Article

The Law of International Waters: Reasonable Utilization

Margaret J. Vick*

Abstract

Reasonable utilization of shared waters is a centuries old principle of riparian law. It is one half of the foundational principle of international water law that requires the equitable and reasonable utilization of international waters. The principle of equitable utilization is extensively developed through treaties, conventions, case law and the writings of scholars of the law of non-navigational uses of international watercourses. However, the principle of reasonable utilization has received little attention. This article examines the relationship and commonalities between riparian reasonable use and the principle of international law and traces the inclusion of the requirement of reasonable utilization in international instruments. It concludes with a case study of a small stream in the western United States, the Vermejo River, using the decisions from the United States Supreme Court analyzing the relationship between equitable apportionment of a transboundary river and reasonable utilization.

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Introduction

> *The development of international law, like that of private law, is determined by the development of human needs and human habits. The traditional formula of the text-books, that it is the law which governs the relations of states, relates rather to the form of international law than to its function. In the last resort the justification of its rules, as with all law, must be found in its ability to enable living men to live with one another in peace and order. Changes in personal habits, the progress of science and invention, commercial and economic organisation, all these will be found to leave their mark upon the law of nations.*
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> *Alike in public and in private law, the rules which govern conduct are worked out to meet the proved needs of mankind, and it is only in experience that the final proof of these needs is to be found.*[1]

The human needs and human habits for sharing waters have long been governed by rules of reasonableness. Reasonable use is the measure of a private right under riparian law and has become the measure of a public share of transboundary watercourses. The law of international watercourses is a relatively new discipline to settle interstate issues relating to the sharing and use of transboundary waters. Yet, legal principles to resolve issues for peaceable sharing of common waters have been in place for centuries, if not from time immemorial.[2] The reasonable use[3] of shared waters is a principle developed in common law to resolve disputes between private water users. It is a governing principle of public international law as codified in the 1997 United Nations Convention on the Law of Non-navigational Uses of International Watercourses. However, most of the

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[1] HERBERT A. SMITH, THE ECONOMIC USES OF INTERNATIONAL RIVERS 144 (1931).

[2] *See, e.g.*, 2 FEKRI HASSAN, WATER HISTORY FOR OUR TIMES, IHP ESSAYS ON WATER HISTORY (UNESCO Publishing 2011).

[3] The terms reasonable use and reasonable utilization are used interchangeably in this article, use being the term favored in riparian law and utilization favored in international law.

international bodies and scholars have focused their attention on the two other general principles of the law of international watercourses: equitable utilization and the prevention of significant harm.

This article examines reasonable utilization or, as it is referenced in riparian law, reasonable use. Reasonable use is a measure of the right to use water from a common resource. It is a relative determination based on factors concerning the resource, other uses, and the relevant policies for water development. It is a determination made at the user's level. This article posits that the principle of reasonable use and the analysis required to determine reasonable use are the same if the parties are riparian neighbor farmers or States sharing an international watercourse. Human needs and human habits for the use of shared water resources are guided by a standard of reasonableness.

This article traces two progressions of the principle of reasonable use. The first is the development of the reasonable use standard at common law beginning with a brief synopsis of early British common law. Riparian law developed in the separate state jurisdictions of the United States and is examined using the American Law Institute's Restatement of the Law Second, Torts. Recently, many jurisdictions following common law principles of reasonable use instituted systems to issue water use permits. The volume of water permitted continues to be based on that which is reasonable.

The second discussion of the reasonable use principle regards its inclusion in international instruments. The discussion begins with the 1966 Helsinki Rules and is followed by a more detailed discussion of the evolution of the Draft Articles on the Law of the Non-navigational Uses of International Watercourses prepared by the International Law Commission and adopted as the 1997 United Nations Convention. This section concludes with discussions of the revisions and updates to the Helsinki Rules contained in the 2004 Berlin Rules and the most recent work by the International Law Commission to prepare Draft Articles on Transboundary Aquifers.

This article concludes with a case study based on two United States Supreme Court decisions for the equitable apportionment of the Vermejo River shared by the states of Colorado and New Mexico. The Vermejo River is a small tributary of the Canadian River in the arid southwestern United States, with only four water users in New Mexico and one proposed new use in Colorado. The Court explains the relationship between reasonable use and equitable apportionment holding that "equitable

apportionment will protect only those rights to water that are 'reasonably required and applied.'"[4]

The essence of water law, whether domestic or international, is to define and regulate the human interaction with the natural resource. While negotiations among States are complex, the resolution often revolves around how people use the resource and whether the uses are considered reasonable and equitable given the circumstances.

I. Reasonable Utilization Distinguished from Equitable Utilization

For purposes of this article's deconstruction of "equitable and reasonable utilization," the author does not assume that the two terms are synonymous; to do so would mean one or the other is superfluous. Whereas equitable utilization may be conceptualized as dividing the entire watercourse among states and other watercourse interests, such as ecological preservation, fisheries, navigation and recreation, reasonable utilization looks at how water is used to determine if the purpose for which the water is being used and the amount used are reasonable under the circumstances.

McCaffrey, in his treatise on the law of non-navigational uses of international watercourses describes equitable utilization as follows:

> Born of the U.S. Supreme Court's decisions in interstate apportionment cases beginning in the early twentieth century, and supported by decisions in other federal states, the doctrine of equitable utilization was applied to international watercourses as the basic, governing principle by the International Law Association's 1966 Helsinki Rules. Its status as the fundamental norm in the field has recently been confirmed by the decision of the International Court of Justice in the *Case concerning the Gabcíkovo-Nagymaros Project* (Hungary/Slovakia) . . . [T]he 1997 UN Convention also appears to treat equitable utilization as the overarching principle governing the use

[4] Colorado v. New Mexico (Vermejo I), 459 U.S. 176, 184 (1982), *remanded to Spec. Master,* (Vermejo II), 467 U.S. 310 (1984).

> of international watercourses, as did the draft articles adopted by the ILC on second reading in 1994.[5]

Equitable utilization is "born" of the principle of equitable apportionment. Apportionment is a division of the water among or between States. The legal principle of sovereign equality of States permits each State to use a share of the watercourse based on principles of equity.

The International Law Commission notes that a State may not apply the principle of equitable utilization unilaterally to determine "the amount of water a State may divert, the quality of water to which it is entitled, or the uses it may make of an international watercourse."[6] Implementation of this standard "depends ultimately upon the good faith and co-operation of the States concerned."[7] Equitable utilization, as explained, is the allocation, the sharing, and the division of the resource and its benefits among States. This is often referred to as a right to use an equitable and *reasonable share* of a water resource.[8] This is not, however, the same as *reasonable use*. The 1997 UN Convention calls for both equitable and reasonable sharing and for equitable and reasonable utilization.[9]

Stephen McCaffrey, the ILC Special Rapporteur who prepared the core provisions adopted in the 1997 UN Convention, provides insight regarding reasonable utilization by quoting the US Supreme Court decision in *Kansas v. Colorado* regarding riparian law:

> [T]he right to the reasonable and beneficial use of a running stream is common to all the riparian proprietors, and so, each is bound so to use his common right, as not essentially to prevent or interfere with an equally beneficial enjoyment of the common right, by all the proprietors . . . . It is, therefore, only for an abstraction and deprivation of

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[5] STEPHEN C. MCCAFFREY, THE LAW OF INTERNATIONAL WATERCOURSES 384-85 (2nd ed. 2007).
[6] Special Rapporteur, *Third Report on the Law of the Non-Navigational Uses of International Watercourses*, Int'l Law Comm'n, at 22, U.N. Doc. A/CN.4/406 (Apr. 8, 1987) (by Stephen C. McCaffrey).
[7] Special Rapporteur, *Second Report on the Law of the Non-Navigational Uses of International Watercourses*, Int'l Law Comm'n, ¶ 177 U.N. Doc. A/CN.4/399 (May 21, 1986) (by Stephen C. McCaffrey) [hereinafter *McCaffrey Second Report*].
[8] Case concerning the Gabčíkovo-Nagymaros Project (Hungary v. Slovakia), 1997 I.C.J. 7 ¶ 85. (Sept. 25) [hereinafter Gabčíkovo Nagymaros Case] ("The Court considers that Czechoslovakia, by unilaterally assuming control of a shared resource, and thereby depriving Hungary of its right to an equitable and reasonable share of the natural resources of the Danube….") *Id.*
[9] United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses art. 5(1), May 21, 1997, U.N. Doc. A/RES/51/869, 36 I.L.M. 700 [hereinafter 1997 U.N. Convention].

