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A Survey of the International Law of Rivers

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CRITICAL ESSAY

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I. INTRODUCTION

The oldest legal theories for acquiring rights in international rivers are absolute territorial sovereignty, absolute territorial integrity and prior use. Absolute territorial sovereignty and integrity are based on the "arbitrary" consideration of the states' boundaries to determine respective rights in the use of the river. Prior use is premised on the notion that first in time is first in right. These three principles have become controversial in the international community as river use has increased because they primarily focus on the effect of the river use in only one state, disregarding injurious effects to other riparians.

The increased interaction and interdependency of nations has forced international river law to be more responsive to the conflicting interests of co-riparians. The initial response to conflicting claims was to resort to the theory of no substantial harm and its related principles. These principles are significant because they address possible harmful effects upon non-riparian water users. As these principles became more established, they led to the principle of equitable utilization.

Equitable utilization evaluates all relevant factors in determining the legality of a particular use. Because all factors are considered, disputes can be resolved more effectively. As an emerging factor in equitable utilization, optimal use seeks the most economically rational solution and use, rather than the most equitable result. However, optimal use is usually consistent with the most equitable use. If the river's most efficient use is employed there will be increased benefits to share equitably.

This article surveys the legal theories applicable to the resolution of international river[1] disputes. The article's scope is limited to examining

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* The authors wish to dedicate this article to William White, Esq., who coached the 1987 Jessup Moot Court Team, and to Professor John A. Carver, Jr., who will be retiring at the end of the 1987-88 academic year after years of service at the College of Law.

1. "An international river is one either flowing through the territory of more than one state, sometimes referred to as a successive river, or one separating the territories of two states from one another, sometimes referred to as a boundary or contiguous river. . . . While there is little authority on the point, international law does not draw legal distinc-

non-navigational issues of river usage such as damming and drainage for irrigation. Issues of international water pollution will not be addressed.[2] The principles of international river law that will be surveyed are absolute state sovereignty, absolute territorial integrity, prior use, no substantial harm, equitable utilization and optimal use.[3] The article will begin with a discussion of the historical development of international river law including absolute state sovereignty, absolute territorial integrity and prior appropriation. Part III will address the principles which prohibit harmful use of a watercourse. Parts IV and V will examine equitable utilization and optimal use. Finally, this article will conclude with a practical comparison of equitable utilization and optimal use.

II. HISTORICAL DEVELOPMENT OF INTERNATIONAL RIVER LAW

A. *The Principle of Absolute State Sovereignty*

Historically, the exercise of state sovereignty permitted the unrestricted use of natural resources within a sovereign state.[4] For example, suppose State A is upstream of State B. State A may lawfully deplete a river's flow within it's territory. Any resulting reduction or elimination of a river's flow into State B is irrelevant to a determination of the legality of State A's conduct. Even if a river used by a state within its territory substantially injures a neighbor, it is legal under the principle of absolute territorial sovereignty.

The principle of absolute territorial sovereignty is referred to as the Harmon doctrine. In 1895, United States Attorney-General Harmon applied the concept of state sovereignty in connection with a river dispute between the United States and Mexico concerning the utilization of the

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tions between contiguous rivers and successive rivers. Such authority as has been found supports the view that the same rules of international law apply to both types of rivers." J. Lipper *Equitable Utilization*, in THE LAW OF INTERNATIONAL DRAINAGE BASINS 16-17 (Garretson, Hayton, Olmstead eds. 1967); 1 D. O'CONNELL, INTERNATIONAL LAW 616 (2d. ed. 1970).

2. For the purposes of this article, detrimental changes in a river's flow, though not pollution in the common sense of the word, will be considered as a form of environmental harm. Therefore, certain works on international water pollution are cited in that context.

3. Principles or concepts that have been proposed by the international legal community concerning international watercourses include: absolute territorial sovereignty/integrity, coherence, community interest of riparian States, community of States, equality of right, equitable apportionment (utilization), equitable participation, good faith, good neighbourship, mitigated-no-substantial-harm, non-discrimination, no specific substantive law, no substantial harm, optimal use, peaceful co-existence, permanent sovereignty over natural resources, prior appropriation or use, *res communis*, restricted territorial integrity/sovereignty, *sic utere tuo ut alienum non laedus*, solidarity, state responsibility, prohibition of abuse of rights, and requirement of integrated approach, etc. J.G. Lammers, 1 *Balancing the Equities in International Environmental Law* in THE FUTURE OF THE INTERNATIONAL LAW OF THE ENVIRONMENT 154 (Dupey ed. 1984).

4. H. BRIGGS, THE LAW OF NATIONS 274 (2d. ed. 1952); 1 L. OPPENHEIM, INTERNATIONAL LAW; 464-65 (8th ed. H. Lauterpacht 1955).

Rio Grande.[5] In giving advice to the Secretary of State, Attorney-General Harmon declared;

> The case presented is a novel one. Whether the circumstances make it possible or proper to take any action from considerations of comity is a question which does not pertain to this Department; but this question should be decided as one of policy only, because in my opinion, the rules, principles, and precedents of international law impose no liability or obligation upon the United States.[6]

This classical formulation of the principle of absolute state sovereignty, has since become known as the Harmon doctrine.[7]

The Harmon doctrine has been espoused by many international publicists,[8] and support can be found in the pronouncements of several nations. Austria and India[9] have acknowledged the Harmon doctrine in disputes with down stream neighbors.[10] However, Bourne does note "like the United States, both countries have settled the waters disputes with their neighbors by treaties based on other principles but expressly providing that the treaty provisions did not establish any general principle of law or precedent."[11]

Despite some support for the Harmon Doctrine,[12] it has been nearly universally rejected. A 1958 memorandum of the United States State Department stated that:

> Well over 100 treaties which have governed or today govern systems of international waters have been entered into all over the world. These treaties indicate that there are principles limiting the power of states to use systems of international waters without regard to injurious effects on neighboring states. These treaties restrict the freedom of action of at least one, and usually of both or all, of the signatories with regard to waters within their respective jurisdictions. The number of states parties to these treaties, their spread over both time and geography, and the fact that in these treaties similar problems are resolved in similar ways, make of these treaties persuasive evidence of law-creating international customs.[13]

More recently, professor Bourne writes:

> Not only do the vast number of water treaties bear witness against it:

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5. Treaty Between The United States and Mexico, May 21, 1906, 34 Stat. 2953, T.S. No. 455, 9 Bevans 924.

