

WATER DISPUTES IN THE MIDDLE EAST: AN INTERNATIONAL LAW ANALYSIS OF THE ISRAEL- JORDAN PEACE ACCORD

RAED MOUNIR FATHALLAH*

Table of Contents

I.	Introduction	120
II.	Historical Background: From War to Peace.....	122
	A. The Water Disputes and Their Origins.....	122
	B. The Main Plan: 1953-1956.....	123
	C. Water: From a Ground of War to a Pillar of Peace.....	126
III.	Overview of the Treaty's Effects on the Allocation of Water Resources	127
	A. Allocation	128
	B. Storage	134
	C. Water Quality and Protection	134
	D. Cooperation.....	135
IV.	The Development of International Water Law	137
	A. Overview.....	137
	B. Water Rights Theories.....	137
	C. The Codification of the Customary Law and its Application to the Treaty.....	140
V.	The Accord in View of International Water Law.....	142
	A. Equitable Utilization	143
	B. No Significant Harm	150
	C. Procedural Duties.....	152
VI.	Final Analysis	153
VII.	Conclusion	154
VIII.	Appendix A.....	156
VIX.	Appendix B.....	158

* Associate, Fathallah & Partners Law Firm, Beirut, Lebanon; Master of Comparative Jurisprudence (M.C.J.), New York University School of Law (1996); Licentiate in Civil Law (LL.L), University of Ottawa, Canada. The author wishes to thank Professor Phillippe Sands from New York University School of Law and University of London (SOAS), Professor Toni Fine from New York University School of Law, and Mr. Jamal Saghir from the World Bank Organization, for their helpful contributions. Finally, the author wishes to thank his parents for their valuable support throughout his academic and professional career.

And we send down water from the sky according to measure, and We can cause it to soak into the soil, and surely We are able to drain it off.¹

I. INTRODUCTION

Water, considered by all holy books as a divine gift to mankind, is a ubiquitous resource, vital for life, human well-being, and economic development, and thus vital for peace and security.² However, fresh water is substantially decreasing in quality and quantity throughout the world, so much so that the issue of water is similar to that of oil in the early 1970s.³ As a result, fresh water will be the focus of intense political disputes in the coming decade and will become the natural resource most likely to cause armed conflicts in the twenty-first century.⁴ The alarming increase in the global population, accompanied by a doubling in the growth of the world-wide demand for water every twenty-one years, raises major concerns and tensions among states, particularly Middle Eastern countries, suffering from scarcity of this resource.⁵

A Swedish water expert once described water as a “[c]hameleon, continuously reappearing in new roles in the human environment.”⁶ One of water’s many roles is as an agent of conflict in international drainage basins.⁷ History has witnessed several disputes involving shared water resources which have resulted in

1. KORAN, Sura XXIII, 18.

2. See Steve Connor, *Water Wars*, THE ECONOMIST PUBLICATION: THE WORLD IN 1996 (1995), at 139.

3. New sources of fresh water are decreasing in availability because 95% of the world’s sewage is dumped directly into rivers, and the cost of tapping new water supplies is two to three times higher than tapping existing supplies. Thus, chronic water shortages will plague approximately 40% of the world’s population in approximately 80 countries by the end of 1996. See *id.* at 140.

4. See *id.* at 139.

5. See *id.* at 139-40.

6. Sharif S. Elmusa, *Dividing Common Water Resources According to International Water Law: The Case of the Palestinian-Israeli Waters*, 35 NAT. RESOURCES J. 223, 223-24 (1995) (quoting Malin Falkenmark, *New Ecological Approach to the Water Cycle: Ticket to the Future*, 13 AMBIO 152, 154 (1984)).

7. See *id.* at 224 (“Virtually all the waters of such basins in the Middle East are contested: the Nile, the Euphrates, the Tigris and the Jordan.”).

armed confrontations and political crises.⁸ Regardless of the degree of violence involved in the conflicts, shared water facilities were usually spared from any direct military attacks⁹ for fear that a weaker opponent who had been deprived of water might resort to higher retaliatory force, and in turn, target the facilities of its attacker.¹⁰

Both friendly and hostile neighboring states that share common water have a tendency to favor negotiation over armed confrontation.¹¹ Generally, direct attacks on water only occur when an attacking state has no reciprocal risk.¹² Recent illustrations of such actions include the destruction of Iraqi water delivery facilities during the Gulf War and the 1993 Serbian shelling of the Peruca dam in former Yugoslavia.¹³ Regardless of occasional direct attacks on facilities, water issues have more often than not brought parties to the negotiating table. Such issues have been the primary force behind many international dispute resolutions and cooperation agreements, thus affecting the course of history.¹⁴ The

8. For example, India and Pakistan have had several limited military confrontations since 1947, as well as several threats of war. However, these disputes never involved military attacks on water facilities and resulted in diplomatic negotiation. See Joseph W. Dellapenna, *Treaties as Instruments for Managing Internationally-Shared Water Resources: Restricted Sovereignty v. Community of Property*, 26 CASE W. RES. J. INT'L L. 27, 30-31 (1994).

9. See *id.* at 30.

10. See *id.* at 31.

11. See *id.* at 30 ("States that are otherwise seemingly locked into apparently uncompromising and never ending enmity have nonetheless negotiated cooperative water arrangements and continued to comply with pre-existing arrangements."). Friendly neighbors such as the United States and Canada dispute use of the Niagara and Columbia Rivers but have met allocation agreements in order to optimize use of the resources. See *id.* at 47. More hostile disputes occur between Turkey, Syria, and Iraq over the Euphrates. See Jonathan E. Cohen, *International Law and the Water Politics of the Euphrates*, 24 N.Y.U. J. INT'L L. & POL. 503, 511-15 (1991).