> this common benefit, or for an unreasonable and unauthorized use of it, that an action will lie.[10]

McCaffrey further comments as follows:

> [A] feature of the above quotation bears scrutiny: its emphasis on the reasonableness of use. If a riparian uses its share unreasonably, "an action will lie" – that is, the riparian will have exceeded its right. There are few examples in international jurisprudence of what constitutes an unreasonable use of shared freshwater resources. However, it is not difficult to imagine possibilities, including sale of withdrawn water outside the basin, excessive withdrawals for use by the withdrawing state outside the basin, serious pollution of the watercourse, as by toxic or hazardous substances, and the like.[11]

II. Reasonable Utilization: Common Law and Domestic Regulation

Common law riparian rights developed in the courts of Great Britain and the United States. Common law rights have given way to government regulation and permitting of water use. Throughout periods of change in water use predominantly for agriculture, mills, manufacturing, and today for domestic supply for metropolitan areas, as well as through the legal changes from the early enforcement at trespass to government issued permits, the standard measure of the privilege to use common waters remains an amount which is reasonable given the circumstances. Reasonable use permits flexibility and responsiveness to changing natural conditions and to economic and policy changes over time.

This section briefly traces developments at common law in Great Britain, the application of the common law reasonable use standard in the United States, as reported in the Restatement Second, Torts, and the more recent government permitting systems referred to as "regulated riparianism."

A. Common Law Development

[10] MCCAFFREY, *supra* note 5, at 389 (citing Kansas v. Colorado, 206 U.S. 46, 104 (1907)).
[11] MCCAFFREY, *supra* note 5, at 389.

Reasonable use developed as a principle of riparian law in the courts of Great Britain and the United States and is the measure for the use of water among users sharing the same resource. Competition for water among users is relatively recent, with industrial mills creating some of the first legal conflicts over water use in Great Britain and in the eastern United States.[12]

In the seminal work, *A History of Water Rights at Common Law*, Joshua Getzler traces the development of water rights. He notes that Henry de Bracton in the early thirteenth century gives "the first extensive treatment of water rights in English Law."[13] Bracton states that the rights to use a commons for pasturage and the use of a common watercourse were implied in the grant of servitude from the lord. The grant of servitude includes both reasonable extensions and reasonable limits of right. Also protected by law with the grant of servitude are the appurtenances which are reasonable and necessary for its enjoyment, including water.[14] "An otherwise legal act done on one's property, such as repairing or varying a watercourse on one's land, would become a nuisance if it 'exceeds due measure.' "[15] Water use cannot exceed the grant of the right of use.

Getzler notes that in the late eighteenth century, the *Commentaries* of Sir William Blackstone include studies of water law as a right of enjoyment incidental to land ownership.[16] Getzler summarizes Blackstone's characterization of water as follows:

> Blackstone regarded water as 'transient' property; and simultaneously as real property, being part of land. Water rights were not a form of personal property, even though water itself was transient and severable. It was a corporeal object of property, a hereditament 'such as affect the senses; such as may be seen and handled by the body', rather than incorporeal property, or things which are 'not the object of sensation, can neither be seen nor handled, are creatures of the mind, and exist only in contemplation'. Rights of water use were definitionally excluded from Blackstone's understanding of incorporeal rights in two ways. First, water use can be a natural amenity inherent in the possession of riparian or watered lands, and is therefore

[12] *See* JOSHUA GETZLER, A HISTORY OF WATER RIGHTS AT COMMON LAW (2004).
[13] *Id.* at 19.
[14] *Id.* at 76-77.
[15] *Id.* at 58 (quoting HENRY DE BRACTON, DE LEGIBUS ET CONSUETUDINIBUS ANGLIAE, 4 vols. (ed. G. E. Woodbine, translated S. E. Thorne, 1977) f. 232b, iii, 191).
[16] *Id.* at 153-156.

> not always an 'accidental' or additional right of grant. Secondly, in some sense water may physically be appropriated by use or 'quasi-possessed', unlike purely abstract legal rights over land such as tithes.[17]

Getzler notes that, as riparian law developed in Great Britain and the United States beginning in the nineteenth century, the courts based riparian principles on Roman law and the French Civil Code.[18] English courts relied on Blackstone's descriptions of rights[19] to refine the principles governing use of a shared watercourse.[20] By 1858 the measure of a right to use a common water resource was that of "reasonable use,"[21] with the measure of reasonableness determined by a jury in an action for trespass or nuisance.[22] Getzler describes the development of riparian law and the effectiveness of enforcement measures based on a community standard of reasonableness:

> The law acted as a third-party enforcer of norms where the norms themselves were set by the interacting parties. Under the supervision of courts and juries, each neighbor with access to the common good of riparian waters was to enjoy limited correlative rights to interfere with the public goods available to all. The procedures and doctrines of the common law paid careful attention to the agreements, understandings, and practices of the parties. The law depended on the parties' monitoring of each other's performances, their collecting of evidence, and their crafting and presentation of pleadings in litigation to make the system run. There was little risk of the system degenerating into a tragedy of the commons, because the law with its ad hoc reasonableness test founded on the parties' own conduct would restrain destructive consumption of the common good.[23]

Getzler notes that English riparian law evolved as the institutions evolved, retaining an effective management of water as a commons. A

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[17] *Id.* at 172.
[18] *But cf.* FRANK J. TRELEASE, WATER LAW, CASES AND MATERIALS 274 (3d ed. 1974).
[19] GETZLER, *supra* note 12, at 192.
[20] *Id.* at 271-296.
[21] *Id.* at 293.
[22] *Id.* at 294.
[23] *Id.* at 349.

system of "private treaty and custom, assisted by law" developed to regulate water use.[24]

The increased ability to engage in destructive consumption through advancements in engineering and technology created situations where reasonable use could not be determined by common neighbors, and the power to determine what uses are reasonable moved to governmental and legislative control with permitting for large multipurpose dams for the storage and use of large quantities of water.

> The rise of legislative, administrative, and indeed market solutions did not, however, mean that the courts were unimportant. The vast amount of litigation over water rights and property use-rights generally proves the reverse. The turn to legislation did little to extinguish lawyers' and litigants' belief in a naturalist set of legal rights to resources, rights which were embedded within the technical reasoning of the common law as it investigated the agreements, customs, and practices of the parties. This sophisticated ideal of formal legal justice articulating local norms dominates the story of riparian law.[25]

This explanation of the common law is the same as the foundational principles of the law of non-navigational uses of international waters. Principles of rights, which in interstate disputes are based on sovereignty, are often tempered by shared and common interests protected by agreements, by the establishment of common institutions and, most importantly, by faith in legalism.[26]

B. Restatement of the Law of Torts: Reasonable Use

Water law in the United States is established and administered by the states. The more temperate watersheds of the United States, primarily located in the eastern states, follow riparian law. Some western states follow riparian principles for groundwater use.[27] It is not the focus of this paper to explore the nuances of reasonable use within the riparian laws of the various states of the United States. Therefore, the following discussion is based on those common law principles set forth in the Restatements

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[24] *Id.* at 350.
[25] *Id.* at 352.
[26] *Pacta sunt servando* is the foundational principle of international law. Each party to an international agreement trusts that the other will keep the agreement. VIENNA CONVENTION ON THE LAW OF TREATIES art. 26.
[27] The States in the western part of the United States predominantly follow a law of prior appropriation of surface waters, to which this discussion does not relate.

First[28] and Second,[29] Torts and the Regulated Riparian Model Water Code prepared by the American Society of Civil Engineers.[30]

Reasonable use developed as a state court standard to resolve disputes between two competing riparian users. It evolved from natural flow theories, which gave each riparian a "veto" over new uses,[31] to the more flexible principles of reasonable use. The party alleging injury must establish that her use of water is reasonable and also that the other party's use interferes with her reasonable use.[32] If the complaining party cannot establish that her water use is reasonable, then she does not have a legally protected interest.

