Rules* are expressed as present legal obligations ("shall"), leaving identification of *Rules* as progressive developments to the commentary.

Second, most of the *Rules* contained herein are applicable to all waters—meaning all surface waters and groundwater other than marine waters—regardless of whether the waters in question are found in an international drainage basin. The *Rules* in Chapters IV, IX, and X for the most part apply only to the waters of international drainage basins. Rules that apply to all waters are expressed in terms of "States," while *Rules* that specifically apply to the waters of international drainage basins are expressed in terms of "basin States."

Most of these *Rules* are firmly based in generally recognized customary international law. Most were codified in the earlier work of the Association and its Water Resources Committee, in the *UN Convention,* in various *Draft Articles* by the International Law Commission, or in other treaties relating to international environmental law or international human rights law, as well as in numerous bilateral and regional treaties relating to waters. Many of the *Rules* have been confirmed by judgments of the international or national tribunals. Because the *Rules* are so firmly established, commentary in this report is minimal, providing brief explanations of the reasons for the particular formulation selected. References to secondary sources are also kept to a minimum. When the *Rules* are not as firmly settled or involve progressive development, the commentary provides a more detailed explanation. In view of the limited time available, the Committee could not consider the Commentary in the preparation of the final text prepared by the Rapporteur. The Commentary provides the Rapporteur's explanations for the *Rules*.

Finally, although the Commentary is brief, there is an additional document (*Sources of the International Law Association Rules on Water Resources*) available through the Committee's webpage the excerpts ex-

tensively from representative international agreements. These agreements are sources of and examples of principles incorporated into these *Rules.* That document is too extensive to include in the report of the International Law Association but should be consulted for evidence of the increasing acceptance of the *Rules* set forth here in the practice of States.

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CHAPTER I
SCOPE

Article 1
Scope

1. **These Rules express international law applicable to the management of the waters of international drainage basins and applicable to all waters, as appropriate.**

2. **Nothing in these Rules affects rights or obligations created by treaty or special custom.**

Commentary: Because these Rules express the entire body of customary international law applicable to the management of waters, this Rule's scope is broader than the equivalent provisions of the original *Helsinki Rules* and of the *UN Convention,* art. 1. Those documents focused purely on transboundary problems. These Rules address the obligations of customary international law that govern the management of waters within a State as well as transboundary waters. Unlike a convention or other international agreement, these Rules do not purport to create new law, although some rules do represent the progressive development of customary international law. This Article also makes explicit that customary international law does not displace special obligations created by treaty or special custom (except insofar as the general customary obligation is a peremptory norm). "Management" in this Article, as throughout these Rules, is used to include development, use, protection, allocation, regulation, and control of waters, regarding the quality and the quantity of waters, and not in a narrow, technical sense.

Article 2
Implementation of These Rules

1. **States shall, where appropriate, enact laws and regulations to accomplish the purposes set forth in these Rules and shall adopt efficient and adequate administrative measures, including management plans, and judicial procedures for the enforcement of these laws and regulations.**

2. **States shall undertake educational and research programs as necessary to assure the technical capacity necessary for State and communal authorities to fulfill the obligations specified in this Chapter and in other Rules.**

Commentary: This Article restates the general obligation of all States to comply with the mandates of customary international law. The same statement appears in the *Montreal Rules,* art. 3. In order for States to fulfill these obligations, they will have to undertake to enact the necessary laws and regulations and to take adequate administrative measures. This Article builds upon the command of the *Montreal Rules on Pollution,* arts. 3 and 7. Agreements to enact and enforce the necessary laws and regulations are among the more common forms of the coordination necessary to implement the obligations of this Chapter.

Foremost among the administrative measures will be to create and update management plans for the waters within their jurisdiction and control. Management planning normally will be based upon drainage basins, although there might be particular reasons for developing plans on some other basis, such as parts of a basin or combining all or parts of several basins. They will reflect the principles set forth in Chapter II that should govern the management of all waters, including conjunctive, integrated, and sustainable management, and the minimization of environmental harm. Normally, such plans will include long-term planning for the development and use of the waters, programs of measures to preserving the ecological integrity of the waters and to assure the attainment of the water quality standards established under Article 28, and contingency plans for extreme situations as required under Articles 32-35. This Article also recognizes, in paragraph 2, that for States to fulfill their obligations under international law, particularly regarding but not limited to environmental impact assessments, States will have to invest in capacity building to assure the necessary technical expertise.

Article 3

Definitions

For the purposes of these Articles, these terms have the following meanings:

1. **"Aquatic environment" means all surface waters and groundwater, the lands and subsurface geological formations connected to those waters, and the atmosphere related to those waters and lands.**

2. **"Aquifer" means a subsurface layer or layers of geological strata of sufficient porosity and permeability to allow either a flow of or the withdrawal of usable quantities of groundwater.**

3. **A "basin State" is a State the territory of which includes any portion of an international drainage basin.**

4. **"Damage" includes:**
   a. **loss of life or personal injury;**
   b. **loss of or injury to property or other economic losses;**
   c. **environmental harm; and**
   d. **the costs of reasonable measures to prevent or minimize such loss, injury, or harm.**

5. **"Drainage basin" means an area determined by the geographic limits of a system of interconnected waters, the surface waters of which normally share a common terminus.**

6. **"Ecological integrity" means the natural condition of waters and other resources sufficient to assure the biological, chemical, and physical integrity of the aquatic environment.**

7. **"Environment" includes the waters, land, air, flora, and fauna that exist in a particular region at a particular time.**

8. **"Environmental harm" includes:**
   a. **injury to the environment and any other loss or damage caused by such harm; and**
   b. **the costs of reasonable measures to restore the environment actually undertaken or to be undertaken.**

9. **"Flood" means a rising of water to levels that have detrimental effects on or in one or more basin States.**

10. **"Flood control" means measures to protect land areas from floods or to minimize damage therefrom.**

11. **"Groundwater" means water beneath the surface of the ground located in a saturated zone and in direct contact with the ground or soil.**

12. **"Hazardous substances" means substances that are bio-accumulative, carcinogenic, mutagenic, teratogenic, or toxic.**

13. **An "international drainage basin" is a drainage basin extending over two or more States.**

14. **"Management of waters" and "to manage waters" includes the development, use, protection, allocation, regulation, and control of waters.**

15. **"Person" means any natural or juridical person.**

16. **"Pollution" means any detrimental change in the composition or quality of waters that results directly or indirectly from human conduct.**

17. **"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 these Rules.**

18. **"State" means a sovereign State or a regional economic integration organization.**

19. **"Sustainable use" means the integrated management of resources to assure efficient use of and equitable access to waters for the benefit of current and future generations while preserving renewable resources and maintaining non-renewable resources to the maximum extent reasonably possible.**

20. **"Vital human needs" means waters used for immediate human survival, including drinking, cooking, and sanitary needs, as well as water needed for the immediate sustenance of a household.**

21. **"Waters" means all surface water and groundwater other than marine waters.**

Commentary: This Article consolidates several definition provisions of the original *Helsinki Rules* and the several supplemental bodies of rules approved by the International Law Association. In several cases, the language has been simplified, but in no case has the definition been changed.

Basin State; Aquifer. The definition of "basin State" is taken unchanged from the original *Helsinki Rules*, art. III. The *UN Convention* applies substantially the same definition to its parallel concept of "watercourse" State in art. 2(c). The term "aquifer" is almost as important. That definition derives from the *Seoul Groundwater Rules*, art. 1 n*, but has been revised in light of more recent knowledge and to be consistent with the terms of the *EU Water Framework Directive*, art. 2(11).

Aquatic environment; Environment; Damage; Environmental Harm; Person. The environment means simply everything. The definition here is from the *Mekong Basin Agreement* of 1995. The definition of

"aquatic environment" is new to these Rules. It means everything in, about, or relating to the waters not included in the marine environment (the oceans and seas). The *UN Convention* devotes two articles to "harmful conditions" and emergencies. These include floods, erosion, siltation, and water-borne diseases. Each of these conditions, as well as the threats to human life or health identified in the commentary to the International Law Commission's art. 7, would all come within the reach of the concept of "environmental harm." The definitions of "damage," "environmental harm," and "person" are taken from the definitions in the *Rules on Private Law Remedies for Transboundary Damage in International Watercourses,* art. 1. The term "environmental damage" in the latter body of rules has been renamed "environmental harm" in this set of Rules to make function in a broader variety of contexts. The definition of "pollution" comes from the original *Helsinki Rules,* art. IX. The definition of "flood control" comes from the *New York Rules on Flood Control,* art. 1.

Best Environmental Practices. This definition derives from *United Nations Convention on the Protection of Transboundary Watercourses and International Lakes,* annexes 1 and 2 (referred to as the *Helsinki Convention*).

Drainage Basin; International Drainage Basin. The definition of "international drainage basin" is carried forward from the *Helsinki Rules.* It is different from and broader than the nearest equivalent term in the *UN Convention.* The latter documents deal only with surface watercourses and "tributary" groundwater. This definition is too restrictive, for the same obligations apply to groundwater as apply to surface waters, regardless of whether the groundwater are interconnected with a watercourse or largely independent of any watercourse.[2] The International Law Association explicitly recognized the applicability of the *Helsinki Rules* to groundwater in the *Seoul Groundwater Rules* approved in 1986. The *Seoul Groundwater Rules* recognize that even groundwater that has no significant connection to surface watercourses can be international in its effects, and thus should be international in its management.

The definition of "international drainage basin" must be read in conjunction with the definition of a "drainage basin." That definition requires that the waters "normally share a common terminus." Hydrologically what defines a drainage basin or catchment area is that the waters are interrelated, that is, their drainage connects them with each other. The usual test for such a connection among surface waters is that that they flow into the sea or other reach the end point of their drainage at some common point. There are exceptional situations, however, where waters can be considered as constituting a single drainage basin or catchment area that must be managed as a unit even though they do not share a common terminus. Usually, this is because of human activity, as where canals have been cut to link the channels of naturally distinct surface watercourses. Similarly, surface watercourses or several aquifers might be separated from each other by relatively impermeable layers, allowing them to flow, seep, or percolate in different directions. Deep wells might penetrate the otherwise impermeable layers, mixing the waters in such a fashion that the several sources cannot be managed rationally except as a single unit. Finally, sometimes surface watercourses or aquifers that are linked nonetheless separate into several different drainages, each having a distinct terminus. Whether these waters too must be managed as a single unit will depend on the specific circumstances involved.

Ecological Integrity. The term does not appear in the *Helsinki Rules* or the supplemental rules approved by the Association, nor in the *UN Convention,* although the *UN Convention* does recognize an obligation on basin States to "protect and preserve the ecosystems of international watercourses" (art. 20). Achieving ecological integrity is central to sustainable development that increasingly is at the core of international environmental law. As a result, national and international law have increasingly come to recognize a legal obligation to assure some minimal level of ecological integrity to natural systems, including watercourses and aquifers (Article 22). The definition here reflects a balance whereby ecological integrity does not require the absolute protection of the natural condition of waters but that measure of integrity necessary for the survival of ecosystems. Anything beyond that minimal requirement may well be desirable but it is not yet mandated by international law. Three forms of integrity are necessary for ecosystems to continue to function: biological, chemical, and physical integrity. These three dimensions have been widely recognized

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[2] *See generally* DANTE CAPONERA, PRINCIPLES OF WATER LAW AND ADMINISTRATION 252-55 (1992); Julio Barberis, *Le régime juridique des eaux souterraines,* 33 ANNUAIRE FRANÇAISE DE DROIT INTERNATIONAL 129 (1987); Robert Hayton & Albert Utton, *Transboundary Groundwaters: The Bellagio Draft Treaty,* 29 NAT. RESOURCES J. 663 (1989); Ludwik Teclaff, *Evolution of the River Basin Concept in National and International Water Law,* 36 NAT. RESOURCES J. 359, 372-74 (1996).

in law as necessary for the ecological integrity of water sources. The U.S. *Clean Water Act,* 33 U.S.C. § 1314(b) is an example.

Flood; Flood Control. These definitions come from the *N.Y. Flood Control Rules,* art. 1. Because these Rules define "waters" as including both surface waters and groundwater, the definitions of "floods" and "flood control" include water logging and other problems from excessive groundwater every bit as much as they include problems arising from increases in surface waters.

Groundwater. This definition derives from the *UN/ECE Protocol on Water and Health,* art. 2(3). That protocol is a supplement to the 1992 *Helsinki Convention.* The same definition appears in the *EC Water Framework Directive,* art. 2(2). The requirement of "direct contact" with the soil serves to excludes water in a storage tank.

Hazardous substances. This definition is taken from the *Helsinki Convention.*

Regional economic integration organization; State. The definition of "regional economic integration organization" is from the *UN Convention,* art. 2(d). This is a standard term in many international agreements. It includes the European Community and any other similar organization should one emerge. It does not preclude application of these Rules to the European Community or any other organization that might progress to the point of becoming a more broadly based integration than one focused on economic integration. The definition of "sovereign State" is provided by general international law.

Sustainable use. This definition is original, but it captures the two dimensions of the concept as expressed in, among many other documents, the *Rio Declaration* (1992), the *Bonn Declaration* (2001), the *Johannesburg Declaration on Sustainable Development* (2002), and the *New Delhi Declaration on Principles of International Law Relating to Sustainable Development* (2002). See also the definition in the *Luso-Spanish Convention* (1997). The reference to non-renewable resources recognizes that to some extent these resources may be consumed, but consumption should be limited insofar as reasonably possible.

Vital Human Needs. Courts and other legal institutions have long recognized a preference in municipal law for "domestic uses" of water relative to competing uses of water, or as the *UN Convention,* art. 10(2), describes it, "vital human needs." This distinction is sometimes described as a distinction between uses to meet "natural wants" or "ordinary uses" on the one hand, and as "artificial uses" or "extraordinary uses" on the other. Whatever one terms the preferred uses, they include water needed for immediate human consumption such as drinking, cooking, and washing, and for other uses necessary for the immediate sustenance of a household, such as watering livestock for household use and keeping a kitchen garden. Any other use, including using water for commercial irrigation, in mining, in manufacturing, to generate power, or for recreation, is not included within the concept of "vital human needs."

CHAPTER II
PRINCIPLES OF INTERNATIONAL LAW GOVERNING THE MANAGEMENT OF ALL WATERS

Article 4
Participation by Persons

States shall take steps to assure that persons likely to be affected are able to participate in the processes whereby decisions are made concerning the management of waters.

Commentary: This Article recognizes the now well established human right for people who are to be affected by decisions to participate in those decisions, expressed here as a duty of States to take steps to assure such participation. This Rule also reflects the emerging recognition that people have a right of access to water as set forth in Article 17. Judge C.G. Weeramantry acknowledged these links in a separate opinion in the *Gabcíkovo-Nagymoros Project Case (Hungary v. Slovakia),* 1997 ICJ No. 92:

> The protection of the environment is … a vital part of contemporary human rights doctrine, for it is a *sine qua non* for numerous human rights such as the right to health and the right to life itself. It is scarcely necessary to elaborate on this, as damage to the environment can impair and undermine all the human rights spoken of in the Universal Declaration and other human rights instruments.

The *New Delhi Declaration,* prs. 5 and 6, endorse the importance of public participation to achieving sustainable development. Recognition of a right of public participation is more than a theoretical concern. Many multinational and global institutions suffer from a "democratic deficit," leading to widespread

protests and other resistance to such institutions. Only by addressing such concerns can basinwide water management institutions operate effectively as well as consistently with basic human rights. Principles governing the implementation of this right to participate are developed in Chapter IV.

There is little evidence of this right specifically in international water treaties. In a sense, then, this Article is a progressive development of the customary international law rather than the expression of existing international law. The principle is found in international environmental law. *See, e.g., Aarhus Convention.* Yet the principle is so firmly grounded in general international law that this Rule is better seen as making the obligation to enable public participation explicit in water management rather than a new development of the law.

Article 5
Conjunctive Management

States shall use their best efforts to manage surface waters, groundwater, and other pertinent waters in a unified and comprehensive manner.

Commentary: This Article expresses both a right and a duty on the part of States to participate in a system of conjunctive management. Conjunctive management is a subset of the more general rule of integrated management, formulated here as a separate obligation to minimize the risk of confusion. The term "integrated management" has often been used in two different senses. In international environmental law, the term generally refers to the management of water resources in a scheme that integrates it into the management of other resources. The term has also been used in the international law of watercourses to refer to integrating the management of surface waters with the management of groundwater and other water sources.[3] The *Seoul Rules,* art. 4, expresses precisely the distinction between "integrated management" and "conjunctive management" as developed here.

Continued use of "integrated management" in these two senses risks undesirable confusion. To avoid confusion, these Rules use the term "conjunctive management" to indicate the integration of the management of surface waters with the management of underground and other waters (such as atmospheric water). Conjunctive management means management of the waters of a drainage basin as a whole by a regime that takes into account the interconnections of surface and subsurface waters within the drainage basin. These Rules reserve "integrated management" for management that integrates the management of water resources with other resources. Article 6 addresses the right and duty to participate in a system of "integrated management" in the sense of the integrating the management of the waters of an international drainage basin with the management of non-water resources in order to minimize pollution or other environmental or ecological harms.

This Article anticipates the evolution of the law, based upon emerging trends, carrying forward the comparable provision of the *Supplemental Rules on Pollution,* art. 4. *Agenda 21*, ch. 18, expressly calls for conjunctive management as an aspect of its call for the integrated management of water resources. The International Court of Justice in the *Gabcíkovo-Nagymoros Project Case (Hungary v. Slovakia),* 1997 ICJ No. 92, did not explicitly discuss conjunctive management, but seems to assume it in considering the likely effects of diverting the Danube River on groundwater on either side of the international border. The widespread consensus that conjunctive management generally is the best management practice leaves room for debate whether conjunctive management is an actual legal duty today. There has been some success in developing conjunctive management in municipal law.

