

**INTERNATIONAL WATER LAW.
THE CONTRIBUTIONS OF WESTERN
UNITED STATES WATER LAW TO THE
UNITED NATIONS CONVENTION ON THE
LAW OF THE NON-NAVIGABLE USES OF
INTERNATIONAL WATERCOURSES**

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I. INTRODUCTION

When I was in the sixth grade, my English teacher predicted that within 25 years a world war would be triggered by a dispute over water. With ten years remaining, the situation does not seem immediately ominous. Yet across the world, we are facing huge water shortages. Indeed, today one in six people lacks access to safe drinking water.¹ According to the United Nations Environment Program's 2002 Global Environment Outlook, "by 2020 world water use is esti-

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1. United Nations Department of Economic and Social Affairs, Division for Sustainable Development, *International Year of Freshwater 2003* (Dec. 2002), available at <http://www.un.org/events/water/brochure.htm>.

mated to increase by about 40%, and 17% more water will be required for food production to meet the needs of the world's growing population."² The repercussions on our environment will be even more dire. Rivers are a key source of accessible water for all purposes. With 145 nations sharing 261 international river basins, interstate cooperative management is essential.³

Adopted in 1997, the United Nations Convention on the Law of the Non-navigable Uses of International Watercourses ("Convention")⁴ is a strong effort to mitigate the impending water crisis by using legal means to resolve transboundary watercourse disputes. Drawn heavily from the principles of water law from the western United States, particularly that of equitable utilization, the Convention strives to serve as a framework for agreements on transboundary watercourses, and may represent a codification of customary international water law.

This note traces critical western US ideas of riparian rights from their origins in the Supreme Court of the United States to their presence in the Convention, and possible furtherance in selected river basins around the globe. The analysis begins with a discussion of western US riparian doctrines in the context of varying degrees of territorial sovereignty and integrity, followed by an overview of the Convention and commentary concerning its place in international water law. The principles of western US water law visible in the Convention, an excellent example of vertical borrowing, will then be treated in a direct comparison. Finally, the ideas of the Convention, with a focus on the principles inherited from western US water law, will be discussed in the case studies of two comparable, overworked, arid-region rivers, the Nile and the Colorado.

2. The United States Mission to the European Union, *UNEP Chief Calls on World Leaders to Address Global Water Crisis* (Aug. 13, 2002), available at <http://www.useu.be/Categories/Sustainable%20Development/Aug1302ToepferWater.html>.

3. See United Nations, *World Water Development Report: Water for People, Water for Life Executive Summary*, 25 (2003), available at <http://www.un.org/esa/sustdev/sdissues/water/WWDR-english-129556e.pdf>.

4. Convention on the Law of Non-navigational Uses of International Watercourses, G.A. Res. 51/229, U.N. GAOR, 51st Sess., U.N. Doc. A/51/PV.99 (1997) [hereinafter "Convention"].

II. BACKGROUND

A. Western United States Water Law

The doctrines of western US riparian law have contributed heavily to the four principle theories of water law, making them worthwhile to review before discussing US case law and doctrines produced. The four principle theories include absolute territorial sovereignty, absolute territorial integrity, limited territorial sovereignty, and community of interests.

The first of these theories is *absolute territorial sovereignty*, synonymous with the Harmon Doctrine of 1895. During a dispute between the United States and Mexico over the Rio Grande, Attorney General Judson Harmon advised that a State has total freedom to act with regard to any portion of international watercourse that is situated within the boundaries of its territory, regardless of any harm its actions may cause to other riparian States.⁵ This strict doctrine, favored by upper riparians,⁶ has never actually been put into practice.⁷ Indeed, the convention that resolved the Rio Grande situation was based primarily on an equitable solution, not the Harmon Doctrine,⁸ and the doctrine is generally considered to be an anachronism in today's interdependent, water-scarce world.⁹

Absolute territorial integrity, also known as "riparian rights," falls at the opposite end of the spectrum and embodies the idea that an upstream state may do nothing that might affect the natural flow (quantity and quality) of the water into the downstream state.¹⁰ This is akin to the "no harm" doctrine, taken in isolation; there may be no harm done to a state's watercourse that might affect its natural flow. Equally severe as the absolute territorial sovereignty doctrine, the riparian rights doctrine can have a devastating effect on slower devel-

5. STEPHEN C. MCCAFFREY, *THE LAW OF INTERNATIONAL WATERCOURSES* 76–77 (2001).

6. Aaron Schwabach, *The United Nations Convention on the Law of Non-navigational Uses of International Watercourses, Customary International Law, and the Interests of Developing Upper Riparians*, 33 *TEX. INT'L L.J.* 257, 276 (1998).

7. *See id.* at 111.

8. MCCAFFREY, *supra* note 5, at 101–02.

9. *See* ATTILA TANZI & MARIZIO ARCARI, *THE UNITED NATIONS CONVENTION ON THE LAW OF INTERNATIONAL WATERCOURSES* 13 (2001).

10. Niveen Tadros, *Shrinking Water Resources: The National Security Issue of this Century*, 17 *Nw. J. INT'L L. & BUS.* 1091, 1103 (1996–97).

oping upstream riparians,¹¹ and is thus favored by downstream states.¹² Like absolute territorial sovereignty, this theory is rarely used in practice.¹³ Both theories deny the needs and reliance of other states on a transboundary watercourse, and ignore that fact that statehood has duties as well as rights.¹⁴ These theories exacerbate differences among states and lead to a zero-sum game.¹⁵

The doctrine of prior appropriation may be tied into the absolute territorial sovereignty or integrity theories, as it advocates the “first in time, first in right” approach that may enhance a state’s claim depending on its upstream or downstream position.¹⁶ This doctrine dictates that the senior water demand is fulfilled in its entirety before the next most senior water demand may receive any water,¹⁷ effectively allowing the last possible drop of remaining stream to be diverted.¹⁸ The prior appropriation doctrine is based on use, not on land.¹⁹

Limited territorial sovereignty represents a middle ground between the two extremes, and is the prevailing theory of international watercourse rights and duties today.²⁰ This involves the maxim of *sic utere tuo ut alienum non laedus*,²¹ or the idea that states must respect the rights of other states sharing the same watercourses as they all have an equality of right. This leads to the doctrine of equitable apportionment and utilization (“equitable utilization”), supporting the principle of sovereign equality of all states as permitting an equitable and reasonable utilization of the flow of an international watercourse.²² A procedural law of cooperation is thus posited. This equitable utilization is deceptively simple in part because of its great flexibility in accounting for various factors on a case by case basis.²³ It should be noted that it is not factual harm that is prohibited by the

11. MCCAFFREY, *supra* note 5, at 128.

12. Schwabach, *supra* note 6, at 276.

13. MCCAFFREY, *supra* note 5, at 135.

14. See TANZI & ARCARI, *supra* note 9, at 13.

15. *Id.*

16. A. Dan Tarlock, *Putting Rivers Back in the Landscape: The Revival of Watershed Management in the United States*, 6 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 167, 176 (2000).

17. *Id.*

18. *Id.*

19. *Id.*

20. MCCAFFREY, *supra* note 5, at 137.

21. “So use your property as not to harm that of another.” MCCAFFREY, *supra* note 5, at 135.