This basic principle of reasonable use in riparian law is set forth in the Restatement Second, as follows:

> Under the Reasonable Use theory the primary or fundamental right of each riparian proprietor on a watercourse or lake is merely to be free from an unreasonable interference with his use of the water therein. Emphasis is placed on a full and beneficial use of the advantages of the stream or lake, and each riparian proprietor has a privilege to make a beneficial use of water for any purpose, provided only that such use does not unreasonably interfere with the beneficial uses of others. Reasonable use is the only measure of riparian rights. Reasonableness, being a question of fact, must be determined in each case on the peculiar facts and circumstances of that case. Reasonableness is determined from a standpoint of a court or jury and depends not only upon the utility of the use itself, but also upon the gravity of its consequences on other proprietors.[33]

The common law reasonable use theory contains three principles: 1) water is shared by riparians on an equitable basis; 2) no single user may unreasonably interfere with the reasonable use of another riparian; and 3) if

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[28] RESTATEMENT OF TORTS, §§ 850-857 (1939).
[29] RESTATEMENT (SECOND) OF TORTS, §§ 841-848 (1979).
[30] AMERICAN SOCIETY OF CIVIL ENGINEERS, REGULATED RIPARIAN MODEL WATER CODE (2004) [hereinafter MODEL WATER CODE]. *See also* Robert E. Beck, *The Regulated Riparian Model Water Code: Blueprint for Twenty First Century Water Management,* 25 WM. & MARY L. & POL'Y REV. 113 (2000).
[31] SMITH, *supra* note 1, at 144-145, 156-157.
[32] RESTATEMENT (SECOND) OF TORTS *supra* note 29, § 850 cmt. c.
[33] FRANK J. TRELEASE, WATER LAW: CASES AND MATERIALS 273 (3d ed. 1979) (citing RESTATEMENT OF TORTS ch. 41, topic 3, intro. note (1939)).

there are conflicting uses the utility of the use must outweigh the gravity of the harm.[34]

Another point of note in the Restatement First description of reasonable use quoted above is the type of legal right held by a riparian; it is a privilege to use the resource, and that privilege is shared with other riparians[35] Each privilege is subject to being reduced or defeated by another riparian holding the same privilege. If a water use is not reasonable, there is no legal privilege or right to continue the use and an injunction may issue. If two uses are both reasonable, a conflict of use is resolved by an examination of "the practicality of avoiding harm by adjusting the use or method of use"[36] and "the practicality of adjusting the quantity of water used by each proprietor."[37] In the event an equitable adjustment is not possible to permit both uses to continue simultaneously, the factors of Restatement Second §850A are used.[38]

Section 850A includes factors for choosing one use over another are reproduced in the Annex and include the economic and social value of the uses, which will change over time. Reasonable use is a comparative standard under which "one cannot always be absolutely sure just what uses he can or cannot lawfully make of the water; and even though a use may, in its inception, be reasonable, circumstances may change to such an extent that it will become unreasonable."[39] The uncertainty inherent in riparian law and the restriction within many states that water may only be used on lands riparian to the watercourse were impediments to economic growth and optimal utilization.[40] Many states overcame these common law limitations through legislation establishing systems for water use permitting.

C. Regulated Riparianism

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[34] RESTATEMENT (SECOND) OF TORTS, *supra* note 29, §850A (1979) (replaced RESTATEMENT OF TORTS §852 (1934)). The balancing of benefit against harm creates a similar tension between Article 5, Equitable and Reasonable Utilization, and Article 7, Obligation not to cause Significant Harm of the 1997 U.N. Convention on the Law of the Non-Navigational Uses of International Watercourses. G.A. Res. 51/229, U.N. Doc. A/RES/51/229 (July 8, 1997).

[35] RESTATEMENT OF TORTS, *supra* note 28, at ch. 41, topic 3, scope note.

[36] RESTATEMENT (SECOND) OF TORTS, *supra* note 29, §850A cl. f (1979).

[37] *Id.* §850A cl. g.

[38] *Id.* §850 cmt. d.

[39] RESTATEMENT OF TORTS, *supra* note 28, at 346. In those states of the United States which apply a reasonable use standard to groundwater the same factors of Restatement (Second) §850A are used.

[40] *See* Frank J. Trelease, *The Model Water Code, The Wise Administrator and the Goddam Bureaucrat,* 14 NAT. RESOURCES J. 207 (1974).

Joseph Dellapenna coined the phrase *regulated riparianism*[41] to describe the new systems of water law that converted common law riparian systems to state issued permits. Dellapenna emphasizes that under a permit system, the measure of the right to use water remains that of reasonable use.[42] A state agency quantifies the amount of water that is reasonable for the requested use by examining the natural conditions and the other uses of the same waters, and issues a permit accordingly. Most permit systems include expiration dates, at which time the agency may re-evaluate the reasonableness of the use in light of changing circumstances.

The Committee of the Water Resource Planning and Management Division of the American Society of Civil Engineers developed the Regulated Riparian Model Water Code. The Model Code defines reasonable use as follows:

> 'Reasonable use' means the use of water, whether in place or through withdrawal, in such quantity and manner as is necessary for economic and efficient utilization without waste of water, without unreasonable injury to other water right holders, and consistently with the public interest and sustainable development."[43]

The amount of water permitted is limited to:

> [the] amount which can be put to a reasonable use by the right holder. By so limiting the quantity of water withdrawn and used, the permit serves to reduce or eliminate the waste of water, making more water available for others uses, including for nonconsumptive uses and to preserve protected minimum levels.[44]

Within the regulated riparian systems of state law, the state agency also gathers watershed information and manages the waters to meet the state management goals. The goals are set through public legislative or regulatory processes. The key for this discussion is that within the state

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[41] MODEL WATER CODE, *supra* note 30, at v; *see also* Beck, *supra* note 30, at 113.
[42] Joseph Dellapenna, *Riparianism, in* 1 and 2 WATERS AND WATER RIGHTS, chs. 6-10 (Robert E. Beck ed., 1991).
[43] MODEL WATER CODE, *supra* note 30, §2R-2-20. The commentary notes that: "[Reasonable use] has long been the criterion of decision under the common law of riparian rights. In that setting, the concept was strictly relational, with the court deciding whether one use was 'more reasonable' than a competing or interfering use, except in the rare case when a particular use was 'unreasonable per se.'" *Id*
[44] *Id.* at ch. VII, pt. 1 cmt. to §7R-1-01.

management goals and with watershed information, states determine which uses are reasonable and quantify a reasonable amount of water for each use.

III. Reasonable Utilization in International Instruments

Reasonable use is also a legal principle for the use of international watercourses. This section traces the inclusion of the principle in four international instruments: the Helsinki Rules, the 1997 United Nations Convention, the Berlin Rules, and the International Law Commission ("ILC") Draft Articles on Transboundary Aquifers. In contrast to the principles of equitable sharing and equitable utilization, reasonable utilization received little discussion in the reports and commentary for these instruments. As demonstrated in the previous section, reasonable use is a well-established principle of water law, which this author posits is the same principle in domestic riparian law as it is in the law of international watercourses. Both circumstances use the same factors to determine what a reasonable use is. Reasonable use can be a foundation principle when determining shared benefits from a watercourse and, more importantly, when adjusting or reallocating shared waters in response to new uses, changing circumstances, and during conditions of water stress.

A. Helsinki Rules on the Uses of Waters of International Rivers

The International Law Association ("ILA"), founded in 1873 to study, clarify and develop international law,[45] published rules at the Helsinki Conference in 1966 on the uses of international rivers. The 1966 Helsinki Rules formed the basis for the work of the International Law Commission that resulted in the 1997 UN Convention.[46] The ILA returned to the topic in 2004, adopting extensive modifications at the Berlin Conference.[47]

The Helsinki Rules[48] are a comprehensive set of legal principles for the utilization of international rivers. The Helsinki Rules use a "river basin approach" to management. They include procedures for dispute resolution and principles for the use of water, cooperation, and pollution prevention. Article IV provides that "each basin State is entitled, within its territory, to

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[45] INT'L LAW ASS'N CONST., ¶ 3.1 (Aug. 2010), *available at* http://www.ila-hq.org/en/about_us/index.cfm.
[46] MCCAFFREY, *supra* note 5, at 380.
[47] Int'l Law Ass'n Comm. on Water Res. Law, *Berlin Conference on Water Resources Law* FOURTH REPORT, 3-4 (2004) [hereinafter *Berlin Rules*].
[48] Int'l Law Ass'n, *Report of the Fifty-Second Conference: The Helsinki Rules on the Uses of the Waters of International Rivers*, 484 (August 1966) [hereinafter *Helsinki Rules*].

a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin."[49]

Articles VII, VIII, and X indicate that the term reasonable is not only a modification of the State's share but is also a measure of use. Article VII provides that the "present reasonable use" of a watercourse cannot be denied in order to reserve water for future uses in another State.[50] Article VIII, paragraph 1 provides that "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."[51] These Articles indicate that only reasonable uses are protected. This is reinforced in Article VIII, paragraph 3, which states that a use that is not reasonable does not receive legal protection; "[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."[52] The concept of reasonableness as used in the Helsinki Rules is both the measure of an equitable share and the limitation on use, just as it is the measure of a water right at common law.