12. See Dellapenna, *supra* note 8, at 31-32.

13. See *id.*

14. For example, the United States and Great Britain, representing Canada, created the 1909 Boundary Waters Treaty establishing a hierarchy of different uses of their common frontier waters. Another example is The Washington Treaty of 1944 between the United States of America and Mexico Relating to the Utilization of the Waters of the Colorado from the Tijuana and Rio Grande. Domestic and municipal uses were the primary objectives of this treaty. BONAYA ADHI GODANA, *AFRICA'S SHARED WATER RESOURCES* 27-28 (1985).

current state of affairs in the Middle East peace process exemplifies such a situation.

This article focuses on the important role of the Jordan River basin in the peace accord (Treaty) between the state of Israel and the Hashemite Kingdom of Jordan.¹⁵ First, Part II briefly examines past water disputes involving the Jordan River.¹⁶ Part III reviews Treaty provisions covering the allocation and management of water resources and compares them with those of the Treaty's predecessor, the Main Plan. Finally, Part IV examines the Treaty's provisions in correlation with the substantive and procedural requirements of the International Law Commission (ILC) Draft Articles that play a prominent role in the Treaty's operation. This article concludes by summarizing the role of the Treaty in the water policy of the region and predicting the Treaty's potential influence over similar water disputes in the area.

II. HISTORICAL BACKGROUND: FROM WAR TO PEACE

A. *The Water Disputes and Their Origins*

Since ancient times, the need for fresh water has played a predominant role in shaping Middle Eastern civilizations.¹⁷ In ancient Egypt, the population gathered around the Nile, and in Mesopotamia, around the Tigris and the Euphrates.¹⁸ Following the collapse of the Ottoman empire, the location of water resources,

15. Treaty of Peace, Oct. 26, 1994, Isr.-Jordan, 34 I.L.M. 43 [hereinafter Treaty].

16. This article does not aim to give an extensive historical overview of the military and political events of the Arab-Israeli conflict. However, giving a broad overview of the events surrounding the water disputes in the Middle East region will help in assessing the elements at stake in the conflict and how water became a direct cause of military confrontation between the riparian states, affecting foreign and strategic policies.

17. See AARON T. WOLF, *HYDROPOLITICS ALONG THE JORDAN RIVER: SCARCE WATER AND ITS IMPACT ON THE ARAB-ISRAELI CONFLICT* 12-15 (1995) [hereinafter WOLF]; Aaron Wolf, *Water for Peace in the Jordan River Watershed*, 33 NAT. RESOURCES J. 797, 801-05 (1993) (providing a chronology of modern water conflict and cooperation in the Middle East). See generally Aaron Wolf & John Ross, *The Impact of Scarce Water Resources on the Arab-Israeli Conflict*, 32 NAT. RESOURCES J. 919 (1992) [hereinafter Wolf & Ross] (giving a brief history of political events affected by the scarcity of water resources in the Middle East).

18. See generally WOLF, *supra* note 17, at 15-42 (describing the effects of the water resources on the development of the Middle East civilization). For a map of the waters in the Middle East, see Appendix A.

particularly the Jordan River, had an important influence in shaping the boundaries of the French and British mandates which later became the borders between Lebanon, Syria, and Jordan.¹⁹ The Ottoman collapse also influenced the immigration policies of the British and French mandate in the area.²⁰

In 1949, Armistice Agreements that were established after the first Arab-Israeli war set new boundaries and Demilitarized Zones between neighboring states.²¹ Due to differing interpretations of the zones' legal status, the Middle East witnessed recurrent hostilities and retaliatory incidents between its riparian states.²² The Jordan River played a crucial and strategic role in the hostilities.²³

The United States' Cold War policy forced the United States to play an active role in shaping Middle Eastern politics, having a significant influence on the water problems between the riparian enemy states.²⁴ Arab populations suffered from serious poverty, lack of development, and especially hostile feelings toward the United States for its continuous and unconditional support of Israeli policy in the Middle East.²⁵ Because some believed that extreme poverty would breed pro-Communist feelings, American officials saw the need to ensure plans for the development of the region, including management of the water facilities in the Jordan River Basin.²⁶

B. *The Main Plan: 1953-1956*

In 1952, the United States encouraged the United Nations Relief and Works Agency (UNRWA) to supervise a revision project of all

19. See Wolf & Ross, *supra* note 17, at 927-29. See generally WOLF, *supra* note 17, at 15-42.

20. See Wolf & Ross, *supra* note 17, at 929. See generally WOLF, *supra* note 17, at 28-40.

21. See MIRIAM R. LOWI, *WATER AND POWER: THE POLITICS OF A SCARCE RESOURCE IN THE JORDAN RIVER BASIN* 80 (1993).

22. A riparian state is a country situated on the banks of a river, lake, etc. See WEBSTER'S NEW TWENTIETH CENTURY UNABRIDGED DICTIONARY 1564 (2d ed. 1983).