22. Tadros, *supra* note 10, at 1105.

23. See MCCAFFREY, *supra* note 5, at 341.

doctrine, but deprivation of a state's legally protected interest or share.²⁴ The minimum flow doctrine, which protects the use of water internal to the body of water itself, may also be accommodated in the theory if environmental concerns are included.²⁵

The fourth theory, *community of interests*, is not widely accepted.²⁶ Developed through navigational dealings, this theory consists of a community of interests created by the natural, physical unity of a watercourse.²⁷ These interests include present and prospective uses of the watercourse, in addition to concern for the health of the ecosystem, and are influenced by a wide variety of economic, societal, and environmental factors.²⁸ This theory reinforces and extends that of limited territorial sovereignty, particularly the aspect of equitable utilization, in that it mandates a high degree of cooperation in common management and more accurately illustrates the watercourse system as a unity shared by all riparian states.²⁹

As discussed above as part of the limited territorial sovereignty and community of interests theories, the doctrine of equitable utilization is arguably the most crucial in international water law today, and was inherited to a large extent from western US water law. In the words of an imminent scholar in the field, Stephen C. McCaffrey,

The decisions of the US Supreme Court in apportionment disputes between US states comprise what is probably the richest body of practice in the field of equitable utilization that exists on either the national or the international level. Indeed, it seems likely that in large measure the doctrine of equitable utilization owes its very existence, as well as its fundamental meaning, to that body of decisional law.³⁰

From its origins in US Supreme Court doctrine, equitable utilization has become one of the most important principles in international water law.

In 1907, the US Supreme Court introduced the doctrine of equitable apportionment in *Kansas v. Colorado*.³¹ When Colorado, the upstream riparian, decided to begin using water from the Arkansas

24. MCCAFFREY, *supra* note 5, at 329.

25. See SLAVKO BOGDANOVIC, INTERNATIONAL LAW OF WATER RESOURCES: CONTRIBUTION OF THE INTERNATIONAL LAW ASSOCIATION (1954-2000) 408-09 (2001).

26. Schwabach, *supra* note 7, at 277; IBRAHIM KAYA, EQUITABLE UTILIZATION 86 (2003).

27. MCCAFFREY, *supra* note 5, at 149-150.

28. *Id.* at 165.

29. See *id.* at 168-69.

30. *Id.* at 221.

31. 206 U.S. 46 (1907).

River, Kansas protested, claiming protection via the prior apportionment and no harm doctrines.³² Colorado countered with the Harmon doctrine.³³ The Court did not agree with either state, however, and used the equitable utilization doctrine instead; stating that it must, “so adjust the dispute upon the basis of equality of rights as to secure as far as possible to Colorado the benefits of irrigation without depriving Kansas of the like beneficial effects of a flowing stream.”³⁴ After weighing the two sides, the Court decided that “equality of right and equity” forbade the interference with Colorado’s withdrawal of water for irrigation, as Colorado had not intruded on Kansas’s share of the river.³⁵

In *Wyoming v. Colorado*,³⁶ Wyoming, the downstream prior user, was trying to prevent Colorado from diverting the Laramie River.³⁷ The Court again used equitable utilization to settle the issue, bypassing the strict prior appropriation regimes followed by both states, as well as the Harmon doctrine argument again advanced by Colorado.³⁸ Reaffirming *Kansas v. Colorado*, the Court stated that this “doctrine lays on each of these States a duty to exercise her right reasonably and in a manner calculated to conserve the common supply.”³⁹ Similarly, in *Nebraska v. Wyoming*,⁴⁰ in a case involving the North Platte River, the Court refused to apply domestic law common to the states, ruling that “strict adherence to the [prior appropriation] doctrine may not be possible” if the allocation was to be just and equitable.⁴¹ Priority could be an important factor to take into consideration, but was not determinative.⁴²

The Court further affirmed and refined the equitable utilization doctrine in a dispute over the waters of the Vermejo River in *Colorado v. New Mexico*.⁴³ The Court-appointed Special Master rejected the rule of priority in favor of equitable utilization.⁴⁴ In validating the

32. *Id.* at 47–48.

33. *Id.* at 92.

34. *Id.* at 100.

35. *Id.* at 114–117.

36. 259 U.S. 419, 484 (1922).

37. *Id.* at 455.

38. *Id.* at 437.

39. *Id.* at 484.

40. 325 U.S. 589 (1945).

41. *Id.* at 618.

42. *See id.* (calling priority of appropriation a guiding principle).

43. 459 U.S. 176, 183–188 (1982).

44. *Id.* at 180.

decision of the Special Master, the Court noted that inefficient uses of water would not be protected, and that senior water rights would be considered forfeited or diminished where they have not been exercised.⁴⁵ Indeed, the Court imposed on states, “an affirmative duty to take reasonable steps to conserve and augment the water supply of an interstate stream.”⁴⁶

The Court has also occasionally enforced this doctrine on eastern US states, which rarely have had to grapple with same issues of water scarcity. In *Connecticut v. Massachusetts*,⁴⁷ the Court referenced *Kansas v. Colorado* and applied equitable utilization in the dispute over the headwaters of the Connecticut River, saying that all states stand on an equal level or plane.⁴⁸ Later that year, in a decision concerning the Delaware river, Justice Holmes called water a “necessity of life” before clearly stating, “the effort always is to secure an equitable apportionment without quibbling over formulas,” while rejecting both the absolute territorial sovereignty and integrity theories.⁴⁹

The approach of the Supreme Court to the equitable utilization doctrine appears deceptively simple. The guiding principle is that states are obligated to share water resources.⁵⁰ If a state believes that its share of the watercourse is being adversely affected by another state, the injured state may petition the Court to apportion the resource equitably.⁵¹ If there is no interstate agreement or Congressional scheme in place, then the Court may do so.⁵² However, the state must demonstrate real or substantial harm or injury as proof of its claim.⁵³ Because of this, the equitable utilization doctrine is generally considered to be a downstream remedy; indeed, suits in reverse have been motivated by a desired injunction against pending litigation by downstream states.⁵⁴ If the injured state can meet this threshold, then the burden of proof is shifted to the injuring state, which must present clear and convincing evidence to refute the claim.⁵⁵ The

45. *Id.* at 184.

46. *Id.* at 185.

47. 282 U.S. 660 (1931).

48. *Id.* at 669–71.

49. *See* *New Jersey v. New York*, 283 U.S. 336, 342–43 (1931).

50. GEORGE WILLIAM SHERK, *DIVIDING THE WATERS: THE RESOLUTION OF INTERSTATE WATER CONFLICTS IN THE UNITED STATES* 18 (2000).

51. *Id.*

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.* at 19.

court then has to resolve the situation via equitable utilization, taking into account all relevant factors.⁵⁶ Thus each decree is fact-specific and unique.

B. The United Nations Convention

The first important manifestation of the doctrine of equitable utilization in international water law was in the Helsinki Rules, produced by the International Law Association in 1966.⁵⁷ These rules were a pioneer effort to create a comprehensive codification of international watercourse law, defining a watercourse as an international drainage basin and addressing specific water issues and uses, such as pollution, navigation, and timber floating.⁵⁸ The guiding principle was equitable utilization, and no priority was given to one factor over another.⁵⁹ However, the Helsinki Rules still received the criticism that it was balanced in favor of lower riparians and against potentially harmful development projects,⁶⁰ as Articles VII and VIII seem to give subtle weight to existing reasonable uses.⁶¹

The Helsinki Rules nevertheless underlie the Convention in large part. After a series of sessions with Special Rapporteurs from the 1970's through the 1990's, the International Law Commission submitted the 1994 Draft Articles to the UN General Assembly (GA), recommending the elaboration of a convention on their basis.⁶² The Sixth Committee of the GA drafted a resolution to establish the mandate of a Working Group, which was adopted by the GA in 1994.⁶³ The Convention was then negotiated in the Sixth Committee during two sessions totaling five weeks in 1996 and 1997.⁶⁴ These sessions were open to UN members as well as members of specialized agencies of the UN.⁶⁵ On May 21, 1997, the Convention was adopted by the GA with a vote of 103 votes in favor, 3 against, and 27 abstaining.⁶⁶

56. *Id.* at 19.

57. Helsinki Rules on the Uses of the Waters of International Rivers, 52 INT'L. L. ASS'N 477, 484 (1966) [hereinafter Helsinki Rules].

58. MCCAFFREY, *supra* note 5, at 320.

59. Tadros, *supra* note 10, at 1107.

60. Schwabach, *supra* note 7, at 272.

61. Helsinki Rules, *supra* note 57 at 492-94.

62. TANZI & ARCARI, *supra* note 14, at 38-41.

63. *Id.* at 42-43.