B. ILC Draft Articles Preparatory to the 1997 UN Convention

As of this writing, the 1997 UN Convention has not entered into force;[53] however, it is the authoritative instrument on the law of international watercourses. The 1997 UN Convention is based on draft articles prepared by the International Law Commission during twenty years of study of the topic.[54] The United Nations Convention on the Law of Non-Navigational Uses of International Watercourses was approved by

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[49] *Id.* art. IV (Article V indicates that "[w]hat is a reasonable and equitable share within the meaning of article IV [is] to be determined in the light of all the relevant factors in each particular case…." The factors to determine a reasonable share are listed in Article V and include "[t]he comparative costs of alternative means of satisfying the economic and social needs of each basin State", "[t]he availability of other resources", "[t]he avoidance of unnecessary waste in the utilization of waters", "[t]he practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses"; and "[t]he degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State".).

[50] *Helsinki Rules*, *supra* note 48, at 125, art. VII.

[51] *Id.* art. VIII(1).

[52] *Id.* art. VIII(3). This subparagraph implies that the first use on a watercourse has priority over later uses so long as it remains reasonable.

[53] The 1997 UN Convention enters into force on the deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession (art. 36(1)). As of April 2012, there are 25 parties. Ratification status is available at http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-12&chapter=27&lang=en.

[54] The UN charge to the ILC to consider this topic was contained in General Assembly Resolution 2669 in 1970. The ILC referred a complete set of draft articles to the General Assembly for consideration in 1994.

resolution of the United Nations General Assembly on May 21, 1997,[55] after negotiations of the Sixth Committee convened as a Working Group of the Whole, in which all States had the opportunity to participate.[56] The principles upon which it is based – equitable and reasonable utilization and prevention of significant harm – are codifications of principles of customary international law.[57]

This section traces the inclusion of the reasonable utilization principle in the 1997 UN Convention by examining the work of three Special Rapporteurs on the topic. This section will begin with the work of the second Special Rapporteur Stephen Schwebel.

1. Schwebel, ILC Draft Articles

In 1981, Special Rapporteur Stephen Schwebel included in his Third Report[58] the first complete set of draft articles on the Law of Non-Navigational Uses of International Watercourses.[59] The 1981 Draft Articles do not include the principle of reasonable utilization and do not use the word *reasonable* to modify or describe a share of or the utilization of an international watercourse. The Schwebel Draft Article on equitable participation provides:

> Article 6
> Equitable Participation
>
> 1. The waters of an international watercourse system *shall be developed and used by system States on an equitable basis* with a view to attaining optimum utilization of those waters, consistent with adequate protection and control of the components of the system.
> 2. Without its consent a State may not be denied its equitable participation in the utilization of the waters of an international watercourse system of which it is a system State.

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[55] G.A. Res 51/229, U.N. Doc. A/RES/51/229 (May 21, 1997).
[56] *See* MCCAFFREY, *supra* note 5, at 359; ATTILA TANZI & MAURIZIO ARCARI, THE UNITED NATIONS CONVENTION ON THE LAW OF INTERNATIONAL WATERCOURSES 42-45 (Patricia Wouters & Serguei Vinogradov eds., 2001).
[57] MCCAFFREY, *supra* note 5, at 375-377.
[58] Special Rapporteur, *Third Report on the Law of Non-Navigational Uses of International Watercourses*, Int'l Law Comm'n, U.N. Doc. A/CN.4/348 (Dec. 11, 1981) (by Stephen M. Schwebel) [hereinafter *Schwebel Third Report*].
[59] *Id.*

> 3. *An equitable participation includes the right to use water resources of the system on an equitable basis* and the duty to contribute on an equitable basis to the protection and control of the system as particular conditions warrant or require.[60]

The first paragraph of Draft Article 6 provides for the "optimum utilization" and the third paragraph addresses "equitable participation" and use "on an equitable basis." As discussed previously,[61] equitable use and equitable sharing are not the same principle as the reasonable use of an international watercourse. The Schwebel Draft Articles do not contain the same limit or measure of use that is contained in riparian common law and in the Helsinki Rules.

Schwebel discusses the Helsinki Rules and ILA Commentary thereon regarding equitable and reasonable use,[62] yet he did not include in his Draft Articles the concept that use by each basin State must be reasonable. Schwebel discusses *reasonable use* as the basis of the United States argument in the dispute with Canada over the Kootenay River,[63] but only to support including the principle of *equitable use* in the Draft Articles. Schwebel is careful in the selection of terminology and a requirement of domestic reasonable use within States should not be implied from this draft text. However, the determination of an equitable use in the Schwebel Draft Article 7 incorporates elements from the Helsinki Rules, which are also very similar to the factors used to determine reasonableness in riparian law,[64] such as the domestic use of water, the "social and economic need for the particular use,"[65] the "efficiency of use of water resources of the system,"[66] and the potential of the use to cause pollution.[67] This laid the groundwork for the next set of Draft Articles to include the principle of reasonable use.

2. Evensen, ILC Draft Articles

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[60] *Id.* ¶ 86 (emphasis added).
[61] *See supra* text accompanying notes 5-11.
[62] *Schwebel Third Report, supra* note 58, ¶¶ 96-98.
[63] *Id.* ¶ 100.
[64] The Schwebel Draft Articles rely on many of the same factors as the Helsinki Rules to determine "equitable use" to determine "reasonable use." However, the Schwebel Draft Articles are not as closely aligned with the concept of reasonableness from riparian law as are the Helsinki Rules.
[65] *Id.* ¶ 106, art. 7(1)(a)(v).
[66] *Schwebel Third Report*, *supra* note 58, ¶ 106, art. 7(1)(a)(vi).
[67] *Id.* ¶ 106, art. 7(1)(a)(vii).

In 1984, the ILC Special Rapporteur Jens Evensen prepared a revised set of Draft Articles.[68] The Evensen Draft Article 6 includes *reasonableness* as a measure of a State's share of an international watercourse and, in this regard, is similar to the Helsinki Rules, Article IV.

> Article 6
> General principles concerning the sharing of the waters of an international watercourse.
>
> 1. A watercourse State is, within its territory, *entitled to a reasonable and equitable share* of the uses of the waters of an international watercourse.[69]
> 2. To the extent that the use of the waters of an international watercourse within the territory of one watercourse State affects the use of the waters of the watercourse in the territory of another watercourse State, the watercourse States concerned *shall share in the use of the waters of the watercourse in a reasonable and equitable manner* in accordance with the articles of the present Convention and other agreements and arrangements entered into with regard to the management, administration or uses of the international watercourse.[70]

Evensen also incorporates reasonable use as a limitation on the domestic use of an international watercourse in Draft Article 7.[71]

> Article 7
> Equitable sharing in the uses of the waters of an international watercourse.
>
> *The waters of an international watercourse shall be developed, used and shared by watercourse States in a*

[68] Special Rapporteur, *Second Report on the Law of the Non-Navigational Uses of International Watercourses*, Int'l Law Comm'n, U.N. Doc. A/CN.4/381 (Apr. 24, 1984) (by Jens Evensen) [hereinafter *Evensen Second Report*].

[69] Compare this passage to the Helsinki Rules art. IV stating that "[e]ach 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" (emphasis added).

[70] *Evensen Second Report*, *supra* note 68, ¶ 49 (emphasis added).

[71] Special Rapporteur on on the Law of the Non-Navigational Uses of International Watercourses, *First Report on the Non-Navigational Uses of International Watercourses,* Int'l Law Comm'n, ¶ 87-93, U.N. Doc. A/CN.4/367, (April 19, 1983) (by Jens Evensen) [hereinafter *Evensen First Report*]; *Evensen Second Report*, *supra* note 68, ¶¶ 52-53.

> *reasonable and equitable manner* on the basis of good faith and good-neighbourly relations with a view to attaining optimum utilization thereof consistent with adequate protection of the international watercourse and its components.[72]

Evensen first introduces the standard[73] for how an international watercourse is to be used within a State[74] in his Draft Articles 6 and 7. These Articles replace previous draft articles characterizing international watercourses as shared natural resources that members of the ILC and the Sixth Committee opposed.[75] It is reported that in making this change Evensen "tried to lay down in a more concretely drafted provision the underlying principle that watercourse States must share in the use of the waters of an international watercourse in a reasonable and equitable manner."[76] Draft Article 7 recognizes the interconnectedness of uses within each State, provides that each State may utilize its equitable and reasonable share *and* that each State's share must be used in an equitable and reasonable manner.

