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While geopolitical tension over natural resources has long been dominated by struggle over the world's petroleum resources, a more complex and potentially devastating resource issue lies quietly in waiting. With rapidly increasing population rates, expanding resource and industrial development, and dwindling water supplies on national and regional levels, water is fast replacing oil as the world's most valuable resource. Its scarcity and quality-related problems are already having a profound impact on the ability of nations to care for their populations, as well as to assure that adequate water supplies will exist to meet future economic and environmental needs. This increasing importance of water in geopolitical affairs is also escalating the potential for conflict over water resources among nations. The United States Department of State estimates that there are presently at least ten places in the world where war could erupt over dwindling transboundary water resources. The majority of these sites are in

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1. See Joyce Starr, Water Resources: A Foreign-Policy Flashpoint, EPA JOURNAL, July 1990, at 34-35. "In Africa alone, 250 million people, almost 40 percent of the population, will suffer or die from water-related problems by the year 2000. The United Nations Children's Fund (UNICEF) reports that 25,000 children worldwide are dying daily from hunger and disease caused by lack of water or contaminated water supplies." Id. at 34.

2. In Eastern Europe for example, which has ample water supplies, it is estimated that Poland's river water is so contaminated that almost 95% is unfit to drink and nearly all of Romania's rivers and 50% in Czechoslovakia are dangerously polluted. Id. at 34 (citing Frederick Painton, Where the Sky Stays Dark: The Lifting of the Iron Curtain Reveals Planet's Most Polluted Region, TIME, May 28, 1990, at 41). In central Asia, the once plentiful Aral Sea has lost 60% of its volume in the past 30 years to over-utilization of the rivers which replenish it by agricultural interests in Uzbekistan and Turkmenistan, leaving a dried-out seabed contaminated by pesticide and fertilizers. The Vanishing Aral Sea, WORLD PRESS REVIEW, Nov. 1992, at 20. In Russia, it is estimated that three-fourths of the country's surface water is unfit to drink, and pollution is continuing to increase despite a decline in industrial activity. Leyla Boulton, FIN. TIMES, Apr. 7, 1993, at 16.
the Middle East,\textsuperscript{3} where fifty percent of the population depends on water flowing from another sovereign State.\textsuperscript{4}

International recognition of the importance of water in international relations and the need for cooperation in developing, as well as protecting, international rivers has resulted in an international effort by the International Law Commission (ILC) to develop a treaty structure for the non-navigational uses of international watercourses. The ILC's Draft Articles on the Law of the Non-Navigational Uses of International Watercourses\textsuperscript{5} (Draft Articles) is an effort both to codify substantive customary principles of international water law developed through case law and State practice and to set out procedural requirements for notification and consultation among watercourse States regarding the use and development of international watercourses. In addition to incorporating traditional international law principles into its provisions, the Draft Articles also attempt to continue the progression of international water law by providing for a wider scope of ecosystem protection and by further developing an equitable utilization standard designed to balance the development of water resources among riparian States.

The Draft Articles, if adopted, will soon become the leading body of international law regarding the development and protection of transboundary watercourses. This Comment examines the ability of the Draft Articles to serve as an effective means for addressing the allocative and environmental problems facing international river systems by analyzing its provisions within the context of the further development of international water law. Part I takes a brief look at the particular problems posed by international rivers, creating a background for resolving watercourse problems. Part II focuses on the development of international water law through the evolution of customary principles and theories of water resource allocation and through past international efforts to codify these principles and theories into a substantive body of international law. Part III discusses the primary provisions of the Draft Articles, analyzes the strengths and weaknesses of

\textsuperscript{3} Starr, supra note 1, at 34.


the individual provisions, and recommends some changes to those provisions to better achieve the goals of protecting the world's rivers.

I. THE NATURE OF INTERNATIONAL RIVER PROBLEMS

The ecological and developmental threats to the world's rivers are rapidly transforming the perspective of natural resource problems from national to international concern. There are approximately 214 river basins in the world which are shared by two or more countries. Moreover, nearly fifty countries have seventy-five percent or more of their total land area falling within shared river basins, and an estimated thirty-five to forty percent of the world's population lives in these basins. As it becomes increasingly clear that environmental problems do not respect national boundaries, nations are searching for the legal and institutional mechanisms which are needed to protect and manage resources which traverse their boundary lines.

International rivers pose a particular problem in the context of international law. A river system, unlike isolated natural resources like minerals or petroleum, is part of a complex hydrological unit. The water environment in an upstream State has a direct effect on the nature of the river downstream, and vice versa. Occurrences, both natural and man-made, affecting the water resources in one part of the watershed have the potential to change the quantity, quality, or use of the water in another part of the watershed. Extensive development of water resources in an upstream area will reduce the flow to the lower riparians and may deprive them of adequate water supplies. Similarly, a downstream riparian's construction of in-stream facilities will impact the rate of flow in the entire river system, both upstream and downstream. Thus, efforts to create accommodations between different States along international rivers need to stress coordinated development, rather than unilateral action, and must take account of effects upon the entire watershed as opposed to isolated segments within national boundaries.