6. 21 Op. Att'y Gen. 274 (1895); *see also* 1 Moore International law Digest 653-54 (1906).

7. *See* J. LAMMERS, POLLUTION OF INTERNATIONAL WATERCOURSES 268 (1984).

8. *See Id.* at 531-533; *see also* F. BERBER, RIVERS IN INTERNATIONAL LAW 15-19 (1959).

9. *See also* Bains, *The Diversion of International Rivers*, 1 INDIAN J. INT'L L. 38 (1960).

10. Bourne, *The Right to Utilize the Waters of International River*, CAN. Y.B. INT'L L. 187, 205 (1965).

11. *Id.*

12. *Supra* note 9.

13. U.S. DEP'T STATE, LEGAL ASPECTS OF INTERNATIONAL WATERS 63 (1958).

> all of the international and federal judicial tribunals that have experience with interstate water problems have rejected it; all of the learned associations, institutes, and other bodies which have studied these problems have rejected it in their statements of principles; and a large majority of the authors, among them some of the most respected and influential jurists, have found it, in professor H. A. Smith's phrase, an "intolerable" doctrine that is radically unsound.[14]

J. Lipper suggests that the Harmon Doctrine is an empty concept and not a principle of law:

> . . . the Harmon Doctrine was not an expression of international law. Rather, it was an assertion that, there being no rules of international law which governed, states were free to do as wished. No subsequent development of the principle supports its inclusion as a part of the law of international rivers.[15]

From a theoretical perspective, J. G. Lammers attacks the Harmon doctrine for being highly egotistic and also, from a legal point of view, self-contradictory.

> It is clear that the unrestricted disposal by State A of the waters of an international watercourse flowing from that State into State B based on the idea of State A's absolute territorial sovereignty is incompatible with the unrestricted disposal of those waters to which State B would be likewise entitled on the basis of its absolute territorial sovereignty over the natural resources which nature would ordinarily bring into its territory . . . . Unlimited disposal by State A of its territory will make the unlimited disposal by State B of its territory impossible and *vice versa*. Thus, if not already untenable because of the social and economic injustice to which the application of the principle of absolute territorial sovereignty would lead, such application would already seem impossible because of the legal contradiction inherent in the principle itself.[16]

B. The Principle of Absolute Territorial Integrity

The antithesis of the Harmon doctrine is the principle of absolute territorial integrity. Under this principle, the exercise of territorial sovereignty is permitted only in so far as it does not cause damage or injury in the territory of other states, as such an exercise would lead to an infringement of the territorial sovereignty of those other states.[17] To illustrate, assume State B is downstream of State A. State A would be prohibited from using the waters within its boundaries in a manner detrimental to State B. Likewise, State B would be prohibited from using the waters within its boundaries in a manner detrimental to a state downstream of

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14. Bourne, *supra* note 10, at 209.
15. Lipper, *supra* note 1, at 22-23.
16. LAMMERS, *supra* note 7, at 557-558.
17. *Id.* at 562.

State B. A detrimental use is any diversion of water that increases or diminishes a river's flow.[18]

The Institute of International Law in its 1979 Athens Resolution[19] and some international publicists adhere to the principle of absolute territorial integrity.[20] However, treaties and state practice do not indicate acceptance of the principle.[21] The absence of the principle of absolute territorial integrity in state practice might be explained by its unjust result. Another, explanation might be the natural inclination of upstream states to take advantage of their upstream location.

C. *The Principle of Prior Use (Appropriation)*

The principle of prior use protects fully the use which existed prior in time.[22] No other considerations are relevant under the principle of prior use in international law.[23] The state that first makes use of a certain quantity of a river's waters has a right to the continued use of that quantity of water. Like the principles of absolute territorial sovereignty and absolute territorial integrity, the principle of prior use often results in unjust uses. Consequently, it is not surprising that there is little support in the international community for the principle of prior use.[24] However, many publicists indicate that international law demands compensation for injury to an existing use.[25]

III. PRINCIPLES PROHIBITING A RIPARIAN'S USE OF A WATERCOURSE THAT CAUSES SUBSTANTIAL HARM TO OTHER RIPARIANS

The principles of neighbourship law, *sic utere tuo ut alienum non laedas*, and restricted territorial sovereignty and restricted territorial in-

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18. BERBER, *supra* note 8, at 20-22.

19. The Preamble of the 1979 Institute of International Law (I.I.L.) Athens Resolution recalls "the obligation to respect the sovereignty of every State over its territory, as a result of which each State has the obligation to avoid any use of its own territory that causes injury in the territory of another state," in 1979 I.I.L. Y.B. Vol. 58, Part II at 196-203.

20. *See* BERBER, *supra* note 8, at 19-22.

21. *See* Lipper, *supra* note 1, at 20.

22. LAMMERS, *supra* note 7, at 364.

23. The principle of prior use in international law is different from the principle of prior use in United States law, which emphasizes the elements of intent to use, a diversion with due diligence, application to a beneficial use, and, of course, priority. *See generally*, Irwin v. Phillips, 5 Cal. 40 (1855); Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882).

24. LAMMERS, *supra* note 7, at 366; Lipper, *supra* note 1, at 57; *but cf.* "Historic uses and priority of appropriation have, in many cases, come to have almost sacred significance, irrespective of the actual benefits derived, or whether the water is being put to the best use." Integrated River Basin Development 38, U.N. Doc. No. E/3066 (1958).

25. *See* R. ZACKLIN & L. CAFLISH, THE LEGAL REGIME OF INTERNATIONAL RIVERS AND LAKES 311 (1984). Additionally, prior use is a significant factor in the settlement of a river dispute under the principle of equitable utilization. *See infra* note 65 and accompanying text; *see also* Lipper, *supra* note 1, at 30.

tegrity prohibit a riparian's use of a river that causes substantial harm to a co-riparian.