23. See LOWI, *supra* note 21, at 79-80.

24. See *id.* at 81.

25. See *id.*

26. See *id.* at 81 (recounting the feelings of United States officials that "poverty provided a fertile breeding-ground for communism . . .").

previously proposed and approved plans involving the management of water resources in the Jordan River basin. The UNRWA sought to ensure the efficiency and success of the plans.²⁷ This project primarily targeted the preceding Bunger Plan, a unilateral water plan for the Kingdom of Jordan²⁸ jointly supervised by the Truman administration and the UNRWA. The Bunger Plan advocated the integration of water and power resources from the Jordan, Yarmouk, and Litani Rivers by the four riparian states. Ultimately, the project led to the Unified or Main²⁹ Plan, that was submitted to the United States Government and the UNRWA in August 1953.³⁰

The Main Plan suggested construction of diversionary canals to irrigate the lands of the Upper Jordan Basin. It also supported utilization of Lake Tiberias as a storage reservoir for the flood flows of the Jordan and Yarmouk Rivers.³¹ The Main Plan rejected some of the Bunger proposals, such as the use of the Maqarin Dam for irrigation and made no reference to the Litani River in Lebanon.³²

President Dwight Eisenhower appointed Eric Johnston, then Chairman of the United States Technical Cooperation Agency's Advisory Board for International Development, as "Personal Representative of the President," with the rank of ambassador.³³ Mr. Johnston's mission was to reach a regional agreement between the riparian states, Jordan, Israel, Lebanon, and Syria,³⁴ on the

27. *See id.* at 82-83.

28. *See id.* at 82. This plan was proposed by Mills Bunger, an American engineer with the United States Technical Cooperation Agency (TCA). The Bunger Plan supported joint Syrian-Jordanian development of the Yarmouk's waters through a dam to be built at Maqarin, diverting water through a canal along the Jordan River. The Plan was designed to provide water to over 100,000 refugees and increase employment opportunities in the region. *See id.*

29. *See id.* at 83. The Main Plan was named after Charles T. Main Inc., a Boston engineering firm that conducted the research and supervised the draft of the study of effective and efficient use of water resources in the Jordan Valley. *See id.*

30. *See id.*

31. *See id.*

32. *See id.*

33. *See id.* at 86.

34. All references to riparian and neighboring states denote the countries of Jordan, Israel, Lebanon, and Syria, all located in the Jordan River basin. *See* Appendix A.

development of the Jordan River Basin.³⁵ He presented the Main Plan as a framework for regional cooperation on water resources, considering a framework based primarily on the needs and consumption of the neighboring states and their available resources, not the geographical borders separating them.³⁶

Negotiations with all the parties were successful, and the allocations set forth by the Main Plan were ultimately accepted by both Arab and Israeli technical committees.³⁷ However, the Main Plan remained unratified for political reasons.³⁸ The political environment in the region was full of hatred, leading to serious misconceptions and continuous hostilities.³⁹ In fact, the Arab League refused to recognize the plan because it would help the development and be an implicit recognition of the state of Israel.⁴⁰

In the aftermath of Johnston's failed mission in the Middle East, the riparian states continued their unilateral water development projects.⁴¹ Meanwhile, the two principal riparian states, Jordan and Israel, were tacitly conducting their water policies in accordance with the Main Plan.⁴² Although Main Plan negotiations never resulted in a formal international instrument, they impacted the policies of the two riparian states during the following years.⁴³ Moreover, the informal understanding between Israel and Jordan ultimately led to discrete technical meetings to determine day-to-day hydraulic operations in the 1960s and 1970s.⁴⁴ Water officials from Israel and Jordan met two to three times a year at "Picnic Table Talks" to discuss flow rates and allocations at the confluence of the Jordan and Yarmouk Rivers.⁴⁵

35. *See id.*

36. *See id.*

37. *See* Jonathan M. Wenig, *Water and Peace: The Past, The Present, and The Future of the Jordan River Watercourse: An International Law Analysis*, 27 N.Y.U. J. INT'L. L. & POL. 331, 335 (1995).

38. *See id.*

39. *See id.*

40. *See id.* at 335-36.

41. *See id.* at 336.

42. *See id.*

43. *See id.*

44. *See id.* at 337.

45. *See id.*

C. *Water: From a Ground of War to a Pillar of Peace*

Following the failure of the mission supporting the Main Plan, Jordan extended an irrigation canal (East Ghor Project) from the Yarmouk River southward along the eastern Ghor of the Jordan Valley.⁴⁶ The East Ghor Project was carried out in cooperation with Syria and financed jointly by the governments of Jordan and the United States.⁴⁷ Israel proceeded with its ten year plan to integrate all of the country's water resources into a comprehensive country-wide network called the National Water Carrier.⁴⁸

These unilateral water development projects created serious tensions among the neighboring states and led to the exchange of threats between them.⁴⁹ In response to Jordan's pleas before the Arab League, the Arab states had two possible responses: (1) diverting the Hasbani and Baniyas waters northward into Syria and Lebanon to obstruct their access to Israel; and/or (2) implementing military measures to deny Israel Upper Jordan water, thereby provoking a confrontation.⁵⁰

Only Syria favored military action.⁵¹ Egypt's president, Abdul Nasser, urged his Arab partners not to fight Israel, having had assurances from President Kennedy that the United States would help to defend Israel.⁵² Israel responded that it intended to complete the project and to prevent the Arab countries from diverting the waters of the Jordan River.⁵³

Between 1964 and 1967, these political clashes developed into several military confrontations between the Syrians and the Israelis.⁵⁴ Other than the bombing of the East Ghor Canal later in 1969, this time period involved the most direct water-related con-

46. *See id.* at 337.

47. *See* LOWI, *supra* note 21, at 119.

48. *See id.* at 116.

49. *See* WOLF, *supra* note 17, at 48-49.

50. *See id.*

51. *See* LOWI, *supra* note 21, at 124.

52. *See id.* at 121.

53. *See id.* at 118-19. "Israel's Foreign Minister Golda Meir warned that any move by the Arab countries to divert the headwaters of the Jordan River would constitute 'an outright attack on one of Israel's means of livelihood'; 'it would be regarded as a 'threat of peace.'" *Id.* at 119.