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II. THE DEVELOPMENT OF INTERNATIONAL WATER LAW

A. Theories of Water Rights

States have historically exercised absolute sovereignty over the use of rivers and other natural resources located within the State’s territory, no matter what the effects of the resource use on neighboring States. This principle of absolute territorial sovereignty is referred to as the Harmon Doctrine. In 1895, United States Attorney General Harmon applied the idea of absolute sovereignty to a dispute between the United States and Mexico over the polluting of the Rio Grande River. Harmon contended that the context of international law placed no obligation or responsibility upon the United States and, therefore, the dispute was a political as opposed to a legal question to be resolved between the nations. Under the Harmon Doctrine, an upstream State can freely deplete or utilize a river’s flow within its boundaries without considering the effect of its actions on a downstream State. This legal doctrine, however, has since become disfavored as an anachronistic and narrow view for reconciling differences among opposing States where a shared natural resources is at issue.

A distinct but similarly restrictive theory of water allocation is the principle of prior appropriation, which favors neither the upstream nor the downstream State, but rather the State that puts the water to use first, thereby protecting those uses which existed prior in time. Each State along a watercourse may thus be able to establish prior rights to use a certain amount of water depending on the date upon which that water use began. In doing so, however, the principle may be inequitable where one State lags behind another in the economic or technical ability to develop its river use. Further, in rewarding those who first put water to use, the doctrine does not take into account either thorough planning or environmental uses of the river. Consequently, although the doctrine is the legal basis for the allocation of water resources in the western United States, it has received little international support.

9. Id. at 119-20.
10. Id. at 120.
12. Id. at 366.
In direct contrast to the Harmon Doctrine and prior appropriation is the principle that lower riparians have an absolute right to have an uninterrupted flow of the river from the territory of the upper riparian, no matter what the priority. This theory, known as “absolute territorial integrity,” posits that a riparian State may not develop a portion of a shared rivercourse if it will cause harm to another riparian State. Like the Harmon Doctrine and prior appropriation, this theory has received little support among the international legal community. It is viewed as inequitably placing a burden on upper riparians without exacting a similar duty on lower riparians. Therefore, the theory has only been invoked where the continued flow of water is critical to the lower riparian State’s survival.

In addition to legal theories which have developed in direct response to international watercourse allocation, the traditional customary law principle of *sic utere tuo it alienum non laedas,* which limits a State’s actions to the extent that such actions injure another State, plays a strong role in international water law. The *sic utere* doctrine is reflected in international water law theory through the principles of “restricted territorial sovereignty” and “restricted territorial integrity” (which are hybrids of the principles of “absolute territorial sovereignty” and “absolute territorial integrity” and form the basis for a compromise between the two). Under these principles, every State is free to use its territorial water, provided that it in no way prejudices the rights and uses of other riparian States. The right to use water from a river basin is reflective of the needs of the riparian States that share that river. Because of its ability to balance interests among States, this doctrine has been widely favored in attempts to codify international water law, through both the Helsinki Rules and the Draft Articles. It has also been clearly established in the caselaw as evidenced by *Spain v. France*...
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(hereinafter the Lake Lanoux Arbitration) where the court upheld "the sovereignty in its own territory of a State desirous of carrying out hydroelectric developments" but acknowledged "the correlative duty not to injure the interests of a neighboring State."\(^{20}\)

The principles of sic utere, "restricted territorial sovereignty," and "restricted territorial integrity" share the basic concept that a riparian may not use a river so as to substantially injure another riparian State. Although the three principles have different rationales, the result of each is similar: river use that causes substantial harm to another riparian is unlawful where the harm outweighs equitable reasons in favor of that use.\(^{21}\) Whether a river use is lawful under these three principles is decided by determining the degree of harm caused to the riparian State.

Today, these customary law concepts are evolving as society recognizes the transboundary issues surrounding natural resources. While the sic utere doctrine seems to embody the pragmatic views of policymakers and attorneys, a more progressive view of international natural resource issues supported by naturalists, engineers, and economists is the "community of interests" concept.\(^{22}\) The "community of interests" approach treats the entire river as one hydrological unit that should be managed as an integrated whole. Each State within the basin has a right of action against any other basin State, such that no State may affect the resource without the cooperation and permission of its neighbors.\(^{23}\) While this concept of managing a resource based upon its hydrological features as opposed to its political boundaries would be a positive step forward in protecting natural resources, relations among States have not yet evolved to a similar level. However, the ILC's Draft Articles are directed toward the attainment of this goal.

\section*{B. International Water Law Treaties}

The development of theoretical and customary law principles for international water resource allocation has led to several significant attempts

\(^{21}\) Thoermond & Shirley, supra note 14, at 146.
to codify these principles. Since the beginning of this century, legal scholars and diplomats have attempted to develop a mechanism for regulating international watercourses. In 1910, the Institute of International Law proposed a framework for regulating international waterways. In the following year, the Institute passed the Madrid Resolution on the uses of international rivers. In the 1920s, the League of Nations adopted the only two existing multilateral treaties on the use of international waterways.