A. *The Principle of Neighbourship Law*

The principle of neighbourship law obliges a state to abstain from conduct that causes physical harm to another state.[26] In order to enable states to coexist while at the same time use transboundary natural resources within their boundaries, the principle of neighbourship law also involves a duty to tolerate, to a certain extent, harmful effects caused by activities not in themselves unlawful, undertaken in neighboring states. However, under this principle no state may inflict substantial damage on another.[27] The principle of neighbourship law is solemnly anchored to the Preamble of the Charter of the United Nations,[28] which states: "And for these ends to practice tolerance and live together in peace as good neighbors."[29]

B. *The Principle of Sic Utere Tuo ut Alienum Non Laedas*

The principle of *sic utere tuo ut alienum non laedas* (use your property so as not to injure your neighbor) limits a state's actions to the degree such actions injure another state. There is a divergence in academic views as to the point at which an injury becomes unlawful under *sic utere*.[30] Most commentators agree that it prohibits river use that causes substantial harm.[31] The obligation of *sic utere* is inherent in the concept of territorial sovereignty, a duty correlative to the right of sovereignty jurisdiction.[32] The principle of *sic utere* has been accepted as a basis for establishing state liability by the International Law Association's Helsinki Rules,[33] by many eminent publicists,[34] by at least two International Arbi-

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26. *See generally* FAUCHILLE, TRAITE DE DROIT INTERNATIONAL PUBLIC, pt. 2 (8th ed. 1925).

27. VERDROSS, VOELKERRECHT 292-94 (Vienna; Springer Verlag 5th ed. 1964); THALMANN, GRUNDPRINZIPIEN DES MODRIEVEN ZWISCHENSTAATTLICHEN ZWISCHENSTAATLICHEN NACHBARRECHTS, 151-52 (Zurich; Polygraphyscher Verlag 1959); *cf.* Huber, "Ein Beitrag Zur Lehre Von der Gebietshoheit an Grenzflussen", *see* 1 ZVB 1907 163-164, 175-194 (1907), for the view that any detrimental interference with the physical conditions in a neighboring state is unlawful unless it is insignificant and does not affect important interests.

28. VERDROSS, *supra* note 27.

29. U.N. Charter, *done at* San Francisco, June 26, 1945, *entered into force* for the United States, Oct. 24, 1945, 59 Stat. 1031, T.S. No. 993, 3 Bevans 1153, 1976 Y.B.U.N. 1043, *reproduced in* Basic Documents in International Law and World Order 6-7 (Weston, Falk and D'Amato ed. 1980).

30. LAMMERS, *supra* note 7, at 571.

31. *See id.*

32. Mannes, Water Pollution in International law, U.N. Doc. *Water Poll/Conf./* 12, 1521 (1960).

33. International Law Association, Report of the 52nd Conference, Helsinki, 1966, [hereinafter cited as Helsinki Rules] Comment on art. 10, at 496 (1967).

34. *E.g.*, L. OPPENHEIM, INTERNATIONAL LAW 474-475 (8th ed. H. Lauterpacht 1955); B. CHENG, GENERAL PRINCIPLES OF LAW AS APPLIED BY INTERNATIONAL COURTS AND TRIBUNALS

tration Tribunals,[35] and by the International Court of Justice on at least one occasion.[36] Further support for the principle is evidenced by the International Law Commission of the United Nations studying "international law for injurious consequences arising out of acts not prohibited by international law," who's work had been based on *sic utere*.[37]

C. *The Principle of Restricted Territorial Sovereignty and of Restricted Territorial Integrity*

The principle of restricted territorial sovereignty and of restricted territorial integrity is a hybrid of the principles of absolute territorial sovereignty and absolute territorial integrity, that achieves a middle ground between the extremes of the latter two principles.

> This practice of states as evidenced in the controversies which have arisen about this matter, seems now to admit that each state concerned has a right to have the river system considered as a whole, and to have its own interests weighted in the balance against those of other states; and that no other state may claim to use the waters in such a way as to cause material injury to the interest of another, or to oppose their use by another state unless this causes material injury to itself.[38]

B. Winiarski,[39] former judge on the International Court of Justice, writes:

> Let us take the matter further. If a river, whether or not navigable, traverses or separates two or more states, each of the riparian states sovereignty on the section of the river which within its territory; but in using this section it must respect the rights of its neighbors: it is one of the general principles of law elaborated by Roman jurists for the *praedia vicina* the reception of which by international law was equally entirely natural.[40]

The principles of restricted territorial sovereignty and of restricted territorial integrity are considered by many eminent publicists to be a generally adopted rules of international law governing the rights of co-riparians to international rivers.[41]

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121 (1953).

35. *See* Trail Smelter Arbitration (Can. v. U.S.) 35 AM. J. INT'L L. 684, 716 (1941), *see also* Lake Lanoux Arbitration (France v. Spain) 53 AM. J. INT'L L. 156 (1959).

36. Corfu Channel Case (United Kingdom v. Albania) 1949 I.C.J. 9, 23, 43 AM. J. INT'L L. 558 (1959).

37. Margraw, *Transboundary Harm: The International Law Commission's Study of "International Liability."* 80 AM. J. INT'L L. 558 (1986).

38. J. BRIERLY, THE LAW OF NATIONS 204-206 (1955).

39. From Poland, Justice B. Winiarski was a member of the I.C.J. from 1946-1967, and served as its President from 1961-1964.

40. BERBER, *supra* note 8, at 30-31, quoting B. Winiarski, *Principes Generaux du Droit Fluvial International*, (Reccueil des Cours, III, P.81 (1933).

41. *See id.* at 25; Griffin, *The Use of Waters of International Drainage Basins Under Customary International Law*, 53 AM. J. INT'L L. 50, 77-79 (1959); L. TECLAFF, THE RIVER

D. *The Relationship Between the Principles of Neighbourship Law, Sic Utere Tuo ut Alienum Non Laedas and Restricted Territorial Sovereignty and Restricted Territorial Integrity*

The principles of neighbourship law, *sic utere tuo ut alienum non laedas* and restricted territorial sovereignty and restricted territorial integrity share the basic concept that a riparian may not use a river so as to substantially injure a co-riparian. Although the three principles have distinct rationales, upon application, the ultimate result of each is similar. A river use that causes substantial harm to a co-riparian is unlawful under all three principles,[42] the harm outweighs equitable reasons in favor of that use. Whether a river use is lawful under these three principles is decided by a determination of the degree of the harm caused to a riparian state.

These three principles are related to one another by the basic concept that a riparian should not injure a co-riparian. Given this relationship, these principles can be coupled to provide a broader rationale for the duty not to injure a co-riparian.

> [v]arious writers have based their arguments both on the infringement of the territorial integrity of the victim State as well as on the breach of an obligation imposed by good neighbourship. [cite omitted] The first approach appears to lay the emphasis on the infringement of a subjective international right of the victim State - i.e., the territorial sovereignty of that State over its territory - while the second approach appears to assume the existence of rule and principles of objective international law which by imposing restrictions on the exercise and enjoyment of the territorial sovereignty of neighbouring States purport to enable their coexistence.[43] [cite omitted]

A similar analogy can be made of the relationship between the principle of restricted territorial sovereignty and neighbourship law. The principle of restricted sovereignty lays emphasis on the exercise of a subjective international right of the state using the waters - i.e., the territorial sovereignty of that state over its territory - while the principle of neighbourship law assumes the existence of rules and principles of objective international law which impose a duty on neighboring states to tolerate a certain degree of use by a riparian.