54. *See id.* at 125-26.

flict.⁵⁵ The most notable incident was the destruction of the diversion works on the Baniyas-Yarmouk Canal in Syria by the Israeli Air Force in July 1966.⁵⁶ Israel destroyed the All-Arab diversion plan that would have reduced Israeli water supplies by 35%.⁵⁷

In the aftermath of the Six Days War of 1967,⁵⁸ the geopolitical map of the Middle East changed dramatically. Apart from Israel's important victory in terms of land and borders, Israel also gained important water resources by acquiring two of three Jordan River headwaters, riparian access to the entire river, and the recharge zones of the mountain aquifer that currently supplies one-third of Israel's freshwater supply.⁵⁹ By occupying the Syrian Golan Heights, Israel also controlled the Baniyas tributary.⁶⁰ After its 1982 invasion of Lebanon, Israel maintained effective control over the remaining Hasbani tributary as well as the strategic Litani River.⁶¹ Some experts argue that the quest for water has been the primary motive behind Israel's wars, and that this motive has been prominent in Israel's military strategy and policy.⁶²

III. OVERVIEW OF THE TREATY'S EFFECTS ON THE ALLOCATION OF WATER RESOURCES

The recent signing of the Treaty is the best illustration of the importance of water to the people of the Jordan River Valley. The Treaty consists of thirty articles of agreement that concern international boundaries, security, economic relations, refugees, and, of course, water.⁶³ The only provision in the Treaty governing shared

55. *See id.*

56. *See* Wolf & Ross, *supra* note 17, at 937.

57. *See id.*

58. The Six Days War of 1967 resulted in an important victory by Israel against its Arab neighbors. Israel gained a considerable stake of new territory that it still presently occupies (the Golan Heights). *See id.*

59. *See* WOLF, *supra* note 17, at 52.

60. *See* LOWI, *supra* note 21, at 147. After occupation of this tributary, the Hasbani tributary was the only northern Jordanian water source outside of Israel's control. *See id.*

61. *See* WOLF, *supra* note 17, at 57-59.

62. *See* Appendix B; *see also* Wenig, *supra* note 37, at 331.

63. *See* STEPHEN C. LONERGAN & DAVID B. BROOKS, WATERSHED: THE ROLE OF FRESH WATER IN THE ISRAELI-PALESTINIAN CONFLICT 270 (1994). The division and numbering of

natural resources is Article 6 of the Treaty, which is entitled simply "water."⁶⁴ Article 6 of the Treaty constitutes the first water agreement between Israel and one of its neighbors.⁶⁵

Annex II of the Treaty contains detailed and technical provisions concerning shared water resources.⁶⁶ First, Annex II sets forth the allocation of water from the Yarmouk and Jordan Rivers.⁶⁷ Second, it provides for the parties' cooperation in building storage facilities to improve the efficiency of their resources.⁶⁸ Further, Annex II provides for the protection of the quality of water, as well as the cooperation between the parties in increasing water supplies and exchanging information.⁶⁹ Finally, Annex II sets forth the implementation of the Joint Water Committee that must coordinate such cooperation.⁷⁰

A. Allocation

The first paragraph of Article 6 sets forth principles governing the "rightful allocation" of the different shared water resources between Israel and Jordan.⁷¹ The major water resources that are subject to the provisions of the agreement are: the water of the

the discussion of the Treaty does not reflect the division of the paragraphs of the Articles of the Treaty or the Annex.

64. See Appendix B.

65. See generally WOLF, *supra* note 17, 42-70 (reviewing the history of water conflicts in the Middle East). Although Israel has had two other water related agreements with Jordan, the Treaty is the first comprehensive agreement reached. In 1960, Israel agreed to allow Jordan to repair the East Ghor Canal in exchange for Jordan's agreement to follow the water allocations established in the Main Plan and to stop Palestinian Liberation Organization activity in Jordan. See *id.* at 54. In 1963, Jordan reached a new agreement concerning the allocation of the Jordan River waters in return for Israel's concession to allow United States tank sales to Jordan. See *id.* at 49.

66. This article contains four principal paragraphs governing different aspects of water policies from the allocation of shared water resources and their storage to the cooperation in their development and preservation of water quality. In studying these agreed principles, this article examines Article 6 of the Treaty, in reference to Annex II entitled "Water Related Matters" under which more detailed and technical principles are enunciated.

67. See Treaty, *supra* note 15, Annex II, art. I.

68. See *id.* Annex II, art. II.

69. See *id.* Annex II, art. III.

70. See *id.* Annex II, art. VII; see also Appendix B.

71. Treaty, *supra* note 15, art. 6, § 1.

Jordan River that, with all its tributaries, consists of about 600 million cubic meters per year (mcm/year), the water of the Yarmouk River that consists of approximately 500 mcm/year of which 250 mcm/year flowing south of Syria, and the water of the Mountain Aquifer that extends from the mountains of the West Bank into pre-1967 Israel that consists of between 500 to 600 mcm/year.⁷² The Treaty deals separately with the allocation of Yarmouk and Jordan waters.⁷³ The Treaty also creates a distinction between summer and winter allocation that did not exist in the Main Plan.⁷⁴

72. See Draft Report, *Water and Peace in the Middle East: Report of the Harvard Middle East Water Project 17* (Oct. 1995).

73. See Treaty, *supra* note 15, Annex II, art. I, §§ 1, 2.

74. Under the Treaty, the summer period extends from the 15th of May to the 15th of October of each year. The winter period extends from the 16th of October to the 14th of May of each year. See *id.* Annex II, art. 1, §§ 1(a), 1(b).