In 1966, the most significant codification of the principles of international law regarding transboundary water resources was completed through the International Law Association’s (ILA) Helsinki Rules on the Uses of the Waters of International Rivers. The foundation of the Helsinki Rules is that each State within an international drainage basin has the right to a reasonable and equitable part of the beneficial use of the basin waters. According to the ILA, this idea is “a development of the rule of international customary law which forbids States to cause any substantial damage to another State or to areas located outside the limits of national jurisdiction.” The Helsinki Rules, for the first time, incorporated the equitable use idea in stating that “each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses” of a drainage basin’s waters. Unfortunately, however, the enforceability of the Helsinki Rules has been undermined by the ILA’s status as an unofficial organization. As such, the ILA’s resolutions cannot be legally binding in international law unless they are adopted in the form of a multilateral convention or followed by States as State practice.

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25. GODANA, supra note 15, at 7. Concluded in 1921 and 1923, these conventions concerned the freedom of navigation and agricultural uses of international rivers. Id.
28. Helsinki Rules, supra note 19, art. IV, at 486.
III. THE ILC'S DRAFT ARTICLES ON THE LAW OF NON-NAVIGATIONAL USES OF INTERNATIONAL WATERCOURSES

Due to an absence of binding legal authority for the regulation of international rivers, the United Nations began an international effort to create a legal framework to address this growing problem. This most recent and thorough effort to codify the law of international watercourses has been undertaken by the United Nations-affiliated International Law Commission in its Draft Articles on the Law of the Non-Navigational Uses of International Watercourses. In 1970, the General Assembly recommended that the ILC take up the study of the law of non-navigational uses of international watercourses with a view toward its "progressive development and codification. . . ."30 From this point until the submission of its Draft Articles in 1991, the ILC's experts worked with thirty-two governments through questionnaires and correspondence in drafting the articles.31 The ILC has now transmitted the thirty-two articles which compromise the draft through the Secretary-General of the United Nations to the governments of member States with the request that their comments and observations be submitted back to the ILC by January 1993.32

A. Scope and Terminology

1. International Watercourses

In an attempt to give legal recognition to physical realities and a more rational organization to the management of international rivers, codifiers of international law have struggled to develop a workable definition of "river" based upon hydrological and geographical concepts.33 However, because State practice is guided primarily by considerations of territorial sovereignty rather than hydrology or geography, the development of a workable definition has oscillated over time. Originally, the ILA's Helsinki Rules focused on the international drainage basin concept which attempted to
integrate the entire watershed including rivers, lakes, canals, groundwater, and glaciers in order to "effect maximum utilization and development of any portion of its waters." The ILC has, however, rejected the "drainage basin" concept as being overly broad and replaced it with the term "watercourse," which is defined in Article 2 as "a system of surface and underground waters constituting, by virtue of their physical relationship, a unitary whole and flowing into a common terminus." By restricting this definition from its formerly broad coverage to focus solely on international rivers and groundwater which is tributary to those rivers, the ILC appears to be accommodating the realities of State practice over a more holistic resource management approach. While this narrower focus may allow for greater acceptance of the Draft Articles, such appeal may come at the expense of accounting for the physical realities of transboundary water resources.

2. Watercourse Agreements

Article 3 sets out the application of the Draft Articles through the "watercourse agreements" concept. Agreements covering an entire watercourse may be entered into, or may only cover a portion of the watershed, a specific project, or a particular program (such as monitoring, warning, or fishery-management schemes), with a proviso that the use of the waters by other watercourse States is not thereby adversely affected to an appreciable extent. Furthermore, Article 3 also permits flexibility in allowing watercourse States entering a watercourse agreement to define the specific waters covered by such an agreement.

Through watercourse agreements, individual States are able to use the Draft Articles as a general structure and guide for creating separate bilateral or multilateral agreements which take account of the geographical and political realities of the region. In drafting their own agreements, States are free to "apply and adjust the provisions of the present articles to the

34. Helsinki Rules, supra note 19, art. II, comment (b), at 485.
37. Id.
characteristics and uses of a particular international watercourse or part thereof.”

This provision sets up the Draft Articles as a “framework” or “guideline” treaty, which explains the generalized nature of the majority of the articles. The framework structure builds upon the success which has been realized through the multilateral conventions governing the development and allocation of the Rhine and Danube Rivers. By allowing individual riverbasin States to develop their own accords, the ILC drafters acknowledged that they could not possibly take account of all of the scientific, political, and economic variables of individual waterbasins. Instead, the drafters focused on creating the procedural guidelines for notification and consultation and for codifying the customary law of international watercourses; thereby leaving the task of application to the negotiation process among the particular States and experts involved in that basin. As such, the Draft Articles become a baseline of principles on which individual watercourse agreements can be structured.

3. Parties to Watercourse Agreements

Article 5 of the Draft Articles recognizes the right of all watercourse States to participate in any consultations on possible uses of shared watercourses, to the extent that a particular State’s use may be affected. This implies a right of third parties to be involved in bilateral negotiations regarding an activity that may effect that party. A related and possibly more significant requirement is that States must not only cooperate but must also notify and inform another State when events on its own territory might affect that other State. This responsibility arises out of customary international law which requires notification when a State is planning an activity involving a shared resource that could have an adverse effect on another State. The Draft Articles provide that watercourse States shall exchange data “on the condition of the watercourse, in particular that of a hydrological, meteorological, hydrogeological and ecological nature. . .”