The importance of the principle of conjunctive management has been recognized in many international legal forums and is beginning to find expression in international legal norms. So important is conjunctive management to effective management of waters that the trend towards requiring conjunctive management will continue. International meetings have repeatedly adopted the principle of conjunctive management as the goal in settling disputes over shared water resources. The United Nations has supported this approach from 1949 and continues to promote it at every opportunity. The *UN Convention* comes close to recognizing conjunctive management as an actual duty through the duty to undertake "cooperative management" in art. 8. Cooperative management is not quite the same as either conjunctive management or as integrated

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[3] *See, e.g.,* FAO, SUMMARY: CONSERVATION AGRICULTURE: MATCHING PRODUCTION WITH SUSTAINABILITY at http://www.fao.org/ag/ags/AGSE/agse_e/general/OBJECT.htm; OECD, *Council Recommendation on Water Management Policies and Instruments,* Pr. 4 (1978).

management, yet if "equitable participation" as posited by the *UN Convention* is to be successful, it must function not simply as a cooperative management, but as conjunctive management. The latter point is where the law is moving, as was shown by *The Johannesburg Declaration on Sustainable Development,* A/CONF.199/20.

This Article is not a strict obligation, mandating conjunctive management under all circumstances. This Article only requires that States use their best efforts to achieve conjunctive management. So long as States making those efforts, there is no violation of customary international law from a failure to achieve that goal in its entirety.

Article 6
Integrated Management

States shall use their best efforts to integrate appropriately the management of waters with the management of other resources.

Commentary: As the commentary to Article 5 indicates, in addition to managing surface waters, groundwater, and other possible sources of water conjunctively, States must also integrate information and policies relating to other resources in the management of the waters of an international drainage basin. The allocation of water to uses requiring the diversion of water from a water source will directly affect the waste assimilative capacity of the source even if the diversion and use will not return polluted effluent to that or another water source. This reality alone mandates the coordination of the functions of water allocation and water quality regulation to avoid inefficiencies. Moreover, any number of land-based and atmospheric activities directly impact upon the availability and quality of waters near and far. And water management decisions can affect the survival of endangered or other species.

The *Belgrade Rules on the Relationship of International Water Resources with other Natural Resources and Environmental Elements* and the *Supplemental Rules on Pollution* all focus on the need of States to integrate the management of water resources with the management of non-water resources to the extent necessary to minimize environmental or ecological harms. Integrated management in the sense used here has emerged as the dominant paradigm for water management at the local, national, and international level.[4] This is sometimes referred to as the "holistic approach."[5] This Rule simply expresses a general policy that basin States conform their decisions and regulations to physical laws as well undertake to achieve the pervasive goal of sustainable development.

As with conjunctive management, this Rule postulates integrated management as a goal for which basin States should strive rather than as an immediate obligation. The trend is towards the recognition of such a duty. For legal support for a rule requiring integrated management, we must look to general international environmental law rather than to the specifics of international water law. It is, for example, found in *Agenda 21,* ch. 18. Major support for this principle is also found in the obligation of sustainability in Article 7 of these Rules. Integrated management is essential for realizing the sustainable use of waters and other resources. This conclusion is inferable from the *New Delhi Declaration,* pr. 7, where the International Law Association recognized the principle of "integration" as central to sustainable development generally. Nor can one determine whether a particular use is equitable and reasonable without examining a use in an integrated context. Thus the obligation expressed in this rule is intimately related to the obligations in Articles 7, 8, 12, and 16.

Article 7
Sustainability

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[4] *See* Kevin Boehmer, Ali Memon, & Bruce Mitchell, *Towards Sustainable Water Management in Southeast Asia: Experiences from Indonesia and Malaysia,* 25 WATER INT'L 356, 363-66, 371-72, 374 (2000); Lakshman Guruswamy, *Integration and Biocomplexity,* 27 ECOL. L.Q. 1191 (2001); Mey Jurdi *et al., A Prototype Study for the Management of Surface Water Resources, Lebanon,* 3 WATER POL'Y 41 (2001); Giorgos Kallis & David Butler, *The EU Water Framework Directive: Measures and Implications,*3 WATER POL'Y 125 (2001); Eric Pyle *et al., Establishing Watershed Management in Law: New Zealand's Experience,* 37 J. AM. WATER RESOURCES ASS'N 783 (2001).

[5] *See* Stephen McCaffrey, *International Organizations and the Holistic Approach to Water Problems,* 31 NAT. RESOURCES J. 139 (1991).

States shall take all appropriate measures to manage waters sustainably.

Commentary: This Article sets forth the basic rule now part of customary international law that States must strive to achieve the sustainable use of waters and other resources. The seeds for the obligation of sustainable development lie in the recognition that, as it was put in the *Stockholm Declaration,* ¶ 4: "[i]n the developing countries most of the environmental problems are caused by under-development." The same paragraph went on to proclaim, "the developing countries must direct their efforts to development, bearing in mind their priorities and the need to safeguard and improve the environment." The *Stockholm Declaration,* ¶ 6, also proclaimed, "To defend and improve the human environment for present and future generations has become an imperative goal for mankind—a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and world-wide economic and social development." The *Stockholm Declaration,* in fact, proclaimed the premises of sustainable development as its first principle. Since then the obligation of sustainable development has appeared in numerous international instruments, including even the preamble to the *WTO Agreement.* The *UN Convention* explicitly indicates that sustainability limits the rule of equitable utilization.

Sustainability and protection of the environment was also recognized by the International Court of Justice in the *Gabcíkovo-Nagymoros Project Case,* in ¶ 140, when the court wrote:

> Such new norms [relating to protection of the environment] have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing activities began in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development.

The concept was endorsed by the International Law Association in the *New Delhi Declaration on Principles of International Law Relating to Sustainable Development* (2002). The *New Delhi Declaration* affirms the duty of States to ensure the sustainable development of natural resources, including the principle of equity, the goal of the eradication of poverty, the importance of the precautionary approach to human health, natural resources, and ecosystems, the principle of public participation and access to information and justice, the obligation of good governance, and the reality that the management of resources must take place in an integrated fashion. The World Summit on Sustainable Development in September 2002 adopted a similar declaration: *The Johannesburg Declaration on Sustainable Development,* A/CONF.199/20.

In a world entering an era of global water shortage, no goal is more important than the sustainable use of waters. Waters are finite and aggregate demand is approaching or exceeding the available water supply in many areas. Therefore sustainability has become the pervasive criterion of both public and private water management. A national and international consensus has also emerged over the past several decades that "sustainable use" is the proper criterion for judging the exploitation of resources and the protection of the environment generally.[6] The recognition of sustainability as a basic principle of international water law thus is essential to assure the effective balancing of development against important social, environmental, and ecological values.

Sustainability has always been implicit in the law of waters, for the right to use water, whether by a State or by an individual, is a "usufructory" right rather than absolute ownership. The word "usufructory" combines the Roman law terms that express two of the three defining characteristics of absolute ownership: *usus, fructus,* and *abusus.* The right to the use of the water and to the fruits of that use never included the right to waste, destroy, or fully consume the resource. Only sometimes—for example, decoupled aquifers (aquifers that are not connected, or only weakly connected, to other waters with little or no recharge, at least in terms of humanly meaningful time scales)—could development exceed the natural or artificial recharge of the waters and still be considered sustainable.[7] Whether a particular pattern of development is sustainable will depend upon a careful analysis of the circumstances under which the development takes place.

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[6] *See generally* PATRICIA BIRNIE & ALAN BOYLE, INTERNATIONAL LAW AND THE ENVIRONMENT ch. 3 (2nd ed. 2002); *See generally* ALEXANDRE KISS & DINAH SHELTON, INTERNATIONAL ENVIRONMENTAL LAW 248-57 (2nd ed. 2000); Bret Birdsong, *Adjudicating Sustainability: New Zealand's Environment Court,* 29 ECOL. L.Q. 1 (2002); Boehmer, Memon, & Mitchell, *supra* note 7.

[7] *See generally* Ximena Fuentes, *Sustainable Development and the Equitable Utilization of International Watercourses,* 69 BRIT. Y.B. INT'L L. 119 (1998).

Sustainability generally requires the conjunctive and integrated management (Articles 5, 6) of the waters of a water basin and the limiting of withdrawals to the safe yield of the each water source. The concept is also closely related to the precautionary principle (Article 23) that has become central to international environmental law. Exceptional circumstances only rarely allow deviation from these principles. At the least, sustainability requires viewing waters as parts of ecosystems that cannot be managed effectively except by giving careful attention to the intimate interconnections of the parts of the system. The importance of attempting to achieve sustainability requires caution in altering these ecosystems irremediably. Determining sustainability must remain a highly fact-specific analysis of the proper uses of a particular resource in a particular setting. The basic notions captured in the phrase "sustainable use" include that the needs of future generations as well as the present generation must be taken into account in resource planning and use, that all persons should have equitable access to the resources they need, that therefore resources (whether renewable or not) ought not to be exhausted, and that resource management must take place in an integrated manner. As the *Brundtland Report* summarized the concept, sustainability supports economic growth that "meets the needs of the present without compromising the ability of future generations to meet their own needs."[8]

In a sense, this entire body of Rules is a structure for fostering sustainability. That is not the same as requiring that States use waters equitably and reasonably. The rule of equitable utilization, the heart of the original *Helsinki Rules,* still expresses the primary rule of international law (whether customary or conventional) regarding the allocation of waters among basin States. *See* Article 12. The emerging international environmental law is compatible with the rule of equitable utilization, yet there is nothing to require that States when using water—even equitably and reasonably—must conform themselves to the mandates of international environmental law. Sustainability then is a separate and compelling obligation that, as indicated in the *UN Convention*¸ art. 5, conditions the rule of equitable and reasonable use without displacing it. Yet sustainability is not an absolute obligation. The varied circumstances of human need and water availability are too complex to allow one to declare an absolute obligation of sustainability. Moreover, in too many situations whether a particular use is sustainable will be highly debatable. Rather than attempt to lay down a theoretically absolute obligation that often will be breached in practice, this Rule identifies an obligation of to take appropriate measures to assure sustainability—a due diligence obligation to which States can be expected to conform.

Article 8
Minimization of Environmental Harm

States shall take all appropriate measures to prevent or minimize environmental harm.

Commentary: This Article sets forth the rule of customary international law regarding the duty of States to minimize environmental harm.[9] This rule is intimately related to sustainability (Article 7), equitable utilization (Article 12), and the avoidance of transboundary harm (Article 16). Together these provisions express the complex of obligations that depend upon the nature of the harm resulting from activities relating to water. This Article recognizes a stronger obligation on States to minimize environmental harm compared to the *UN Convention,* in particular by recognizing that the obligation to minimize environmental harm does not depend upon the harm arising in a transboundary setting. This broader obligation in turn derives from general international environmental law. The International Law Association affirmed this relationship in the *New Delhi Declaration*, pr. 1.3. The link between general international environmental law and the rules of transboundary water law is found at the very end of *UN Convention*, art. 5.

This Article expresses a general duty expressed at many places in the various articles approved by the International Law Association, most particularly the *Supplemental Rules on Pollution,* art. 2. Both the obligation of sustainability and the obligation of protection of the environment were recognized by the International Court of Justice in the *Gabcíkovo-Nagymoros Project Case* when the court wrote in ¶ 140 (quoted *supra* in the commentary to Article 8). These and many other documents speak in terms of transboundary environmental harm, yet the general obligations of sustainability and, for example, of the protection biodiversity or to preserve wetlands are not so limited. These and other obligations apply within a state as well

[8] WORLD COMM'N ON ENVIRONMENT & DEVELOPMENT, OUR COMMON FUTURE 8 (1987) ("THE BRUNTLAND REPORT").
[9] *See generally* STEPHEN MCCAFFREY, THE LAW OF INTERNATIONAL WATERCOURSES: NON-NAVIGATIONAL USES 381-96 (2001).

as across boundaries and imply an obligation to minimize environmental harm both within and without the responsible state. Like the duty of sustainability, the duty to minimize environmental harm is expressed in numerous international agreements relating to the environment and even in the preamble to *WTO Agreement.*

This Article addresses the broad obligation to minimize environmental harm but not other kinds of harms. The customary international law dealing with international environmental problems has long made clear that environmental harm deserves special attention different from other kinds of harm generally.[10] Even the International Court of Justice has recognized this special obligation.[11] The obligation here is stated broadly, applying both to environmental harm to waters subject to the State's jurisdiction and to environmental harm arising from the use of the waters subject to the State's jurisdiction. This Article acknowledges both that environmental harms move from environmental medium to environmental medium and that the obligation to minimize environmental harm must take into account both harms to water and harms caused by using water. Some have sought to make "cross-media pollution" a specific topic for international environmental law. A few internationally agreed rules do address expressly "cross-media" pollution. The *Helsinki Convention* requires that measures taken to prevent, control, or reduce pollution "shall not directly or indirectly result in a transfer of pollution to other parts of the environment." Art. 23 of the *UN Convention* provides a specific obligation to protect the marine environment and estuaries. Yet all pollution is cross-media pollution. Pollution is the placing of a resource into a medium in which is does not belong, transforming the resource from potentially useful and ecologically important into a waste and a potentially dangerous substance. Efforts to prohibit cross-media pollution are bound to fail unless one can identify a single resource into which it is always and everywhere preferable to dispose of wastes. The question is how to dispose of wastes in the manner that causes the least net harm to the environment rather than singling out one or another resource and laying down that nothing can be disposed of in that resource.

The African Commission on Human and People's Rights has found that Nigeria has violated two articles of the African Charter of Human and People's Rights: art. 16, guaranteeing a right to food, and art. 24, guaranteeing a "general[ly] satisfactory environment favorable to their development." *Decision Regarding Communication 155/96 (Social and Economic Rights Action Center v. Nigeria),* Case No. ACHP/COMM/Ao44/1, *available at* http://www.umm.edu/humanrts/africa/comcases/allcases.html. Among the violations found by the Commission were specifically the despoliation of waters by the disposal of toxic wastes. The Commission found that the right to a general[ly] satisfactory environment "imposes clear obligations upon a government," requiring states

> to take reasonable … measures to prevent pollution and ecological degradation, to promote conservation, and to secure an ecologically sustainable development and … use of natural resources [and] at least permitting independent scientific monitoring of threatened environments, requiring and publicizing environmental and social impact studies prior to any major industrial development, undertaking appropriate monitoring and providing information to those communities exposed to hazardous materials and activities and providing meaningful opportunities for individuals to be heard and to participate in the development of the development decisions affecting their communities. ¶¶ 52, 53.

Even when expressed as a duty to minimize net environmental harm, the duty can only be one of "due diligence" or, as expressed here, a duty to take "appropriate measures." The variables are too numerous and too complex to require more. The *UN Convention* similarly expressed the duty to avoid harm in terms of "due diligence" or "appropriate measures." If human and other life is to continue and thrive on this planet, the waters of the world must be used in a fashion that maintains the ecological integrity of a water source (Article 22). This in turn leads back to the obligation to achieve sustainability (Article 7). By defining the obligation in terms "appropriate measures," the language proposed here subsumes the language now found in the *Supplemental Rules on Pollution,* art. 2, in the expression "insofar as technically and economically feasible," but also incorporates a question of reasonableness somewhat similar to the concept of equitable utilization. No effort is made to define "appropriate measures." The concept is a familiar one in interna-

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[10] *See generally* Fuentes, *supra* note 10, at139-63, 174-75.

[11] *Gabcíkovo-Nagymoros Case (Hungary v. Slovakia),* 1997 ICJ No. 92, ¶ 53 (a special duty to "the whole of mankind"); *The Legality of the Threat or Use by a State of Nuclear Weapons,* 1996 ICJ 226, ¶ 29 (Advisory Opinion no. 96) (an obligation to protect the environment of other States or of areas beyond national jurisdiction).

tional law and in national legal systems. At the least, the obligation includes procedural obligations regarding notice and consultation, environmental impact assessment, and a balancing of the social, ecological, and financial costs of an activity, and the ability of the State or States responsible for the activity to bear those costs, as well as the importance of the need the activity is intended to satisfy and the nature and extent of the benefits expected to be realized from the activity.

The obligation to take appropriate measures also is consistent with the principle of equitable utilization and rejects the proposition that pollution or other environmental harms can never be lawful. "Appropriate measures" allows the consideration of factors relevant to resolving a dispute about equitable utilization (Article 13), but with a greater emphasis on avoiding damage than the command of equitable utilization. The stated principle generally will require a State, in using waters, to use the best practicable environmental option. That option generally will be the option that produces the least net environmental harm. Consistent with the obligation to strive for integrated management, this Article, while not specifically mentioning "cross-media pollution," indicates that the relevant criterion is environmental harm generally rather than to minimize harm to the aquatic environment. *See also UN Convention,* art. 21(2).

The application of this Article to groundwater requires care. Groundwater might be harmed by pollution or by overpumping. Overpumping not only can exhaust an aquifer, but even before the aquifer is exhausted can lead to salt water intrusion, surface subsidence, compaction, reduction or even elimination of the base-flow of streams, and the drying of wetlands. These effects must be anticipated and prevented for it is often impossible to do anything to correct the resulting conditions once the harm occurs. Chapter VIII therefore has special rules regarding aquifers.

Article 9
Interpretation of These Rules

1. **All of these Rules are to be interpreted consistently with the principles of this Chapter.**

2. **References to States in these Rules encompass States acting individually or jointly and States acting with or through international organizations, as appropriate**.

Commentary: This Article precludes reading other Articles in these Rules without reference to these general principles or the general obligation to make the obligations expressed in those Articles effective. It also makes clear that the obligations of these Rules apply to States acting jointly as well as individually, and to States acting in cooperation with or through international organizations.