64. *Id.* at 43-45.

65. MCCAFFREY, *supra* note 5, at 301.

66. TANZI & ARCARI, *supra* note 14, at 45.

The Preamble of the Convention sets the document clearly within the context of the UN Charter, as well as the Rio Declaration of 1992 and Agenda 21.⁶⁷ Its status as a framework convention is noted, as is its goal of ensuring the “utilization, development, conservation, management, and protection of international watercourses” and the promotion of “optimal and sustainable utilization thereof.”⁶⁸ Good cooperation among states is thus essential. Part I, the “Introduction,” sets out the scope of the Convention, including “protection, preservation, and management,”⁶⁹ which is considered to be broader than “conservation.”⁷⁰ A “watercourse” is defined inclusively, though excluding confined groundwater.⁷¹ Article 3 clarifies that the Convention is not retroactive, though parties may want to consider harmonizing prior agreements with its principles.⁷² As a framework convention, parties may adapt its guidelines according to the specific needs of an agreement.⁷³ States may not adversely affect uses of other states without consent, and negotiation must be in good faith at the request of concerned parties.⁷⁴

Part II, containing “General Principles” is both the most important and controversial section of the Convention. Article 5 sets out “Equitable and reasonable utilization and participation,”⁷⁵ thus incorporating the doctrine of equitable utilization as a mandate, joined by the new concept of equitable participation.⁷⁶ This was requested by States to represent contemporary developments in the field,⁷⁷ as there is no other general principle that may adequately account for a wide spectrum of factors involved.⁷⁸ With language such as “optimal and

67. Convention on the Law of Non-navigational Uses of International Watercourses, G.A. Res. 51/229, U.N. GAOR, 51st Sess., U.N. Doc. A/51/PV.99 (1997) [hereinafter Convention].

68. *Id.*

69. *Id.* at art. 1(1).

70. See TANZI & ARCARI, *supra* note 14, at 54 (describing the relevancy of the replacement of “conservation and management” with “protection, preservation, and management” to the scope of the Convention).

71. *Id.* at art. 2(a).

72. *Id.* at art. 3(1)-(2).

73. *Id.* at art. 3(3).

74. Convention, *supra* note 67, at art. 3(4)-(5).

75. *Id.* at art. 5.

76. MCCAFFREY, *supra* note 5, at 305.

77. *Id.*

78. Stephen C. McCaffrey, *An Overview of the U.N. Convention on the Law of the Non-Navigational Uses of International Watercourses*, 20 J. LAND RESOURCES & ENVTL. L. 57, 61 (2000).

sustainable utilization,”⁷⁹ “participation,” and “duty to cooperate,”⁸⁰ the article supports the idea of a watercourse as a shared natural resource in a river community, subject to public interest limitations.⁸¹ In order to achieve equitable utilization, states must cooperate by taking affirmative steps, either individually or jointly.⁸²

Article 6 lays out the “Factors relevant to equitable and reasonable utilization,” similar to those enumerated in the Helsinki Rules.⁸³ These include natural (ecology, climate, geography, hydrology, conservation, and protection), functional (development, economy, existing and potential uses, effects on other watercourse states), and social (social and economic needs, population dependency) factors, as well as the availability of alternatives to use.⁸⁴ There is no hierarchical ordering of the list,⁸⁵ nor is it exhaustive.⁸⁶ The article also refers back to Article 5 and reaffirms the encouraged spirit of cooperation.⁸⁷

The “Obligation not to cause significant harm” described in Article 7 requires states to “take all appropriate measures to prevent the causing of significant harm to other watercourse states,”⁸⁸ and if unable to eliminate or mitigate such harm, to discuss compensation.⁸⁹ This is an obligation of conduct, not of result, and includes the most basic duty of international law, for one state not to cause harm to another.⁹⁰ The Article also references the guidelines of Articles 5 and 6.⁹¹ There is considerable argument over which rule, equitable utilization or no harm, takes precedence, but it is probable that neither rule overrides the other,⁹² as harm is likely to be an important factor in calculating equitable utilization.⁹³ Articles 8 and 9 focus on the obli-

79. Convention, *supra* note 67, at art. 5(1).

80. *Id.* at art. 5(2).

81. Tanzi & Arcari, *supra* note 14, at 103–4, 120.

82. McCaffrey, *supra* note 78, at 61.

83. MCCAFFREY, *supra* note 5, at 306.

84. Convention, *supra* note 67 at art. 6(1).

85. *Id.* at art. 6(3).

86. MCCAFFREY, *supra* note 5, at 306.

87. Convention, *supra* note 67 at art. 6(2).

88. *Id.* at art. 7(1).

89. *Id.* at art. 7(2).

90. MCCAFFREY, *supra* note 5, at 307.

91. Convention, *supra* note 67 at art. 7(2).

92. Jutta Brunée & Stephen J. Toope, *The Changing Nile Basin Regime: Does law matter?* 43 HARV. INT’L L.J. 105, 151 (2002).

93. See MCCAFFREY, *supra* note 5, at 308–310; KAYA, *supra* note 26, at 160–61.

gation to cooperate and exchange information readily.⁹⁴ Article 10 further emphasizes the use of the equitable utilization and no harm doctrines together in elucidating the relationship between different types of uses, wherein “no use of an international watercourse enjoys inherent priority over other uses.”⁹⁵ However, special regard is given to the requirements of vital human needs, including drinking water and water necessary for food production to prevent starvation.⁹⁶

Part III is “Planned Measures,” including a discussion of the process of notification and further communication between states.⁹⁷ Part IV, “Protection, Preservation, and Management,” highlights areas of environmental concerns. Article 20 mandates individual and joint protection of ecosystems,⁹⁸ while Article 21 emphasizes cooperation in the reduction and prevention of pollution.⁹⁹ Articles 22 and 23 discuss limitations on the introduction of alien species and protection of the marine environment.¹⁰⁰ Article 24 supports joint planning and promoting the sustainable development of an international watercourse.¹⁰¹ Part V contains articles relating to “Harmful Conditions and Emergency Situations.”¹⁰²

Part VI, “Miscellaneous Provisions,” includes the other contentious area of the document, relating to the settlement of disputes. Article 32, “Non-discrimination,” prevents a state from denying persons from other countries injured by watercourse activities access to its legal system or the right to claim compensation if other arrangements have not been set out in the agreement.¹⁰³ Some states were uncomfortable with the thought of granting non-citizens nondiscriminatory access to their judicial and administrative forums relating to transboundary watercourse harm,¹⁰⁴ and indeed considered it an infringe-

94. Convention, *supra* note 67 at art. 8-9.

95. *Id.* at art. 10(1).

96. Statement of Understanding on Convention in Report of the Sixth Committee convening as the Working Group of the Whole, U.N. Doc. A/51/869 art. 10(2) (1997) *reprinted in* 36 I.L.M. 719 (1997); HILAL ELVER, PEACEFUL USES OF INTERNATIONAL RIVERS 201 (Richard Falk ed., Transnational Publishers, Inc.) (2002).

97. Convention, *supra* note 67 at art. 20-26.

98. *Id.* at art. 20.

99. *Id.* at art. 21.

100. *Id.* at art. 22-23.

101. *Id.* at art. 24.

102. *Id.* at art. 27-28.