1. *Waters from the Jordan River*

The Treaty entitles Jordan to the majority of the Yarmouk River's flow⁷⁵ and gives Israel principal entitlement to the Jordan waters.⁷⁶ Jordan receives twenty mcm of summer flow⁷⁷ in exchange for twenty mcm of winter Yarmouk water⁷⁸ and must bear the cost of the transfer.⁷⁹ During the winter period, Jordan is entitled to store for its use an average of twenty mcm from the floods of the Jordan River south of its confluence with the Yarmouk.⁸⁰ The Treaty allows both states to use the excess flows in order to avoid unnecessary waste.⁸¹

The Treaty also provides for Israel to maintain its use of the Jordan River waters between its confluence with the Yarmouk and its confluence with Tirat Zvi Wadi Yabis.⁸² Jordan has the same right but is only entitled to those waters if its entitlement is subject to the condition that its use does not "harm the quantity or quality of Israeli uses."⁸³

Under the Main Plan, Jordan was entitled to 100 mcm/year from the Jordan River waters that was to be transferred from the Kinneret to the East Ghor Canal.⁸⁴ However, after the failure of the Main Plan, Jordan began taking this portion directly from the lower Jordan River bordering its territories.⁸⁵

2. *Waters from the Yarmouk River*

Under the Treaty, Israel is entitled to twenty-five mcm/year (twelve mcm in the summer and thirteen mcm in the winter), and Jordan gets the rest of the flow.⁸⁶ Further, Israel is entitled to

75. See Treaty, *supra* note 15, Annex II, art. I, § 1(b); see also Wenig, *supra* note 37, at 338.

76. See Treaty, *supra* note 15, Annex II, art. I, § 1(b).

77. See *id.* § 2(a).

78. See *id.* § 1(b).

79. See *id.* § 2(a).

80. See *id.* § 2(b).

81. See *id.*

82. See Treaty, *supra* note 15, Annex II, art. I, § 2(c).

83. *Id.*

84. See Wenig, *supra* note 37, at 340.

85. See *id.*

86. See *id.*

pump an additional twenty mcm from the Yarmouk in return for its concession of transferring twenty mcm during the summer period from the Upper Jordan River to Jordan.⁸⁷ Finally, both countries are entitled to the excess flood waters that are unusable.⁸⁸

Under the Main Plan, Israel was allocated twenty-five mcm/year of the Yarmouk water.⁸⁹ However, as mentioned earlier, the Main Plan did not have any seasonal distinctions.⁹⁰ Although all of that water was a summer allocation,⁹¹ Israel regularly extracted extensive amounts of water during the winter seasons.⁹² While it never officially claimed any right to these waters, Israel used them when Jordan could not. In this way, Israel took advantage of its temporarily favorable geographic position and avoided the waste of unused waters.⁹³

Undoubtedly, the agreed repatriation of the Yarmouk waters has resolved a "point of contention which arose on previous occasions."⁹⁴ Under the Main Plan, Jordan was allocated 100 mcm of Yarmouk waters for the proposed West Ghor Canal⁹⁵ on the West Bank, then under Jordan's control.⁹⁶ The Six Days War of 1967, however, changed the Middle Eastern map and gave Israel control over the Yarmouk, granting Israel an arguable claim over the alleged 100 mcm/year that it had been extracting.⁹⁷ This claim was disputed by the Jordanians and Syrians, who also shared the Yarmouk resources,⁹⁸ but was resolved under the Treaty after Israel abandoned its claim in accordance with Israel's proposed withdrawal from the West Bank.⁹⁹

87. See *id.* §§ 1(b), 2(a).

88. See *id.* § 2(b).

89. See Wenig, *supra* note 37, at 338.

90. See *id.*

91. See *id.*

92. See *id.* at 339.

93. See LOWI, *supra* note 21, at 181.

94. Wenig, *supra* note 37, at 339.

95. See *id.*

96. See *id.*

97. See *id.*

98. See *id.*

99. See *id.*

3. Saline Springs

Under the section covering the Jordan River, the Treaty contains provisions for desalinated water.¹⁰⁰ Jordan is entitled to ten mcm of desalinated water from about twenty mcm of saline springs diverted into the lower Jordan River.¹⁰¹ Israel agreed to “explore the possibility” of desalinating and maintaining the springs at its own cost.¹⁰² Furthermore, Israel will supply Jordan with the ten mcm from the Jordan River during the summer period until the facilities are operational.¹⁰³

4. Groundwater

Annex II includes a separate article dealing exclusively with the groundwater in Emek Ha'arava/Wadi Araba.¹⁰⁴ This article is an essential section of the Treaty because it governs wells that were once drilled and managed by Israel¹⁰⁵ but currently fall within Jordan's boundaries and thus are controlled by Jordan.¹⁰⁶ The Treaty mandates that the wells remain in Jordan's control but subject to both neighbors' use.¹⁰⁷ Jordan is responsible, with Israel's support, for licensing well maintenance and replacement so that proper use is preserved by both states.¹⁰⁸ Provisions also stipulate that both states have a duty to refrain from taking “any measure that may appreciably reduce the yields or quality of these wells and systems.”¹⁰⁹ This article provides Israel with an additional ten mcm/year from the wells.¹¹⁰ However, the additional allowance is subject to the supervision of the Joint Water

100. *See id.* § 2(d).

101. *See id.*

102. *Id.*

103. *See id.*; *see also* Wenig, *supra* note 37, at 340-41.

104. *See Treaty, supra* note 15, Annex II, art. IV.

105. *See id.* § 1.

106. *See id.*

107. *See id.*

108. *See id.* § 2.

109. *Id.* § 1.

110. *See id.* § 3.