Equitable and reasonable utilization are determined using a list of factors, many of which carry forward from the Helsinki Rules and the Schwebel Draft Articles. The Evensen Draft Article 8 lists factors to determine reasonable and equitable use,[77] including "conservation by the watercourse [S]tate,"[78] efficiencies of use among watercourse States,[79] pollution,[80] and the "availability to the States concerned and to other watercourse States of alternative water resources."[81]

3. McCaffrey, ILC Draft Articles

In his second report in 1986, Special Rapporteur Stephen C. McCaffrey comments on the Schwebel and Evensen Draft Articles.[82] He chronicles the shift from "shared natural resource" concept, articulated by the first Special Rapporteur Richard D. Kearny and developed by

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[72] *Evensen Second Report*, *supra* note 68, ¶ 52 (emphasis added).
[73] *Evensen First Report*, *supra* note 71, ¶ 87.
[74] *Evensen Second Report*, *supra* note 68, ¶ 52.
[75] U.N. GAOR, 36th Sess., ¶ 315, U.N. Doc. A/39/10 (7 May - 27 July 1984).
[76] *Id.*
[77] *Evensen Second Report*, *supra* note 68, ¶ 55.
[78] *Id.* art. 8(1)(e).
[79] *Id.* art. 8(1)(f).
[80] *Id.* art. 8(1)(i).
[81] *Id.* art. 8(1)(j). This requirement is a further examination of water use within a state, requiring information on other available surface and groundwater resources.
[82] *McCaffrey Second Report*, supra note 7, ¶ 71-75.

Schwebel, to the language of recent drafts that emphasize "sharing in the use of waters in a reasonable and equitable manner."[83] To support the principles included in the Draft Articles, McCaffrey's report includes an extensive survey and discussion of treaties, diplomats' positions in negotiations, state practice, judicial decisions, arbitral awards, international instruments, municipal court decisions, and the views of publicists.[84]

Draft Article 5, as reported by the ILC to the General Assembly in 1994, is identical to the McCaffrey Draft Article 5 and reads as follows:

Article 5
Equitable and reasonable utilization and participation

1. *Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner.* In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal utilization thereof and benefits therefrom, consistent with adequate protection of the watercourse.

2. *Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner.* Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present articles.[85]

The first sentence of the first paragraph of Draft Article 5 sets a standard for the domestic use of water within a watercourse State vis-à-vis other States. This standard incorporates the concepts from the 1984 Evensen Draft Article 7, which states that the "waters of an international watercourse shall be developed, used and shared by watercourse States in a

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[83] *Id.* ¶ 38.
[84] *Id.* ¶¶ 75-168.
[85] *Compare Report of the International Law Commission on the work of its forty-third session, 29 April – 19 July 1991*, U.N. GAOR, 46th Sess., Supp. No. 10, U.N. Doc. A/46/10, Ch. III, 66, *with Report of the International Law Commission on the work of its forty-sixth session, 2 May – 22 July 1994,* U.N. GOAR, 49th Sess., Supplement No. 10, U.N. Doc. A/49/10, Ch. III, 96, *available at* http://untreaty.un.org/ilc/documentation/english/A_49_10.pdf (emphasis added). The only change made prior to the adoption by the UN General Assembly is the addition of a phrase in paragraph 1 so that the last clause reads: "with a view to attaining optimal *and sustainable* utilization thereof and benefits therefrom, *taking into account the interests of the watercourse States concerned,* consistent with adequate protection of the watercourse."

reasonable and equitable manner . . . ."[86] McCaffrey does not discuss the principle of reasonable use in the commentary, nor is it discussed in subsequent Reports of the Special Rapporteurs or in the 1994 ILC Report to the General Assembly.[87]

Similar to drafts prepared by previous Special Rapporteurs, McCaffrey includes a non-exclusive list of factors to determine what constitutes equitable and reasonable utilization. The listed factors apply to domestic water use and are similar to factors used to determine reasonable use in riparian common law. These factors include the "social and economic needs of the watercourse States;"[88] the "existing and potential uses of the watercourse;"[89] the "conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;"[90] and "the availability of alternatives, of corresponding value, to a particular planned or existing use."[91]

C. 1997 UN Convention

The 1997 UN Convention, adopted with the overwhelming support of UN Member States,[92] codifies customary international law and sets the standards for utilization of international watercourses. The pertinent provisions in Article 5 are the same as the McCaffrey Draft.

Article 5
Equitable and reasonable utilization and participation

1. Watercourse States shall in their respective territories *utilize* an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.

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[86] *Evensen Second Report*, *supra* note 68, ¶ 52.
[87] *Report of the International Law Commission on the work of its forty-sixth session*, *supra* note 85, Ch. III.
[88] *Id.* ¶ 59, art. 6(b).
[89] *Id.* art. 6(e).
[90] *Id.* art. 6(f).
[91] *Id.* art. 6(g).
[92] MCCAFFREY, *supra* note 5, at 374-375.

> 2. Watercourse States shall *participate* in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention.[93]

Equitable and reasonable uses are determined by examining a non-exclusive list of factors. The factors are found in Article 6 of the 1997 UN Convention and are very similar to the factors to determine Reasonable Use that are set out in the Restatement of Torts and in the Model Regulated Riparian Code.[94]

The twenty-year ILC process is well documented in reports and is further explained by McCaffrey in his book, *The Law of International Watercourses*. The definitive work on the process within the United Nations General Assembly and the Sixth Committee is by Attila Tanzi and Maurizio Arcari, entitled *The United Nations Convention on International Watercourses: A Framework for Sharing*. Both of these works provide extensive analysis of the principle of equitable utilization and the principle of the prevention of significant harm and the relationship between these two principles. Despite these writings, the principle of reasonable use has generated very little discussion. During the ILC process and the adoption of the UN Convention, States focused on these principles to overcome efforts to assert sovereignty over shared water resources. Moreover, as the number of places experiencing water scarcity and water stress increases,[95] the principle of reasonable use will gain greater importance for sharing limited resources.

Since the adoption of the 1997 UN Convention, two other instruments of international law have emerged: the Berlin Rules, developed by the ILA as revisions to the Helsinki Rules, and the ILC Draft Articles on Transboundary Aquifers. Each instrument was developed with a core principle of reasonable use.

D. Berlin Rules

In 2004 the International Law Association adopted revisions to the 1966 Helsinki Rules, which are commonly referred to as the Berlin Rules. The Berlin Rules take into account state practice since the 1966 adoption of

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[93] G.A. Res. 51/229, U.N. Doc. A/RES/51/299 (July 8, 1997) (emphasis added).
[94] These can be found in the Annex.
[95] Malin Falkenmark & Carl Widstrand, *Population and Water Resources: A Delicate Balance*, 1992 POPULATION BULLETIN, POPULATION REFERENCE BUREAU.

the Helsinki Rules, subsequent international instruments, and changes in global water resources. The principles of equitable and reasonable utilization are addressed primarily in Chapter III Internationally Shared Waters, Articles 10 through 16, with Article 12 containing the core General Principles. Article 12 is as follows:

Article 12
Equitable Utilization

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

2. In particular, *basin States shall develop and use the waters of the basin in order to attain the optimal and sustainable use thereof and benefits therefrom,* taking into account the interests of other basin States, consistent with adequate protection of the waters.[96]

Essentially, Article 12 changes the language slightly from the Helsinki Rules by using the terminology of Article 5 of the 1997 UN Convention. The Commentary explains the drafters' reasoning:

> The phrasing adopted here emphasizes that the right to an equitable and reasonable share of the waters of an international drainage basin carries with it certain duties in the use of those waters. The change of phrase from the original *Helsinki Rules* is not turning away from the right to share in the benefits of the transboundary resource. Rather, it recognizes that with the right to share come obligations that can only be fulfilled by acting in an equitable and reasonable manner, having due regard to the obligation not to cause significant harm to another basin State. The interrelation of these obligations must be worked out in each case individually, in particular through the balancing process expressed in Articles 13

[96] *Berlin Rules*, *supra* note 47, art. 12 (emphasis added).