103. Convention, *supra* note 67 at art. 32.

104. McCaffrey, *supra* note 78, at 69.

ment upon their sovereignty.¹⁰⁵ Article 33 sets out the procedure for settling disputes if parties are unable to resolve it themselves within six months and do not make other arrangements.¹⁰⁶ This procedure involves establishment of a compulsory fact-finding Commission, which some states found objectionable because of perceived infringement on free choice of means.¹⁰⁷ Part VII consists of the “Final Clauses,” including provisions for entry into force upon obtainment of 35 instruments of ratification.¹⁰⁸

Although the Convention was adopted by a large majority in the GA,¹⁰⁹ it has not yet come into force. Currently it has 16 signatories and 12 parties.¹¹⁰ The vote in the GA displayed a tendency of upstream riparians not to support the Convention,¹¹¹ either by voting against it, as in the cases of Burundi, China, and Turkey, or through abstention.¹¹² These countries commonly felt that the equitable and reasonable utilization and no harm obligation would operate to protect the interests of downstream riparian states, thus offending upstream riparians resentful of any limitation on use of watercourses that originate within their borders.¹¹³

Regardless of whether it enters into force, however, the Convention is a milestone in the development of the field of international water law,¹¹⁴ as it is arguably a codification of customary international law.¹¹⁵ Indeed, as there are few pre-existing rules of customary international law in the field,¹¹⁶ the impact of the Convention is even greater. The Convention adheres closely to the Draft Articles of the International Law Commission, the UN organization responsible for

105. Jordan C. Kahn, *1997 United Nations Convention on the Law of Non-navigational Uses of International Watercourses*, 1997 COLO. J. INT'L ENVTL. L. Y.B. 178, 182 (1997).

106. Convention, *supra* note 67 at art. 33.

107. MCCAFFREY, *supra* note 5, at 313.

108. Convention, *supra* note 67 at art. 36(2).

109. See *supra* note 66 and accompanying text.

110. United Nations, Status of Multilateral Treaties Deposited with the Secretary-General, at <http://untreaty.un.org/ENGLISH/bible/englishinternetbible/part1/chapterXXVII/treaty41.asp> (last modified Mar. 18, 2005).

111. Kahn, *supra* note 105, at 184.

112. *Id.* at 178.

113. *Id.* at 184.

114. MCCAFFREY, *supra* note 5, at 317.

115. See *id.* at 316 (“[I]t seems clear that the most important elements of the Convention – equitable utilization, prevention of harm, prior notification, protection of ecosystems – are, in large measure, codification of norms that either exist or, in the case of ecosystem protection, are at least emerging.”)

116. See Schwabach, *supra* note 7, at 278.

the “progressive development of international law and its codification.”¹¹⁷ The most critical elements of the convention, namely equitable utilization, no harm, prior notification, and ecosystem protection, represent codification of existing or well emerging (regarding ecosystem protection) norms.¹¹⁸ Additionally, the Convention was negotiated in a virtually open forum in which any interested state could participate.¹¹⁹ The heavy majority of favorable votes in the GA showed broad agreement on the principles codified.¹²⁰ Moreover, the Draft Articles had already influenced formulation of several important agreements concerning freshwater resources before the Convention was drafted, indicating wide acceptance of the doctrines contained therein.¹²¹ These agreements include the 1991 Protocol on Common Water Resources between Argentina and Chile, the 1995 Protocol on Shared Watercourse Systems in the Southern African Development Community Region, and the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin.¹²²

III. COMPARISON OF US LAW AND THE CONVENTION

Comparative and international law are not often studied together. According to Professor Jonathan Wiener, “comparative and international law may have kept a polite distance for some time, the former offering disinterested cross-cultural understanding and the latter offering normative projects of supranational governance.”¹²³ Though it is a seldom-explored topic, there are many examples of vertical borrowing, or borrowing between national and international law.¹²⁴ The European Union and the United States illustrate vertical legal borrowing from their member states.¹²⁵ Perhaps more significantly, though, there are many examples of vertical borrowing from national into supranational governance structures or treaties, including various aspects of intellectual property and environmental law.¹²⁶

117. MCCAFFREY, *supra* note 5, at 315 (quoting STATUTE OF THE INT’L L. COMM., art. (1)(1) UN Doc. A/CN.4/4/Rev. 2 (1982)).

118. MCCAFFREY, *supra* note 5, at 316.

119. *Id.*

120. *Id.*

121. *Id.* at 317.

122. *Id.*

123. Jonathan B. Wiener, *Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law*, 27 *ECOLOGY L.Q.* 1295, 1302 (2001).

124. *Id.* at 1297, 1302.

125. *Id.* at 1303.

126. *Id.* at 1304–05.

Indeed, international treaty negotiations are often preceded and encouraged by unilateral national action in the subject area.¹²⁷ As problems are experienced more and more globally, there will be an increase in value to borrowing from national law comparables, and benefits are likely to rise as countries gather greater knowledge of the performance of different legal principles.¹²⁸

Though much more analysis of the topic should be undertaken, it is worthwhile to note factors conducive to vertical borrowing. It is economically efficient to borrow, rather than invent and test a new legal structure, particularly when dealing with delicate and irreversible environmental matters which are inevitably interconnected on a global basis.¹²⁹ In addition, there is no comparable system to international law, so horizontal borrowing is impossible. However, certain factors may inhibit vertical borrowing, primarily that international law is seen as distinct from national law.¹³⁰ Similarly, practitioners in the field of international law have incentive to separate the profession from their own governments, and there may be hesitation to acknowledge borrowing for fear of accusations of favoritism.¹³¹ Finally, there is some level of belief that international law is superior to national,¹³² an idea that is incompatible with vertical borrowing.

There is no question, however, that vertical borrowing occurred in the present circumstance. A. Dan Tarlock, a well-known scholar in the field, has declared that US water law is the principle model for international water law.¹³³ The doctrine of equitable utilization, an invention turned cornerstone of Western US water law, has become a cornerstone in international water law and codified as such in the Convention.¹³⁴ The idea of equality of right that underlies equitable utilization is clearly seen in the US Supreme Court cases. Indeed, in the foundational case of *Kansas v. Colorado*, the Court stated,

One cardinal rule, underlying all the relations of the States to each other, is that of equality of right. Each State stands on the same level with all the rest. . . through these successive disputes and deci-

127. *Id.* at 1302.

128. *See id.* at 1360–61.

129. *Id.* at 1353, 1359–60.

130. *Id.* at 1345.

131. *Id.* at 1346, 1348.

132. *Id.* at 1348–49.

133. A. Dan Tarlock, *Safeguarding International River Ecosystems in Times of Scarcity*, 3 U. DENV. L. REV. 231, 237 (2000).

134. MCCAFFREY, *supra* note 5, at 305; Convention, *supra* note 67, at art. 5.

sions this court is practically building up what may not improperly be called interstate common law.¹³⁵

This understanding of equality of right, though not equality of share, is noted in numerous other decisions on watercourse allocation between states.¹³⁶

Here, US interstate common law is analogous to customary international law in terms of acceptance and weight in a federal or international context, respectively. In its Preamble, the Convention references Article 2 of the UN Charter,¹³⁷ thus affirming the significance of the ideas contained therein, namely, “The Organization is based on the principle of the sovereign equality of all its Members.”¹³⁸ Equality of right overlaps to a great extent with sovereign equality if it is recognized that this entails an obligation to acknowledge the equal sovereignties of other states.¹³⁹ This focus on sovereign equality is reiterated in Article 8 of the Convention, which emphasizes the mandate to watercourse states to cooperate on the basis of sovereign equality.¹⁴⁰ Thus the equality of right baseline noted in US Supreme Court cases on watercourse allocation exists in the Convention as well.

Not only is equitable utilization prominently incorporated into the Convention, the doctrine is largely unaltered from its original formulation in the US Supreme Court. The description of equitable utilization is the same in each setting: each riparian state has an equal right to an equitable share of the uses and benefits of a trans-boundary watercourse.¹⁴¹ Equitable utilization is dynamic, causing the Supreme Court to describe it as, “a flexible doctrine which calls for ‘the exercise of an informed judgment on a consideration of many factors’ to secure a ‘just and equitable’ allocation.”¹⁴² The preceding reference to the “many factors” corresponds well with Article 6 of the Convention, which lays out a non-exclusive list of factors for consid-

135. *Kansas v. Colorado*, 206 U.S. at 97-98.

136. *Connecticut v. Massachusetts*, 282 U.S. at 670-71; *Wyoming v. Colorado*, 259 U.S. at 465.