Committee to assure that the increased pumping does not harm existing uses.¹¹¹

5. *Operation and Maintenance*

The Treaty contains several provisions concerning the operation and maintenance of almost all the agreed water resources.¹¹² Systems located within Israeli territory, including those supplying Jordan with water and electricity, are Israel's responsibility, while those serving only Jordan are Jordan's responsibility and expense.¹¹³ Israel guarantees Jordanian personnel with equipment access to the facilities located in Israel in order to assure continued operation.¹¹⁴ In addition, Jordan is responsible for the operation of the wells in its own territory to assure Israel's supply of water and electricity.¹¹⁵ Because Israel maintains responsibility for those wells,¹¹⁶ Jordan guarantees Israel access to personnel and equipment to facilitate the operations.¹¹⁷

6. *Additional Water*

Article I of Annex II of the Treaty governs the development of additional water resources. In this section, parties agree to cooperate in finding new resources "for the supply to Jordan of an additional quantity of (50) MCM/year of water to drinkable standards."¹¹⁸ Interestingly, this allocation of drinkable water comes as compensation for Jordan. Fifty to seventy mcm of the 100 mcm/year allocated to Jordan under the Main Plan were to be of drinkable quality and were to be diverted from the Kinneret into East Ghor Canal.¹¹⁹ However, under the Treaty, Jordan's allocation is directly diverted from the lower Jordan River, leaving

111. *See id.*

112. *See id.*

113. *See Treaty, supra* note 15, Annex II, art. I, § 4(a).

114. *See id.* § 4(b).

115. *See id.* § 4(a).

116. *See Treaty, supra* note 15, Annex II, art. IV, § 4(a).

117. *See id.* § 4(b).

118. *See id.* § 3.

119. *See Wenig, supra* note 37, at 341.

Jordan with water of high salinity.¹²⁰ Some experts argue that this compensatory allocation is “a peace gesture on Israel’s part”¹²¹ to help Jordan deal with its chronic shortage of drinkable water.¹²²

B. Storage

The parties agree to cooperate in building two storage facilities.¹²³ The first is on the Yarmouk River,¹²⁴ directly downstream of the Adassiya diversion. It reflects the previous Adasiyeh Dam project proposed by the Main Plan that was intended to facilitate the diversion efficiency of waters into the King Abdullah Canal (East Ghor Canal).¹²⁵

The second water storage system will be built on the Jordan River along the common boundary between Jordan and Israel.¹²⁶ This storage system is designed to allow Jordan to store its twenty mcm winter allocation in addition to any other potential floodwaters.¹²⁷ But, Jordan must let Israel use three mcm per year of any added storage capacity.¹²⁸

Finally, the Treaty makes reference to other storage facilities that can be agreed upon by the parties.¹²⁹ This agreement reflects the long-time desire of the parties to construct the Maqarin project, a large dam on the Yarmouk that was envisioned by the Main Plan.¹³⁰

C. Water Quality and Protection

120. See *id.* at 342.

121. *Id.* at 341.

122. See Steve Rodan, *Jordan Wants Fair Share of Water Now; Israel Looks Ahead*, THE JERUSALEM POST, Sept. 16, 1994, at 2B; see also Wenig, *supra* note 37, at 341.

123. See Treaty, *supra* note 15, Annex II, art. II, §§ 1, 2.

124. See *id.* § 1.

125. See Treaty, *supra* note 15, Annex II, art. II, § 1; Wenig, *supra* note 37, at 342.

126. See Treaty, *supra* note 15, Annex II, art. I, § 2(b).

127. See *id.* § 2.

128. See *id.* § 2.

129. See *id.* § 3.

130. See LOWI, *supra* note 21, at 172-80; Wolf & Ross, *supra* note 17, at 939-41; Wenig, *supra* note 37, at 343. If completed, the Maqarin project would allow Jordan to store the excess winter floodwaters and use its share of the Yarmouk. Several attempts to undertake this project have failed because of the project’s dependence on Syria’s acquiescence. See *id.*

Within the Treaty is a specific Article governing the obligation of both parties to undertake necessary measures to preserve the quality of the shared waters of the Jordan, Yarmouk, and the Arava/Araba groundwaters “against any pollution, contamination, harm or unauthorized withdrawals of each other’s allocations.”¹³¹ Generally speaking, this article sets a relatively high standard of protection by creating a duty on the part of each supplying country to preserve the quality of the water resources in its territories so that all resources are protected from harm.¹³² The obligation to preserve water quality extends to the water systems located in each territory that supplies its neighbors with water.¹³³

Once again, the Treaty calls for cooperation among the parties in accomplishing such a task. Joint monitoring stations will be established along the participating country’s boundaries.¹³⁴ These monitoring stations will be subject to the supervision of the Joint Water Committee in order for the parties to control the quality of their shared water resources.¹³⁵

D. Cooperation

The Treaty contains several provisions relating to the cooperation between the parties “in developing plans for purposes of increasing water supplies and improving water use efficiency, within the context of bilateral, regional or international cooperation.”¹³⁶ Some of those provisions are also discussed under the sections covering the allocation, the building of storage facilities, and the preservation of water quality.¹³⁷

1. Joint Water Committee

All the projects and policies set forth by Annex II require a considerable amount of cooperation and jointly coordinated efforts. To

131. Treaty, *supra* note 15, Annex II, art. III, § 1.

132. *See id.* § 4.

133. *See id.* § 6.

134. *See id.* § 2.