The above principles are in turn related to the principle *sic utere*. "The principle of *sic utere* is anchored to the principle of good neighbourship."[44] Since the principle of restricted territorial sovereignty and restricted territorial integrity are related to the principle of neighbourship law, the principles of restricted territorial sovereignty and

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BASIN IN HISTORY AND LAW (1967); Utton, *International Streams and Lakes*, in 2 Waters and Water Rights 402 (Clark ed. 1967).

42. LAMMERS, *supra* note 7, at 562-72.

43. *Id.* at 563.

44. VERDROSS, *supra* note 27, at 132.

restricted territorial integrity are in turn related to the principle of *sic utere*. The three principles can be applied in unison to judge a river use. The result of such an application of these principles would be to treat any use of a river that substantially harmed a co-riparian as unlawful.

There appears to be much support among publicists for the proposition that a riparian should not use a river so as to injure a co-riparian and much support as an accepted principle of international law. The general rules for the utilization of international rivers "are to be found among the rules of international customary laws . . . ."[45] The basic rule may be said to express the duty to use river waters in a manner which is not detrimental to the interest of other riparian states."[46]

> There is ample authority for the proposition that a state can utilize the waters in its territory if its doing so will cause no injury to co-riparians . . . . This view is echoed in the 1961 Salzburg Resolution of the Institute of International Law, . . .; in the 1933 Declaration of Montevideo; and in the 1957 Buenos Aires Resolution. It is also consistent with the basic assumptions underlying the 1958 New York Resolution of the International Law Association. In fact, it is explicit or implicit in most recent writing on international rivers, and it has recently been strongly supported in the Lake Lanoux[47] case between France and Spain[48] in 1957.[49] [cites omitted]

Further support is evidenced by United Nations declarations and conferences. At the United Nations Conference on the Human Environment held in Stockholm,[50] attended by most nations of the world,[51] they found that "the principle of responsibility of one State for damage caused

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45. F. SORENSON, MANUAL OF PUBLIC INTERNATIONAL LAW 329 (1968).

46. *Id.* at 301.

47. France v. Spain, 24 I.L.R. 88 (1957). Although the issue before the Lake Lanoux Tribunal was one governed by treaty law, the Tribunal made statements concerning the substantive law of water courses. The Lake Lanoux case is the leading case on the development of international river law. *See* LAMMERS, *supra* note 7, at 508-517.

48. "It should be noted. . . that even though Spain was claiming a right of veto over French projects, she admitted in her Counter-Memorandum that 'A state has the right to utilize unilaterally that part of a river which runs through it so far as such utilization is of a nature which will effect on the territory of another State only a limited amount of damage, a minimum of inconvenience, such as falls within what is implied by good neighbourliness.' " Bourne, *supra* note 10, at 210.

49. *Id.* at 188-89.

50. U.N. Doc. A/Conf./48 C.R.P. 26, 1972.

51. The resolution was adopted by a vote of 112 to 0, with 10 abstentions. "It has been approved by the General Assembly's Second Committee by a vote of 111 to 0, with 11 abstentions. Abstaining votes were cast by Eastern bloc countries. A probably representative explanation of the non-substantive grounds for abstention by these countries may be that of the Cuban delegate to the Second Committee, who stated that 'his delegation ha[d] abstained from the vote because it had not participated in the Stockholm conference; however the draft [resolution] contained elements that it unreservedly approved.' "U.N. Doc. A/C.2/SR.1479, para. 39." Handl, *State Liability For Accidental Transnational Environmental Damage By Private Persons*, 74 AM. J. INT'L L. 525, 528 N. 10 (1980).

in another is generally recognized."[52] Principle 21 declared:

> States have, in accordance with the Charter of the United Nations and the principle of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[53]

Furthermore, an extensive examination of water treaties reveals that such treaties often include articles forbidding river usage that injures a riparian.[54] Such treaties are further evidence of the acceptance of the principle that a river use that injures a co-riparian is unlawful.

Unfortunately, the principle that a river use that injures a co-riparian is unlawful is of limited utility. Even if the principle is accepted as international law between riparians, it provides little guidance for resolving river disputes. The principles of neighbourship law, *sic utere* and restricted territorial sovereignty and restricted territorial integrity do not define what constitutes an unlawful injury. The principle *sic utere* has been criticized as mere verbiage.

> It is repeatedly said in nuisance cases that the rule is *sic utere tuo ut alienum non laedas*, but the maxim is unhelpful and misleading. If it means that no man is ever allowed to use his property so as to injure another, it is palpably false. If it means that a man in using his property may injure his neighbor, but not if he does so unlawfully, it is not worth stating, as it leaves unanswered the critical question of when the interference becomes unlawful.[55]

The principle of neighbourship law has received similar criticism.[56] Likewise, the principles of restricted territorial sovereignty and of restricted territorial integrity seem plagued by the same lack of applicable standards as to what is an injury. Moreover, even if riparians are able to agree as to what degree of injury is unlawful, the riparians may not be satisfied with a rule that only allows them to use a river to the extent that no substantial injury is caused.

> [T]he no substantial harm principle works out favorable for the victim State which is, in the case of successive watercourse, usually the downstream State. Its interests are protected as soon as they become substantially affected, even though the water use in the State of origin was a prior existing use, or after weighing all the relevant factors, a more important use compared to that made by the victim State. It is clear that in this form the principle may, under certain circumstances,

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52. Sohn, *The Stockholm Declaration on the Human Environment*, 14 HARV. INT'L L. J. 423, 492-93 (1973).

53. *Id.* at 485; *reproduced in* 11 I.L.M. 1416, 1420 (1972).

54. *See, e.g.*, S. SALIBA, THE JORDAN RIVER DISPUTE 49 (1968).