137. Convention, *supra* note 67, at pmb1.

138. U.N. CHARTER art. 2, para. 1.

139. See MCCAFFREY, *supra* note 5, at 331 (stating equality of rights means that no state has an inherent superior claim of rights to the watercourse).

140. Convention, *supra* note 67, at art. 8(1).

141. See MCCAFFREY, *supra* note 5, at 336.

142. *Colorado v. New Mexico*, 459 U.S. at 183.

eration.¹⁴³ All of the factors mentioned in Article 6 have been alluded to, if not openly discussed, in Supreme Court decisions.

The most disputed issue before the US Supreme Court (and listed in Article 6 as well)¹⁴⁴ has been that of the weight of existing or prior use, the descendent of the prior appropriation doctrine. The Court has repeatedly declared that existing use is neither absolutely protected, nor not protected at all.¹⁴⁵ Equitable utilization is thus incompatible with both the absolute territorial sovereignty and integrity theories. To the dismay of many States, then, their existing uses were denied protection until such time as there would no longer be an equitable division of benefits and the call for relief would be rightful.¹⁴⁶ This is reflected in the Convention, which lists existing use as the fifth enumerated factor on a list of seven, and makes it clear that the factors employed are relative to the circumstances.¹⁴⁷ Conservation and avoidance of risk through alternative means have also been important factors in the Court's decision as seen in the imposition of an obligation "to employ financially and physically feasible measures 'adapted to conserving and equalizing the natural flow.'"¹⁴⁸ These factors are also noted in the Convention.¹⁴⁹ Thus like that performed by the US Supreme Court, the Convention's weighing of the relevant factors is flexible and situationally based.

Though the doctrine of no significant harm appears to have originated from a general principle of law, considered as a source of international law by the International Court of Justice,¹⁵⁰ it has long had a presence in Western US water law in conjunction with equitable utilization.¹⁵¹ A strict prohibition on causing harm would severely limit individuals as to use of their property, and has been refuted by the US courts in various areas of law.¹⁵² Article 7 of the Convention appreciates this distinction as well in qualifying this prohibition on

143. Convention, *supra* note 67, at Art. 6.

144. *Id.* at art. 6(1)(e).

145. See *supra* notes 35–48 and accompanying text.

146. *Kansas v. Colorado*, 206 U.S. at 117; see *Wyoming v. Colorado*, 259 U.S. at 467; *Colorado v. New Mexico*, 459 U.S. at 188; *Connecticut v. Massachusetts*, 282 U.S. at 673.

147. Convention, *supra* note 67, at art. 6(1), (3).

148. *Colorado v. New Mexico*, 459 U.S. at 185.

149. See Convention, *supra* note 67, at art. 6(1)(f),

150. MCCAFFREY, *supra* note 5, at 350; ICJ STATUTE art. 38(1)(c).

151. *Kansas v. Colorado*, 206 U.S. at 103–4, 117.

152. MCCAFFREY, *supra* note 5, at 351; see e.g., *Fleming v. Lockwood*, 92 Pac. 962, 963 (1908) (rejecting claim based solely on general maxim prohibiting harm to others, and requiring showing of negligence for plaintiff to receive damages and injunction).

harm to only that which is “significant” and allowing for the possibilities of mitigation and compensation.¹⁵³ “Harm” in the doctrine before both the Court and the Convention has a broad, flexible definition, and must be factual to meet evidentiary standards.¹⁵⁴ It may not be of a type prohibited altogether, but must be of serious consequence, enough to meet a threshold where one state which believes itself to be suffering harm will expect the other to reply in an appropriate way.¹⁵⁵ The doctrine has close connections with the limitations on causing “unreasonable” harm inherent in the abuse of rights and good neighborliness principles in international law.¹⁵⁶

This common understanding of the no significant harm doctrine is reflected in comparable application of the US courts and the Convention of the principle as part of equitable utilization. Though both doctrines function as independent norms, they do not compete, as both are flexible enough to accommodate and compliment each other. The no significant harm doctrine has been treated by the US Supreme Court as only one factor, albeit an important one, in equitable utilization determination.¹⁵⁷ A state may have to suffer some harm to an existing use to permit another state to enjoy substantial benefits from a new use of the watercourse.¹⁵⁸ In *Kansas v. Colorado*, for example, the Court admitted that the irrigation uses of the Arkansas River by Colorado had caused some level of detriment to Kansas, but decided that the great benefit to Colorado outweighed that level of harm.¹⁵⁹ Article 7 of the Convention uses similar methodology, prohibiting the causation of significant harm with appropriate measures, and may result in elimination or mitigation of such harm, or compensation.¹⁶⁰ As noted in Article 7(2), this is incorporated into the framework of equitable and reasonable utilization, and the factors used to determine this.¹⁶¹ The harm itself may fall under Article 6(1)(d), “The effects of the use or uses of the watercourses in one watercourse State on other watercourse States” in addition the existing

153. Convention, *supra* note 67, at art. 7.

154. MCCAFFREY, *supra* note 5, at 369.

155. *Id.* at 369.

156. *Id.* at 351.

157. *See, e.g.,* *Nebraska v. Wyoming*, 325 U.S. at 618.

158. *See* MCCAFFREY, *supra* note 5, at 350–51.

159. *Kansas v. Colorado*, 206 U.S. at 113–114.

160. Convention, *supra* note 67, at art. 7.

161. *Id.* at art. 7(2).

use and other factors listed.¹⁶² The overall objective of both the Court and the Convention is to find a balance which results in the minimization of harm to each state concerned.¹⁶³

Perhaps the greatest area of important difference between Western US water law and that codified by the Convention deals with the level of attention paid to the environment. While Western US water law has generally had little reference to environmental concerns, the Convention addresses the issues of conservation and protection with much greater force.¹⁶⁴ Indeed, it has been suggested that the Convention exhibits an emerging principle of customary international law on the subject, namely that states must protect the ecosystems of international watercourses.¹⁶⁵ The minimum flow doctrine, which has some influence in Western US water law, is a rather recent development, dating back only about two decades.¹⁶⁶ Other than the incorporation of the ideals of the environmental movement as a non-written factor in the determination of equitable utilization, little note of ecosystem concerns has been made in the major Supreme Court decisions that define the equitable utilization doctrine.¹⁶⁷ Reflecting the more recent international public concern for the environment, the Convention places much more importance on the idea of the watercourse as a shared natural resource, and devotes a chapter to the protection and preservation of ecosystems, with Articles 20 through 25 directly addressing the area.¹⁶⁸ Much attention is focused on reduction and control of pollution, in particular, but even estuaries are included in the protection initiative.¹⁶⁹ In addition, the listed factors under Article 6, including “conservation, protection, development, and economy of use of the water resources. . .,”¹⁷⁰ may result in giving more protection to environmental concerns and somewhat less weight to existing uses than allotted by US equitable utilization doctrine. However, these at-

162. *Id.* at art. 6(1)(d).

163. McCaffrey, *supra* note 5, at 327–28; Convention, *supra* note 67, at pmb., art. 6 (highlighting the application of the equitable utilization factors to achieve a balance and promote the optimal and sustainable utilization of international watercourses).

164. Convention, *supra* note 67, at art. 20–26.

165. McCaffrey, *supra* note 78, at 70.

166. Albert E. Utton & John Utton, *The International Law of Minimum Stream Flows*, 10 COLO. J. INT’L ENVTL. POL’Y 7, 9 (1999).

167. *See id.* at 9 (The minimum flow doctrine has greatly gained importance in recent years as rivers have become increasingly appropriated.).

168. Convention, *supra* note 67, at art. 20–25.

169. *Id.* art. 23.

170. *Id.* art. 6(1)(f).

tempts to incorporate environmental awareness have been criticized from both directions. Many developing upper riparians view international environmental law as an obstacle to progress,¹⁷¹ while environmentalists protest that the definition of watercourse is not broad enough and that the focus is almost exclusively on pollution, neglecting floodplain and wetland protection.¹⁷² Regardless, the Convention marks a significant development for the incorporation of environmental appreciation into international water law.