135. *See id.*

136. Treaty, *supra* note 15, Annex II, art. VI, § 2.

137. *See id.* Annex II, art. I, II, III.

accomplish this, the Treaty establishes a Joint Water Committee (Committee), comprised of three members from each country.¹³⁸

The Committee supervises all the joint projects undertaken by the countries and provides the necessary technical support and expertise to assure that each country's projects are in compliance with the Treaty.¹³⁹ Subject to the approval of both governments, the Committee has the power to appoint specialized subcommittees to perform any required technical task.¹⁴⁰ However, the Treaty grants neither judicial nor legislative authority to the Committee and does not provide a dispute settlement remedy.¹⁴¹ The Committee's establishment is significant because it formalizes and extends the role of the picnic table summits,¹⁴² which played an important role in the de facto compliance with the Main Plan¹⁴³ and resemble the International Joint Commission.¹⁴⁴

2. Notification and Agreement

Each party is obliged to notify and obtain the consent of the other before undertaking any project effecting the flow of either river.¹⁴⁵ The party must provide notification six months in advance of starting any such project.¹⁴⁶ The six month window allows for the meeting of the Committee to study the proposed project and assure its efficient management, thus preventing any adverse impact on an effected party.¹⁴⁷

138. *See id.* § 1.

139. *See id.* § 2.

140. *See id.* § 3.

141. *See id.*

142. *See* LONERGAN & BROOKS, *supra* note 63, at 273.

143. *See* discussion *supra* Part II.B (mentioning the role of picnic table summits in the development of the Main Plan).

144. *See id.* The Committee manages water along the United States-Canada border. *See id.*

145. *See* Treaty, *supra* note 15, Annex II, art. V, § 2.

146. *See id.*

147. *See id.*

3. *Transfer of Information*

Israel and Jordan undertook to exchange relevant data concerning water resources and the proposed facilities each party intended to build and operate.¹⁴⁸ The parties exchange the information through the Committee under the methods and procedure set by the Treaty.¹⁴⁹

IV. THE DEVELOPMENT OF INTERNATIONAL WATER LAW

A. *Overview*

The issue of water in the Middle East can only be solved through cooperation and agreement. However, such cooperation and agreement depends on an official body of law in order for a treaty to survive political disagreement between the riparian states.¹⁵⁰ Having examined the geopolitical implications of the water issue in the Treaty, an examination of the legal aspects of the Treaty is critical.¹⁵¹ This section serves as a brief overview of the principals of transboundary water rights and their developments in order to assist in understanding the Treaty and its implications in international water law. An introduction into the different water rights theories and their development into a body of customary international law is also necessary.

B. *Water Rights Theories*

In the absence of international agreements, international water law has evolved through a body of customary law. This evolution was shaped either by the practices of the states or by the international decisions and agreements that governed the relations between the riparians throughout history.

One legal theory adopted by drainage basin states is the theory of absolute territorial sovereignty, also known as the Harmon Doc-

148. See Treaty, *supra* note 15, Annex II, art. IV, § 2 (mandating an exchange of technical information regarding the wells operated by Jordan).

149. See *id.* § 1.

150. See Cohen, *supra* note 11, at 554.

151. This section does not provide an extensive analysis of the different instruments governing international water law.

trine.¹⁵² Under this theory, a state can use the rivers on its territory without any obligation or responsibility toward any riparian neighbor.¹⁵³ Naturally, this theory is favored by upstream states, such as Turkey, in its endless dispute with Syria and Iraq over the Euphrates.¹⁵⁴ However, a majority, especially downstream riparian states, reject this theory for its narrowness and inefficiency in solving shared watercourse differences.¹⁵⁵ These states prefer a theory of absolute integrity of the river, under which an upper riparian state cannot, in its use of an internationally-shared river, harm or affect in any way the flow or the quality of the shared waters.¹⁵⁶

Like the Harmon Doctrine, the theory of absolute integrity of the river is inequitable in its award of rights. Therefore, neither doctrine has received much support.¹⁵⁷ Consequently, the doctrine of restricted sovereignty¹⁵⁸ has become a partial conciliation, combining the theory of limited territorial sovereignty with the theory of limited integrity of the river.¹⁵⁹

Under restricted sovereignty, "each state recognizes the rights of all riparian states to use some water from a common source, and the obligation to manage use so as not to interfere with the similar use of other riparian states."¹⁶⁰ The recognition of reciprocal rights and obligations reflects the growing need for fresh water by the states in their search for guaranteed and constant water resources and their desire to avoid conflict.

The theory of restricted sovereignty has become the dominant trend among riparian states and thus has constituted the customary rule of international law as reflected in international

152. GODANA, *supra* note 14, at 32. The Harmon Doctrine was named after the United States Attorney General who announced this theory during a dispute with Mexico over the Rio Grande in 1895. The theory was later invoked by India in a conflict with Pakistan and by Ethiopia in a dispute with Egypt and Sudan over the Nile. *See id.*

153. *See id.*

154. *See* Cohen, *supra* note 11, at 522.

155. *See id.* at 522-23.

156. *See id.* at 523.

157. *See id.*

158. *See* Dellapenna, *supra* note 8, at 36.

159. *See* Cohen, *supra* note 11, at 524.

160. Dellapenna, *supra* note 8, at 36.

case law¹⁶¹ and codified in the works of international organizations.¹⁶² Indeed, the restricted sovereignty doctrine gave rise to the rule of equitable utilization and the no appreciable harm theory, as codified in the international instruments.¹⁶³

The evolution of watercourse treaty practice has witnessed a transition from a model of restricted sovereignty to a more restrictive definition of sovereignty under the theory of community of interest or a community of property model.¹⁶⁴ The allocation of water resources based on equitable apportionment under the community of interest theory is actually based on a concept of equitable participation under the theory of community of property.¹⁶⁵

Under another theory, known as the ecosystem concept, a basin is jointly managed as one geographic and economic unit, regardless of international boundaries.¹⁶⁶ The riparians agree on sharing the resources of the basin and equitably participate in its development and protection.¹⁶⁷ This theory gives a right of action to all states, prohibiting states from disposing or affecting the flow or the quality of the waters without the agreement or cooperation of its neighbors.¹⁶⁸ This modern theory is mirrored in various international treaties and legal documents, mainly through agreed provisions imposing on the parties an obligation to participate in the

161. One example is the Lake Lanoux Arbitration between France and Spain. See PHILIPPE SANDS, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* I 348 (1995).