CHAPTER III
INTERNATIONALLY SHARED WATERS

Article 10
Participation by Basin States

1. **Basin States have the right to participate in the management of waters of an international drainage basin in an equitable, reasonable, and sustainable manner.**

2. **Basin States shall define the waters to which an international agreement regarding the management of waters of an international drainage basin applies; such an international agreement may apply to all or part of the waters of an international drainage basin or to a particular project or use, except that a use by one or more basin States shall not cause a significant adverse effect on the rights of or uses in another basin State without the latter State's express consent.**

Commentary: This Article expresses some of the few rules regarding internationally shared waters from which there appears never to have been any dissent. While universally applied, these rules are seldom stated explicitly: Basin States—a State that includes any portion of an international drainage basin—have a legal right to participate in the management of the water of a river, lake, aquifer, or other surface or underground water source forming part of the basin. *See UN Convention,* art. 4. That States have a right to

participate in cooperative multinational management regimes is sometimes referred to as the principle of "equitable participation."

The first paragraph thus sets forth the most basic requirement for a State to be entitled to participate in a cooperative regime for an international drainage basin or in other measures to allocate or protect the waters of an international drainage basin. Including this principle here clarifies what is already understood as implicit in the definition of "basin State" in Article 2(3). This Article, as in the *UN Convention,* qualifies the right to participate by recognizing the duties that limit such participation—a participating State must behave in an equitable and reasonable manner. This provision also follows the terms of the *UN Convention* by qualifying the right to participate by requiring that the State's behavior be sustainable. *UN Convention* art. 5(1) These qualifications are developed further in several of the specific provisions of these Rules (Articles 7, 12, 13, 16, 22-26, and 32-35).

Paragraph 2 opens by indicating that agreements among basin States are free to define the waters to which the agreement applies, and that there is no obligation to make either a partial or a comprehensive agreement. It then states a principle central to the right of basin States to participate in agreements relating to their shared waters: No such agreement can affect the rights of a basin State without the State's consent. This includes adverse effects on uses by or in another basin State, but is not limited to such effects. Anything that affects the rights of another basin State is ineffectual to that end without the affected State's express consent. Whether an arrangement between particular basin States will affect another basin State is a factual question depending on the hydrologic and legal circumstances of the situation. Actions by downstream States diverting water for use within itself or even for use in a non-basin State usually will not affect the interests of an upstream State. On the other hand, a basin State that proposes to transfer some part of a fixed allocation to a non-basin State could affect another basin that depends upon the transferring State's return flows. These rules are so generally accepted that there appears to have been remarkably little dispute about them and thus little direct authority for them as propositions of customary international law. Despite the relatively sparse authority for the rule, the point seems beyond question.

This Article does not address the possibility of a non-basin State acquiring some or all of the rights of a basin State. Consider, for example, the proposed agreement to divert part of the flow of the Rhone River from France to Catalonia in Spain. Such an agreement would not make Spain a basin State, but it could be construed as conferring some of the rights of a basin State on Spain as against France. Such an agreement could not affect the rights or obligations of Switzerland, the other basin State. This Article does not directly address whether an agreement of all the basin States could confer all of the rights of a basin State on Spain, although there seems no good reason why France and Switzerland could not do so should that be their choice. Developing an appropriate rule to express the limits, if any, of such an arrangement would be complex. At this time, it is better to allow State practice to develop pragmatically rather than to attempt to cabin that practice with theoretical constraints.

Article 11
Cooperation

Basin States shall cooperate in good faith in the management of waters of an international drainage basin for the mutual benefit of the participating States.

Commentary: More than 70 years ago, Professor Herbert Smith concluded that because of the shared nature of water as a natural resource, a duty to cooperate arises that underlies all other rights and duties pertaining to water management:

> The first principle is that every river system is naturally an indivisible physical unit, and that as such it should be so developed as to render the greatest possible service to the whole human community which it serves, whether or not that community is divided into two or more political jurisdictions. It is the positive duty of every government concerned to cooperate to the extent of its power in promoting this development.[12]

Stephen McCaffrey, the leading draftsman of the *Draft Articles* of the International Law Commission that became the basis for the *UN Convention,* quoted this passage to explain why the general obligation to

[12] H.A. SMITH, THE ECONOMIC USES OF INTERNATIONAL RIVERS 150-51 (1931).

cooperate is central to water management in the *Draft Articles* and the *UN Convention*.[13] The International Court of Justice expressed this perspective in the *Gabcíkovo-Nagymoros Project Case*, ¶ 17:

> The Danube has always played a vital part in the commercial and economic development of its riparian States, and has underlined and reinforced their interdependence, making international cooperation essential. … Only by international cooperation could action be taken to alleviate … problems [of navigation, flood control, and environmental protection.]

What is true of the Danube is true of other international watercourses. The duty to cooperate ultimately arises because without cooperation between basin States, it is literally impossible for States to fulfill their obligation to share transboundary water resources, to achieve sustainable development, to protect ecological integrity, and to fulfill the many other legal obligations expressed in these Rules. The *Helsinki Rules* and its supplements contain numerous provisions recommending or requiring cooperation in the allocation, management, and preservation of internationally shared waters. The *New Delhi Declaration,* Pr. 3.1, affirms yet again the duty of States to cooperate in the management of nature and natural resources. Many of the other basic documents of international environmental law express this same rule in even stronger terms. This rule derives from numerous treaties in which States have undertaken cooperative management of their shared fresh water resources. The *Stockholm Declaration,* Pr. 24, stated this proposition in general terms, as do the *UN Convention on the Law of the Sea* and the *Rio Declaration.*

The duty of cooperation is the most basic principle underlying international water law. The duty to cooperate creates only general obligations. It does not prescribe specific obligations. Along these lines, McCaffrey and others go so far as to call it a "portmanteau" or "umbrella term" rather than a strictly legal duty.[14] Customary international law does not provide a ready-made blue print for the necessary institutional structures to achieve cooperative management. The obligation on States to cooperate is an obligation to negotiate in good faith. Once a duty to cooperate is recognized, it is imperative to allow all basin States the opportunity to participate in any cooperative regime that emerges (Article 10).

Article 12
Equitable Utilization

1. **Basin States shall in their respective territories manage the waters of an international drainage basin in an equitable and reasonable manner having due regard for the obligation not to cause significant harm to other basin States.**

2. **In particular, basin States shall develop and use the waters of the basin in order to attain the optimal and sustainable use thereof and benefits therefrom, taking into account the interests of other basin States, consistent with adequate protection of the waters.**

Commentary: Today the principle of equitable utilization is universally accepted as basic to the management of the waters of an international drainage basin. The principle was first formulated in the original *Helsinki Rules,* art IV. The principle was reformulated in *UN Convention,* art. 5(1). The language in this Article is based on the *UN Convention's* language, without limiting it to "watercourses." This formulation reflects the approach of the original *Helsinki Rules* and is consistent with the emphasis on conjunctive management in Article 5. The language introduces another change from the *UN Convention* in order to resolve the most debated issue in the drafting of the *UN Convention:* the relationship of the principle of equitable utilization to the obligation not to harm another basin State (Article 16). The phrasing adopted here emphasizes that the right to an equitable and reasonable share of the waters of an international drainage basin carries with it certain duties in the use of those waters. The change of phrase from the original *Helsinki Rules*

[13] MCCAFFREY, *supra* note 10, at 399. *See also* Stephen McCaffrey, *Third Report on the Law of Non-Navigational Uses of International Watercourses,* UN Doc. A/CN.4/406, [1987] II Y.B. INT'L L. COMM'N 15, 24-28.

[14] MCCAFFREY, *supra* note 10, at 401-04 (the general duty to cooperate regarding the international environment translates into specific duties to engage in environmental impact assessment, to notify neighboring states regarding proposed actions, to exchange information with neighboring states, to consult with neighboring states, to provide emergency information, to enforce environmental standards across boundaries, and to work together to achieve an "equitable allocation" of waters and benefits).

is not a turning away from the right to share in the benefits of the transboundary resource. Rather, it recognizes that with the right to share come obligations that can only be fulfilled by acting in an equitable and reasonable manner, having due regard to the obligation no to cause significant harm to another basin State. The interrelation of these obligations must be worked out in each case individually, in particular through the balancing process expressed in Articles 13 and 14.

Paragraph 2 tracks the language of the second sentence of the *UN Convention,* art. 5(1), with vocabulary changes to reflect usage in these Rules. As with the corresponding sentence in the *UN Convention,* paragraph 2 sets forth the principle that the right to an equitable utilization does not trump the obligations to assure the optimal and, most centrally, sustainable use of the waters, and the obligation to assure adequate protection to the waters (Article 7). The last point refers back to the obligation to minimize environmental harm (Article 8).

Article 13
Determining an Equitable and Reasonable Use

1. **Equitable and reasonable use within the meaning of Article 12 is to be determined through consideration of all relevant factors in each particular case.**

2. **Relevant factors to be considered include, but are not limited to:**
   a. **Geographic, hydrographic, hydrological, hydrogeological, climatic, ecological, and other natural features;**
   b. **The social and economic needs of the basin States concerned;**
   c. **The population dependent on the waters of the international drainage basin in each basin State;**
   d. **The effects of the use or uses of the waters of the international drainage basin in one basin State upon other basin States;**
   e. **Existing and potential uses of the waters of the international drainage basin;**
   f. **Conservation, protection, development, and economy of use of the water resources of the international drainage basin and the costs of measures taken to achieve these purposes;**
   g. **The availability of alternatives, of comparable value, to the particular planned or existing use;**
   h. **The sustainability of proposed or existing uses; and**
   i. **The minimization of environmental harm.**

3. **The weight of each factor is to be determined by its importance in comparison with 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.**

Commentary: This Article originated in the original *Helsinki Rules,* art. V, but has been revised by adopting the provisions of the *UN Convention,* art. 6. Empirical surveys have found that these lists describe the actual variables that influence actual allocations under particular transboundary water treaties.[15] There are a few changes in paragraph 2 reflecting the emphases of these Rules. The term "hydrogeographic" has been added list in (2)(a) to reflect the greater attention in these Rules to groundwater, attention to which was almost non-existent in the *UN Convention.* Consistent with the emphasis of these Rules on sustainability and on the minimization of environmental harm, this draft adds those factors to end of the list in paragraph 2 although they do not appear either in the original *Helsinki Rules* or in the *UN Convention.* The *UN Convention* includes one variable that was not recognized explicitly in the original *Helsinki Rules*: the need for water for future uses in the basin States. The need to consider foreseeable future uses was implicit in the original *Helsinki Rules.*

Article 14
Preferences among Uses

[15] *See, e.g.,* NURIT KLIOT, DEBORAH SHMUELI, & URI SHAMIR, INSTITUTIONAL FRAMEWORKS FOR THE MANAGEMENT OF TRANSBOUNDARY WATER RESOURCES (1997).

1. **In determining an equitable and reasonable use, States shall first allocate waters to satisfy vital human needs.**

2. **No other use or category of uses shall have an inherent preference over any other use or category of uses.**

Commentary: Generally, categories or kinds of use have no inherent preference over each other in international water law, with one important exception. Legal institutions have long recognized a preference in municipal law for "domestic uses" of water, or as the *UN Convention* describes it, "vital human needs." Comparable preferences are found in particular treaties. This Article makes explicit what was implicit in the original *Helsinki Rules,* art. V. This Article tracks the language of the *UN Convention,* art. 10. The preference in this Article is stronger, but the concept "vital human needs" is defined more clearly in Article 2(20) than in the *UN Convention*. It does not extend to water needed to support general economic activity even though some have argued that such activity is included in "vital human needs." Unquestionably, the provision of jobs as well as the other benefits from enhanced economic activity are important concerns, but those concerns need to be balanced under Articles 12 and 13 against the like needs in other basin States and against the obligations of ecological integrity and sustainable development.

Article 15
Using Allocated Water in Other Basin States

1. **Allocation by agreement or otherwise to one basin State does not prevent use by another basin State to the extent that the basin State to which the water is allocated does not in fact use of the water.**

2. **Use of a water for purposes of this Article includes water necessary to assure ecological flows or otherwise to maintain ecological integrity or to minimize environmental harm.**

3. **Use of water by a basin State other than the one to which the water is allocated does not preclude the basin State to which the water is allocated from using the water when it chooses to do so.**

Commentary: This Article derives from two of the original *Helsinki Rules,* arts. VII, VIII. The point of the Article is that a basin State cannot preclude present uses by another basin State by a claim that the objecting States will need the water at some time in the future. On the other hand, such existing uses of water allocated to another State do not become a vested right relative to later beginning uses in the State to which the water is allocated. The question at all times is whether the use in question is equitable and reasonable, which in turn implicates not only questions of equitable utilization (Articles 12, 13), but also sustainability (Article 7), minimization of environmental harm (Article 8), and avoidance of transboundary harm (Article 16). The obligation of sustainability is intergenerational as well as an interstate. See the *New Delhi Declaration,* pr. 1.2, 2.1, 2.2, 2.3, 7.1. This intergenerational aspect, as much as the reality that the later developing States often lack the means of compensating the generally wealthier States that developed earlier, explains the frequent absence of compensation when existing uses must be curtailed or even eliminated to allow the later development.

Article 16
Avoidance of Transboundary Harm

Basin States, in managing the waters of an international drainage basin, shall refrain from and prevent acts or omissions within their territory that cause significant harm to another basin State having due regard for the right of each basin State to make equitable and reasonable use of the waters.

Commentary: This Article sets forth the basic rule of customary international law that States are to avoid and prevent significant harm to other States arising from activities of the State or subject to the State's ju-

risdiction directed at the waters of an international drainage basin. This proposition simply applies the Latin maxim *"sic utere tuo ut alienum non laedas"*: "Do not use your property so as to injure the property of another." This result is more in line with recent work of the International Law Commission in its drafts articles on *International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law (Prevention of Transboundary Harm from Hazardous Activity).*

This Article follows the approach of the *UN Convention,* art. 7. Despite the considerable controversy over the application of the "no harm" rule and its relation to the rule of equitable use found in art. 5 of the *UN Convention,* there actually is little controversy over whether the principle expressed in art. 7 is part of customary international law. While not the same, this rule is intimately related to the principle of equitable utilization (Article 12), the principle of sustainability (Article 7), and the principle on minimization of environmental harm (Article 8). Together these provisions express the complex of obligations that arise depending on the nature of the harm that results from an activity relating to water. The International Law Association has also endorsed this concept in the *New Delhi Declaration,* Pr. 1.1.

CHAPTER IV
RIGHTS OF PERSONS

Article 17
The Right of Access to Water

1. **Every individual has a right of access to sufficient, safe, acceptable, physically accessible, and affordable water to meet that individual's vital human needs.**

2. **States shall ensure the implementation of the right of access to water on a non-discriminatory basis.**

3. **States shall progressively realize the right of access to water by:**
   a. **Refraining from interfering directly or indirectly with the enjoyment of the right;**
   b. **Preventing third parties from interfering with the enjoyment of the right;**
   c. **Taking measures to facilitate individuals access to water, such as defining and enforcing appropriate legal rights of access to and use of water; and**
   d. **Providing water or the means for obtaining water when individuals are unable, through reasons beyond their control, to access water through their own efforts.**

4. **States shall monitor and review periodically, through a participatory and transparent process, the realization of the right of access to water.**

Commentary: This Article sets forth the right of access to water. National constitutions in more than 60 States, including Chile, Ecuador, Hungary, Nicaragua, Peru, Portugal, South Africa, the Philippines, the Republic of Korea, the Ukraine, and Turkey, include a right to a safe and healthy environment. South Africa recognizes a right to water in its Constitution. A right to water was recognized in the *Dublin Statement,* pr. 3. The *African Charter on the Rights and Duties of Peoples,* art. 24, and the *Protocol on Economic, Social, and Cultural Rights to the American Convention on Human Rights,* art. 11, proclaim a broad right to a safe and healthy environment. Such a right has been inferred for the *European Convention on Human Rights.*[16]

There is increasingly explicit support in legal instruments for a right of access to water, as well as implicit support in numerous international instruments. The strongest implicit support is found in the *International Covenant on Economic, Social and Cultural Rights,* arts. 11(1) and 12(1), which recognize a right to an adequate standard of living and to the highest attainable standard of health. For explicit support, one can turn to the *Convention on the Elimination of All Forms of Discrimination against Women,* art. 14(2), which requires States to ensure that women "enjoy adequate living conditions, particularly in relation to … water

[16] Hatton v. United Kingdom, App. No. 36022/97, *available at* http://www.echr.coe.int/Eng/Judgments.htm. *See generally* MAGUELONNE DEJEANT-PONS & MARC PALLEMAERTS, HUMAN RIGHTS AND THE ENVIRONMENT (2002); Peter Gleick, *The Human Right to Water,* 1 WATER POL'Y 487 (1999); Stephen McCaffrey, *A Human Right to Water: Domestic and International Implications,* 5 GEO. INT'L ENVTL. L.J. 1 (1992).

supply." A similar provision is found in the *Convention on the Rights of the Child,* art. 24(2). In the drafting of the *UN Convention,* the General Assembly approved a Statement of Understanding that declared that in determining vital human needs during disputes over watercourses, "special attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for the production of food in order to prevent starvation." UNGA Doc. A/51/869 (11 April 1997). Any doubt about the existence of a right to water should be set to rest by General Comment 15 on Substantive Issues Arising in the Implementation of the *International Covenant of Economic, Social and Cultural Rights,* adopted by the UN Committee on Economic, Social, and Cultural Rights in November 2002. In that General Comment, the Committee expressed the view that a human right to water was implicit in the right to "an adequate standard of living." UN Doc. E/C.12/2002/11 (26 November 2002). This document provides a lengthy and persuasive analysis of the legal basis for such a right.

Article 17 does not spell out every detail of what a right of access to water entails, but does provide the basic principles within that right. The Article also indicates that the right to water requires only that States work towards the progressive realization of the right and are not under a present or immediate duty to provide fully adequate and safe water supplies to all persons subject to their jurisdiction or control.