The Gabčíkovo-Nagymaros case¹⁷³ marks an excellent example of the success of vertical borrowing. Following a 1977 treaty, Hungary and Czechoslovakia agreed to build a series of dams and barrages on the Danube River.¹⁷⁴ Hungary, the downstream riparian, later stopped work on its portion of the project and tried to terminate the treaty, claiming environmental concerns in reliance on the no harm rule.¹⁷⁵ However, the ICJ used equitable utilization, explicitly affirming its status as customary international law by stating, “[the suspension and withdrawal of Hungary’s consent] cannot mean that Hungary forfeited its basic right to an equitable and reasonable sharing of the resources of an international watercourse.”¹⁷⁶ Moreover, the significance of the Convention, after only four months in existence and 3 signatures, was specifically attested to in Paragraph 147:

Re-establishment of the joint regime will also reflect in an optimal way the concept of common utilization of shared water resources for the achievement of the several objectives mentioned in the Treaty, in concordance with Article 5, paragraph 2, of the Convention on the Law of the Non-Navigational Uses of International Watercourses.¹⁷⁷

The idea of a shared watercourse community of interest based on equitable utilization is reaffirmed in several paragraphs.¹⁷⁸ Thus the equitable utilization doctrine successfully navigated first vertical borrowing from US law to the Convention, then horizontal implementation from the Convention to the ICJ.

171. Schwabach, *supra* note 7, at 279.

172. Tarlock, *supra* note 133, at 249–50.

173. Gabčíkovo – Nagymaros Project (Hungary v. Slovakia) 1997 I.C.J. 7 (Sept. 25).

174. *Id.* at para. 15.

175. *See id.* at para. 13.

176. *Id.* at para. 78.

177. *Id.* at para. 147.

178. *Id.* at paras. 85, 150.

IV. CASE STUDIES: FURTHER POSSIBILITIES OF IMPLEMENTATION ON THE NILE AND COLORADO RIVERS

The Nile and the Colorado Rivers are often referred to as the two Niles, one African and one American.¹⁷⁹ They are both long, much-used rivers in arid regions.¹⁸⁰ They both support increasing populations and competition for the waters is intense and diverse.¹⁸¹ Both river basins are significantly over-appropriated, but the nations or states which contribute the most flow use it the least.¹⁸² The commonalities end thereafter, as the Nile's major water use will continue to be agriculture, while the Colorado will likely increasingly be used to support vital human needs more directly.¹⁸³ The primary difference, however, is that the allocation scheme of the Nile is still incomplete, compared to the comprehensive Congressional plan and Supreme Court enforcement that govern the Colorado.¹⁸⁴

A. The Nile River

International law is considered to have much to offer to the relations of the Nile basin states.¹⁸⁵ Claimed to be the world's longest river at 4239 miles, the basin drains 1.1 million square miles, and nourishes approximately 280 million people.¹⁸⁶ The waters of the Nile flow through ten nations: Egypt, Sudan, Ethiopia, Kenya, Eritrea, Democratic Republic of Congo, Tanzania, Burundi, Rwanda, and Uganda.¹⁸⁷ A World Bank study has forecasted that the amount of water available to each person in North Africa will have dropped by 80% in a single lifetime by 2025.¹⁸⁸ Indeed, the population of the Middle East, which includes several of the Nile basin states, has less available water per capita than any other large region on Earth.¹⁸⁹

179. See e.g., A. Dan Tarlock, *How Well Can International Water Allocation Regimes Adapt to Global Climate Change?* 15 J. LAND USE & ENVTL. LAW 423, 444 (2000).

180. See *id.*

181. *Id.*

182. *Id.*

183. *Id.* at 444–46.

184. See *id.* at 444–46.

185. Brunnée & Toope, *supra* note 92, at 116.

186. Christina M. Carroll, *Past and Future Legal Framework of the Nile River Basin*, 12 GEO. INT'L ENVTL. L. REV. 269, 272 (1999).

187. *Id.*

188. Brunnée & Toope, *supra* note 92, at 118.

189. Tadros, *supra* note 10, at 1098.

Ethiopia provides 85% of the flow of water,¹⁹⁰ while Egypt and the Sudan account for over 90% of water use.¹⁹¹ Over 80% of Nile waters are used for agricultural production.¹⁹²

The flow of the Nile has diminished significantly over the past century.¹⁹³ As the White Nile flows north through the extensive wetlands of the Sudd Swamps and Machar marshes in the Sudan, about half of its water is lost to evaporation and seepage.¹⁹⁴ The Jonglei Canal project was designed to ameliorate this loss of water (and would possibly also severely disturb the ecosystem of the region), but its construction has been halted indefinitely because of fighting in the area.¹⁹⁵ Large-scale use of fertilizer and high levels of salinity have resulted in poor water quality, particularly in Egypt.¹⁹⁶ The Aswan High Dam was constructed to control and capture flood waters for use in the dry season.¹⁹⁷ However, Lake Nassar, the immense reservoir created behind the dam, permits a high level of water loss through seepage and evaporation (suggested to be about 12% of flow¹⁹⁸), thus further increasing salinity of the waters.¹⁹⁹

Existing treaty agreements governing the Nile are notably insufficient. There are no treaty agreements that apply to all its basin states, or apply to the basin as a whole.²⁰⁰ Many treaty agreements and resulting claims were formed under British colonial rule, and their validity is uncertain.²⁰¹ In addition, even the more recent treaties fail to adequately address the growing pollution problem.²⁰²

As the Nile scholar Albert H. Garretson stated, “The Nile basin is perhaps the archetype of the usual historical pattern of international river basin development: early and significant development in the delta and lower basin and later – in this instance several thousand years later – development in the upper basin.”²⁰³ Motivated in part

190. Brunnée & Toope, *supra* note 92, at 117.

191. Tarlock, *supra* note 179, at 444.

192. Brunnée & Toope, *supra* note 92, at 120.

193. Brunnée & Toope, *supra* note 50, at 117.

194. MCCAFFREY, *supra* note 5, 234–35.

195. *Id.*

196. Brunnée & Toope, *supra* note 92, at 119.

197. *See id.* at 117–18.

198. *Id.* at 142.

199. *Id.* at 119–120.

200. MCCAFFREY, *supra* note 5, at 237.

201. Carroll, *supra* note 186, at 281.

202. Tadros, *supra* note 10, at 1096.

203. Garretson, *as quoted in* MCCAFFREY, *supra* note 5, at 236.

because of a cotton scheme in Sudan, an agreement between Egypt and the UK/Sudan on the use of the Nile waters was formulated in 1929.²⁰⁴ The report of the 1925 Nile Commission, on which much of the agreement is based, stated that, “consideration of [water] levels could not be carried to the point of precluding development in the Sudan, but only to the point of setting a limit to the extent and rate of this development.”²⁰⁵ However, the British assured Egypt its dominant share of the waters, and 48,000 million cubic meters was allocated to that country while 4,000 was designated for Sudan, for a ratio of 12:1.²⁰⁶ Other colonial agreements, including that of the Owens Fall Dam in Uganda, also made clear that their priority was to protect barely impeded flow into Egypt.²⁰⁷ Disputes over water rights were minimized or eliminated because of overall British control of the region.²⁰⁸

After Sudan’s independence in 1956, the country repudiated the treaty and demanded an increased share of the Nile waters.²⁰⁹ At the same time, Egypt desired to build the Aswan High Dam, whose reservoir would extend into Sudanese territory.²¹⁰ This resulted in the negotiation of the 1959 Agreement between the United Arab Republic and the Republic of Sudan for the Full Utilization of the Nile Waters, which altered the ratio from 12:1 to 3:1 and fully allocated the Nile flow between the two states.²¹¹ The agreement also established the Permanent Joint Technical Committee, thus institutionalizing cooperation.²¹²

The significant under-inclusion of the eight other Nile riparian states began to cause problems as they also gained independence from the UK. Ethiopia has never recognized the validity of the 1959 agreement,²¹³ while Egypt has continued to assert the no harm doctrine and its historical claim to the Nile.²¹⁴ For many decades, regional statesman, particularly Egyptians and Ethiopians, warned of the

204. MCCAFFREY, *supra* note 5, at 237.

205. Report of the Nile Commission, para. 37, *quoted in* MCCAFFREY, *supra* note 5, 238.

206. MCCAFFREY, *supra* note 5, at 239 (citing 1929 Agreement).

207. Brunnée & Toope, *supra* note 92, at 123.

208. *See id.*

209. MCCAFFREY, *supra* note 5, at 241.

210. *Id.* at 242.