38. Draft Articles, supra note 5, part I, art. 3, ¶ 1.
40. Draft Articles, supra note 5, part II, art. 9, ¶ 1.
B. Substantive Requirements of the Draft Articles

Part II of the Draft Articles addresses the “general principles” of the articles and the rights and duties of watercourse States. These substantive requirements, by and large, emanate from and are an attempt to codify principles of international law that have evolved from the customary law regarding the use of international watercourses among States. This is most evident in the duty to prevent appreciable harm to watercourse States, which is one of the cornerstones of these substantive requirements. However, the Draft Articles also expand upon this codification task by contributing a structure for the progressive development of international water law under equitable and reasonable use. While the principle of equitable and reasonable utilization of shared natural resources is not a new idea in the field of international law, its concrete placement in the substantive portion of the Draft Articles assures that it will continue to receive attention and further structure in the process of the development of this treaty. These two principles of equitable and reasonable use in Article 5 and the obligation not to cause appreciable harm in Article 7 result in what is termed the “twin cornerstones” of the Draft Articles by the Special Rapporteur.

1. No Appreciable Harm

In expanding the substantive protection against the pollution of rivers, the Draft Articles embody the sic utere principle of international law which requires States to prevent extraterritorial harm by not causing appreciable harm in other watercourse States. Article 7 specifies that States shall utilize an international watercourse in a manner that does not cause appreciable harm to other watercourse States. To be an appreciable harm, there must be a “real impairment of use, i.e., a detrimental impact of some consequence” upon the public health, industry, property, agriculture, or the environment of another State. In developing this standard over the “substantial harm”

41. See infra notes 45-50 and accompanying text.
standard in the Helsinki Rules, it is reported that the ILC wanted the standard to be more than "insignificant" but less than "serious."\textsuperscript{44}

Support for the concept of prohibiting a State from causing appreciable harm in the territory of another State is strongly rooted in international caselaw. This idea is found in \textit{United States v. Canada} (Trail Smelter Arbitration), in which the court found that "under the principles of international law... no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein..."\textsuperscript{45} Even though this case involved air pollution, as opposed to a river impact, such a statement is a clear indication that the \textit{sic utere} principle applies across the board in international law.

While the no appreciable harm rule is an integral component concept of international law, its inclusion in the Draft Articles as the substantive trigger for international river violations may cause a problem with regard to existing uses. Article 7's no appreciable harm standard appears to bring with it the doctrine of prior appropriation, protecting the rights of those who first put the watercourse to use regardless of the harm being caused. The article is a prospective application of the \textit{sic utere} principle. There is no allowance for retroactively applying the no appreciable harm standard, nor for balancing the principle by creating some advantage for States that are already deficient in existing uses. The equitable use standard, which is explored below, does include existing uses in a balancing of factors to be considered. However, the Draft Articles' emphasis on the no appreciable harm principle as the standard for watercourse violations trumps the application of any balancing formula by protecting existing uses from being considered as having appreciable harm on other watercourse States. The Draft Articles are thus inconsistent: they promote a shared natural resource view of international water use, while at the same time, by promoting existing uses, regressing to the prior appropriation doctrine.

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\textsuperscript{45} U.S. v. Canada, 3 R.I.A.A. 1905, 1965 (1938) [hereinafter Trail Smelter Arbitration].
2. Equitable and Reasonable Utilization

One of the most fundamental principles of international water law which emerged in the Helsinki Rules and is further developed by the Draft Articles is the idea of equitable utilization, or as Article 5 of the Draft Articles provides: "equitable and reasonable utilization and participation." This principle reflects the emerging shared natural resource view of regulating the use of the international environment so as to manage the resource, as opposed to managing the individual political entity. "Equitable utilization" in the Draft Articles stands for the idea that each State in an international drainage basin has an equal right to use the waters of that basin.\(^46\) Article 5 sets out these principles as twofold: first, that international watercourses shall be used and developed to attain optimal utilization consistent with adequate protection of the particular watercourse; and second, that watercourse States shall participate in the use, development, and protection of international watercourses in an equitable and reasonable manner, including the duty to cooperate in the protection and development of it.\(^47\) By providing that watercourse States "shall participate" in the use and protection of an international watercourse in Article 5, the Draft Articles expand upon the Helsinki Rules view of equitable use as a right to use a watercourse reasonably by creating a positive duty to protect that watercourse.

In applying the equitable use concept to allocating water resources, the standard considers not what is an equitable use for that particular State's activities, but, rather, what is equitable in relation to other States using the same watercourse. The scope of a State's right of equitable use depends upon the facts and circumstances of each individual case, and specifically upon a weighing of several relevant factors.\(^48\) Article 6 specifically provides six factors and circumstances which include: geographic and hydrologic factors, social and economic needs, effects of the use of the watercourse on another State, existing and potential uses, conservation and economic factors, and availability of alternatives. The Draft Articles also make clear that, of the uses to be considered, none is to be given priority. Article 10 embodies this idea in providing that "in the absence of agreement

\(^{46}\) Nanda, supra note 23, at 258.
\(^{47}\) Draft Articles, supra note 5, part II, art. 5, ¶ 1.
\(^{48}\) Report of the ILC, supra note 43, at 84.
or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses.” This principle, which is also found in the Helsinki Rules, encourages flexibility in the article’s specific application to watercourses and further erodes the concept that there is a pecking order of traditional uses where developmental considerations supersede environmental protection.