Article 18
Public Participation and Access to Information

1. **In the management of waters, States shall assure that persons subject to the State's jurisdiction and likely to be affected by water management decisions are able to participate, directly or indirectly, in processes by which those decisions are made and have a reasonable opportunity to express their views on programs, plans, projects, or activities relating to waters.**

2. **In order to enable such participation, States shall provide access to information relevant to the management of waters without unreasonable difficulty or unreasonable charges.**

3. **The information subject to access under this Article includes, without being limited to, impact assessments relating to the management of waters.**

4. **In providing information consistently with this Article, States need not provide access to information that would compromise:**
   a. **Intellectual property rights, including commercial or industrial secrets;**
   b. **Rights of individual privacy;**
   c. **Criminal investigations or trials;**
   d. **National security; and**
   e. **Information that could endanger ecosystems, historic sites, and other naturally or culturally important objects or locations.**

Commentary: In contemporary society, legitimacy largely depends on the consent of the governed, and hence on the sense that the governed have a voice through direct participation, representation, deliberation, or other methods. Without a sense of legitimacy, attempts to govern founder on popular resistance, whether active or passive. Recent protests directed at meetings of the World Trade Organization, the World Bank, and other multilateral institutions demonstrate the significance of participation even at the global level. Given the central importance of water in people's lives, the now generally recognized right of people to participate in decisions effecting their lives must apply to decisions concerning waters.

One of the most complete expressions of the right to participate is found in the preamble to *Agenda 21,* ch. 23. This same concept is developed in the *Aarhus Convention,* arts. 1 and 6 to 8, and in other international environmental instruments. These principles were affirmed in the *New Delhi Declaration,* pr. 4.4. The *New Delhi Declaration,* pr. 5.1, provides a summary of the requirements for meaningful participation. The *New Delhi Declaration,* pr. 7.1, goes on to recognize that the principles of sustainable development and integrated management require the integration of the "social, economic, financial, environmental and human rights aspects of principles and rules on international law …" The central importance of the right of participation in environmental management generally was reaffirmed by the Governing Council of the UN Environment Programme in 2003. UNEP/GC.22/3/Add.2.

The *UN Convention* and most bilateral and regional transboundary water agreements do not express a right of participation. Yet many other international instruments, including those agreed to at conferences such as the 1992 Rio conference, contain guarantees of a right of participation. *Rio Declaration,* pr. 10. Thus the *Framework Convention on Climate Change*, art. 4(1)(i), obliges States to promote public awareness and to "encourage the widest participation in this process including that of non-governmental organizations." One also finds guarantees of public participation in the *Biological Diversity Convention* and the *Espoo Convention.* The most complete recognition of a right of public participation is found in the *Desertification Convention,* in which the right to participate is embedded pervasively throughout the agreement. One can easily add many other such instruments, which are so numerous that there can be little doubt that a right of public participation has now become a general rule of international law regarding environmental management even beyond the specific provisions of these agreements. The impossibility of actually separating quantity and quality issues in water management indicates that the right to participate extends to all aspects of water management and not just to environmental issues strictly speaking.

Despite the principles expressed in *Agenda 21* and the *Rio Declaration,* and developed in some detail in the *Aarhus Convention,* most international environmental instruments do not contain provisions for the realization of individual rights relative to the instruments. Those who seek to participate in environmental decision-making have turned to general human rights instruments to secure the right. The right to participate in governance is expressed in numerous international human rights instruments. Foremost are the *Universal Declaration of Human Rights,* art. 21 and the *International Covenant on Civil and Political Rights,* art. 25.

Paragraph 1 recognizes that States have broad discretion in structuring public participation, discretion limited by the obligation to assure that participation is genuine. All affected persons have a right to participate. Public participation could be through written submissions, oral hearings, or voting, or other mechanisms. The structuring of the right of participation is up to each State so long as the structure assures genuine and serious consideration of the views of the public.

Paragraph 2 introduces access to information as a prerequisite to participation in decision-making and to monitoring governmental and private activities. The basic importance of this need has been recognized in numerous international human rights instruments. The International Law Association also recognized the central importance of this proposition in the *New Delhi Declaration,* pr. 5.2. That access to information is necessary in order to participate in the governance of waters was recognized in the preamble to ch. 23 of *Agenda 21,* and has been developed in the *Aarhus Convention*¸ arts. 4 and 5**.** The nature of environmental effects, which often become clear only long after a project or activity is complete and is often irreversible, requires early and complete data for informed decisionmaking. In transboundary contexts, affected participants need access to information across borders.

A right to information might be characterized narrowly as a freedom to seek information, or more broadly as a right of access to information, or even as a right to be sent information as it becomes available. Corresponding duties of the State can be limited to abstention from interfering in the public pursuit of information or expansively to include a duty to distribute some or all information concerning projects that might affect waters or the aquatic environment. The latter obligation might also be extended to include governmentally held information about private projects or activities as well as governmental projects or activities. A broader public right of access to information arguably makes the right of participation more meaningful.

Neither the original *Helsinki Rules* nor any of the supplemental rules recognize a right to information, yet today, many instruments in international environmental law now recognize various forms of a "right to information." The *Aarhus Convention,* art. 5, goes further and requires participating States to publish national reports on the state of the environment every three or four years. That a right to information exists is now beyond dispute, although considerable room exists for debating the precise contours of that right. The particular formulation adopted here attempts to blend the best provisions of the many source provisions. It does not adopt specific requirements such as in the *Aarhus Convention,* but does recognize that the right to information includes a right of access to environmental assessments in so far as they occur or are required under national or international law.

Paragraph 3 recognizes that often the most efficient method for making information available is through disclosures in the environmental assessment process separately required under customary international law (Articles 29-31). This particular relationshiop is found in the *Espoo Convention,* art. 3(8). This Article does not attempt to spell out specifically what might make a request unreasonable, for that would presuppose more of a consensus on the matter than currently exists in international law, although Paragraph 4 does

spell out certain exceptions to the obligation to make information available. On the broader question of the reasonableness of access to information, one might refer for guidance to various international agreements regulating the public's right to information. Specific restriction on access to information, as in the *Aarhus Convention,* art. 4(4), have at their core a balancing of the right to know against other interests widely recognized in society. Such limitations have also been recognized in some agreements relating to the management of internationally shared waters. Clearly, as the *Aarhus Convention* provides, any such exceptions must be read narrowly in order to avoid eviscerating the right to information expressed in the Convention and in this Article.

Article 19
Education

States shall undertake education at all levels to promote and encourage understanding of the issues that arise under these Rules.

Commentary: Public participation and the fulfillment of a State's duties under international law requires that the persons are able to understand and use the information. The State's obligation to educate also derives from the basic right to an education recognized in international law. *See UN Convention on Economic, Social, and Cultural Rights,* arts. 13, 14; UN Comm'n on Hum. Rts., *Resolution on the Right to Education,* E/CN.4/200 (22 Apr. 2002); Katarina Tomaševski, *Report of the Special Rapporteur to the Commission on Human Rights on the Right to an Education,* E/CN.4/2003/913 (Dec. 2002). States therefore need to undertake to educate their people to enable them to fulfill their rights and duties as citizens and as stakeholders in the management of waters. This Article reflects the obligation of States to provide relevant education in the *Convention on Biological Diversity,* art. 13. It also reflects the approach of *Agenda 21,* ch. 36, and *The Johannesburg Declaration on Sustainable Development,* A/CONF.199/L.6/REV.2, ch. X. Education requirements are beginning to appear in bilateral water management treaties as well as in some general international environmental conventions.

Article 20
Protection of Particular Communities

States shall take all appropriate steps to protect the rights, interests, and special needs of communities and of indigenous peoples or other particularly vulnerable groups likely to be affected by the management of waters, even while developing the waters for the benefit of the entire State or group of States.

Commentary: This Article draws upon international human rights law to recognize the need to assure that the rights and interests of persons or communities inhabiting water basins that will be affected by a plan, project, program or activity are particularly considered and respected. A good deal of international law has developed to recognize and respect the rights of indigenous peoples in particular, most clearly in the *ILO Convention Concerning Indigenous and Tribal Peoples in Independent Countries no. 169* (1989). The *Rio Declaration,* prs. 10 and 22, and the *Biological Diversity Convention,* arts. 8(j), 10(d), recognized such rights in the environmental management context. This proposition was affirmed by the International Law Association in the *New Delhi Declaration,* pr. 1.2.

Agenda 21, ch. 26, goes further than this Article, providing that indigenous peoples "may require, in accordance with national legislation, greater control over their lands, self-management of their resources, participation in development decisions affecting them, including where appropriate, participation in the establishment or management of protected areas." The *Declaration on the Establishment of the Arctic Council* provides specifically for the inclusion of indigenous peoples and their communities as "permanent participants" in the governing council created by the seven Arctic nations. Finally, the UN Human Rights Committee has interpreted the right to cultural life recognized in the *International Covenant on Civil and Political Rights,* art. 27, as requiring similarly broad, but not unlimited, protection for the rights of indigenous communities to manage the natural resources on which their culture depends. This Article builds upon

this emerging tradition, but extends it to all existing communities.[17] While there often are special considerations that apply to indigenous peoples and other particularly vulnerable communities, just as often special impacts fall on all existing communities. This has been most pointedly recognized in FAO *Global System for the Conservation and Utilization of Plant Genetic Resources.* FAO Res. 5/89.

Article 21
Duty to Compensate Persons or Communities Displaced by Water Projects or Programs

States shall compensate persons or communities displaced by a water program, plan, project, or activity and shall assure that adequate provisions are made for the preservation of the livelihoods and culture of displaced persons or communities.

Commentary: This Article builds upon the language of the *Articles on Private Law Remedies,* art. 2. That article, in turn, builds upon comparable language in the *Montreal Rules,* art. 8. These rules draw upon a rich tradition in international environmental law. *See, e.g., Trail Smelter Case* (U.S. v. Can.), 3 RIAA 1905 (1941), *reprinted in* 35 AM. J. INT'L L. 684 (1941). This tradition finds full expression in the *Rio Declaration,* pr. 13. It also finds expression in other, more specialized international environmental instruments. These various instruments combine to indicate that there is a right under international law to prompt, adequate, and effective compensation or other appropriate remedies for injuries arising from activities in a State relating to an international drainage basin. The *African Charter on the Rights and Duties of Peoples,* art. 7, provides specifically recognizing a right to "adequate compensation for the spoliation of resources of a dispossessed people."

This Article recognizes that persons or communities living in a water basin and who face displacement from their homes because of a project or program are entitled to an effective remedy for their losses. Such a right to a remedy is found in the *ILO Convention,* arts. 15(2) ("fair compensation for damage"), 16(4) ("compensation in money"), and 16(5) (full compensation for "any loss or injury"). Special recognition of the right to a remedy reflects that at times people or communities will have to be displaced in the interest of the greater good for the State or basin as a whole, but that the affected people or communities should not have to bear such costs. General human rights law also recognizes an obligation for States to compensate individuals injured by environmental harms within the jurisdiction or control of the States.

By itself, the right to a remedy in the State where the wrongful conduct occurred does not assure persons that their rights relative to waters and the aquatic environment would be adequately protected. The other standards necessary to give full content to the right to a remedy provided in this Article are provided in other Chapters of these Rules, as a sort of "international common law of the environment." The obligation of States to compensate persons affected by a water program, project, or activity is intimately linked to the obligation to respect the rights of particular communities (Article 20). It also derives from the right of persons to access to water (Article 17(1)) and the right of affected persons to participate in water management decisions (Article 18). Recognition of the right to compensation provides the most certain assurance of the fulfillment of these other rights. This reality thus far has found its most consistent expression in treaties regulating foreign investment, but it is no less necessary for local communities commanded to surrender their property for the good of the nation. Fairness to the affected parties requires assurances of appropriate compensation. The *New Delhi Declaration,* pr. 5.3, aptly summarizes the central importance of access to prompt, adequate, and effective compensation.

CHAPTER V
PROTECTION OF THE AQUATIC ENVIRONMENTS

Article 22
Ecological Integrity

[17] *See generally* DARRELL POSEY, TRADITIONAL RESOURCE RIGHTS: INTERNATIONAL INSTRUMENTS FOR PROTECTION AND COMPENSATION FOR INDIGENOUS PEOPLES AND LOCAL COMMUNITIES (1996).

States shall take all appropriate measures to protect the ecological integrity necessary to sustain ecosystems dependent on particular waters.

Commentary: This Article lays down the most basic obligation of basin States towards the environment in the use of waters, namely that they preserve and protect the ecological integrity of the biotic communities dependent on those waters. Without a commitment to ecological integrity, sustainability is impossible. The International Law Association affirmed this obligation in the *New Delhi Declaration,* pr. 1.2, recognizing an obligation of "protection of the environment, including ecosystems."

The obligation expressed in this Article has only recently been recognized in international and national legal systems, but has rapidly gained general acceptance.[18] The rule formed the basis of the *Belgrade Rules on the Relationship of International Water Resources with other Natural Resources and Environmental Elements,* art. 1(a), and is in the *UN Convention,* art. 20. Similar duties are found in the *Helsinki Convention,* arts. 2(2)(b), 2(5)(c), 2(7), and the *Ramsar Convention.* The obligation is also found in many treaties and other legal instruments relating to the environment generally. The obligation is expressed as requiring a State to take "all appropriate measures" to protect the ecological integrity of the biotic communities dependent on the waters in question. The definition of "ecological integrity" in these Articles is broad. Still, the necessity of human activity affecting waters precludes an absolute standard of ecological integrity. It must involve, as with other managerial decisions, the often difficult balancing of conflicting needs. This Article does not attempt to spell out what specifically must be done in order to discharge this obligation. To a significant extent the obligations of this Article will be discharged through fulfilling the obligations of other Articles, particularly the other Articles of this Chapter.

Article 23
The Precautionary Approach

1. **In implementing obligations under this Chapter, States shall apply the precautionary approach.**

2. **States shall take all appropriate measures to prevent, eliminate, reduce, or control harm to the aquatic environment when there is a serious risk of significant adverse effect on or to the sustainable use of waters even without conclusive proof of a causal relation between an act or omission and its expected effects.**

Commentary: The *Rio Declaration* proclaimed the precautionary principle in pr. 15. In fact, the precautionary principle appears in almost all international environmental instruments adopted since 1990. It has also been affirmed by the International Law Association in the *New Delhi Declaration,* pr. 4. The International Court of Justice in the *Gabcíkovo-Nagymoros Project Case,* however, made no mention of the precautionary principle although the Hungarian pleadings raised the point. Thus far, only the Indian and Pakistani Supreme Courts have explicitly embraced the principle as a legal obligation.[19]

This Article is somewhat stronger than the *Rio Declaration.* This Article requires reason to believe that serious irreversible harm will occur from the introduction of something into the aquatic environment. When such a fear arises, States are to take all appropriate measures to prevent the introduction of the harmful substance even though the scientific evidence is not entirely conclusive. There is no mention of "cost effectiveness" or "capabilities." *New Delhi Declaration,* pr. 4.3, takes a similar approach, indicating that States "in particular should proceed to the adoption of appropriate precautionary measures even in the face of scientific uncertainty." *New Delhi Declaration,* pr. 4.4, indicates that "[p]recautionary measures should be based on up-to-date and independent scientific judgment and be transparent."

Implementation of the precautionary principle requires careful planning and the evaluation of the likely effects of significant actions before the action is implemented. The primary, but not the only, method

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[18] Albert & John Utton, *The International Law of Minimum Stream Flows*, 10 COLO. J. INT'L ENVT'L L. & POL'Y 7 (1999).

[19] Vellore Citizens Welfare Forum v. Union of India, [1996] 7 S.C.R. 375 (India); Mehta v. Union of India, [1997] 2 S.C.R. 353 (India); Zia v. WAPDA, [1994] S.C.R. 693 (Pakistan). *See also* Russell Unger, *Brandishing the Precautionary Principle through the Alien Tort Claims Act,* 9 NYU ENVTL. L.J. 638 (2001). *See generally* HARALD HOHMANN, PRECAUTIONARY LEGAL DUTIES AND PRINCIPLES OF MODERN INTERNATIONAL ENVIRONMENTAL LAW (1994).

that this will occur is through the impact assessment process that is now part of the requirements for the protection of the environment under international law. *See* Chapter VI of these Rules.

Article 24
Ecological Flows

States shall take all appropriate measures to ensure flows adequate to protect the ecological integrity of the waters of a drainage basin, including estuarine waters.

Commentary: The duty to preserve minimum streamflows is now gaining recognition in international law. This approach follows the *Rule on Instream Flows* proposed by the Water Resources Committee of the International Law Association but never considered by the Association as a whole. Numerous legal strategies have been devised to assure streamflows. This Article expresses the controlling standard in terms of the need to preserve the ecological integrity of the aquatic environment. Therefore the Article is captioned "ecological flows" rather than "minimum flows." These Articles are not the appropriate means for prescribing which strategies are most appropriate to a particular basin, although clearly ecological flows require considering seasonal variation and other attributes that mimic natural patterns of flow.

Article 25
Alien Species

States shall take all appropriate measures to prevent the introduction, whether intentionally or otherwise, of alien species into the aquatic environment if the alien species might have a significant adverse effect on an ecosystem dependent on the particular waters.

Commentary: Nothing is more disruptive of the biological integrity of an ecosystem than the introduction of an alien species. While some introduced species might not be significantly detrimental to particular ecosystems, the contrary result has occurred so often, and often without having been foreseen, that the precautionary principle requires that exceptions to the prohibition of this rule be rare. The legal basis of this requirement is the *Biological Diversity Convention* and other environmental agreements. This prohibition also has strong roots in the law of internationally shared fresh waters. Thus, while there is no comparable rule in the *Helsinki Rules* or the rules supplementary thereto, such a rule does appear in similar terms in the *UN Convention,* art. 22 The language proposed here goes farther than the *UN Convention* in that it does not require a threat of significant harm to other basin States. Reflecting mandates that have crystallized in international environmental law, the introduction of alien species is prohibited if it will have significant detrimental effects on an ecosystem dependent on the waters of the basin regardless of where the ecosystem is located. This Article does not address genetically modified organisms.

Article 26
Hazardous Substances

States shall take all appropriate measures to prevent the introduction of hazardous substances into the waters subject to its jurisdiction or control.