> [Determining an Equitable Reasonable Use] and 14 [Preferences among Uses].[97]

The obligation to use water shared by other States in a reasonable manner is an attempt to attain the objectives of optimal and sustainable use. This obligation is very similar to the discussion of the principles guiding a system of regulated riparianism. The similarity, in turn, reinforces the point that reasonable use is a well-established principle used to achieve common objectives for shared waters. The list of non-exclusive factors to determine reasonable use includes the same factors listed in the other instruments examined, including those applicable to determinations of reasonable domestic water use in riparian law. The common factors include "the social and economic needs,"[98] "the population dependent on the waters,"[99] "conservation, protection, development, and economy of use,"[100] alternatives to uses,[101] "sustainability of proposed or existing uses,"[102] and "minimization of environmental harm."[103]

E. ILC Draft Articles on Transboundary Aquifers

The International Law Commission took up the topic of shared natural resources at its fifty-fourth session in 2002.[104] In his second report, Special Rapporteur Chusei Yamada identified confined transboundary aquifers as the first topic for consideration.[105]

Yamada's Second Report[106] includes initial considerations of the topic. Using the 1997 UN Convention as a starting point with input from a committee of experts, Yamada proposed separating the principles of "equitable use" and "reasonable utilization."[107] Yamada emphasized that equitable utilization refers to sharing with other States, and the principle of

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[97] *Id.* at Commentary to art. 12.
[98] *Id.* art. 13 (2)(b).
[99] *Id.* art. 13 (2)(c).
[100] *Id.* art. 13(2)(f).
[101] *Id.* art. 13(2)(g).
[102] *Id.* art. 13(2)(h).
[103] *Id.* art. 13(2)(i).
[104] *See* Special Rapporteur, *Shared Natural Resources: First Report on Outlines*, Int'l Law Comm'n, ¶¶ 1-5, U.N. Doc. A/CN.4/533 (Apr. 30, 2003) (by Chusei Yamada).
[105] *Id.* ¶ 3; Special Rapporteur, *Second Report on Shared Natural Resources: Transboundary Groundwater*, Int'l Law Comm'n, ¶¶ 1-5, U.N. Doc. A/C N.4/539 (Mar. 9, 2004) (by Chusei Yamada) [hereinafter *Yamada Second Report*] (Recognizing concerns expressed by members of the ILC and the Sixth Committee with the phrase "shared resources," Yamada focuses on the sub-topic of "transboundary groundwaters.").
[106] *Yamada Second Report*, *supra* note 105.
[107] *Yamada Second Report*, *supra* note 105, ¶¶ 21-23. This language was proposed for the limited purpose of discussion within the ILC.

reasonable utilization applies to the particular uses within the territory of a State.[108] The 2005 ILC Report to the General Assembly[109] corresponds with the Yamada Third Report.[110] It states that the principles of equitable utilization and reasonable use are closely related and often confused.[111] Consistent with the distinction between equitable use and reasonable use made by this author, Yamada submitted the following Draft Article, using separate paragraphs to distinguish the two principles.

Article 5
Equitable and reasonable utilization

1. Aquifer States shall, in their respective territories, utilize a transboundary aquifer or aquifer system in a manner such that the *benefits to be derived from such utilization shall accrue equitably* to the aquifer States concerned.
2. Aquifer States shall, in their respective territories, *utilize a transboundary aquifer or aquifer system in a reasonable manner* and, in particular:
    1) With respect to a recharging transboundary aquifer or aquifer system, shall take into account the sustainability of such . . .
    2) With respect to a non-recharging aquifer or aquifer system, shall aim to maximize the long-term benefits derived from the use of the water contained therein . . . .[112]

As seen above, Yamada discusses reasonable use as a distinct principle from equitable use and equitable sharing. Yet, Yamada also explains reasonable use in ways that confuse it with concepts of sustainability and the management goal of optimal use.

> The principle of "reasonable utilization", provided for in paragraph 2, relates to the proper management of groundwaters. For renewable natural resources, this principle is well established and is also expressed in other terms, such as "optimal utilization" and "sustainable

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[108] *Id.*
[109] Rep. of the Int'l Law Comm'n, 57th Sess., May 5-June 3, July 11-Aug. 5, 2005, U.N. Doc. A/60/10, Ch. IV [hereinafter ILC 2005 Report].
[110] Special Rapporteur, *Third Report on Shared Natural Resources: Transboundary Groundwaters*, Int'l Law Comm'n, U.N. Doc. A/CN.4/551 (Feb. 11, 2005) (by Chusei Yamada) [hereinafter *Yamada Third Report*].
[111] ILC 2005 Report, *supra* note 109, ¶ 40.
[112] *Yamada Third Report, supra* note 110, ¶ 18 (emphasis added).

> utilization". It means that the renewable natural resource must be kept at the level that would provide the maximum sustainable yield (MSY).[113]

Yamada states in his third report that the water in a non-recharging aquifer is different from renewable watercourses. Therefore, Yamada reasons that the principle of "sustainable utilization does not apply . . . [h]owever, the concept of reasonable utilization should still be viable."[114] This statement implies a different definition of reasonable use for non-renewable and renewable water resources. Yamada discusses the principle of reasonable use in relation to watercourses, which he differentiates from groundwater, as follows:

> With regard to the renewable water resource of watercourses [as defined in the 1997 UN Convention], no such precise description of this reasonable, optimal or sustainable utilization principle exists. However, it can be presumed that extraction of water is permitted up to the amount of water recharge to the watercourse so that the total quantity of the water in the watercourse remains stable.[115]

Moreover, Yamada reported in 2005 that equitable utilization is not the same legal principle as reasonable utilization. Contrary to the explanations in the Yamada reports, this author emphasized that reasonable utilization is not the same as sustainable utilization, optimal utilization, or maximum sustainable yield, all of which are management goals and not the measure of the right to use shared water.

Conversely, the Draft Articles reported to the General Assembly and incorporated in Resolution 63/124 do not have separate paragraphs for equitable utilization and reasonable utilization. The commentary to the Draft Articles as reported does not explain the changes from the separation of the principles in the Second and Third Yamada Reports.

Article 4
Equitable and reasonable utilization

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[113] *Yamada Third Report, supra* note 110, ¶ 21.
[114] *Id.* ¶ 22.
[115] *Id.* ¶ 21. The Commentary uses the term "groundwaters" not the term "aquifer" which is in the text of Draft Article 5.

> *Aquifer States shall utilize transboundary aquifers or aquifer systems according to the principle of equitable and reasonable utilization*, as follows:
>
> a) They shall utilize transboundary aquifers or aquifer systems in a manner that is consistent with the equitable and reasonable accrual of benefits therefrom to the aquifer States concerned;
> b) They shall aim at maximizing the long-term benefits derived from the use of water contained therein;
> c) They shall establish individually or jointly a comprehensive utilization plan, taking into account present and future needs of, and alternative water sources for, the aquifer States; and
> d) They shall not utilize a recharging transboundary aquifer or aquifer system at a level that would prevent continuance of its effective functioning.[116]

The meaning of reasonable utilization of a transboundary aquifer in Article 4 is not clear. The commentary does not provide examples from state practice or an explanation of the new term: "equitable and reasonable accrual of benefits." Categorizing and applying different legal principles to water resources based on the geologic formation in which the water is located fragments the law and diminishes legal principles to something more akin to domestic regulations. For example, are States required to determine the recharge capabilities of an aquifer before knowing if the principle of reasonable use applies?

Reasonable use is a principle of great flexibility and vitality applied in many different situations throughout the history of the law pertaining to shared common resources.

IV. The Vermejo River Cases: The Relationship Between Equitable Apportionment and Reasonable Use

This case study looks at the litigation between the states of Colorado and New Mexico[117] over the use of the Vermejo River to examine the relationship between the principle of equitable apportionment and the principle of reasonable use. The Vermejo River cases present a relatively

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[116] G.A. Res. 63/124 , U.N. GAOR, 63rd Sess., Agenda Item 75, U.N. Doc. A/RES/63/124 (Dec. 11, 2009) (emphasis added).

[117] Colorado v. New Mexico (Vermejo I), 459 U.S. 176, 184 (1982), *remanded to Spec. Master,* (Vermejo II), 467 U.S. 310 (1984).

uncomplicated factual situation from which to analyze these two principles and explore the relationship between local uses and transboundary sharing.

The Vermejo River is a small stream that originates in the snowmelt of the Sangre de Cristo Mountains of southern Colorado.[118] The river is a headwaters tributary to the Canadian River in New Mexico that flows through Texas and Oklahoma before joining the Arkansas River. The Vermejo River flows for a total distance of fifty-five miles, mostly in New Mexico. Four water users have water rights in New Mexico and none exist in Colorado. The dispute in the Vermejo River cases arose over a proposed new industrial use in Colorado.

The states of New Mexico and Colorado in the western United States both follow the law of prior appropriation for allocation of surface water among users. Under this principle, the first in time to use the water has the superior legal right. Priority dates and quantification of each landowner's water rights are determined in an adjudication, which is a court proceeding that brings all water users on the same watercourse into court together. The court enters an adjudication decree that lists the names of water users or land parcels, a priority date for each use and an amount of water. These are often listed chronologically, identifying the dates as the highest priority for delivery of water. In essence, in the event of a water shortage on the watercourse, the parties at the bottom of the decree with the most recent priority dates bear the burden of water shortages.