55. WINFIELD & JOLOWICZ, WINFIELD AND JOLOWICZ ON TORT 318 (London: Sweet and Maxwell 10th ed. 1975).

56. LAMMERS, *supra* note 7, at 569.

lead to inequitable results.[57]

IV. EQUITABLE UTILIZATION (APPORTIONMENT)

Under the principle of equitable utilization, each riparian is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of a river.[58] An equitable share is determined by weighing factors in favor of one riparian's use of a river against factors in favor of another riparian's use of a river.[59] These factors include, *inter alia*, geographic, hydrologic or climatic conditions, the existing or prior use made of the waters, the feasibility of alternative means - including the availability of other resources - to satisfy those needs and the possibility of compensation to one or more riparian states as a means of adjusting conflicts among uses.[60] A determination in favor of one riparian does not entitle that riparian to exclusive use of the waters in its territory. A riparian is entitled to use a river only to the degree to which equitable factors support its use.

To illustrate, suppose that State A, a lower riparian, has, for many years used a river for irrigation. State B, upstream, now wishes to utilize the river for hydro-electric power production. The uses of the river for hydro-electric power and irrigation purposes are in conflict. If State B is underdeveloped and will be able to industrialize when supplied with electricity and State A, is more developed, but continues to use an inefficient method of irrigation, then the following factors are relevant to a determination of an equitable usage: existing reasonable use; dependence upon the waters; population; geographic, climatic and weather conditions; the existence of alternative sources of food supply; inefficient utilization; and the financial status of the respective co-basin states.

> If State A can continue to achieve the same agricultural productivity by employing efficient irrigation methods, then those methods may be demanded of State A in order to provide State B with its equitable share. Under the principle of equitable utilization State B will likely be required to compensate State A for the cost of changing irrigation methods.[61]

"The principle of equitable utilization, which is prescribed by international law, requires . . . no more no less than delimitation of each riparian State's rights and duties in respect of a natural resource divided between two or more riparian states."[62]

The 1966 Helsinki Rules concerning the utilization of the waters of international drainage basins, although not universally recognized as the

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57. *Id.* at 363-64.
58. *Id.* at 364.
59. *Id.*
60. *Id.*, *See also* Helsinki Rules, *supra* note 33, at 488-91.
61. Helsinki Rules, *supra* note 33 and accompanying text.
62. LAMMERS, *supra* note 7, at 371.

statement of the principle of equitable utilization,[63] provides a specific elaboration of that principle.[64] The Helsinki Rules read in part:

> Art. 4. Each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.
>
> Art. 5.(1) What is a reasonable and equitable share within the meaning of Article IV is to be determined in light of all the relevant factors in each particular case.
> (2) Relevant factors which are to be considered include, but are not limited to:
> (a) the geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;
> (b) the hydrology of the basin, including in particular the contribution of water by each basin State;
> (c) the climate affecting the basin;
> (d) the past utilization of the waters of the basin, including in particular existing utilization;
> (e) the economic and social needs of each basin State;
> (f) the population dependent of the waters of the basin in each basin State;
> (g) the comparative costs of alternative means of satisfying the economic and social needs of each basin State;
> (h) the availability of other resources;
> (i) the avoidance of unnecessary waste in the utilization of waters of the basin;
> (j) the practicality of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses; and
> (k) the degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State;
> (3) The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable share, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.
>
> Art. 6. A use or category of uses is not entitled to any inherent preference over any other use or category of uses.
>
> Art. 7. A basin State may not be denied the present reasonable use of the waters of an international drainage basin to reserve for a co-basin State a future use of such waters.
>
> Art. 8. 1. An existing reasonable use may continue in operation unless the factors justifying its continuance are outweighed by other factors leading to the conclusion that it be modified or terminated so as to accommodate a competing incompatible use.
> 2.(a) A use that is in fact operational is deemed to have been an existing use from the time of the initiation of construction directly re-

63. *Id.* at 368.

64. Bovine, *Pollution of International Rivers and Lakes*, 21 U. TORONTO L. J. 193, 201 (1971); LAMMERS, *supra* note 7, at 364.

> lated to the use or, where such construction is not required, the undertaking of comparable acts of actual implementation.
> (b) Such a use continues to be an existing use until such time as it is discontinued with the intention that it be abandoned.
> 3. A use will not be deemed an existing use if at the time of becoming operational it is incompatible with an already existing reasonable use.[65]

Comment (b) to Art. IV states that a "beneficial" use is one that is economically or socially valuable. However, the comment further states:

> A "beneficial use" need not be the most productive use to which the water may be put, nor need it utilize the most efficient methods known in order to avoid waste and insure maximum utilization. As to the former, to provide otherwise would dislocate numerous productive and, indeed, essential portions of national economies; the latter, while a patently imperfect solution, reflects the financial limitations of many States; in its application, the present rule is not designed to foster waste but to hold States to a duty of efficiency which is commensurate with their financial resources.[66]

The comments to Art. V elaborate on how the factors are to be weighed.

> In short, no factor has a fixed weight nor will all factors be relevant in all cases. Each factor is given such weight as it merits relative to all the other factors. And no factor occupies a position of preeminence *per se* with respect to any other factor. Further, to be relevant, a factor must aid in the determination or satisfaction of the social and economic needs of the co-basin states.[67]

However, the comment seems to place some special weight on existing uses.[68] "An existing reasonable use is entitled to significant weight as a factor and, as indicated in Article V, consideration must be given to protecting it. However, it is but one factor."[69] The comment to Art. VIII explains when a use is an existing use.

> The rule stated in Paragraph 3 of this Article [VIII] precludes the status of existing use to a use which, when it becomes operational, conflicts with another use already in operation. If the use conflicts with the already existing use only in part, it is denied that status only to the extent of the conflict. Thus, a use may be an existing use with respect to a portion of the water which it appropriates but not with respect to the remainder.[70]

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65. Helsinki Rules, *supra* note 33, at 484-494.
66. *Id.* at 487.
67. *Id.* at 489.
68. "Furthermore. . . many of the general statements of the principles strongly favor prior uses and, generally speaking, the advocates of the doctrine of equitable apportionment tend to have the same bias." BOURNE, *supra* note 10, at 490.
69. Helsinki Rules, *supra* note 33, at 490.
70. *Id.* at 494.

The comment to Article VIII also states that a use may still be existing when not currently being used. In order for an existing use to terminate, it must be abandoned. Abandonment results from the discontinuance of the use coupled with intention to relinquish it. The intention may be expressed or it may be implied from conduct.[71]

The 1958 New York Resolution of the International Law Association provides that a co-riparian only has a right "to a reasonable and equitable share in the beneficial uses of waters."[72] Publicists have stated that the principle is indicative of current trends in the development of international river law.[73] International and domestic decisions have relied upon the principle of equitable utilization for resolving international river disputes.[74] The majority of international river treaties are consistent with the principle of equitable utilization[75] The River Platte Basin Treaty calls for "[R]easonable" and "equitable uses,"[76] and the Amazon Cooperation Treaty seeks "equitable and mutually beneficially results."[77] The vast support for the principle of equitable utilization has lead publicists to state that of the principles of international river law, the principle of equitable utilization comes the closest to being a general principle of international law.[78]

The weight of the authorities in support of the principle of equitable utilization is not necessarily diminished by the support for the principle of no substantial harm. As indicated there is much support for the principle of no substantial harm in the international community.[79] "[T]he ex-

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71. Helsinki Rules, *supra* note 33, at 493-94.