Commentary: This Article is based upon the *Montreal Rules,* art. 2. The meaning of the term "hazardous substances" is provided in Article 2(12). A growing body of international environmental law prohibits the introduction of hazardous substances into the environment. Where it is necessary to use such substances, they must be treated to lessen their toxicity before introducing them into the environment. The general environmental provisions apply to waters as much as to any other aspect of the environment. *See Basel Convention on the Control of Transboundary Movement of Hazardous Wastes*; *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemical*; and *Stockholm Convention on Persistent Organic Pollutants*.

This obligation thus requires States to take all appropriate measures to assure that private actors within the State's jurisdiction or control do not introduce hazardous substances into the indicated waters. The indirect introduction of such substances is prohibited every bit as much as their direct introduction. The

prohibition of the introduction of hazardous substances therefore necessarily encompasses an obligation to regulate the storage, handling, or management of such substances in order to assure that they are not introduced into the waters subject to a State's jurisdiction or control.

Article 27
Pollution

1. **States shall prevent, eliminate, reduce, or control pollution in order to minimize environmental harm.**

2. **When there is a relevant water quality standard established pursuant to Article 28, States shall take all appropriate measures to assure compliance with that standard.**

3. **States shall ensure that wastes, pollutants, and hazardous substances are handled, treated, and disposed of using the best available techniques or the best environmental practices, as appropriate to protect the aquatic environment.**

Commentary: The original *Helsinki Rules* addressed three articles to pollution, arts. IX-XI, focusing only on the risk that activities in one basin State would cause injury in other basin States. With the growing interest in protecting the environment, the International Law Association subsequently approved the *Marine Pollution Rules* (1972), the *Belgrade Rules on the Relationship of International Water Resources with Other Natural Resources and Environmental Elements* (1980), the *Montreal Rules on Pollution* (1982), and the *Supplemental Rules on Pollution* (1996). These several rules began as recommendations that States strengthen their steps to prevent or correct the pollution of internationally shared waters, and gradually strengthened the strictures into obligations. This progression matched the evolving practice of States, including multilateral and bilateral agreements, which was also moving in the direction of definite obligations regarding pollution. A similar rule was included in the *UN Convention*¸ art. 21. Today, the obligation to control pollution in order to produce the least net environmental harm is part of the customary international law of the environment. As the *Rio Declaration* and other instruments make clear, this obligation applies to the management of the waters within a State's jurisdiction and control as much as it applies to any other resource.

The *UN Convention,* art. 21, is limited to cross-border situations, but spells out in more detail the obligation of States to act against pollution. This Article sets forth the obligation in more general terms as an expression of the general obligation to minimize environmental harm as provided in Article 8. The obligation draws upon international environmental law to go beyond the earlier efforts of the *Helsinki Rules* and its supplements and the *UN Convention.* This Article not only dispenses with the limited view of preventing injury only to other basin States, but also transcends concerns limited solely to the pollution of water. It commands basin States to handle, treat, and dispose of wastes, pollutants, and hazardous materials with the best environmental practices or best available techniques as appropriate in order to minimize environmental harm.

"Best environmental practices" refers practices or prevent or reduce the effects of non-point sources of pollution, while "best available techniques" refers to techniques applied to prevent or reduce the effects of point sources of pollution. These are evolving concepts that cannot be precisely codified without preventing their further evolution. As indicated in Article 1(2), nothing in these Rules or in customary international law generally displaces the specific obligations spelled out in various treaties, including the growing body of treaties that define more precisely how wastes, pollutants, and hazardous materials are to be treated. These treaties define current standards of best environmental practices and best available techniques.

The goal of minimizing environmental harm recognizes that occasionally some degree of environmental harm must be accepted, but that overall environmental harm must be minimized if resource use is to be sustainable. The principle of integrated management further requires that the determination of how to proceed regarding wastes, pollutants, and hazardous materials should not be limited to consideration of only one medium or resource. These obligations apply to the transportation of wastes, pollutants, and hazardous materials as well as to their use or disposal.

This and other Articles do not mention the "polluter pays" principle, summarized in the *Rio Declaration,* pr. 16. This principle is built upon in *Agenda 21,* ch. 20, and has been widely embraced in European environmental law. The *International Convention on Oil Pollution Preparedness, Response, and Co-*

Operation, in its preamble, even describes "polluter pays" as a "general principle of international law." Despite such assertions, however, the polluter pays principle has not been widely adopted in international agreements outside of Europe. Most of the instruments referred to in this commentary describe the polluter pays principle as a goal ("insofar as possible") rather than as a binding norm. One cannot conclude that the polluter pays principle is in fact part of customary international law. The increasingly frequent recourse by States to economic incentives to prevent, eliminate, reduce, or control pollution is neither required nor precluded by this Article, but it serves to introduce at least some aspects of the polluter pays principle into water management.

Article 28
Establishing Water Quality Standards

1. **States shall establish water quality standards sufficient to protect public health and the aquatic environment and to provide water to satisfy needs, in particular for:**
   a. **Providing drinking water of sufficiently good quality for human health;**
   b. **Preserving ecosystems;**
   c. **Providing water for agriculture, including irrigation and animal husbandry; and**
   d. **Providing for recreational needs with due regard for sanitary and aesthetic requirements.**

2. **Standards established under this Article shall include, among others:**
   a. **Specific quality objectives for all waters within a State's jurisdiction or control, taking into account the uses of the particular waters;**
   b. **Specific quality objectives applicable to a particular basin or part of a basin.**

Commentary: The *Helsinki Rules* and its supplementary rules have addressed questions of water quality repeatedly over the last 38 years, mostly focusing on the question of pollution without attempting to set standards for water quality generally. This Article provides guidance regarding the obligation of each State to set water quality goals for waters within its territory or jurisdiction.

CHAPTER VI
IMPACT ASSESSMENTS

Article 29
The Obligation to Assess Environmental Impacts

1. **States shall undertake prior and continuing assessment of the impact of programs, projects, or activities that may have a significant effect on the aquatic environment or the sustainable development of waters.**

2. **Impacts to be assessed include, among others:**
   a. **Effects on human health and safety;**
   b. **Effects on the environment;**
   c. **Effects on existing or prospective economic activity;**
   d. **Effects on cultural or socio-economic conditions; and**
   e. **Effects on the sustainability of the use of waters.**

Commentary: The assessment of the environmental impacts of proposed projects has now become "singularly important in both domestic and international environmental law."[20] Most States now require such assessments, and as do a growing number of international agreements, beginning (in embryonic form) with the *General Convention Relating to the Development of Hydraulic Power Affecting More Than One State,* art. 2. The most important such international agreement is the *Espoo Convention* prepared by the UN Economic Commission for Europe. The International Law Association recognized that the practice has crystallized into a rule of customary international law, at least insofar as transboundary effects are concerned, in

[20] KISS & SHELTON, *supra* note 6, at 203.

Supplemental Rules on Pollution, art. 3, and in the *New Delhi Declaration,* pr. 4.2. The World Bank now requires prior assessment before considering a loan or grant, regardless of whether the project will have transboundary effects. World Bank, *Operational Directive 4.01* (1991).

The obligations to preserve and protect the integrity of ecosystems and to assure sustainable development are now general obligations of international law within a State as well as in transboundary contexts. Without prior and on-going assessment of the likely impacts of all programs, projects, and activities, no State can hope to fulfill its obligations of sound environmental management. This is equally true for projects without immediate transboundary impacts as for projects likely to cause immediate transboundary impacts. This Article therefore expresses a broad obligation despite the relatively little direct support for it in international legal authorities.

Various standards are used to indicate when a State is required to perform an environmental impact assessment. Standards have included "measurable effects," "appreciable harm," and "significant harm," with "significant effect on the environment" as the most common standard. The *Espoo Convention* requires significant transboundary harm. Several international instruments speak more broadly, without reference to whether the potential harm crosses a boundary. *See, e.g., Biological Diversity Convention,* art. 14; *EU Directive on the Assessment of Certain Public and Private Projects on the Environment,* and *EU Directive on the Assessment of the Effects of Certain Plans and Programmes on the Environment.*

This Article does not address the requirement of public participation generally, although that has become a requirement of customary international law. *Espoo Convention,* art. 5. Public participation generally in the assessment process is addressed in Articles 4 and 18 to 20 of these Rules. Public participation in impact assessments in other States is addressed in Article 30. As in the *Espoo Convention,* art. 7, this Article requires an ongoing process of assessment even after the initial approval of the program, project, or activity. Implicit in the obligation to assess impacts is an obligation to support education and training of the personnel necessary to carry out such assessments, and to allow science to proceed without political or other forms of interference, as recognized explicitly in the *New Delhi Declaration* prs. 4.4, 6.1.

Article 30
Participation in Impact Assessments in Another State

A person who suffers or is under a serious threat of suffering damage from programs, projects, or activities relating to the waters in another State shall be entitled in the other State to the same extent and on the same conditions as a person in that State to participate in an environmental impact assessment procedure.

Commentary: This Article draws from the provisions of the *Espoo Convention,* art. 5. Chapter IV of these rules recognizes that international human rights law requires that persons be allowed to participate in water management decisions affecting their lives. Article 18 specifically recognizes that the right to participate is the obligation to provide the public with the requisite information. Implicit in the right of access to the necessary information is access to any impact assessments regarding water management decisions. This Article recognizes that the right to participate goes further than just access to information, also requiring an opportunity for actual participation in the impact assessment process itself.

Article 31
The Impact Assessment Process

Assessment of the impacts of any program, project, or activity shall include, among others:

- **a. Assessment of the waters and the environments likely to be affected;**
- **b. Description of the proposed activity and its likely effects, with particular emphasis on any transboundary effects;**
- **c. Identification of ecosystems likely to affected, including an assessment of the living and non-living resources of the relevant water basin or basins;**
- **d. Description of mitigation measures appropriate to minimize environmental harm;**
- **e. Appraisal of the institutional arrangements and facilities in the relevant drainage basin or basins;**
- **f. Assessment of the sources and levels of pollutants in the relevant drainage basin or basins, and of their effects on human health, ecological integrity, and amenities;**

g. Identification of human activities that are likely to be affected;
h. Explanation of predictive methods and underlying assumptions as well as the relevant data used, including identification of gaps in knowledge and uncertainties encountered in compiling the required information, including assessment of the risk of major accidents;
i. Where appropriate, an outline for monitoring and management programs and plans for post-project analysis;
j. A statement of the reasonable alternatives, including a non-action alternative; and
k. An adequate non-technical summary.

Commentary: This Article provides a summary of the matters to be considered in an impact assessment. The Article tracks the comparable provisions of the *Espoo Convention,* art. 4. This pattern is also found in several regional action plans, such as the *Zambezi Action Plan* and in the *UNEP Guidelines.* Such a precise mandate is not yet part of customary international law, but it is a good model for doing an environmental impact assessment. *See generally* UNEP, *Environmental Impact Assessment Guidelines for Developing Countries* (1988).

CHAPTER VII
EXTREME SITUATIONS

Article 32
Responses to Extreme Conditions

1. States shall take all appropriate measures to prevent, reduce, eliminate, or control all conditions of waters, whether resulting from human conduct or otherwise, that pose a significant risk:
a. To human life or health;
b. Of harm to property; or
c. Of environmental harm.

2. States, promptly and using the most expeditious means available, shall notify other potentially affected States and competent international organizations of any harmful condition of waters under this Article that originates within its jurisdiction or control.

3. States shall develop notification systems and contingency plans for responding to harmful conditions under this Article.

Commentary: This Article tracks the language of the *UN Convention* arts. 27, 28, reflecting customary international law expressed in numerous international environmental instruments. The duty under paragraph 1 to prevent, mitigate, or eliminate harmful conditions is a particular application of the duty to minimize environmental harm and to prevent harm to other States under Articles 8 and 16. That States are bound to cooperate in appropriate cases with other States in taking such steps is sometimes explicit in international environmental agreements and arises from the general duty of cooperation (Article 11). This duty is also found in the *UN Convention,* art. 28(3), (4), which provides the basis for the obligation to create contingency plans as provided in paragraph 3. The duty to notify other States and international organizations of such harmful conditions, specified in paragraph 2, is widely endorsed in international environmental agreements and is firmly secure as part of customary international law. An OECD Council Decision, OECD, *Guiding Principles on the Environment,* Annex, tit. A (1972), usefully suggests the information to be provided in notifying of harmful conditions:

1. The location and general description of the harmful condition or of a hazardous installation;
2. General information regarding the nature, extent, and likely effects on human health or well-being or on the environment generally arising from the harmful condition;
3. The common chemical names or the generic names or the general danger classifications of any substances likely to cause transfrontier harm;
4. The legislative, regulatory, and administrative requirements affecting the harmful condition; and
5. Information on any emergency plans relevant to the exposed country.

An exposed State would be required to provide the following information:

1. The distribution of its population, including any particularly sensitive groups;
2. The location and general description of any properties likely to be affected adversely; and
3. The location of natural resources, protected areas, sensitive ecosystems, and historical monuments that could be damaged.

Article 33
Polluting Accidents

1. **States shall take all appropriate measures as quickly as possible to reduce, eliminate, or control pollution resulting from accidental events.**

2. **States shall use the most expeditious method available to notify other affected States and competent international organizations of accidents that pose a significant risk of serious pollution to waters within another State's jurisdiction or control, in particular when pollution involves hazardous substances.**

3. **States shall develop notification systems and contingency plans for responding to accidents under this Article.**

Commentary: This Article is based upon the *Montreal Rules*, art. 2. This also represents a now nearly universal prescription from customary international environmental law. Comparable provisions are found in *UN Convention*, art. 28 and in numerous water management conventions. Paragraph 1 merely repeats the general obligation to prevent pollution. Paragraphs 2 and 3 are the core of this Article, providing for notification of other affected States and the cooperative development of contingency plans for coping with such accidents. Again, general environmental instruments and water management agreements address these concerns. *See Convention on the Transboundary Effects of Industrial Accidents*, 210 UNTS 457 (1992).

Article 34
Floods

1. **States shall cooperate in developing and implementing measures for flood control, having due regard to the interests of other States likely to be affected by the flooding.**

2. **States likely to be affected by flooding shall use the most expeditious method available to communicate among themselves and with international organizations as soon as possible regarding any events likely to create floods or dangerous rises of water levels in their territory, establishing:**
   a. **An effective system of transmission in order to fulfill this obligation;**
   b. **Measures to ensure priority to the communication of flood warnings in emergency cases; and**
   c. **A special system of translation, if necessary, between the basin States.**

3. **States shall jointly develop contingency plans for responding to foreseeable flood conditions.**

4. **In addition to contingency plans, cooperation with respect to flood control shall, by agreement between affected States and when appropriate international organizations, include among other matters:**
   a. **The collection and exchange of relevant data;**
   b. **The preparation of surveys, investigations, studies, and flood plain maps, and their mutual exchange;**

c. The planning and designing of relevant measures, including flood plain management and flood control works;
d. The execution, operation, and maintenance of flood control measures;
e. Flood forecasting and communication of flood warnings;
f. Developing or strengthening necessary legislation and appropriate institutions for achieving these goals; and
g. The setting up of a regular information service charged to transmit the height of water levels and the discharge quantities.

5. States shall maintain all flood control measures in good order, and shall ensure the prompt execution of repairs or other emergency measures taken to assure the minimization of damage from flooding.

6. The use of the channel of rivers and lakes for the discharge of excess waters shall be free and not subject to any limitation provided such discharge is not incompatible with the object of flood control and does not adversely affect the rights or interests of other states.

Commentary: This Article incorporates the provisions of the *New York Rules on Flood Control*, arts. 2 to 5. This obligation is expressed explicitly in a number of bilateral water management conventions. The *Luso-Spanish Convention,* for example, indicates that the duty to communicate flood warnings includes the transmission of the available data on precipitation, river flows, water levels, and reservoir storage. Often, in order to accomplish the goals of this Article, States will have to engage in flood plain management that will include limiting development within the flood plain both in order to limit risks to persons or property and in order to assure natural systems capable of distributing floodwaters in a non-damaging manner

Article 35
Droughts

1. States shall cooperate in the management of waters to prevent, control, or mitigate droughts, having due regard to the interests of other basin States.

2. Cooperation with respect to drought shall, by agreement between affected States and when appropriate with international organizations, include among other matters:
a. An integrated strategy for addressing the physical, biological, and socio-economic aspects of the drought;
b. The definition of criteria that activate the provisions of this Article;
c. An integrated strategy for mitigating the effects of drought and moving towards the sustainable use of waters;
d. The development or strengthening necessary legislation and appropriate institutions for achieving these goals; and
e. The allocation of adequate resources to achieve these goals in accordance with their circumstances and capabilities.

3. States likely to be affected by drought shall promptly communicate among themselves and with competent international organizations whenever the criteria specified pursuant to paragraph 2(b) are met.

4. Nothing in this Article limits the rights of States to protect themselves unilaterally from the effects of droughts so long as the measures taken do not violate obligations under these Rules or otherwise violate the rights of other States.

Commentary: This Article is derived from the *Luso-Spanish Convention.* It is similar to the Article 34 on floods. The balancing of the right of States to take steps to ameliorate the effects of droughts and the interests of other affected States deserves close study.

CHAPTER VIII
GROUNDWATER

Article 36
Application of These Rules to Aquifers

1. The Rules of this Chapter apply to all aquifers, including aquifers that do not contribute water to, or receive water from, surface waters or receive no significant contemporary recharge from any source.

2. States, in managing aquifers, are subject to all Rules expressed in these Articles, taking into account the special characteristics of groundwater.

Commentary: Groundwater—water in the ground contained in aquifers—is an increasingly important resource for humans but, like other waters, it also serves important ecological purposes. Aquifers contain 97% of all the non-frozen freshwater on the planet. Groundwater is used for domestic, municipal, industrial, and agricultural uses. In some European countries, as much as 90% of drinking water is from groundwater; percentages are nearly as high in some countries on other continents. Groundwater, however, is often seen as a problem in the way of other activities such as mining or construction. In these cases, the groundwater will generally be pumped out ("dewatered"), at least temporarily. Moreover, because of groundwater's characteristics, significantly different from surface waters, the management of aquifers sometimes requires special rules. This Chapter sets out certain specific rules for the management of aquifers based upon these special characteristics.