211. *Id.* at 242–43.

212. *Id.* at 243.

213. Brunnée & Toope, *supra* note 92, at 127.

214. Tadros, *supra* note 10, at 1097.

threat of war over Nile waters.²¹⁵ Added to this was a range of broader political disputes, both inter and intrastate, that touched on Nile issues and complicated the situation.²¹⁶ Egypt now has plans for the Salaam Canal and New Valley Projects, both of which will require substantial water draws from the Nile, in a quest to create “facts on the ground” to reinforce its historic and reliance claims on the river’s flow.²¹⁷ Ethiopia has schemes for hydroelectric and mini-dam projects.²¹⁸ The Nile flow cannot meet the demands of both Ethiopia and Egypt, let alone satisfy the desires of all other Nile riparians.²¹⁹

However, there have been important steps towards teamwork on management of the Nile Basin that indicate an emerging spirit of cooperation. In 1992, an intergovernmental Technical Cooperation Committee for the Promotion of Development and Environmental Protection on the Nile (TECCONILE) was formed by the water affairs ministers of Egypt, Sudan, Congo, Rwanda, Tanzania, and Uganda.²²⁰ This was superceded by the Nile Basin Initiative (NBI) in 1999 to serve until a permanent legal framework is in place, with a secretariat located in Uganda.²²¹ The key to success of the NBI is active participation by all riparians, particularly Ethiopia.²²² Strengthened by substantial funding, particularly by the World Bank,²²³ the NBI has developed a series of Strategic Action Programs aimed at achieving basin-wide cooperation by focusing on decision making on the lowest appropriate levels.²²⁴ In 1993, Ethiopia and Egypt declared the Nile to be a “center of mutual interest” after agreeing to cooperate on Nile issues, and a series of meetings was held between governmental leaders on the subject.²²⁵ The theme of the Nile 2002 Conferences, held annually beginning in 1993, was comprehensive cooperation, with emphasis on relative separation from political influences.²²⁶

A number of factors work for and against successful cooperation in the Nile Basin. On the negative side, the interest in the Nile at the

215. Brunnée & Toope, *supra* note 92, at 105–06.

216. *See id.* at 129.

217. *Id.* at 128, 147.

218. *Id.* at 128.

219. *Id.* at 128.

220. MCCAFFREY, *supra* note 5, at 247 & n.102.

221. Brunnée & Toope, *supra* note 92, at 108, 135, 138.

222. *Id.* at 137.

223. *Id.* at 138, 140.

224. *Id.* at 138.

225. *Id.* at 106–7.

226. *Id.* at 135.

political level differs greatly among the countries, as national water plans tend to be designed in isolation, and there is significant political distrust and a lack of information.²²⁷ On the positive side, there is a widespread recognition of the unsustainability of the region, particularly as governments stabilize and population grows substantially.²²⁸ If planned and executed in cooperation, a basin-wide scheme involving production of hydroelectric power and upstream water storage could mean considerable gain for all, including the savings of much water now lost to evaporation.²²⁹ Additionally, donors have thus far approved of the cooperation initiative and provided ample funding with few strings attached.²³⁰

However, the reaction of the Nile riparians to the Convention – a framework that supports many of the goals of the region – has been mixed. Sudan and Kenya voted for the Convention; Egypt, Ethiopia, Rwanda, and Tanzania abstained; Burundi voted against; and Uganda and Zaire were absent.²³¹ Ethiopia protested that giving priority to the no harm doctrine would override the right to equitable and reasonable utilization.²³² On the opposing side, Egypt continued to claim that the no harm rule was the foundation of international watercourse law and that it should not be given the same weight as equitable utilization.²³³ It has been suggested that the Convention's success at balancing the interests of upper and lower Nile riparians was in fact the reason for its lack of success on the ballot.²³⁴ Indeed, it was surprising that Egypt abstained from the vote, considering the view that the Convention was biased towards lower developed riparians.²³⁵ However, after the vote, Egypt's delegate, Lamia Mekhemar, saluted the adoption of the Convention and articulated, a “hope that the adoption of the new convention will promote better cooperation.”²³⁶ It is important to note that none of the Nile riparians have since ratified or

227. *Id.* at 130.

228. *Id.* at 140.

229. *Id.* at 141–42.

230. *Id.* at 142–43.

231. Press Release, United Nations, General Assembly Adopts Convention on Law of Non-Navigational Uses of International Watercourses, GA/9248, May 21, 1997, available at <http://www.un.org/News/Press/docs/1997/19970521.ga9248.html> (last visited March 1, 2005).

232. Brunnée & Toope, *supra* note 92, at 150.

233. *Id.*

234. *Id.* at 151–2.

235. Schwabach, *supra* note 7, at 263.

236. *Id.* at 263–64.

signed the Convention,²³⁷ perhaps challenging its probable status as customary international law in the region.

Though the Convention has been criticized by some as unsuitable for the Nile region because its guidelines are too vague,²³⁸ it is an excellent starting point and offers much value as a framework. Foremost is the emphasis on cooperation largely devoid of political influence. The Nile basin suffers from a large disparity of political and economic power in its members. By creating a “community of interest” situational ideal, the Convention focuses on the Nile River itself and its outreach into its communities rather than on the diverse, individual, political players who divide its waters. In this setting, Justice Holmes’ words in *New Jersey v. New York* are realized: “A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it.”²³⁹

As suggested above, the doctrine of equitable utilization and its incorporation of the doctrine of no harm is fair, and hence bound to initially please none of the parties concerned, but negotiation has a strong possibility of mitigating fears enough to support the principle. Indeed, the laudable NBI seems to follow the Convention to a great extent in incorporating the equitable utilization and no harm doctrines.²⁴⁰ The Convention’s chapter on environmental protection management, Part IV, is very useful and sets out a strong plan for cooperative ecosystem preservation, as is sorely needed in the Nile Basin. Furthermore, it should be remembered that the Convention acts as a flexible framework; it should not be expected to provide concrete solutions, but simply to describe mechanisms that will help to achieve them. With the ideas of the Convention in hand, amelioration of the Nile situation is certainly possible through joint riparian planning, as much water can be saved from evaporation and much better use can be made of that that exists.

B. The Colorado River

The Colorado River has been called the “most legislated, most debated, and most litigated river in the world.”²⁴¹ Indeed, its 1,450 mile flow is completely allocated among seven basin states and Mex-

237. Carroll, *supra* note 186, at 287.

238. Brunnée & Toope, *supra* note 92, at 144; Carroll, *supra* note 186, at 288–90.

239. 283 U.S. 336, 342 (1931).