72. Resolution on the Uses of the Waters of International Rivers, in *Report of the Forty-Eighth conference of the International Law Association Held at New York, September 1-7, 1958*, Agreed Principles No. 2 and 3 (1959).

73. *See* BERBER, *supra* note 8, at 209; Bourne, *supra* note 10, at 221; Lipper, *supra*, note 1, at 41-62.

74. "This community of interests becomes the basis of a common legal right. . .the perfect equality of all riparian states the user of the whole or the course of the river. . . ." River Oder Case 1929 P.C.I.J. ser. A, No. 23, 27; Zarumilla River Arbitration (Ecuador v. Peru); Report of the Helmand Delta Commission (Afghanistan v. Iran), Feb. 1951, para. 208; *see also* Lake Lanoux Arbitration (France v. Spain) 24 I.L.R. 101 (1957); Nebraska v. Wyoming, 325 U.S. 589 (1945); Wyoming v. Colorado, 259 U.S. 46 (1922); Kansas v. Colorado, 206 U.S. 46 (1907); *see* R. Scott, *Kansas v. Colorado Revisited*, 52 AM. J. INT'L L. 432 (1958).

75. *E.g.*, Treaty between Egypt, Sudan and Great Britain: The Nile, Gr. Brit. T. S. No. 17, p. 33 (1929); Treaty between the Union of Soviet Socialist Republics and Turkey (1927) (cited in Legal Aspects of Hydroelectric Development of Rivers and Lakes of Common Interest, at 138, U.N. Doc. E/ECE/136 (1952)); Treaty of Peace and Friendship and Arbitration between the Dominican Republic and the Republic of Haiti, 105 L.N.T.S. 216 (1930).

76. The Treaty on the River Platte Basin, *signed* April 23, 1969, 8 I.L.M. 905, 906, art. 1(b).

77. Treaty for Amazon Cooperation, [Bolivia-Brazil-Colombia-Equador-Guyana-Peru-Surinam-Venequela], *done at* Brasilia, July 3, 1978, 17 I.L.M. 1045, 1046, art.1.

78. Bovine, *supra* note 64, at 201; SMITH, THE ECONOMICAL USES OF INTERNATIONAL RIVERS 148 (1931); Hirsh, *Utilization of International Rivers in the Middle East*, 50 AM. J. INT'L L. 81 (1956); Lipper, *supra* note 1, at 41-62 (1967).

79. *See supra* notes 42-54 and accompanying text.

tent of harm inflicted to the victim State will always remain a very important *factor* in determining whether a certain use can be regarded as equitable so that in many cases application of the no substantial harm principle may lead to the same result as the principle of equitable utilization."[80]

V. OPTIMAL USE

"The principle of optimal use of the waters of an international watercourse . . . implies that riparian States must together strive at making the *optimal* use which could be made of the waters as if they were not intersected by state frontiers."[81] Optimal use seeks the most economically beneficial use of the river and does not necessarily pursue the most equitable use. To distinguish optimal use from beneficial use, as used in Article IV of the Helsinki Rules, the Commentators characterized an optimal use as "the most productive use to which the water may be put . . . the most efficient methods known in order to avoid waste and insure maximum utilization."[82] Significantly, to qualify as a beneficial use under Article IV, the use does not have to be the optimal use, merely, "it must be economically or socially valuable."[83] While the optimal use of international watercourses may be "a laudable goal for states to pursue, it is not *yet* required by general international law." (Emphasis added.)[84]

Although "highly desirable from an overall hydroeconomic point of view, it cannot be said that general international law has already so far developed that basin states are legally obliged to strive at the optimum rational development of common water resources on a basin-wide scale."[85] The Lake Lanoux Arbitral Tribunal stated that an upstream State "is not obliged to associate the downstream state in the elaboration of its schemes."[86] It has been inferred from the Tribunal's opinion that "there is no duty to attempt to arrive at forms of water utilization which would lead to an *optimal* use of the waters considering *all* the interests involved . . . ."[87]

The current absence of a duty to achieve the optimal use of a watercourse may not be indicative of the development of optimal use. While the Helsinki Rules do not expressly require or impose a duty of optimal use on states,[88] the comment to Article II states that "the drainage basin is an indivisible hydrologic unit which requires comprehensive consideration in order to effect maximum utilization and development of any por-

80. LAMMERS, *supra* note 7, at 368.
81. *Id.* at 371.
82. Helsinki Rules, *supra* note 33, at 487.
83. *Id.*
84. LAMMERS, *supra* note 7, at 371.
85. *Id.* at 560.
86. Lake Lanoux Arbitration (France v. Spain) 24 I.L.R. 101, at 140 (1957).
87. LAMMERS, *supra* note 7, at 517.
88. Helsinki Rules, *supra* note 33, at 487.

tion of its waters."[89] The Helsinki Rule's failure to require the optimal use of a watercourse by co-basin states "is not designed to foster waste but to hold states to a *duty of efficiency* which is commensurate with their financial resources. Of course, the ability of a state to obtain international financing will be considered in this context." (Emphasis added).[90] Viewed in this light, it may be said that the Helsinki Rule's do impose a duty of optimal use, limited by the financial resources of the co-basin states involved.

Despite the fact that optimal use is *not* required by international law; "[i]f the rapidly progressing needs of the expanding human race for water are to be met, there is an urgent demand for carefully planned multi-state action."[91] "[I]n recognition of their common interest, increasingly such cc-basin states will voluntarily enter into joint planning and development agreements governing international drainage basins."[92] Olmstead refers to this as a "promising trend."[93]

A good example of such a joint effort is the United States-Canada Treaty relating to the Columbia River Basin.[94] The Treaty" . . . represents an important step in achieving optimum development . . . of the Columbia River Basin as a whole, from which the United States and Canada will each receive benefits materially larger than either could obtain independently.[95]

The Columbia River Basin Treaty allowed the United States to construct a hydroelectric dam in Canadian territory for the purposes of energy production[96] and flood control.[97] The United States agreed to compensate Canada for the use of its territory with both electric power and

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89. *Id.* at 485.