In incorporating this standard into the Draft Articles, the ILC appears to use the equitable utilization principle as an attempt to balance the more traditional *sic utere* principle found in Article 7’s no appreciable harm standard. By incorporating equitable utilization into the equation, it would appear that a downstream State that first developed its water resources could not foreclose later development by an upstream State by demonstrating that the later development would cause it harm under the no appreciable harm standard. Therefore, under the doctrine of equitable use, the fact that the downstream State was first to develop would merely be one factor, to be balanced against the other five factors in Article 6, in deriving the equitable allocation of the watercourse.

However, one significant problem with the equitable use principle is its subordination to the no appreciable harm standard in Article 7. For example, as explored below, it is the no appreciable harm standard, rather than the equitable use standard, that is applied in the case of pollution. This is a practical solution, given that pollution should be reduced on all levels, not just balanced in one State against the beneficial uses in another State. In direct support of the primacy of one standard over the other, the ILC commentary defines the equitable use standard by direct reference to no appreciable harm. “[U]tilization of an international watercourse is not equitable if it causes other watercourse States appreciable harm. The Commission recognizes, however, that in some instances the achievement of equitable and reasonable utilization will depend upon the toleration by one or more watercourse States of some measure of harm.”

49. The Helsinki Rules, supra note 19, art. IV, reads as follows: “A use or category of uses is not entitled to any inherent preference over any other use or category of uses.”


transboundary water resources to fall in line behind the more easily defined *sic utere* principle found in the no appreciable harm standard.

3. Environmental Protection

In developing laws to deal with the human uses of rivers, the protection of ecosystems and the long-term sustenance of the resource have often been ignored. Customary law regarding the rights of ecosystems to protection is still undeveloped. Although the principle of *sic utere* does appear to imply that a State's actions should not cause harm to another State's environment, it does not protect an ecosystem against harm caused within the State itself. And despite recognition in the Stockholm Declaration of 1972 of the need to protect the environment, the ILA has failed to take action through the Helsinki Rules to recognize the independent rights of the ecosystem.

In direct contrast to this past, the ILC's Draft Articles recognize for the first time that the river ecosystem is a resource deserving legal protection against degradation. The ILC has adopted four articles in Part IV dealing with environmental protection and pollution. Article 20, entitled "Protection and Preservation of Ecosystems," sets forth the purposes of this part as "protecting and preserving ecosystems of international watercourses," and Article 21 specifically defines the term pollution as "any detrimental alteration in the composition or quality of the waters of an international watercourse which results directly or indirectly from human conduct." These two articles add considerably to international river protection in two ways. First, the ecosystem concept established in Article 20 allows for a wider scope of environmental protection focusing on all parts of the riparian ecosystem, which would incorporate direct impacts as well as indirect land development and watershed impacts that affect rivers. Second, Article 21's broad definition of pollution is a positive development in environmental

54. *Draft Articles*, supra note 5, part IV, art. 21, ¶ 1.
protection as it allows for a wider array of activities to be subject to the Draft Articles than the much narrower definitions recommended by the Organization of Economic Cooperation and Development in 1974 and later adopted in several international treaties. These definitions focused only on human activities and narrowly defined terms such as "environment," "substance," and "deleterious effect" in relation to harmful effects on humans rather than the environment itself.

In dealing with pollution, the ILC, in Article 21, decided to adopt the no appreciable harm rule established in Article 7 as opposed to an equitable use standard. As one commentator describes: "There was little sympathy . . . for the notion that pollution damage in one State should be balanced against the beneficial uses of another State . . . ." Rather the ILC, through its Special Rapporteur, felt that: "water uses that cause appreciable pollution harm to other watercourse States and the environment could well be regarded as being per se inequitable and unreasonable." In defining the standard, the Rapporteur further elaborated that the term "harm" here must be an "actual impairment of use, injury to health or property, or a detrimental effect on the ecology of the watercourse." The standard, based upon the sic utere doctrine, is a strict one, and does not allow the balancing of values that might have been incorporated into an equitable use standard. This makes it clear that the ILC is not just paying lip service to the idea of incorporating environmental protection into the treaty, but rather that it means to create a substantive level of protection.

Article 21, paragraph 2, specifically provides that nations have a positive duty to "prevent, reduce and control pollution" of an international river that may cause "appreciable harm" to the river's "living resources." This foresighted emphasis on the obligation to prevent pollution from occurring in the first place is a fundamental part of this important section. Restoration of water quality and controlling harm caused to an ecosystem are extremely difficult problems to remedy due to a lack of technological advance in dealing with these problems and to fiscal constraints upon a State's economic growth which are often not seen as directly linked with long-term environmental health. In attempting to identify and head off potential

55. Bourne, supra note 50, at 79.
57. Id. at 6.
58. Charles Odidi Okidi, Preservation and Protection Under the 1991 ILC Draft Articles on the
problems before they occur, the Draft Articles take a proactive approach to environmental protection.