240. Brunnée & Toope, *supra* note 92, at 152.

241. MCCAFFREY, *supra* note 5 at 286.

ico by treaty, interstate compact, congressional statute, and US Supreme Court decision.²⁴² It drains 244,000 sq. miles in the US and Mexico, and is the only major source of surface water between the Sierra and the Rocky Mountains.²⁴³ The upper basin states of Colorado, New Mexico, Utah, and Wyoming are less populated but contribute most of the water, while the lower basin states of Arizona, California, and Nevada contain a much larger population and great expanses of rich agricultural land that depend completely upon irrigation.²⁴⁴ After its journey through the states, the river then forms the international boundary between the US and Mexico for 20 miles before passing completely into Mexican territory and later emptying into the Gulf of California.²⁴⁵ Multiple large dams on both sides of the border shunt off almost all of the flow, and little is left to reach the delta, which has suffered severe ecological loss from the depletion.²⁴⁶

One of these dams, the Imperial, located in Arizona, diverts over 20% of the Colorado's flow into the 80 mile long All American Canal for use in irrigating California's fertile Imperial Valley, a journey that loses 70,000-90,000 acre-feet each year to seepage into an aquifer along the US-Mexico border.²⁴⁷ The Colorado also provides more than half the water used by the growing cities of Los Angeles, San Diego, and Phoenix.²⁴⁸ Before the Colorado's development by the US, its flow was used for irrigation in the Mexicali Valley (the southern extension of the Imperial Valley) but this irrigation is now quite limited as the flow is so depleted.²⁴⁹ The burgeoning population in Baja California, predicted to be almost 3 million by 2010, will strain the waters even further.²⁵⁰

When the Colorado was first apportioned in the Colorado River Compact of 1922, a mass allocation scheme by Congress, its flow was

242. Tarlock, *supra* note 179, at 445; MCCAFFREY, *supra* note 5, at 286.

243. MCCAFFREY, *supra* note 5, at 286.

244. *Id.*

245. *Id.*

246. See Center for Biological Diversity, *Colorado River Campaign*, at <http://www.sw-center.org/swcbd/Programs/watersheds/lcr/> (last visited Apr. 21, 2005); Environmental Defense, *The Colorado River Delta*, <http://www.environmentaldefense.org/article.cfm?ContentID=2641> (last visited Apr. 21, 2005) (stating that due to water extraction upstream, the delta receives less than 0.1 percent of the river's flow, resulting in decreased habitat area and considerably reduced plant and animal life).

247. MCCAFFREY, *supra* note 5, at 287.

248. *Id.*

249. *Id.*

250. *Id.*

considerably overestimated at 21 million acre feet.²⁵¹ Indeed, the average of the river's highly erratic flow is actually around 13.5 million acre feet.²⁵² Since each of the two basins was allocated 7.5 million acre feet per year, Mexico's "reserved" flow to 1.5 million acre feet was often difficult to fulfill.²⁵³ In response to the issue, a commission formed by the Mexican government advised implementing an interdependent governmental infrastructure to evaluate the area as a single region and guarantee development through equitable and reasonable utilization.²⁵⁴

This issue was addressed in the 1944 Treaty between the US and Mexico relating to the waters of the Colorado and Tijuana Rivers, and of the Rio Grande,²⁵⁵ which created an expanded International Boundary and Water Commission that continues to function effectively.²⁵⁶ The treaty guaranteed 1.5 million acre-feet to Mexico, to be optionally increased to 1.7 million acre-feet in years of surplus.²⁵⁷ In cases of extraordinary drought, however, Mexico's share may be reduced "in the same proportion as consumptive uses in the US are reduced."²⁵⁸ It should be noted that the Harmon doctrine was once again introduced and refuted during the Congressional hearings on confirmation of the treaty.²⁵⁹

The Colorado River's water quality is also a major problem. The Colorado is naturally salty, a problem exacerbated by human contributions, and the water's salinity increasingly exceeds US potability standards as it travels down its course.²⁶⁰ The 1944 treaty does not explicitly consider this issue, discussing flow from "any and all sources" "whatever their origin," though it is clear that the need is agricultural.²⁶¹ As a result, Mexico's agricultural lands have been negatively impacted by the delivery of heavily saline water, even necessitating some removal of land from cultivation.²⁶² In response, Mexican farm-

251. *Id.*

252. *Id.* at 288.

253. *Id.*; *Arizona v. California*, 373 U.S. 546, 557–58 (1962).

254. MCCAFFREY, *supra* note 5, at 289.

255. Treaty Respecting Utilization of Waters of the Colorado and Tijuana Rivers and the Rio Grande, Feb. 3, 1944, U.S. – Mex, 59 Stat. 1219 [hereinafter US/Mexico Treaty].

256. MCCAFFREY, *supra* note 5, at 289–90.

257. US/Mexico Treaty, *supra* note 255, at art. 10.

258. *Id.*

259. MCCAFFREY, *supra* note 5, at 290.

260. *Id.*

261. US/Mexico Treaty, *supra* note 255, at art. 10, 11.

262. MCCAFFREY, *supra* note 5, at 291.

ers have pumped more groundwater from the border aquifer, thereby enraging Arizona farmers.²⁶³

Minute 242, a 1973 addendum to the 1944 treaty, attempts to provide some solution to the water quality problem by limiting the average salinity level of water delivered to Mexico.²⁶⁴ However, as an average annual level, water of considerably higher level salinity may be delivered during the dry months, offset by low salinity water during the wet season.²⁶⁵ Salinity thus remains a problem, even with US construction of a desalination plant in Arizona. The agreement also limits groundwater withdrawal along the boundary aquifer and mandates joint consultation before undertaking new development.²⁶⁶

Though many of the elements discussed in the Convention are already present in the Colorado River situation, the Convention would be unlikely to have much impact as it could with regard to the Nile River. The time has passed for Convention's usefulness to the Colorado River. There is already a high degree of joint cooperation, information sharing, and non-politicized interaction between the United States and Mexico in regards to the Colorado River. The doctrines of equitable utilization and no harm are well-established and are derived in large part from the region. Scientific knowledge and innovation pertaining to water use originating in this region are respected and among the best in the world. Environmental pressures are intense from non-governmental organizations on both sides of the border. However, there is an enormous historical legislative and judicial presence in the interactions of the seven states, combined with a layer of international negotiation between the US and Mexico. A more equitable utilization schema is highly improbable, as it would require undoing a century of Congressional Acts, US Supreme Court decisions, and international treaties. In any case, the overarching problem will remain – there is simply not enough water for a growing population coupled with corresponding irrigation needs, regardless of conservation efforts. If the All American Canal is sealed (to prevent seepage) to satisfy increasing demand in California, for example, the

263. *Id.*

264. Agreement Approving Minute 242 of the International Boundary and Water Commission Setting Forth a Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River, 20 Aug. 1973, 12 I.L.M. 1105 (1973), available at <http://www.ibwc.state.gov/Files/Minutes/Min242.pdf>.

265. *See id.* at para. 1.

266. *Id.* at para. 5, 6.

water source for a third of the Mexicali Valley's farmland would be removed.²⁶⁷

Unlike the Nile, there is no win-win situation for the Colorado River unless water use is significantly reallocated. This would most likely involve retirement of land from agriculture to provide water for burgeoning municipalities,²⁶⁸ as well as general consideration of water as a commodity instead of a sovereign resource.²⁶⁹ While the Convention offers an excellent conceptual framework for the Nile, it seems that its point of usefulness for the Colorado has passed, though it does serve as an important reminder of the reasonable and equitable utilization principle that should influence any further modification of the 1944 treaty. Perhaps the conclusion can be drawn that the Convention is more valuable to developing nations, or in situations uncomplicated by extensive prior legislation or multiple governmental levels. Thus the Convention offers considerable hope to millions of thirsty citizens of developing countries, even if only as a probable codification of customary international law.

V. CONCLUSION

The increasing awareness of global interconnection spotlights the importance of international law. International water law, in particular, has become ever more significant as world population grows and freshwater resources shrink. Successfully proven guidance is essential, as there is little room for error in the delicate balance of vital human need, development, and conservation. From its origins in the US Supreme Court, the long-used doctrine of equitable utilization has been vertically borrowed into a key UN Convention, which arguably codifies customary international law and is now referenced by important bodies such as the ICJ. The Convention offers great potential as a framework in flexible, developing circumstances, and indeed may return the favor to a key progenitor, the US, in providing guidance on environmental issues. The contributions of Western US water law to the Convention thus mark a crucial advance in international water law, bringing us closer to solutions to sustain our "necessity of life."

267. *See supra* note 249 and accompanying text.

268. *Id.* at 293.

269. Tarlock, *supra* note 179, at 447–48.