Paragraph 1 is the same as *Seoul Rules,* arts. 1, 2(1) and 4. It applies to all aquifers and not just to aquifers connected to international drainage basins. Whether groundwater is exploited as a source or dewatered to allow other activities, it has at least two major characteristics that differ from surface waters. First, drawn by gravity but impeded by the media in which it is found, groundwater moves slowly and often in unpredicted directions. Second, in part because of its slow movement, once groundwater is contaminated, it is extremely slow to purify itself—unlike most surface waters. Therefore, paragraph 1 recognizes that States in managing groundwater must take these characteristics into account. *See generally UN/ECE Charter on Groundwater Management* ("*UN/ECE Charter*"). Paragraph 2 provides that apart from the specific rules in this Chapter, all of these Rules apply to aquifers.

Article 37
Managing Aquifers Generally

States shall manage groundwater conjunctively with the surface waters of any basin of which it is a part, taking into account any interconnections between aquifers or between and an aquifer and a body of surface water, as well as any impact on aquifers caused by activities within the State's jurisdiction or control.

Commentary: This Article recognizes that aquifers, like other water sources, are best managed if managed conjunctively and in an integrated fashion as provided in Articles 5 and 6. The Article carries forward the principles expressed in *Seoul Rules,* arts. 2(2), (3), and 4 without limiting it solely to international drainage basins. The phrasing has been changed to make it consistent with the language of Articles 5 and 6 of these Rules. This approach is increasingly found in state and regional management arrangements. *See UN/ECE Charter,* art. VI(2).

Article 38
Precautionary Management of Aquifers

States, in accordance with the precautionary approach, shall take early action and develop long-term plans to ensure the sustainable use of groundwater and of the aquifers in which the groundwater is contained.

Commentary: Usually less is known about groundwater than about surface waters, with considerable uncertainty regarding the availability of groundwater, the connections between aquifers or between an aquifer and surface waters, or other important aspects of the resource. Therefore application of the precautionary principle (Article 23) is particularly compelling. The obligation applies even to an aquifer entirely within a single State because these principles derive from international environmental law rather than in instruments directed specifically at transboundary waters. *See, e.g., UN/ECE Charter*, art. II(3).

Article 39
Duty to Acquire Information

In order to comply with this Chapter, States shall take all appropriate steps to acquire the information necessary to manage groundwater and aquifers efficiently and effectively, including:

a. Monitoring groundwater levels, pressures, and quality;
b. Developing aquifer vulnerability maps;
c. Assessing the impacts on groundwater and aquifers of industrial, agricultural, and other activities; and
d. Any other measures appropriate to the circumstances of the aquifer.

Commentary: This Article derives from the obligations to monitor groundwater expressed in *Seoul Rules,* art. 3, generalized to all aquifers rather than limited to aquifers that qualify as parts of international drainage. It is related to, but more specific than, the obligations to gather and exchange data in international contexts expressed in Articles 56 to 60. Nor is this obligation limited to international contexts. It is properly seen as derived from the obligations to protect the aquatic environment (Chapter V) and to respond to extreme situations (Chapter VII). Those obligations cannot be fulfilled for aquifers without taking the indicated steps even for an aquifer wholly within a single State. Monitoring is necessary for the impact assessments necessary for compliance with the general environmental obligations of these Articles (Chapter VI). Even if one concludes that the obligation to gather information is limited to transboundary contexts, often a State cannot know whether an aquifer is transboundary, and thus cannot know whether the more limited duty applies, unless the State undertakes to develop information comprehensively regarding all aquifers within its jurisdiction even without proof of international connections.

Article 40
Sustainability Applied to Groundwater

1. States shall give effect to the principle of sustainability in managing aquifers, taking into account natural and artificial recharge.

2. The rule in paragraph 1 does not preclude the withdrawal of groundwater from an aquifer that is receiving no significant contemporary recharge.

Commentary: Fewer resource issues are more controversial than "groundwater mining"—the view that groundwater should be viewed as an exhaustible rather renewable resource. For aquifers that receive little or no contemporary recharge (so-called fossil waters in decoupled aquifers), there is no choice but to treat it as an exhaustible resource if it is to be used for human purposes at all. Thus sustainability does not altogether preclude the abstraction of water from a non-renewable aquifer. In all situations, the maximum permissible drawdown depends upon what the interested States will accept, with damage to an aquifer to be minimized and benefits maximized. The standard remains what drawdown rate qualifies as sustainable under Article 7.

In order to assure sustainability, States will have to establish a maximum allowable drawdown for each aquifer, with the maximum allowable drawdown reflecting natural and artificial recharge. For recharging aquifers, sustainability requires that, on average, withdrawals not exceed recharge rates, although even here exceptions might have to be made, at least in the short term. Groundwater managers must be particularly sensitive to the reality that rapidly falling water tables might not appear until some years after a serious overdraft begins, by which time it might be too late to do much about it. Biodiversity can become an issue in setting the maximum permissible drawdown.

The propriety of any particular drawdown can be altered dramatically by artificial recharge. So long artificial recharge is done in an environmentally sensitive way, it is to be commended. In extraordinary cases, the maximum allowable drawdown could exceed the total recharge rate, determined by balancing social and ecological costs of drawing down the water against the benefits of withdrawing the water. International law does not yet provide standards for making such a determination.

Article 41
Protecting Aquifers

1. **States shall take all appropriate measures to prevent, insofar as possible, any pollution of, and the degradation of the hydraulic integrity of, aquifers.**

2. **States in fulfilling their obligation to prevent pollution of an aquifer shall take special care to prevent, eliminate, reduce, or control:**
   a. **The direct or indirect discharge of pollutants, whether from point or non-point sources;**
   b. **The injection of water that is polluted or would otherwise degrade an aquifer;**
   c. **Saline water intrusion; or**
   d. **Any other source of pollution.**

3. **States shall take all appropriate measures to abate the effects of the pollution of aquifers.**

4. **States shall integrate aquifers into their programs of general environmental protection, including but not limited to:**
   a. **The management of other waters;**
   b. **Land use planning and management; and**
   c. **Other programs of general environmental protection.**

5. **States shall specially protect sites where groundwater is withdrawn from or recharged to an aquifer.**

Commentary: This Article elaborates the obligation to protect aquifers from environmental degradation. Because ground water moves slowly and unpredictably, it is often particularly vulnerable to environmental damage, and thus requires special steps to assure protection. These provisions add to, without subtracting from, the general obligations to protect the aquatic environment (Chapter V) and to respond to extreme situations (Chapter VII). In general, the provisions of this Article follow the approach of *Seoul Rules,* art. 3, although the principles are elaborated in more detail than in the *Seoul Rules. Seoul Rules,* art. 4, expressly recognized the obligation of integrated management expressed in paragraph 4. These obligations apply even to an aquifer entirely within a single State because these principles derive from international environmental law rather than instruments directed specifically at transboundary waters. For example, similar provisions on groundwater protection are found in *UN/ECE Charter,* art. II(3); and in the *Helsinki Convention,* art. 3(1)(k) and Annex III.

Paragraph 1 recognizes that aquifers are especially vulnerable to pollution. Groundwater must be protected at the source, for it may be impossible to correct pollution that is allowed into an aquifer. Pollution might continue to diffuse into an aquifer even after several flushings. These problems are especially characteristic of decoupled aquifers. The precautionary principle requires then that no pollution be allowed. This standard is stronger than in *Seoul Rules,* art. 3. The standard is elaborated in Article 38. Paragraph 2 states a necessary condition for fulfilling the obligations of paragraph 1, and paragraph 3 states the obligation to attempt to abate any pollution that results notwithstanding the requirements of paragraphs 1 and 2. As spelled out in paragraph 2, the goal is to prevent the degradation of groundwater. This means, insofar as possible, no reduction quality of the groundwater within an aquifer. Thus even the introduction of fresh or saline water or other natural substances is prohibited if it would degrade the quality of the water in the aquifer.

Paragraphs 4 and 5 express the reality that in order to protect groundwater, the management of aquifers must be fully integrated into the management of other resources and that special measures are required to protect well fields and areas where natural or artificial recharge takes place. This also implies, as is indi-

cated expressly in paragraph 1, protection of the hydraulic integrity of aquifers. Protecting hydraulic integrity requires appropriate measures to prevent or control two related processes: subsidence and compaction. The withdrawal of groundwater will cause the surface of the land to subside and, more importantly, can cause the aquifer itself to compact. Subsidence can cause any number of problems on the surface, such as damage to buildings, flooding of low lying land, and so on. Compaction occurs when water, being withdrawn from pores within the soil or rock, the solid material presses together to fill the now empty pore. Once this happens, it can become difficult or even impossible to recharge the aquifer. Only by assuring timely recharge can irreversible compaction be prevented.

Article 42
Transboundary Aquifers

1. **The Rules applicable to internationally shared waters apply to an aquifer if:**
   a. **It is connected to surface waters that are part of an international drainage basin; or**
   b. **It is intersected by the boundaries between two or more States even without a connection to surface waters that form an international drainage basin.**

2. **Whenever possible and appropriate, basin States sharing an aquifer referred to in paragraph 1 shall manage an aquifer in its entirety.**

3. **In managing the waters of an aquifer referred to in paragraph 1, basin States shall consult and exchange information and data at the request of any one of them and shall cooperate in the collection and analyzing additional needed information pertinent to the obligations under these Rules.**

4. **Basin States shall cooperate according to the procedures in Chapter XI to set drawdown rates in order to assure the equitable utilization of the waters of an aquifer referred in paragraph 1, having due regard for the obligation not to cause significant harm to other basin States and to the obligation to protect the aquifer.**

5. **Basin States sharing an aquifer referred to in paragraph 1 shall cooperate in managing the recharge of the aquifer.**

6. **Basin States sharing an aquifer referred to in paragraph 1 shall refrain from and prevent acts or omissions within their territory that cause significant harm to another basin State, having due regard to the right of each basin State to make equitable and reasonable use of the waters.**

Commentary: Paragraph 1derives from *Seoul Rules,* art. 1. Rather than artificially defining an aquifer that experiences no drainage as constituting an international drainage basin, however, it simply indicates that the rules applicable to drainage basins apply as well to transboundary aquifers even if they experience no significant contemporary discharge. Paragraph 1 thus makes explicit the application of the Articles on transboundary issues even to aquifers that do not connect to surface waters.

Paragraph 2 recognizes that if management practices are dictated by political boundaries, each State is less likely to achieve its managerial goals than if the States concerned with the aquifer act cooperatively. This principle was recognized, albeit in different language, in *Seoul Rules,* art. 2. There are in fact very few examples of the sort of basinwide management of aquifers called for in this Article in existing State practice, largely because international agreements focusing on groundwater are still rare. The stronger approach expressed in paragraph 1 is beginning to be found in regional arrangements regarding aquifer management. *See UN/ECE Charter,* art. VI(2).

Paragraph 3 is based on *Seoul Rules,* art. 3(2), (3). States are already under a general duty in Article 39 to gather the data necessary to manage aquifers properly. Paragraph 3 of this Article states the obligation to exchange data and information relevant to a transboundary aquifer. The Article is closely related to the provisions relating to the international aspects of the management of waters (Chapter XI).

Paragraph 4 makes explicit the most central obligation regarding internationally shared aquifers. States cannot exploit more than their appropriate share of groundwater, whether from a renewable or from a non-

renewable aquifer, under the principle of equitable utilization. Several international agreements now set about to limit the drawdowns of groundwater as the means for assuring that States limit their use to an equitable and reasonable share. In setting drawdown rates for transboundary aquifers, basin States are to have due regard for the obligation not to cause significant harm to another State (Article 16) and to the obligation to protect aquifers (Article 41). Paragraph 5 indicates that States are to cooperate in protecting the recharge of aquifers. Similarly, paragraphs 6 indicates that the rule of preventing significant harm applies to transboundary aquifers, having due regard to the rule of equitable utilization.

CHAPTER IX
NAVIGATION

Article 43
Freedom of Navigation

1. Subject to the limitations or qualifications in this Chapter, each riparian State is entitled to freedom of navigation on the entire watercourse to which they are riparian on a basis of equality and nondiscrimination.

2. A "riparian State" for purposes of this Chapter is a State traversed by or separated from another State by the navigable portion of a watercourse.

3. A "watercourse" for purposes of this Chapter is a river, lake, or other surface body of water on which navigation is possible from one riparian State to another or from a riparian State to the high seas.

4. A watercourse is "navigable" for purposes of this Chapter if, in its natural or canalized condition, the watercourse is currently used for commercial navigation or is capable of being so used in its natural condition.

5. "Freedom of navigation" for the purposes of this Chapter includes:
- **a. Freedom of movement on the entire navigable course of the watercourse;**
- **b. Freedom to enter ports and to make use of plants and docks; and**
- **c. Freedom to transport goods and passengers, directly or through transshipment, between the territory of one riparian State and the territory of another riparian State and between the territory of a riparian State and the open sea.**

Commentary: The customary international law relating to shared rivers originated in Western Europe with concerns about freedom of navigation for riparian states, at a time when other uses of rivers in humid areas were largely undeveloped. With the development of large hydroelectric dams and large scale uses for other purposes even in humid areas, attention shifted to consumptive uses and attention to navigation declined. This Chapter reflects the traditional rules developed in the nineteenth century as codified in the original *Helsinki Rules*, arts. XII-XX. These rules were not addressed in the *UN Convention on the Law of the Non-Navigational Uses of International Watercourses* (1997). The leading scholarly works on the subject endorse the content of this Chapter.[21]

This Article in particular combines the content of the original *Helsinki Rules* XII, XIII, XIV. The definitions of "navigable," "riparian State," and "watercourse" are taken from art. XII of the original *Helsinki Rules* and apply only in this Chapter. The term "riparian state" is used rather than "watercourse state" not only because that is the term traditionally used regarding navigation (as in the original *Helsinki*

[21] CHARLES DE VISSCHER, THEORY AND REALITY IN PUBLIC INTERNATIONAL LAW 207 (1957); 1 CHARLES CHENEY HYDE, INTERNATIONAL LAW, CHIEFLY AS INTERPRETED AND APPLIED BY THE UNITED STATES 565 (2nd rev. ed. 1945); GEORGES KAECKENBEECK, INTERNATIONAL RIVERS (1918); 1 OPPENHEIM'S INTERNATIONAL LAW 575 (R. Jennings & A. Watts eds. 9th ed. 1996); 3 J.H.W. VERZIJL, INTERNATIONAL LAW IN HISTORICAL PERSPECTIVE 185-207 (1970); BÉLA VITÁNYI, THE INTERNATIONAL REGIME OF RIVER NAVIGATION 219-371 (1979); Kazimierz Równy, *The Evolution of Law on the Freedom of Navigation on International Rivers,* in LEGAL ASPECTS OF SUSTAINABLE WATER RESOURCES MANAGEMENT __ (Slavko Bogdanovic ed. 2002).

Rules), but also to avoid confusion that could arise because the term "watercourse state" is used in the *UN Convention* in a different context, for different purposes, and to different effect. As indicated in the definition of "navigability," watercourses that have become navigable through artificial works are within the scope of this Chapter, but watercourses that are not navigable in their natural condition and have not yet been artificial works ("canalized") are not within the scope of the Chapter. As indicated in paragraph 5(c), the right to transport goods does not generally include the right to transport goods from a port in one State to another port in the same State (cabotage). This proposition is found in the original *Helsinki Rules,* art. XVI. While there is some debate regarding this rule, the practice of States supports the rule expressed in this Article.

Article 44
Limitations on Freedom of Navigation

1. **Absent special arrangements, only vessels of a riparian State are entitled to exercise freedom of navigation.**

2. **Movement by vessels exercising freedom of navigation shall be continuous and expeditious, and not prejudicial to the peace, good order, or security of the riparian State.**

3. **Stopping or anchoring is allowed when incidental to ordinary navigation or if necessary because of *force majeure,* distress, or for the rendering of assistance to persons, ships, or aircraft in danger or distress.**

4. **Riparian States may restrict or prohibit the loading by vessels of a foreign State of goods and passengers in its territory for discharge in such territory.**

5. **Nondiscriminatory fees may be charged by a riparian State to recover the costs of services provided to vessels exercising freedom of navigation.**

Commentary: Freedom of navigation is limited to vessels of riparian states. This reflects the now predominant approach to freedom of navigation in bilateral or multilateral treaties. Some nineteenth century treaties extend freedom of navigation to all States, but twentieth century treaties more often restricted freedom of navigation to riparian states. Today, in addition to specific treaties opening certain watercourses to ships of all States, some trade agreements (for example, the GATT and WTO agreements) open watercourses to the shipping of non-riparian States party to the agreement if a particular riparian State has made a declaration opening transportation services generally to such other States. This aspect is addressed explicitly in Article 47. Paragraphs 2 and 3 parallel the limitations on the meaning of "innocent passage" in the *UN Convention on the Law of the Sea,* arts. 18, 19. Paragraph 4 reiterates the right of a riparian State to prohibit cabotage by vessels of other States without violating freedom of navigation. Paragraph 5 reflects the fact that States sometimes charge fees to recover the cost of services provided to vessels exercising freedom of navigation. The practice is too widespread to argue that it violates customary international law, but to allow a State to charge a fee higher than necessary to recover the costs of its services would nullify freedom of navigation.

Article 45
Regulating Navigation

In order to achieve good order in the navigable portion of a watercourse within its jurisdiction, a riparian State may regulate, limit, or suspend navigation, as appropriate for the purposes of protection of public safety, health, or the environment, over that portion of the watercourse within its jurisdiction, provided the State does not discriminate against the shipping of another riparian State and does not unreasonably interfere with the enjoyment of the rights of freedom of navigation defined in Articles 43 and 44.

Commentary: This Article is the same as original *Helsinki Rules,* art. XV. The rule seems well founded in customary international law. The language in this Article has been modified to make explicit that any such regulation must be applied in a non-discriminatory fashion to vessels of riparian States.

Article 46
Maintaining Navigation

Each riparian State is, to the extent of the means available, required to maintain in good order that portion of a navigable watercourse within its jurisdiction.