States also have the responsibility under Article 21, paragraph 3, to work with other watercourse States to establish "lists of substances, the introduction of which into the waters of an international watercourse is to be prohibited, limited, investigated, or monitored." This practice, which is similar to that contained in the London Convention on Dumping,59 requires the listing of substances with different levels of toxicity, persistence, and bioaccumulation. Substances identified to be dangerous to the ecosystem are prohibited by mutual agreement between the parties, while substances with lower classifications receive lower levels of regulation.

Also of significance in protection of the riparian environment is Article 22's provision which addresses the introduction of alien or new species into an international watercourse. It requires that States shall "take all measures necessary to prevent the introduction of species, alien or new, into an international watercourse which may have effects detrimental to the ecosystem of the watercourse resulting in appreciable harm to other watercourse States."60 This is important because an ecosystem's resilience depends upon a balance among its various biological and hydrological features, which can be disturbed through the introduction of new or alien species.61

C. The Draft Article's Procedural Duties

Part III of the Draft Articles is entitled "Planned Measures" and sets forth procedural requirements that States must follow in utilizing an international watercourse. This procedural section of the Draft Articles is centered on the obligation set out in Article 11 for watercourse States to "exchange information and consult with each other on the possible effects of planned measures on the condition of an international watercourse." This procedural aspect of the treaty, while more unique in a customary law sense

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60. Draft Articles, supra note 5, part IV, art. 22.
61. Charles Odidi Okidi, supra note 58, at 153. Okidi cites, for example, Lake Victoria in Africa, one of the richest lakes in the world in terms of fish diversity, which has been severely impacted by the introduction of Nile perch that are reducing the numbers of native fish species in the Lake.
than the substantive aspects explored above, also traces its roots in the international caselaw. The principle that States have an obligation to cooperate in the interests of avoiding harm to another State was clearly articulated in the Lake Lanoux Arbitration.  

[S]tates are today perfectly conscious of the importance of the conflicting interests brought into play by the industrial use of international rivers, and of the necessity to reconcile them by mutual concessions. The only way to arrive at such compromises of interests is to conclude agreements on an increasingly comprehensive basis. . . . There would thus appear to be an obligation to accept in good faith all communications and contracts which could, by a broad comparison of interests and by reciprocal good will, provide States with the best conditions for concluding agreements . . . .

Articles 11-19 detail how States should notify and consult each other if any measures planned within their territories could have an "appreciable adverse effect" on other basin States. The articles provide for notification of the affected State, then a six month comment period during which time the notifying State is to suspend implementation of the measures, and finally a six month period of consultation and negotiation if the affected State has reason to object to the measure. During the time in which consultation is underway, the notifying State may not initiate the project without the consent of the notified State. Thus, by giving notice of a project it is considering, a State obligates itself to suspend implementation of its plans until the end of the period for reply. Articles 15 and 17 provide that if the notified State informs the notifying State that the project may cause the former appreciable harm (Article 7) or violate equitable utilization (Article 5), the parties must enter into consultation and negotiation with a view to arriving at an equitable resolution of the situation. If, however, the notified State replies that there will not be a violation of Articles 5 or 7, the notifying State may go forward with the project.

Even if the State in which the activity is to take place does not inform other watercourse States, presumably because it believes there will be no

63. Id. at 129-30.
64. Draft Articles, supra note 5, part III, art. 12.
65. Id. part III, art. 14 & 17.
appreciable adverse impact, the other States may nevertheless initiate the notification process. These States can request that the activity State apply the provisions of Article 12 (determination of whether the plans will have an appreciable adverse effect) through the requirements of Article 18, paragraph 1, which allows such a request if supported by evidence. Even if the activity State answers in the negative, that determination may still not be accepted by the affected State which then under Article 18, paragraph 2, can require the activity State to enter into consultation and negotiations. Once again, implementation of the plans is to be suspended for six months, at the request of the potentially affected State, to allow for meaningful discussions.

There are three principle exceptions to these procedural requirements located in the Draft Articles. The first is found in Article 19, which provides that a watercourse State may immediately proceed with measures that are "of the utmost urgency in order to protect public health, public safety or other equally important interests." In this case, however, the implementing State must transmit to the other watercourse States a formal declaration of the urgency of the measures, together with relevant data and information, after which the normal requirements for consultation and negotiation apply. The second exception is found in Article 25, which allows a State latitude in procedural compliance in the case of emergencies. An emergency is defined here as "a situation that causes, or poses an imminent threat of causing, serious harm to . . . other States and that results suddenly from natural causes . . . or from human conduct. . . ."66 This Article provides that a State in which an emergency is occurring need only notify the other watercourse States and relevant international organizations. However, the obligation of other States to come to the assistance of the victim State is limited. The obligation only comes into effect when the necessary contingency plans have been agreed to in advance. The third exception, in Article 31, allows States to withhold information which is vital to its national defense or security, thereby protecting this most important sovereign interest from disclosure. It should be noted, however, that the national defense and security criterion has no specific definition in the Draft Articles and could potentially become an avenue of retreat for signatory States to avoid compliance with the articles. For it seems that just about

66. Id. part V, art. 25, ¶ 1.
any major facility, such as a dam, powerplant, or factory, can be viewed as somehow related to national security. Article 31’s best attempt to narrow this exception is in requiring that States “shall cooperate in good faith with other watercourse States with a view to providing as much information as possible under the circumstances.”