A New Mexico state court adjudicated the New Mexico portion of the Vermejo River and entered a water rights decree in 1941 listing the four water rights holders.[119] The largest and most junior holder of water rights is the Vermejo Conservancy District, a federally funded reclamation project that provides water through "an extensive system of canals and reservoirs"[120] for stock watering[121] and irrigated agriculture.[122] The four users fully appropriated the Vermejo River such that the proposed new use in Colorado would reduce the supply for the most junior water rights holder in New Mexico, the Vermejo Conservancy District.[123]

In 1975, the state of Colorado granted the Colorado Fuel and Iron Steel Corporation ("C.F. & I.") a conditional water right to divert water from the Vermejo River, transfer it out of the Vermejo River basin, and use

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[118] Vermejo I, 459 U.S. at 178.
[119] Phelps Dodge Corp. v. W.S. Land & Cattle Co., No. 7201 (D.C. Cty. Colfax 1941).
[120] Vermejo I, 459 U.S. at 196 n.6.
[121] *Id.* at 192.
[122] *Id.* at 181 n. 6.
[123] *See* Vermejo I, 459 U.S. at 180-182; *c.f.* Colorado v. New Mexico (Vermejo II), 467 U.S. 310 at 334-36 (1984) (Stevens, J., dissenting). Justice Stevens in his dissent in Vermejo II disputes this fact based on the record of Special Master in his discussion of the unreasonable and wasteful uses in New Mexico.

it in the Purgortoire River basin for industrial development.[124] The four New Mexico water users filed the first litigation against C.F. & I[125] based on a theory of interstate prior appropriation giving superior rights to senior appropriators regardless of the state in which they are located.[126] The district court enjoined C.F. & I. from diverting any water that would violate the senior rights held by the four users downstream in New Mexico. C.F. & I. appealed, which was stayed when the state of Colorado invoked the original jurisdiction of the United States Supreme Court[127] to request an equitable apportionment of the Vermejo River.[128]

The U.S. Supreme Court accepted jurisdiction and appointed Special Master Ewing T. Kerr to hear evidence and prepare a report, which he submitted to the Court in 1982. The parties, Colorado and New Mexico, appeared before the U.S. Supreme Court on exceptions to the Special Master's Report. The Court summarized the findings of the Special Master, in part, as follows:

> The Special Master found that most of the water of the Vermejo River is consumed by the New Mexico users and that very little, if any, reaches the confluence with the Canadian River. He thus recognized that strict application of the rule of priority would not permit Colorado any diversion since the entire available supply is needed to satisfy the demands of appropriators in New Mexico with senior rights. Nevertheless, applying the principle of equitable apportionment established in our prior cases he recommended permitting Colorado a transmountain diversion of 4,000 acre-feet of water per year from the headwaters of the Vermejo River. He [Special Master Kerr] states: "It is the opinion of the Master that a transmountain diversion would not materially affect the appropriations granted by New Mexico for users downstream. A thorough examination of the existing economies in New Mexico convinces the Master that the injury to New Mexico, if any, will be more than offset by the benefit to Colorado."[129]

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[124] Vermejo I, 459 U.S. at 178, n.2.
[125] *Id.* at 178-179, n.3.
[126] *See* Wyoming v. Colorado, 259 U.S. 419 (1922).
[127] U.S. CONST. art. III, §2.
[128] Vermejo I, 459 U.S. at 8.
[129] *Id.* at 180 (quoting Report of the Special Master 23).

Rejecting a theory of interstate prior appropriation the Special Master determined that the common law of equitable apportionment, as developed by the U.S. Supreme Court, provides that each state has an equal right to share in the use of an interstate stream, even when use in one state interferes with uses in another state.[130] The uses in each state must be balanced to provide benefits to both.

The U.S. Supreme Court remanded to the Special Master for a lack of sufficient findings of fact to support his conclusion that an equitable apportionment of the Vermejo River should be 4,000 acre-feet per year for use in Colorado. [131] Justice O'Connor wrote a separate opinion concurring in the remand and questioning the finding of the Special Master that water use within the Vermejo Conservancy District in New Mexico was unreasonable and wasteful. When the case returned to the U.S. Supreme Court two years later, Justice O'Connor wrote the majority opinion.[132]

The majority in *Vermejo II* held that Colorado had not met its burden of proof to establish a right to an equitable apportionment of the Vermejo River, nor had Colorado proven that the proposed use by C. F. & I. was a reasonable one. Holding that "equitable apportionment will protect only those rights to water that [are] 'reasonably acquired and applied,'" the Court decided the two Vermejo River cases using the principles of equitable apportionment and reasonable use.[133] The decision in favor of New Mexico, and denying an apportionment to Colorado for a future use by C.F. & I., was based on Colorado's failure to prove the reasonableness of the proposed new use. The Court set out the factors for an equitable apportionment[134] and examined the facts necessary to establish reasonable use.[135] The following is discerned from the two opinions in *Vermejo I* and *Vermejo II.*

A. Equitable Apportionment

The principles of equitable apportionment first articulated by the United States Supreme Court in the early twentieth century[136] developed through a multitude of cases between states in circumstances not unlike those presented by conflicting uses of international watercourses. Each state has vested economic and development priorities tied to water use and

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[130] *See* Kansas v. Colorado, 206 U.S. 46 (1907)
[131] Vermejo I, 459 U.S. at 116.
[132] Colorado v. New Mexico (Vermejo II), 467 U.S. 310 at 312 (1984).
[133] Vermejo I, 459 U.S. at 184 (citing Wyoming v. Colorado, 259 U.S. 419 (1922)).
[134] *Id.* at 183.(quoting Nebraska v. Wyoming, 325 U.S. 589, 618 (1945)).
[135] *Id.* at 185.
[136] *E.g.* Kansas v. Colorado, 206 U.S. 46 (1907); Wyoming, 259 U.S. at 419, *modified*, 260 U.S. 1 (1922), *amended by*, 353 U.S. 953 (1957).

the sovereign control over as much of the resource as possible. The Court in *Vermejo I* recounted the law of equitable apportionment noting the key principle that equitable apportionment requires a "delicate adjustment of interests."[137] A court must consider all relevant factors, including:

- the physical and climatic conditions;
- the consumptive use within the different sections of the river and the return flow;
- the extent of established uses;
- the availability of storage water;
- the effect of wasteful uses;
- the damage to uses in one state compared to benefits in another if limitations are placed on the former; and
- the efficiencies of different uses.[138]

The Court went on to note that the "doctrine of equitable apportionment clearly extends to a state's claim to divert water for future uses."[139] However, "[w]hile the equities of supporting the protection of established, senior uses are substantial, it is also appropriate to consider… conservation measures available to both states and the balance of harm and benefit,"[140] thereby optimizing benefits to both states.

For purposes of this discussion of reasonable use, the salient point made by the Court is that "equitable apportionment will protect only those rights to water that are 'reasonably acquired and applied'"[141](citations omitted). Reasonable use of the Vermejo River not only requires the "reasonably efficient use of water," but also imposes "an affirmative duty to take reasonable steps to conserve and augment the water supply of an interstate stream."[142]

B. Reasonable Use

The Court articulated factors to determine a *reasonable use* within the concept of equitable apportionment. In *Vermejo I* the Court determined that existing uses in New Mexico could be reduced to accommodate new uses in Colorado. The Court used the standard of reasonableness to determine the available supply from which an apportionment may be made without causing legal harm. In other words,

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[137] Vermejo I, 459 U.S. at 183.
[138] *Id.* (citations omitted).
[139] *Id.* at 190.
[140] *Id.* at 188.
[141] *Id.* at 184.
[142] *Id.* at 185.

the Court, through the Special Master, determined which uses were wasteful and, thus, unreasonable and thereby not protected when making an interstate equitable apportionment.

The Court acknowledged that "[w]hat is reasonable…does not admit of ready definition, being dependent upon the particular facts and circumstances of each case."[143] However, the Court in the Vermejo Cases was able to articulate what are *not* reasonable uses; needless waste must first be eliminated and inefficient use of water is a factor, particularly if inefficiencies result in a waste of water. However, the Court stated that a comparison of uses in the states from the same water resource is needed to determine if mere inefficiencies are unreasonable. In addition, "it is . . . appropriate to consider the extent to which reasonable conservation measures by [one state] might offset the proposed . . . diversion [in another state] and thereby minimize any injury to . . . users."[144]

The Court explained the principles first articulated in *Wyoming v. Colorado*[145] in relation to the facts of Vermejo: "The question here is not what one state should do for the other, but how each should exercise her relative rights in the waters of this interstate stream . . . . Both states recognize that conservation within practicable limits is essential in order that needless waste may be prevented and the largest feasible use may be secured."[146] Colorado, in seeking the new right to use water through an equitable apportionment, did not prove that the uses in New Mexico were so unreasonable as to constitute waste such that a new use in Colorado would not create a legal interference. More importantly, Colorado did not establish the reasonableness of the proposed new use for the C. F. & I. mining enterprise in Colorado.