Commentary: This Article is the same as original *Helsinki Rules,* art. XVIII. The rule seems well founded in customary international law. While the primary obligation is on the State in whose territory maintenance is to take place, nothing in the law precludes international cooperation in such matters, including, with the consent of the States involved, maintenance with resources provided by other States.

Article 47
Granting the Right to Navigate to Non-Riparian States

Riparian States, individually or jointly, may grant rights of navigation to non-riparian States on watercourses or other waters within its or their territory.

Commentary: This Article is the same as original *Helsinki Rules,* art. XVII. The proposition seems self-evident and States have sometimes granted rights of navigation to non-riparian States. The language has been revised to make explicit that States may do so jointly and can do so for any watercourse. The rule, alone of the rules in this Chapter, is not limited to transboundary watercourses, for States can, if they so choose, accord rights of navigation even on wholly national rivers. Grants of rights navigation on wholly national rivers, however, are rare.

Article 48
Exclusion of Public Vessels

Freedom of navigation does not apply to the navigation of warships or of a government vessel used for non-commercial purposes except by agreement of the States concerned.

Commentary: This Article is substantially the same as original *Helsinki Rules,* art. XIX. The Rule seems well founded in customary international law. The description of vessels subject to exclusion from freedom of navigation has been modernized, using the terminology found in art. 29 of the *UN Convention on the Law of the Sea.*

Article 49
Effect of War or Similar Emergencies on Navigation

1. **In time of war, other armed conflict, or public emergency constituting a threat to the security of a riparian State, it may take measures derogating from its obligations under this Chapter to the extent strictly required by the exigencies of the situation.**

2. **No measures taken under this Article are to violate a State's other obligations under international law.**

3. **Riparian States shall in any case facilitate navigation for humanitarian purposes.**

Commentary: This Article is the substantially same as original *Helsinki Rules,* art. XX. The original term "a threat to the life of the State" has been changed to "a threat to the national security of the State" as a more modern formulation. This formulation is consistent with the *UN Convention on the Law of the Sea,* art. 25(3). This Article addresses only the effect of war or similar emergencies; other public emergencies,

such as a seriously polluting accident, are addressed in Article 33 of these rules. The Article seems well founded in customary international law.

CHAPTER X
PROTECTION OF WATERS AND WATER INSTALLATIONS DURING WAR OR ARMED CONFLICT

Article 50
Rendering Water Unfit for Use

Combatants shall not poison or render otherwise unfit for human consumption water indispensable for the health and survival of the civilian population

Commentary: The prohibition of poisoning of drinking water is a rule of customary international law. *Annex to the IVth Hague Convention Respecting the Laws and Customs of War on Land,* art. 23(a). Civilians are entitled to an adequate water supply under all circumstances. Hence the prohibition of any action, whatever the motive, which would have the effect of denying the civilian population of the necessary water supply. The rule has been expanded to protect all vital human needs, a concept that in these Rules means water necessary to assure human health and survival. This Article substantially repeats, but in a somewhat stronger version, the comparable provision in the *Madrid Armed Conflict Rules,* art. I. This principle is also found in *Protocol I Additional to the Geneva Conventions of 12 August 1949 and Relating to the Protection of Victims of International Armed Conflicts* ("*Protocol I*"), art. 54.

Article 51
Targeting Waters or Water Installations

1. **Combatants shall not, for military purposes or as reprisals, destroy or divert waters, or destroy water installations, if such actions would cause disproportionate suffering to civilians.**

2. **In no event shall combatants attack, destroy, remove, or render useless waters and water installations indispensable for the health and survival of the civilian population if such actions may be expected to leave the civilian population with such inadequate water as to cause its death from lack of water or force its movement.**

3. **In recognition of the vital requirements of any party to a conflict in the defense of its national territory against invasion, a party to the conflict may derogate from the prohibitions contained in paragraphs 1 and 2 within such territories under its own control where required by imperative military necessity.**

4. **In any event, waters and water installations shall enjoy the protection accorded by the principles and rules of international law applicable in war or armed conflict and shall not be used in violation of those principles and rules.**

Commentary: Paragraph 1 introduces a proportionality limitation on the destruction or diversion of water and water installations. *Protocol I* contains no specific rule on proportionality regarding water resources. The rule in paragraph 1 reflects the general rule of proportionality in armed conflict. No rule provides an absolute prohibition against an otherwise legitimate means of warfare, solely on account of potential incidental civilian damage. For example, damming or diverting a river in order to enable movement of troops cannot be outlawed automatically because of potential harm to civilians. The criterion for prohibition must be harm to civilians disproportionate to the military advantage. The *Madrid Armed Conflict Rules,* art. III, contains comparable provisions. Paragraph 2 comes from several provisions found in *Protocol I,* primarily art. 54 of the *Protocol.* The protection of ecological integrity during wars or armed conflicts is provided in Article 52.

Yoram Dinstein described art. 54 as "unjustifiable and utopian" because "the legality of siege warfare has not been contested in classical international law" and "if the destruction of foodstuffs sustaining the civilian population in a besieged town is excluded, how can a siege be a siege?"[22] The official commentary on *Protocol I* by the International Committee of the Red Cross concedes that the "statement of this general principle [prohibiting starvation of population as a method of warfare] is innovative and a significant progress of the law." The U.S. Department of State has taken the position that the provisions of *Protocol I* that "starvation of civilians is not to be used as a method of warfare" are among those provisions that "should be observed and in due course recognized as customary law, even if they have not already achieved that status." The *US Naval Military Manual* also recognizes this as a customary rule. While it would be advisable for States to mark such installations clearly to minimize the risk of damaging them, international humanitarian law does not require this. *See Additional Protocol I, Annex I.*

Paragraph 3 recognizes an exception for nations destroying water installations as an act of national self-defense. *See Protocol I,* art. 54(5). Even then, States may derogate from the obligation not to damage water facilities only when compelled by dire (imperative) military necessity. Nor is there any prohibition in international law against denying water to enemy armed forces. The *US Army Field Manual* states in fact that there is no prohibition against "measures being taken to dry up springs, to divert rivers and aqueducts from their courses." Presumably this refers to springs, etc., used by the military and not necessary for civilian survival. The comparable provision in the *Madrid Armed Conflict Rules,* art. II, is more succinct, but there is no apparent difference in substance. Paragraph 4 merely reinforces the point that waters and water installations are subject to protection under the law of war and armed conflict.

Article 52
Ecological Targets

Combatants shall not, for military purposes or as reprisals, destroy or divert waters, or destroy water installations, when such acts would cause widespread, long-term, and severe ecological damage prejudicial to the health or survival of the population or if such acts would fundamentally impair the ecological integrity of waters.

Commentary: *Protocol I* contains two general provisions relating to ecological harm, arts. 35 and 55. Art. 55, with its emphasis on health and survival of the population is of greater relevance to water resources. The text here follows that of *Protocol I,* art. 55, except that the word "care" is infelicitous in the circumstances, applying a weak and vague criterion. It is arguable that the provision of *Protocol I* regarding ecological damage and this Article are not yet customary law. Consistent with the emphasis on ecological concerns in these Rules, this Article extends protection to the fundamental ecological integrity of the waters in question. The allegations made after the Gulf War that the Iraqi actions violated the laws of war by impairing the ecological integrity of Kuwait and the Gulf region suggest that the law is at least moving in this direction. The *Advisory Opinion on the Use of Nuclear Weapons* suggests that customary international law does indeed prohibit the causing of widespread, long term, and severe ecological damage prejudicial to the health or survival of the population. This conclusion is closer to the language already approved by the International Law Association in the *Madrid Armed Conflict Rules,* art. III. Two other articles of the *Madrid Armed Conflict Rules* also speak to these concerns, arts. IV and V. This broader approach also appears to be required by the *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques.*

Article 53
Dams and Dikes

1. **In addition to the other protections provided by these Rules, combatants shall not make dams and dikes the objects of attack, even where these are military objectives, if such an attack may cause the release of dangerous forces and consequent severe losses among the civilian population.**

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[22] Yoram Dinstein, *Siege Warfare and the Starvation of Civilians,* in HUMANITARIAN LAW OF ARMED CONFLICT: CHALLENGES AHEAD; ESSAYS IN HONOUR OF FRITS KALSHOVEN 145-46 (Astrid Delissen & Gerard Tania eds. 1991).

2. **This protection ceases if the dam or dike is used for other than its normal function and in regular, significant, and direct support of military operations and such attack is the only feasible way to terminate such use.**

Commentary: This Article reproduces from *Protocol I,* art. 56(1), (2), with editorial changes. The rule apparently is not yet customary law. This rule "raises serious doubts about, for example the RAF "dam-busters" raid during the Second World War, although the principal dams concerned "undoubtedly supplied power for a vital war industry."[23] The 1992 *German Military Manual* interprets "significant and direct support of military operations" as comprising "for instance, the manufacture of weapons, ammunition and defense materiel. The mere possibility of use by armed forces is not subject to these provisions." The *Madrid Armed Conflict Rules,* arts. IV, V, contain a similar, but apparently less absolute, rule.

Article 54
Occupied Territories

1. **An occupying State shall administer water resources in an occupied territory in a way that ensures the sustainable use of the water resources and that minimizes environmental harm.**

2. **An occupying State shall protect water installations and ensure an adequate water supply to the population of an occupied territory.**

Commentary: Under customary international law, an occupying State is only the administrator with a usufruct of State property. The *U.S. Army Field Manual* stipulates that the occupier "should not exercise his rights in such a wasteful and negligent manner as seriously to impair its value." Applying this criterion to water resources requires the occupier to limit the use of water resources so as to ensure sustainability and to minimize environmental harm. The *Fourth Geneva Convention,* art. 55, stipulates that "[t]o the fullest extent of the means available to it, the Occupying Power has the duty of ensuring the food and medical supplies of the population." This Article strengthens the rule as regards water supply and the obligation is made absolute. The language in the *Madrid Armed Conflict Rules,* art. VI, is more specific and detailed; whether it makes a real change is debatable. There is nothing explicit in this Articles that corresponds to art. VI(1), but that obligation might be considered implicit in this Article or in this Chapter. Art. VI(2), (3) appear to presuppose a short-term occupation, and therefore attempt to restrict the possible actions of the occupying power more than this Article, which recognizes that today long-term military occupations have occurred with some frequency.

Article 55
Effect of War or Armed Conflict on Water Treaties

1. **Treaties creating legal regimes for an international watercourse or part thereof are not terminated by war or armed conflict between the parties to the treaty.**

2. **Such Treaties or parts thereof shall be suspended only where military necessity requires suspension and where suspension does not violate any provision of this Chapter.**

Commentary: The rules of international law relating to the effect of armed conflict on validity of treaties are not entirely settled. The customary rule apparently is represented by Lord McNair's statement that "State rights of a permanent character, connected with sovereignty and status and territory, such as those created or recognized by a treaty of peace … are not affected by the outbreak of war between the contracting parties."[24] This Article more severely circumscribes the effect of war on existing water treaties than the comparable provision of the *Madrid Armed Conflict Rules,* art. VII. This Article does not contain a provision comparable to the limitation on the suspension of navigation expressed in Article 55.

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[23] HILLAIRE MCCOUBREY, INTERNATIONAL HUMANITARIAN LAW 179 (2nd ed. 1998).
[24] A.D. MCNAIR, THE LAW OF TREATIES 705 (2nd ed. 1961).

CHAPTER XI

INTERNATIONAL COOPERATION AND ADMINISTRATION

Article 56
Exchange of Information

1. **Basin States shall regularly provide to other basin States all relevant and available information on the quantity and quality of the waters of a basin or aquifer and on the state of the aquatic environment and the causes for any changes in waters, in an aquifer, or in the aquatic environment, including, but not limited to, a list of all known water withdrawals and sources of pollution.**

2. **Basin States shall employ their best efforts to collect and, where appropriate, to process data and information in a manner that facilitates its use by other basin States to which it is to be communicated.**

3. **The exchange of information under this Article shall include all relevant technical information for a program, plan, project, or activity, including the results of any relevant impact assessment.**

4. **Basin States shall cooperate with other basin States to provide as much information as possible under the circumstances having due regard for the provisions of paragraph 5.**

5. **States need not provide information that would compromise:**
   a. **Intellectual property rights, including commercial or industrial secrets;**
   b. **Rights of individual privacy;**
   c. **Criminal investigations or trials;**
   d. **National security; and**
   e. **Information that could endanger ecosystems, historic sites, and other naturally or culturally important objects or locations.**

Commentary: This Article builds upon the provisions of the original *Helsinki Rules,* art. 29, and the *Montreal Rules on Pollution,* art. 5. This obligation has been codified in the *UN Convention,* arts. 9, 11, 12, 14. Such duties are also found in many other instruments, relating both to internationally shared waters or to the environment generally. It appears that the obligation to inform regarding programs, plan projects, or activities affecting shared waters or the aquatic environment has become a norm of customary international law. It is, after all, simply a corollary of the duty to cooperate in managing the environment addressed in Article 11 of these Rules. The obligation to inform regarding specific water withdrawals or sources of pollution is modeled after a comparable provision in the *Danube Pollution Convention,* art. 8. The obligation to protect the confidentiality of certain information derives from the general international law of human rights. These obligations have also been recognized in some agreements relating to the management of internationally shared waters.

Article 57
Notification of Programs, Plans, Projects, or Activities

1. **Basin States shall promptly notify other States or competent international organizations that may be affected significantly by a program, plan, project, or activity.**

2. **Basin States shall also promptly inform other States or competent international organizations whenever necessary to accomplish obligations set forth in these Rules.**

3. **A basin State that has reasonable grounds to conclude that a program, project, or activity to be undertaken or already undertaken within another State may involve a significant**

effect on waters or the aquatic environment within the first State shall so inform the other State, providing documentary support for the conclusion, and request the other State to exchange information under Article 56 and to consult under Article 58.

Commentary: This Article derives from the provisions of the *UN Convention,* arts. 12 and 18. The Article also reflects the provisions of the original *Helsinki Rules,* art. 29(2), the *Montreal Rules,* art. 5(b), (c), the *Seoul Complementary Rules,* art. III(1), the *Rules on the Maintenance and Improvement of Naturally Navigable Waterways,* art. 1, and the *Rules on the Regulation of the Flow of Water in International Watercourses,* art. 7. Similar obligations are found in numerous bilateral and multilateral treaties relating to water management or to the environment.

UN Convention art. 13 provides for a period of six months to reply to a notification of a pending project, a period that can be extended once for a further six months. Such a bright line rule has much to commend it, but it has not become part of customary international law. Customary international law does require that notification be prompt and that consultations under Article 58 ensue within reasonable time and with due regard for the rights and legitimate interests of the States involved.

Article 58
Consultations

1. **Basin States shall consult one another and with competent international organizations on actual or potential issues relating to their shared waters or to the aquatic environment in order to reach, by methods of their own choice, a solution consistent with their rights and duties under international law.**

2. **Basin States that conclude that a program, plan, project, or activity would significantly adversely affect them shall promptly notify the State responsible for the program, plan, project, or activity of those conclusions along with corroborating documentation. Upon receipt of such a claim, the interested States shall promptly consult each other**

3. **In conducting consultations and negotiations under paragraphs 1 and 2, basin States shall proceed in good faith to give reasonable regard to the rights and legitimate interests of the other basin States involved, and if necessary, to coordinate approaches to the program, plan, project, or activity in order to arrive at an equitable and sustainable resolution of the situation.**

4. **During consultations, a basin State planning a program, project, or activity shall, if requested the another interested State, refrain from implementing or allowing the implementation of the program, plan, project, or activity for a reasonable period.**

5. **Consultation shall not be used to delay unreasonably the implementation of programs, plans, projects, or activities that are the subject of the consultation.**

Commentary: The duty to consult arises from the duty to cooperate expressed in Article 11. This Article builds upon the provisions of the *Montreal Rules on Pollution,* art. 6. This obligation has been codified in the *UN Convention,* arts. 9, 11, and 12. *UN Convention* art. 9 expresses the obligation to consult as a positive duty similar to the duty identified here. Such duties are also found in many other instruments, relating both to internationally shared waters or to the environment generally. Often these are the very same provisions that provide for the exchange of information, for the obligation to inform often is meaningless unless the States or international organizations are willing to discuss the information with each other. *UN Convention* arts. 11-19 sets forth the procedures to be followed in the consultation process. These procedures are addressed in these Rules in Articles 56 to 61. The duty to consult, of course, does not imply a duty to submit to the demands of the other State or of an international organization.

Article 59
Failure to Consult

1. **If a State subject to a duty to consult pursuant to Article 58 does not enter into consultations or negotiations within a reasonable time, the other interested States may implement a proposed program, plan, project, or activity so long as it is consistent with the State's obligations under international law.**

2. **A State's obligation to pay compensation for violations of customary international law to another interested State may be offset by expenses incurred by the obligated State as result of the other State's failure to respond.**

Commentary: This Article tracks provisions of the *UN Convention*, arts. 8 and 13 to 18. The Article also tracks the language of *Seoul Complementary Rules*, art. 3. This Article does not propose the rigid time limits set forth in the *UN Convention* because those limits have not become customary legal obligations.

Article 60
Requests for Impact Assessments or Other Information

1. **A basin State, at the request of another basin State likely to be affected by a program, plan, project, or activity envisaged to occur or occurring within the requested State, shall undertake an impact assessment of the program, plan, project, or activity on an ongoing basis.**

2. **A basin States, at the request of another basin State likely to be affected by a program, project, or activity envisaged to occur within the requested State, shall provide all relevant information in the requested State's possession or which the requested State can acquire through reasonable efforts, limited as in Article 56(2).**

3. **A basin State requested by another basin State to provide information or to conduct an impact assessment pursuant to this Article shall employ its best efforts to comply with the request but may condition its compliance upon reciprocal exchanges by the requesting State or upon reimbursement for the reasonable costs of collecting and processing the information.**

Commentary: This Article reflects the right generally to request information relevant to the management of waters. Such a provision is found in the *UN Convention*, art. 18, and in a growing number of water management treaties. The right to request an impact assessment is a new provision, although it recognizes the central importance of the impact statement process (Articles 29 to 31). The *Espoo Convention* provides for such requests in arts. 2(5), 3(7), and 7(1), (2).