90. *Id.* at 487.

91. C. Olmstead, *Introduction* in *The Law of International Drainage Basins* 7 (Garretson, Hayton, Olmstead eds. 1967).

92. *Id.*

93. *Id.*

94. Treaty between the United States of America and Canada relating to cooperative development of water resources of the Columbia River Basin and annexes, *signed at* Washington, Jan 17, 1961, ST/LEG/SER. B/12 at 206, T.I.A.S. No. 5638 (1964) (hereinafter cited Columbia River Basin Treaty); other treaties seeking the optimal use of a river basin include: Bangladesh-India: Agreement on Sharing the Ganges' Waters, 17 I.L.M. 1045, "BEING desirous . . of making the optimal utilisation of the water resources of their region . . . ."; U.A.R. and Sudan, 453 U.N.T.S. at 64 (1963), seeks "the full utilization of it's [the Nile's] waters."; Syria and Jordon, 184 U.N.T.S. 15, at 36, art. 11, shall undertake "measures to facilitate the maximum use of the capacity of the reservoir"; Argentina-Brazil-Paraguay: Agreement on Parana River Project, *done at* President Stroessner City, Paraguay, Oct, 19, 1979. Diplomatic Note sent by Paraguay's Foreign Minister to the Argentine Foreign Minister on Oct. 19, 1979. Diplomatic Note sent by Paraguay's Foreign Minister to the Argentine Foreign Minister on Oct. 19, 1979, "Italpu may be operated with the flexibility required for it's optimum utilization, up to the maximum of it's potential."

95. Canada and United States: Exchange of Notes on the Columbia River Basin Treaty, 3 I.L.M. 318, 319, *reproduced from* 50 Dep't of State Bull. 200-206 (Feb. 10, 1964).

96. Columbia River Basin Treaty, *supra* note 94, art. 3.

97. *Id.* at art. 4.

dollars.[98] In 1961, when the treaty was signed, Canada was concerned that it would not be able to use all of the power it was entitled to under the treaty, so a provision was added to the effect that the United States would buy Canada's "excess" energy.[99] While Canada, in Article 8 retains a right of refusal with regard to further sales of "excess" energy to the United States, the Treaty has been criticized "on the ground that such a power, usually cheaper in Canada, is required for the development of Canadian industry and that once sold it is very difficult to recapture it because the American users develop a vested need which would be very difficult to later disregard."[100] There was also some debate in Canada as to the legality of exporting power under Canadian law,[101] and "some question as to whether the technical arrangements represent a program for the optimum utilization of the river's power potential."[102] However, it is important to note that Cohen characterized the Columbia River Basin Treaty as an "important and *successful* bi-national approach to the development of a common river basin." (Emphasis added.)[103]

The success of the Columbian River Basin Treaty should not be vitiated because of the good relations between the United States and Canada. This Treaty, significantly and effectively, dealt with the problem of basin development between nations of different technological and financial levels. In the absence of an international duty to achieve the optimal use of a river basin, this Treaty may serve as an example of international cooperation aimed at developing water resources to their fullest.

VI. EQUITABLE UTILIZATION AND OPTIMAL USE: A COMPARATIVE ANALYSIS OF THEIR DEVELOPMENT

The principle of equitable utilization is gaining acceptance as the law of international rivers.[104] The principle of optimal use arguably creates no duties for co-basin states to develop a watercourse to the maximum extent feasible. The doctrine of equitable apportionment (utilization) was applied in the United States as early as 1907 to resolve an interstate river dispute in *Kansas v. Colorado*.[105] While the decisions of domestic courts are not binding upon international tribunals, Article 38(l)(d) of the Statute of the International Court of Justice does allow them to be considered as a "subsidiary means for the determination of the rules of law."[106] The

98. *Id.* at art. 6.

99. *Id.* at art. 8.

100. Cohen, *The Columbia River Treaty - A Comment*, 8 MCGILL L. J. 212, at 214 (1962).

101. *Id.*

102. *Id.* at 213, expressing some disagreement between U.S. and Canadian engineers with regard to the optimum method of development.

103. *Id.* at 215.

104. *See* notes 52-72 and accompanying text.

105. Kansas v. Colorado, 206 U.S. 46, 27 S.Ct. 655, 51 L.Ed. 956 (1907).

106. Statute of the International Court of Justice, *done at* San Fransisco, June 26, 1945, *entered into force* for the United States, Oct. 24, 1945, 59 Stat. 1055, T.S. No. 993, 3

United States Supreme Court, in discussing the applicable law stated that ". . . as an international, as well as domestic tribunal, we apply Federal law, state law, and international law, as the exigencies of the particular case may demand . . . ."[107] "International law is part of our law, and must be ascertained and administered by the courts of justice of appropriate jurisdiction, as often as questions of right depending upon it are duly presented for their determination.[108]

In *Nebraska v. Wyoming*, the court said that "apportionment calls for the exercise of an informed judgment on consideration of many factors."[109] The Court identified several factors in addition to priority of appropriation (prior appropriation was adhered to by both parties involved) including: physical and climatic conditions, consumption uses, rate of return flows, existing uses, availability of storage water or alternative sources, and the comparative benefits and injuries to the states resulting from the use.[110] "These are all relevant factors."[111] In 1966, the International Law Association identified these factors as they apply to the international community in their Helsinki Rules, at Art. 5.[112] The principle of equitable utilization for rivers among the different states of the United States preceded its general application in the international arena, although the degree of any causal connection may be debated.

Interestingly, the Helsinki Rule's definition of equitable utilization holds "States to a duty of efficiency . . . commensurate with their financial resources."[113] In other words, the optimal use that the states can afford to make of the watercourse. The common theme of the factors in Art. 5 of the Helsinki Rules is the avoidance of waste or undue injury to other basin states.[114] Previously, the United States Supreme Court in *Kansas v. Colorado*,[115] acknowledged that the appropriation by Colorado "has worked some detriment to . . . Kansas,"[116] but compared the proportionately "great benefit"[117] that Colorado had received from the appropriation. The Court determined that to force Colorado to give up their use would work a greater economic hardship than allowing it to continue and would have a subsequent deleterious effect on the economy of the nation as a whole. Moreover, it would be inequitable not to allow Colo-

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Bevans 1153, 1976 Y.B.U.N. 1052, *reproduced in* Basic Documents in International Law and World Order 23, 27 (Weston, Falk and D'Amato ed. 1980).