A problem with applying these procedural rules, however, is that they are directed only towards cooperation and negotiation concerning “planned measures.” By limiting this wording to future events, Part III of the Draft Articles fails to address existing uses of watercourses, a problem also encountered in the appreciable harm standard. Rather, this standard seems to allow States to remain outside the procedural process for activities that are already in place, reinforcing the anachronistic territorial sovereignty standard. Even while Article 9 requires the regular exchange of data, it primarily addresses general scientific data on the watercourse itself and then only requires exchange of that information which is “reasonably” available at a “reasonable” cost. Thus, the procedural articles fail to achieve an overall atmosphere of waterbasin cooperation. Moreover, they also further inhibit the ability of developing countries to compete with developed countries for access to the watercourse.

One possible way to remedy this situation might be to include a review requirement for existing uses as well as for “planned measures.” Such a provision could require States to conduct reviews of existing facilities and projects with a view toward limiting their impacts on other States through operational and structural changes. In this manner, the procedural requirements could better support the cooperative attitude developed in this section as well as the overall shared natural resource concept that is found throughout the Draft Articles.

Regardless of this apparent flaw, Part III’s procedural requirements are a clear improvement over the Helsinki Rules, which merely recommend that States furnish “relevant and reasonably available” information to each other about the waters of a shared river. Moreover, these general procedures provide a framework within which individual States sharing a watercourse can develop specific regimes to meet the particular needs and characteristics of the watercourse, thereby furthering the goal of creating a general legal framework to be implemented in individual waterbasins. Despite these

67. See supra text accompanying notes 43-46.
68. HELSINKI RULES, supra note 19, art. XXIX, ¶ 1 at 518.
procedural requirements, it seems clear through the Draft Articles that even if no information is provided to other States before the plans are actually implemented, the State permitting the activity remains bound to comply with its substantive obligations under Articles 5 and 7.

D. Remedies

Article 32 provides that watercourse States shall not discriminate on the basis of nationality or residence in granting access to their legal system to any person who is threatened with or has suffered appreciable harm as a result of an activity related to an international watercourse. According to the ILC, the idea behind this article is that "where watercourse States provide access to judicial or other procedures to their citizens or residents, they must provide access on an equal basis to non-citizens and non-residents." The Article also covers situations in which a foreign national has suffered harm within a watercourse State and, therefore, it is not limited to transboundary pollution. It also is significant in covering not only harms which have already occurred, but also protecting citizens who are "exposed to a threat thereof," thereby furthering the overall goal of preventing harm before it occurs.

The private remedy provision is significant not only in allowing judicial remedies but also in providing access for "other procedures." This recognizes the growing significance of administrative and legislative procedures such as those used in the United States involving the drafting of environmental impact statements under the National Environmental Policy Act. Under this provision, foreign citizens are included within the significant provisions of the Draft Articles’ procedural processes, including notification, negotiation, and consultation, to the same degree as citizens of the State conducting the activity. However, it is important to note that access to a State’s judicial procedures is only as good as the procedures within that particular State. The Draft Articles provide no baseline for


70. Id. at 195.

citizen suits or standing, nor for the enforcement of a judgment for foreign nationals.

The protection of a non-national's ability to bring claims against an offending State seems to be an attempt to respond to litigation problems highlighted in the Trail Smelter Arbitration. In that case, injured United States citizens were banned from bringing an action against a smelter in Canada based upon the common law doctrine known as the "local action rule." This doctrine stipulates that actions to recover for injury to land be brought in the jurisdiction where the land is located. Since jurisdiction could not be obtained over the smelter in the United States, the plaintiffs had to request the United States government to press their claims. Article 32 remedies this situation, at least in part, by granting private non-citizens equal access to a nation's judicial system.

However, while the Draft Articles do create the opportunity for a private non-citizen to use a country's courts and administrative processes to resolve conflicts regarding international rivers, it does not specify a method for remedying disputes among nations. While there is a heavy emphasis on negotiations and consultation in the procedural rules, which promote the idea of settling a potential conflict before it ripens, there is no safety valve to rely on if these negotiations break down and States are reluctant to negotiate. A dispute settlement provision, such as that contained in the Convention for the Protection of the Ozone Layer's Article 117 could be included which would then submit the dispute to the International Court of Justice. The Draft Articles could either specifically create an adjudicatory provision or allow the individual waterbasin agreements to create their own on a regional basis. While the customary law behind the Draft Articles' principles would indicate that dispute settlement is available within individual nations or the International Court of Justice, it still seems important for the Draft Articles to clearly indicate the method for adjudicating differences and violations among States.