The reasonable use standard in this case is similar to the standard for riparian rights[147] and to the 1997 UN Convention Article 6 factors for determining equitable and reasonable utilization.[148] It is clear that the use of a transboundary watercourse within each watercourse state, whether international or interstate, must be reasonable. Reasonable use is the standard to determine the available supply for apportionment and to determine which uses are to be protected from interference by new and existing uses in another state.

Reasonable utilization and equitable apportionment also contain a temporal element in that one state may be entitled to prevail today, but not

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[143] *Id.* at 191 (O'Connor, J., concurring).
[144] *Id.* at 186.
[145] Wyoming v. Colorado, 259 U.S. 419 at 484 (1922).
[146] Vermejo I, 459 U.S. at 185 (quoting Wyoming, 259 U.S. at 484).
[147] *See* text accompanying notes 28 – 41.
[148] *See* text accompanying note 96.

tomorrow, because a more equitable or a more reasonable use is developed.[149] "Equitable utilization is not an abstract and static state of affairs, but one that must be arrived at through an ongoing comparison of the situations and uses of the states concerned . . . . [W]hat is equitable can change with changing circumstances, whether they be of natural or human origin."[150]

In *Vermejo I* and *Vermejo II*, the Court held that Colorado must prove particular conservation measures that are reasonable to be made in New Mexico, that the use by the Vermejo Conservation District is unreasonable, and that the proposed use in Colorado meets the same standard of reasonableness applied to uses in New Mexico. Colorado failed to provide this proof and did not prevail in its effort to establish that a proposed future use by C.F. & I. was reasonable and thereby entitled to protection as an equitable apportionment of the Vermejo River.

Conclusion

How can a principle of reasonable use be applied in an international basin? First, it can be applied during an exchange of information and the consultation or negotiation for planned measures.[151] Second, it can be applied during an evaluation of an existing river regime due to changes in river conditions caused by natural or human factors.

The facts of the Vermejo Cases are illustrative of the first situation; however, the Vermejo cases were decided by the U.S. Supreme Court and many water sharing disputes are not ruled upon by a judicial body. For example, State A is a downstream arid state with a long history of irrigation and an economy based on irrigated agriculture with irrigation practices that have not changed for centuries and State B is an upstream developing state with funding from an international organization to construct a multipurpose structure for hydropower, irrigation and domestic water supply. The funding organization requires modern efficiencies for all aspects of the project. State A lodges objections with the funding organization to any development upstream that would alter river flows.

State A and State B must address whether they can agree on an equitable sharing of the water and of the benefits within the basin. The States must also look at the reasonableness of the use in State A, asking questions regarding waste and comparing the efficiencies of water use

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[149] *See* Kansas v. Colorado, 206 U.S. 46 (1907) (the Court left open the possibility that the states would return if circumstances changed, which they did); Colorado v. Kansas, 320 U.S. 383 (1943); Kansas v. Colorado (Kansas II), 514 U.S. 673 (1995); MCCAFFREY, *supra* note 5, at 388.

[150] MCCAFFREY, *supra* note 5, at 402.

[151] 1997 U.N. Convention, *supra* note 9, at Part III, Planned Measures.

within the basin. It is possible that the present use with historic delivery mechanisms includes water diversions that are in part wasteful and thereby legally unreasonable. Given the increased demand for other uses within the basin and technological improvements in delivery methods, arguably, State A cannot claim significant harm or interference with its equitable share of the waters for the amount of use that is unreasonable.

Looking at this same example of existing uses in downstream State A and new uses in upstream State B and assuming a watercourse agreement that includes either volumetric allocations or protections for existing uses, we can use the same analysis. The International Court of Justice determined in the Gabčíkovo-Nagymaros Case in relation to environmental harm:

> [N]ew norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past.[152]

The ICJ goes on to state that the new norms and standards are part of the concept of sustainable development. While this article makes the case that reasonable use is an old principle of law, new norms and standards may include those for efficiencies, delivery and conservation.

The principle of reasonable use allows States to examine and compare water use within each of the other States in a shared basin. In situations of water stress and water scarcity, both existing uses and proposed new uses must be reasonable. Reasonable use may be established during negotiations comparing uses within the basin. The Court in the Vermejo cases determined that out of basin transfers, excessive losses in delivery systems, outdated irrigation practices, and a lack of state regulation and control over water use may be factors indicating unreasonable uses.

Determining equitable and reasonable use requires an examination that many States will find intrusive. It requires a fact-intensive inquiry. The United States Supreme Court looked at whether the state of New Mexico acted reasonably in the actions it took to detect waste and whether the state properly administered the Vermejo River. This included an examination of the need for a Water Master (which New Mexico did not

[152] Gabčíkovo Nagymaros Case, *supra* note 8, ¶ 140.

provide), the lack of monitoring and gauging of the stream, the adequacy of the staff within the New Mexico enforcement agency, and the enforcement practices under the state court decree.[153]

Negotiations over the use of international waters may not include such an intrusive examination of State practices; however, it is instructive of what may be required when water resources are truly scarce and any new use impacts the availability of water for existing uses. Conservation, elimination of waste, and the sharing of burdens, in addition to benefits, must be addressed. What is reasonable in times of plenty is not the same as what is reasonable in times of scarcity.

Reasonableness is the measure of the use of water and is determined by factors that are, and have been, consistent throughout the history of the doctrine.

[153] Colorado v. New Mexico (Vermejo II), 467 U.S. 310 at 332 (1984) (Stevens, J., dissenting).

Annex
Factors to Determine Reasonable Utilization

Restatement of the Law of Torts Second§ 850A Reasonableness Of The Use Of Water

The determination of the reasonableness of a use of water depends upon a consideration of the interests of the riparian proprietor making the use, of any riparian proprietor harmed by it and of society as a whole. Factors that affect the determination include the following:

a. The purpose of the use,
b. the suitability of the use to the watercourse or lake,
c. the economic value of the use,
d. the social value of the use,
e. the extent and amount of the harm it causes,
f. the practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other,
g. the practicality of adjusting the quantity of water used by each proprietor,
h. the protection of existing values of water uses, land, investments and enterprises and
i. the justice of requiring the user causing harm to bear the loss.

Regulated Riparian §6R-3-02 Determining Whether a Use is Reasonable

In determining whether a use is reasonable, the State Agency shall consider:

a. the number of persons using a water source and the object, extent, and necessity of the proposed withdrawal and use and of other existing or planned withdrawals and uses of water;
b. the suppy potential of the water source in question, considering quantity, quality, and reliability, including the safe yields of all hydrologically interconnected water sources;
c. the economic and social importance of the proposed water use and other existing or planned water uses sharing the water source;
d. the probably severity and duration of any injury caused or expected to be caused to other lawful consumptive and nonconsumptive uses of water by the proposed withdrawal and use under foreseeable conditions;
e. the probably effects of the proposed withdrawal and use on the public interest in the waters of the State, including, but not limited to:
(1) general environmental, ecological, and aesthetic effects;

(2) sustainable development;
(3) domestic and municipal uses; recharge areas for underground water;
(4) waste assimilation capacity;
(5) other aspects of water quality; and
(6) wetlands and flood plains;
f. whether the proposed use is planned in a fashion that will avoid or minimize the waste of water;
g. any impacts on interstate or interbasin water uses;
h. the scheduled date the proposed withdrawal and use of water is to begin and whether the projected time between the issuing of the permit and the expected initiation of the withdrawal will unreasonably preclude other possible uses of the water; and
i. any other relevant factors.

1997 UN Convention Article 6
Factors relevant to equitable and reasonable utilization

1. Utilization of an international watercourse in an equitable and reasonable manner within the meaning of article 5 requires taking into account all relevant factors and circumstances, including:
a. Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
b. The social and economic needs of the watercourse States concerned;
c. The population dependent on the watercourse in each watercourse State;
d. The effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
e. Existing and potential uses of the watercourse;
f. Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
g. The availability of alternatives, of comparable value, to a particular planned or existing use.
2. In the application of article 5 or paragraph 1 of this article, watercourse States concerned shall, when the need arises, enter into consultations in a spirit of cooperation.
3. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable use, all relevant factors are

to be considered together and a conclusion reached on the basis of the whole.