Article 61
Urgent Implementation of Programs, Plans, Projects, or Activities

1. **When implementation of a program, plan, project, or activity is of the utmost importance to the public health, public safety, or similar interests, the basin State considering the program, project, or activity may proceed immediately to implement the program, project, or activity within awaiting the completion of the consultation process, but without violating the other obligations expressed in these Articles.**

2. **A basin State that undertakes to implement a program, plan, project, or activity pursuant to this Article shall immediately notify other basin States and shall disclose all relevant data and information.**

3. **Notwithstanding a basin State's decision to implement a program, plan, project, or activity pursuant to this Article, the implementing basin State shall, at the request of another interested basin State, consult and negotiate as provided in Article 58.**

Commentary: This Article tracks the provisions of the *UN Convention,* art. 19. The language of the *UN Convention* provision has been modified only to the extent necessary to make it consistent with the language of other Articles in these rules. The Article also reflects the provision of the *Montreal Rules,* art. 6, and the *Seoul Complementary Rules,* art. 3.

Article 62
Harmonization of National Laws and Policies

In enacting national laws pursuant to this Article, basin States shall consult other interested States with a view to harmonizing the laws and policies regarding the equitable use and sustainable development of waters and of the aquatic environment.

Commentary: Harmonization of national laws and policies is absolutely essential if conjunctive and integrated management are to be realized. Many provisions in the original *Helsinki Rules* and its supplementary rules and in the *UN Convention* that require basin States to cooperate in these matters implicitly support this Article. Harmonization does not require either the least or the maximum level of legal protection conceivable. And, as the word "harmonize" indicates, national laws and policies do not have to be precisely identical, but they must be sufficiently consistent across borders as not to interfere with the accomplishment the goals of proper water management. Harmonization also assures that environmental laws and policies and other laws and policies pertaining to the management of waters will not function as covert barriers to trade.

Article 63
Protection of Works

1. **Basin States shall, within their territories, use their best efforts to maintain and protect installations, facilities, and other works related to the management of waters of an international drainage basin.**

2. **Basin States shall, at the request of another basin State that has reasonable grounds to conclude that its interests may be significantly adversely affected by an installation, facility, or other work related to waters or the management of waters, enter into consultations regarding:**
   a. **The safe operation and maintenance of the installation, facility, or other work; and**
   b. **The protection of the installation, facility, or other work from intentional or negligent acts or the forces of nature.**

Commentary: This provision tracks the language of *UN Convention,* art. 26. The *Luso-Spanish Convention* also provides for the protection of works. Such an obligation is implicit in the obligation not to cause significant harm to another State (Article 16).

Article 64
Establishing Basin Wide or Other Joint Management Arrangements

1. **When necessary to ensure the equitable and sustainable use of waters and the prevention of harm, basin States shall establish a basin wide or joint agency or commission with authority to undertake the integrated management of waters of an international drainage basin.**

2. **When appropriate, basin States shall establish other joint mechanisms for the management of waters.**

3. **The establishment of a basin wide management mechanism is without prejudice to the creation, existence, or designation of any joint management agency, conciliation commission, or tribunal by the basin States for the resolution of any question or dispute relating to the present or future management of transboundary waters.**

Commentary: Paragraph 1 of this Article follows closely the language of the *Montreal Rules*, art. 7, the *Rules on the Regulation of the Flow of International Watercourses*, art. 3, and the *Seoul Groundwater Rules*, art. 4. Paragraph 2 follows the language of the *Rules on the Administration of International Water Resources*, art. 2(2). The language of the earlier articles has been broadened to express the more expansive approach of these Articles. While often basin wide management mechanisms will be the best or even a necessary means for achieving equitable and sustainable management of waters, customary international law does not specifically require such institutions be established nor does it provide specific details for such mechanisms. This Article only indicates that such institutions are to be established when necessary (paragraph 1) or appropriate (paragraph 2). The *UN Convention*, art. 24, includes a similar provision. Actual examples of basin wide joint management mechanisms are too numerous, and too varied, to attempt to list them here.

Article 65
Minimal Requirements for Joint Management Arrangements

1. **A basin wide management mechanism under Article 64 shall have authority over:**
   a. **The coordination and pooling of their scientific and technical research programs;**
   b. **Establishment of harmonized, coordinated, or unified networks for permanent observation and control; and**
   c. **Establishment of joint or harmonized water quality objectives and standards for the whole of or each significant part of a basin.**

2. **An agreement creating a mechanism under Article 64 shall provide expressly for the mechanism's:**
   a. **Objective and purpose;**
   b. **Nature and composition;**
   c. **Form and duration;**
   d. **Legal status;**
   e. **Area of operation;**
   f. **Functions and powers; and**
   g. **Financial arrangements.**

Commentary: Paragraph 1 of this Article follows *Montreal Rules*, art. 7. Paragraph 2 of this Article follows the *Rules on the Administration of International Water Resources*, art. 4. Paragraph 2 broadens those provisions to make them applicable to all water management questions and not just to groundwater or pollution. The language of the source articles have been changed only to assure stylistic consistency. Such mechanisms are too numerous and too varied to attempt to list them here.

Article 66
Compliance Review

Basin States shall undertake recurring review at regular intervals of the implementation of their commitments under agreements relating to waters, including, when applicable, their implementation of joint management mechanisms, in either event including in the review:

a. **Assessment, on the basis of all information available, of the overall affects of measures relating to the management of waters or of the aquatic environment;**
b. **Examination of the obligations of the States involved in a joint management mechanism in light of the objectives for which the mechanism was established and of the evolution of scientific and technological knowledge;**
c. **Promotion of appropriate responses by States involved to climate change;**

d. Facilitation of the refinement of methodologies for the effective implementation of the joint management mechanism or other agreements;
e. Establishment of subsidiary bodies as necessary or proper for the implementation of the joint management mechanism or other agreements;
f. Mobilization of additional financial resources as necessary and as available for the joint management mechanism or for other agreements;
g. Arrangement, where appropriate, for the services or cooperation of international organizations, of intergovernmental bodies, and of non-governmental bodies; and
h. Recommendations regarding any matters necessary or proper for the implementation of the joint management mechanism or other agreements.

Commentary: This Article is new matter, although compliance review procedures are found in several international water management agreements. This Article provides for the review of compliance with treaties or other agreements relating to the management of waters that is central to the avoidance of serious disputes that are likely to arise if the parties to such an agreement do not take steps to assure compliance. This Article draws upon the original *Helsinki Rules* art. 29, but is more specific about the steps necessary to assure compliance review. The specifics of this Article were adapted from the *Kyoto Protocol,* art. 13(4). The *UN Convention* does not have a corresponding provision.

Article 67
Sharing Expenses

1. Expenses for the collection and exchange of relevant information and other joint activities, including the establishment and operation of a basin wide management mechanism, shall be allocated among the basin States based upon:
a. Receipt of economic benefits;
b. Receipt of environmental benefits; and
c. Ability to pay.

2. Expenses for special works undertaken by agreement in the territory of one State at the request of another State shall be borne by the requesting State, unless otherwise agreed.

Commentary: This Article reflects the standards that are emerging in many environmental and resource agreements regarding the sharing of the expenses of various measures to protect the environment, and in agreements relating to the management of waters generally. The provision in this Article provides a more nuanced and flexible approach to the sharing of costs than the comparable provisions of the *Flood Control Rules,* art. 6, and the *Belgrade Rules,* arts. 4 and 5. The principles set forth in this Article were endorsed in the *New Delhi Declaration,* pr. 3.2. Often States will agree to pay equal shares, but this is not required by customary international law.

CHAPTER XII
STATE RESPONSIBILITY

Article 68
State Responsibility

States are responsible for breaches of international law relating to the management of waters or to the aquatic environment in accordance with the international law of State responsibility.

Commentary: This Article builds upon the language of the *Montreal Rules on Pollution,* art. 9, but is more specific in referring explicitly to the law of State responsibility. Such a reference might be implicit in the *Montreal Rules.* The International Law Commission has undertaken a lengthy and careful examination of the rules of State responsibility stretching over a period of nearly 40 years, and culminating in 2001 with the *Draft Articles on the Responsibility of States for Internationally Wrongful Acts.* Restating those rules

are beyond the scope of these Rules. The underlying responsibility of States to fulfill their obligations under these Rules is expressed in Article 2(1).

CHAPTER XIII
LEGAL REMEDIES

Article 69
Access to Courts or Administrative Authorities

1. **A person who suffers or is under a serious threat of suffering damage from the management of water or the aquatic environment in a State shall be entitled to institute proceedings before a competent court or administrative authority of that State in order to obtain an appropriate remedy as specified in Article 70.**

2. **Public bodies and non-governmental organizations with a proven interest regarding waters or the aquatic environment in a State shall be entitled, under appropriate terms and conditions, to institute proceedings or to participate in proceedings instituted by others.**

Commentary: Without appropriate remedial procedures, the right of individuals (Chapter IV) is severely curtailed if not altogether rendered nugatory. The State involved furthermore will lack important feedback on its measures and policies. Fairness to the affected parties requires access to appropriate remedies. The *New Delhi Declaration,* pr. 5.3, aptly summarizes the central importance of access to prompt, adequate, and effective legal remedies. This Article builds upon *Articles on Private Law Remedies,* art. 2. That article builds upon comparable language in the *Montreal Rules,* art. 8. These rules draw upon a rich, albeit relatively recent, tradition in international environmental law. This tradition finds full expression in the *Rio Declaration,* pr. 13. It also finds expression in other, more specialized international environmental instruments. In particular, the *Aarhus Convention,* art. 9, makes extensive provision for public access to courts to ensure a public right to participate in environmental decision making. These various instruments combined recognize a right under international law to prompt, adequate, and effective remedies for injuries arising from activities in a State relating to an international drainage basin. By itself, the right to a remedy in the State where the wrongful conduct occurred would be insufficient to assure persons that their rights relative to waters and the aquatic environment would be protected. The other standards necessary to give full content to the right to a remedy provided in this Chapter are provided in the other Chapters of these Rules, as a sort of "international common law of the environment."

This right of access to a tribunal began with the *Universal Declaration of Human Rights,* art. 8, and was carried forward in the *International Covenant of Civil and Political Rights,* art. 2(3). Regional courts, such as the European Court of Human Rights, have applied such rights to claims arising from harm to aquatic environments. The *African Charter on the Rights and Duties of Peoples,* art. 26, also promises that States shall respect the independence of courts and shall establish and improve appropriate national institutions for promoting and protecting the rights and freedoms guaranteed by the *Charter.* The *NAFTA Side Agreement on the Environment,* art. 7, provides a convenient inventory of the procedural requirements implicit in the obligations of Article 70.

Perhaps the most controversial aspect of this Article is the suggestion that non-governmental organizations and other public bodies are entitled, to some extent, to access to the courts. This might not yet be a requirement of customary international law, but it is happening on an ever more frequent basis around the world. It is particularly important when one recalls that often individuals who suffer damage lack the financial resources necessary for legal redress. Non-governmental organizations and other public bodies are more likely to have the necessary financial resources. If they are excluded from the courts there might be no way for the goals of this article to be achieved. The *Aarhus Convention,* art. 2(5), recognizes that non-governmental organizations "promoting environmental protection and meeting requirements under national law" have a sufficient interest to invoke rights under the convention. This Article expresses an evolving international practice without attempting to define it precisely or to limit or prescribe its scope or reach.

Article 70
Remedies for Damage to Persons

1. **States shall take all appropriate steps to ensure the availability of effective administrative and judicial remedies for persons whose legal rights have been violated and who suffer or are under a serious threat of suffering damage arising from programs, plans, projects, or activities relating to waters or to the aquatic environment subject to the State's jurisdiction or control.**

2. **Remedies under this Article shall, as appropriate, provide for:**
   a. **Determination whether the damaging program, plan, project, or activity should be permitted;**
   b. **Preventive remedies;**
   c. **Compensation for damage; and**
   d. **Any other proper remedy.**

Commentary: This Article builds upon *Articles on Private Law Remedies,* art. 2, following on the comparable language in the *Montreal Rules,* art. 8. This Article provides details regarding the implementation of the right of access provided in Article 69. Certain international agreements require States to enforce their own environmental laws, without mandating any particular set of environmental standards to be enforced. *See, e.g.,* the *NAFTA Side Agreement on the Environment.* Even within this limited obligation, States are left wide discretion on how to structure remedies for environmental wrongs. The *NAFTA Side Agreement,* art. 6(3), provides an inventory of the appropriate remedies. The Article set forth here also mirrors the many human rights texts as discussed in the commentary to Article 69. The obligation expressed in this Article is quite general, and includes an obligation to provide remedies for injuries for acts or omissions by private persons as well as public authorities, if those activities violate national or international law and relate to the management of waters or the aquatic environment. Like Article 69, this Article is clearly established as customary international law, evidenced by numerous international agreements and the application of such rights in proceedings before regional courts regarding aquatic environments.

Article 71
Remedies for Persons in Other States

1. **In providing access to courts and remedies to persons who suffer or are under a serious threat of suffering damage, States shall not discriminate on the basis of the nationality or residence of the person claiming damage or the place where the damage occurred or may occur.**

2. **States shall take all appropriate measures to ensure cooperation between their courts and authorities to ensure that persons who suffer or are under a serious threat of suffering damage resulting from actions in another State relating to the waters of an international drainage basin shall have access to such information as is necessary to enable them to exercise their right to a remedy in a prompt and timely manner.**

3. **Public bodies and non-governmental organizations with a proven interest regarding waters or the aquatic environment in States other than the States in which they are established shall be entitled on to institute proceedings or participate in procedures in that other State to the same extent and on the same conditions as public bodies and non-governmental associations established in the other State.**

4. **States shall provide, by agreement or otherwise, relative to proceedings involving persons or events in more than one State for:**
   a. **The jurisdiction of courts or administrative bodies;**
   b. **The determination of the applicable law; and**
   c. **The enforcement of judgments.**

Commentary: This Article provides for individual and collective access to judicial and administrative remedies for transnational damage relating to the management of waters or to the aquatic environment. It follows the provisions of the *Articles on Private Law Remedies,* art. 3, and in the *Montreal Rules,* art. 8. A

similar right is expressed in the *UN Convention,* art. 32, in more general language under the title of "non-discrimination." This right flows from the recognized right of access to administrative and judicial processes as expressed in such international environmental instruments as the *Rio Declaration,* pr. 10, and the *Helsinki Convention,* art. 16. The *UN Convention on the Law of the Sea,* art. 235(2), also recognizes a right to prompt and adequate compensation or other relief for damage caused by pollution of the marine environment. A person who proves a cognizable interest and who suffers or is under a serious threat of suffering damage from the management of water in another State shall be entitled in that State to the same extent and on the same conditions as a person in that State.

CHAPTER XIV
SETTLEMENT OF INTERNATIONAL WATER DISPUTES

Article 72
Peaceful Settlement of International Water Disputes

1. **States shall resolve disputes concerning issues within the scope of these Rules through peaceful means.**

2. **States involved in the dispute shall consult one another and, when appropriate, competent international organizations, in order to reach, by methods of their own choice, a solution consistent with their rights and duties under international law.**

3. **Where the facts are in dispute, the States involved in the dispute shall appoint a body to investigate and to determine the disputed facts, the decision of the fact-finding body binding the States only if they have consented to such binding effect.**

4. **In any procedure to resolve the dispute, the States involved shall invite other States likely to be affected by resolution of the dispute to present their views at an appropriate early stage in the dispute.**

5. **The means of settlement referred to in this Article are without prejudice to recourse to means of settlement recommended to, or required of, members of regional arrangements or agencies or other international organizations.**

Commentary: This Article expresses the basic obligation of States under the UN Charter to settle disputes by peaceful means. It draws heavily from the *UN Convention,* art. 33 and the original *Helsinki Rules,* ch. 6. Paragraph 2 parallels the obligation of consultation under Article 58, but here is expressed somewhat more broadly. This paragraph follows the original *Helsinki Rules,* art. 30, the *Montreal Rules on Pollution,* art. 10, the *Madrid Rules on Administration,* art. 2, the *Delhi Rules on Naturally Navigable Waterways,* arts. 2 and 3, the *New York Rules on Marine Pollution,* art. 4, and the *Belgrade Rules on the Regulation of Flow,* art. 7. Paragraph 2 is similar to *UN Convention,* art. 33(1), recognizing that the primary mechanisms for resolving disputes is through negotiations between the States involved in the dispute. States might alternatively choose to seek the good offices of, or request mediation or conciliation by, a third party or an international organization. These possibilities track original *Helsinki Rules,* arts. 28, 31, and 32. Paragraph 3 derives from the original *Helsinki Rules,* arts. 31 and 33. These original provisions were consolidated and restated to focus strictly on fact-finding or related procedures. *UN Convention,* art. 33(3), is similar. The *UN Convention* provides detailed provisions regarding how a fact-finding commission should operate. *UN Convention,* arts. 33(4)-(9). Paragraph 4 assures that States whose interests are implicated in the dispute are involved in its resolution, a right rooted in the right to be consulted provided in Article 58. See the original *Helsinki Rules,* art. 31(3). Paragraph 5 derives from the original *Helsinki Rules,* art. 37.

Article 73
Arbitration and Litigation

1. **If the procedures set forth in Article 72 of these Rules have not succeeded in resolving the dispute, the States or international organizations involved shall agree to submit their dispute to an *ad hoc* or permanent arbitral tribunal, or to a competent international court.**

2. **Recourse to arbitration or litigation implies an undertaking by the States involved in the dispute to accept any resulting award or judgment as final and binding.**

Commentary: Paragraph 1 of this Article derives from the original *Helsinki Rules*, art. 35. Paragraph 2 follows the language of the original *Helsinki Rules*, art. 36. *UN Convention*, art. 33(2), (10), is of similar import.