72. McCaffrey, supra note 36, at 27. See also, STEPHEN MCCAFFREY, PRIVATE REMEDIES FOR TRANSFRONTIER ENVIRONMENTAL DISTURBANCES 68-71 (1975).

E. Issues Not Addressed in the Draft Articles

While the discussion above highlights some of the problems with the existing Draft Articles in the context of the specific provisions in which they occur, there are two other areas which are not covered by the Draft Articles which deserve mention. These are the influence of global climate change on international watercourses and the need to provide assistance to developing countries to coordinate development with other watercourse nations.

1. Climate Change

The international community is today facing a global environmental problem that will have a severe impact on every aspect of life on the planet. The increase of atmospheric carbon dioxide levels and the subsequent greenhouse effect is predicted to result in an increase in the average surface temperature of the Earth by two to nine degrees Fahrenheit by the year 2050.\(^\text{74}\) While the precise rate of temperature increase is still an issue of debate in the scientific community, there is a general consensus that there will be a significant increase in global temperatures in the next century. Warmer global temperatures will have a number of effects on international river systems, including increase in runoff due to snowmelt, greater need for hydroelectric power to run air conditioners, alteration of agricultural practices and movement of need for water use to higher latitudes, and most importantly, a decrease in precipitation in many regions.\(^\text{75}\)

Climate change is relevant to the issue of international watercourses because agreements which allocate fixed amounts of water to various State uses will not be able to account for the wide fluctuations of flows due to climate change. Once specific water rights are allocated along a river, nations have no mechanism for coping with a drastic reduction in the flow of the river. Allowing these allocations to stand would favor countries having more developed uses of water, thereby leaving under-developed States with no option for development. One suggestion for correcting this deficiency is that treaties (based on the Draft Articles) could, instead of fixing specific numerical allocations of water, work out more flexible water

\(^{75}\) Gretta Goldenman, *supra* note 52, at 746-47.
sharing arrangements, such as proportional shares to a river.\textsuperscript{76} Another solution is that advance agreements could contain contingency plans specifically dealing with issues related to climate change, such as how lower flows will be allocated among the waterbasin States. Unless the framework of the Draft Articles creates a system of priorities and/or a scheme for accounting for climatic factors in reevaluating river flows on some periodic basis, this problem will once again bring us back to the prior appropriation model in protecting the State making first use of the water.

2. \textit{The Need for Assistance to Developing Countries}

The Draft Articles do not contain any provision for financial or technical assistance to countries to ensure that the Articles' legal principles and efforts at monitoring can be achieved. While such provisions have been included in other treaties, such as the Law of the Sea Convention,\textsuperscript{77} there is no consideration of such a mechanism in the Draft Articles. With the ever increasing global nature of environmental problems, such as global warming, deforestation, and, most importantly here, water resource depletion and pollution, it is important that every country has the economic and technical means to achieve the goals of environmental protection. In countries such as Russia, where the dissolution of the Soviet Union has left tremendous economic and infrastructural problems, environmental and health issues tend to take a secondary role to the goals of economic reform, increasing industrial output, and paying for grain imports.\textsuperscript{78} As one commentator viewed the situation: "It is not just a question of money, but of technology transfers, and institution-building. There is a need to multiply model successes of co-operation to set an example."\textsuperscript{79} By providing financial and technical assistance within waterbasins, or on a larger scale, the Draft Articles could further ensure that the ILC's goals will be met and that countries will better understand the interconnectedness of their activities and will be able to manage those activities in cooperation with their neighbors.

\textsuperscript{76} Id. at 785.
\textsuperscript{78} See Boulton, \textit{supra} note 2, at 17.
\textsuperscript{79} Id.
IV. CONCLUSION

The ILC’s Draft Articles have taken a significant step forward in the creation of legal principles for the protection and regulation of international rivers. For the first time, a government-backed institution has incorporated into a draft treaty the customary law and State practice regarding transboundary water resources, along with a progressive view of community resources and the need to protect entire ecosystems regardless of political boundaries. In incorporating both general substantive and procedural requirements for relations among waterbasin States, the Draft Articles create a framework which takes into account the realities of regional politics, economics, and geography, allowing waterbasin States to build upon this baseline of principles with their own watercourse agreements. In this regard, the Draft Articles embody the successful efforts of the international community to draft a legal structure to begin the process of protecting the world’s rivers from further environmental degradation and to assist States in allocating water resources in a manner that is both equitable and protective of other States’ interests.

However, while the Draft Articles are a step in the right direction, they are not a complete step. They do not adequately address such problems as existing uses of rivers, the subordination of the progressive equitable use principle to the traditional no appreciable harm standard, establishing an adjudicatory remedy for States, accounting for global climate change, and providing for financial and technical contributions to under-developed nations. It is the identification of problems such as these that will be important in the ILC’s reconsideration of the Draft Articles and their work, along with the international community, to produce a final treaty that both addresses the problems facing the world’s river systems and is acceptable to the greatest number of potential signatory States. For in the end, it is not the treaty itself, but rather nations and people that will guarantee the preservation of our vital water resources for generations to come.