107. 206 U.S. 46, 48.

108. The Paquete Habana, 175 U.S. 677, at 700 (1899).

109. Nebraska v. Wyoming, 325 U.S. 589, 618, 65 S.Ct. 1332, 1351, 89 L.Ed. 1815 (1945).

110. *Id.* at 618.

111. *Id.*

112. Helsinki Rules, *supra* note 33, at 488.

113. *Id.* at 487.

114. *Id.* at 488.

115. 206 U.S. 46.

116. *Id.* at 113-114.

117. *Id.*

rado's exiting use to continue. In other words, the Court sought the avoidance of waste.

The United States' and international applications of the doctrine of equitable utilization have been done so as to avoid the greatest harm or to obtain the optimal use of a river, in an equitable manner. Reflecting this promising trend Schewbel and Everson, both Special Rapporteurs of the International Law Commission on the Law of the Non-Navigational Uses of International Watercourse, have articulated the principle of *equitable participation*, which is closely related to and stems from the principle of equitable utilization. Schwebel states that: "[i]t may be maintained that there now exists a duty under general international law to participate affirmatively to effect more rational development, use and protection of shared water resources. To the extent that state practice does not establish that duty, it is believed that the progressive development of international law should establish it."[118] Everson is of the opinion that the principle of equitable participation, with its inclusion of a duty to achieve the optimal use of a watercourse is already an established principle of international law.[119]

If the principle of equitable utilization is interpreted and applied to foster the least waste and optimum development, as limited by financial resources, then the principle of equitable participation, with its duty of optimal use, may already be an established principle of international law. "The talents of experts, including water engineers and economists, may be widely utilized . . . as a reservoir of knowledge and know-how which, when applied, would greatly enhance the opportunity of achieving *optimum basin development and equitable utilization for all.*" (Emphasis added.)[120]

VII. CONCLUSION

The principles that appear to be followed by the international community are no substantial harm and equitable utilization, and possibly optimum use.[121] Although the principle of no substantial harm provides a

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118. S.M. Schwebel, Special Rapporteur [ILC] Third Report on the Law of the Non-Navigational Uses of International Watercourses, U.N. Doc. A/CN. 4/348, Dec. 11, 1981, at 57. If rational development is considered to be the optimal development, then it is interesting to compare the language of several treaties like the River Platte Basin Treaty which calls for the "best" and "rational utilization" 8 I.L.M. 905; or the Amazon Cooperation Treaty which also calls for the "rational utilization of the natural resources" 17 I.L.M. 1046, art.1; *see also supra* note 85 and accompanying text.

119. J. Evensen, Special Rapporteur [ILC] First Report on the Law of Non-Navigational Uses of International Watercourses, U.N. Doc. A/CN. 4/367, Apr. 19, 1983, at 33-34.

120. Lipper, *supra* note 1, at 60.

121. While it cannot be said that optimal use is required by international law, State practice may be indicative of customary international law, despite the fact that many treaties do not claim to be establishing precedent in this area. *See generally supra* notes 80-101 and accompanying text; M.E. VILLIGER, CUSTOMARY INTERNATIONAL LAW AND TREATIES 4-5 (1985); OPPENHEIM, *supra* note 4, at 25-27; VON GLAHN, LAW AMONG NATIONS: AN INTRODUC-

definition of what is a legal river use, the principle does not provide standards for judging the legality of a river use or for reaching an equitable resolution of a river dispute.

The principle of equitable utilization, on the other hand, does provide usable standards for resolving a river dispute. This is not to say the principle of no substantial harm is of no significance. The principle of equitable utilization embodies the no substantial harm principle along with many other factors.[122] In some cases the harm caused to a riparian by the river use of another riparian may be so great that under either the principle of equitable utilization or the principle of no substantial harm the use may be prohibited.[123] However, it is when the degree of harm is not so severe that the principle of equitable utilization is clearly more useful to resolving disputes. This is because the principle of equitable utilization, unlike the principle of no substantial harm, provides equitable standards by which all river disputes may be resolved.

The principle of equitable utilization has been applied in many river disputes, however, its acceptance is not universal.[124] The reason why the international community has been cautious to accept the principle of equitable utilization or any other principle for that matter, is explained by Olmstead:

> This reservation probably stems in part from traditional notions of national sovereignty as embracing every aspect of a nation's physical territory, and in part from a reluctance of states to submit competing claims to such an important resource as water to state negotiation much less to determination by an international tribunal applying international law. The comparatively recent and rapidly accelerating use of water resources for consumption, as distinguished from navigation, a factor which greatly increases the value of control over water flowing through the state, has intensified this reluctance.[125]

Nevertheless, the trend of international river law as manifested by state conduct appears to be in a direction of raising the principle of equitable utilization to the status of an accepted principle of international law.[126] This is probably because the principle of equatable utilization allows the States involved to consider the factors that are important to their own, individual drainage basin, emphasizing the factors that are important to the people of that particular drainage basin. "One cannot but

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TION TO PUBLIC INTERNATIONAL LAW 14-15 (3d ed. 1976).

122. *See supra* note 65 and accompanying text.

123. *Id.* There is no doubt that in determining an equitable apportionment of benefits, a minor injury will be ignored whereas a serious one will probably be considered as a weighty factor.

124. *See* C. JENKS, THE PROSPECTS OF INTERNATIONAL ADJUDICATION, 528 (1964); F. BERBER, *supra* note 8, at 40-42; Utton, *Sporhase, El Paso, and the Unilateral Allocation of Water Resources; Some Reflections on International and Interstate Groundwater Law*, 57 U. COLO. L. REV. 551 (1986).

125. OLMSTEAD, *supra* note 91, at 3.

126. LIPPER, *supra* note 1, at 66.

conclude that the principle of equitable apportionment remains a principle with an extremely flexible content."[127] In the words of Trelease:

> A good water law should be based on a proper value system; it should have an underlying bias that elicits general support . . . Law is man's creation; law should serve man, not things or governments. If the law is to be comprehensive it must, of course, protect the resource and promote the public good, but it is *people* who want to preserve the natural features of lakes and streams; it is *people* whose farms and factories contribute not only profit to them but prosperity to the State, and it is *people* who make up the population of cities.[128]

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127. LAMMERS, *supra* note 7, at 420.

128. Trelease, *A Water Management Law for Arkansas*, 6 U. ARK. LITTLE ROCK L. J. 369, 371-72 (1983).