162. In addition to the ILC Draft Articles, these principles were applied by the International Court of Justice, in the case of the Gabčíkovo-Nagymaros Project, concerning the dispute over the Danube between Hungary, on one side, and the Czech and Slovak Republic, on the other side. See *id.* at 351-54.

163. An example of one such international instrument is the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes. See *id.* at 357.

164. See Dellapenna, *supra* note 8, at 42.

165. See *id.*

166. See Ved P. Nanda, *The Law of the Non-Navigational Uses of International Watercourses: Draft Articles on Protection and Preservation of Ecosystems, Harmful Conditions and Emergency Situations, and Protection of Water Installations*, 3 *COLO. J. INT'L ENVTL. L. & POL'Y* 175, 179-80 (1992) (describing the international acceptance and development of the ecosystem concept).

167. See *id.*

168. See *id.*

management of the watercourse.¹⁶⁹ Additionally, certain procedural requirements in the dealing between the states, such as the requirements of notification and consultation, as well as the sharing of data is involved.¹⁷⁰ Although this theory is the most beneficial in the current world situation, it remains a rather utopian concept in light of the scarcity problem haunting the planet.¹⁷¹

C. The Codification of the Customary Law and its Application to the Treaty

Since the beginning of the century, several attempts have been made to develop a mechanism of regulating international watercourses. The most significant codification of the customary law was the Helsinki Rules on the Uses of the Waters of International Rivers (Helsinki Rules), completed in 1966 by the International Law Association (ILA).¹⁷² Article IV of the Helsinki Rules was the first incorporation of the equitable use doctrine 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.”¹⁷³

According to the ILA, the equitable use doctrine set forth in the Helsinki Rules was “a development of the rule of international customary law forbidding states to cause any substantial damage to another state or to areas located outside the limits of national jurisdiction.”¹⁷⁴ Although the Helsinki Rules helped to establish the rules of equitable utilization and no appreciable harm, the

169. Examples include the 1978 Agreement between Canada and the United States on Great Lakes Water Quality, the Convention on the Conservation of Antarctic Marine Living Resources, and the World Charter for Nature. *See id.* at 179.

170. *See id.*

171. *See* Cohen, *supra* note 11, at 513-15 (describing current tensions, compounded by the drought situation, between Turkey, Syria, and Iraq despite a 1990 bilateral agreement on water division).

172. INTERNATIONAL LAW ASSOCIATION, HELSINKI ON THE USES OF THE WATERS OF INTERNATIONAL RIVERS, 52d Conf. (Aug. 20, 1967) [hereinafter Helsinki Rules].

173. *Id.* art. IV.

174. Stephen McCaffrey, *International Organizations and the Holistic Approach to Water Problems*, 31 NAT. RESOURCES J. 139, 144 (1991) (quoting FINNISH BRANCH OF THE INTERNATIONAL LAW ASSOCIATION, THE WORK OF THE INTERNATIONAL LAW ASSOCIATION ON THE LAW OF INTERNATIONAL WATER RESOURCES 225 (E. Manner & V. Matsaelampi eds. 1988)).

unofficial status of the ILA eroded the enforceability of the Rules and undermined their binding authority.¹⁷⁵

In an attempt to give binding legal authority to the regulation of international watercourses and under the recommendation of the United Nations, the ILC studied a possible legal framework for the rules. After several sessions and almost twenty-five years of study, the result was the 1994 Draft Articles on International Watercourse.¹⁷⁶ Although the ILC Draft Articles have not been formally adopted, they have a significant de facto impact on the practice of riparian states. Indeed, they can serve as a framework and general guide for riparian states in forming multilateral agreements adaptable to their regional and political realities. Parties are given the freedom to “apply and adjust the provisions of the present articles to the characteristics and uses of a particular international watercourse or part thereof.”¹⁷⁷

This freedom of agreement is limited so that it “does not adversely affect, to a significant extent, the use by one or more other watercourse States”¹⁷⁸ Furthermore, the ILC Draft Articles require watercourse states to enter into consultations “with a view to negotiating in good faith for the purpose of concluding a watercourse agreement or agreements.”¹⁷⁹ Consequently, every watercourse state that is significantly affected by the implementation of the proposed agreement would be entitled to participate in the negotiation of the agreement and to become a member of such a multilateral agreement.¹⁸⁰ This provision aims to extend the scope of the agreement to the territory of the concerned state to cope with the agreement’s effects on the watercourse.¹⁸¹

175. See David J. Lazerwitz, *The Flow of International Water Law: The International Law Commission’s Law of the Non-Navigational Uses of International Watercourse*, 1 IND. J. GLOBAL LEGAL STUD. 247, 253 (1993).

176. See *Report of the International Law Commission on the Work of Its Forty-Sixth Session*, U.N. GAOR 49th Sess., Supp. No. 10, at 199, U.N. Doc. A/49/10 (1994) [hereinafter ILC Draft Articles].

177. *Id.* at 206 (draft art. 3, § 1).

178. *Id.* at 206 (draft art. 3, § 2).

179. *Id.* at 206 (draft art. 3, § 3).

180. See *id.* at 215 (draft art. 4).

181. See *id.* at 215 (stating in the commentary that Article 4 allows significantly-affected watercourse states to participate in negotiations to the extent they are affected).

The context of the Treaty appears to be in conformity with the principles forwarded by the ILC Draft Articles.¹⁸² However, this bilateral agreement may raise in the future a controversial claim from Lebanon concerning the spring sources of the Hasbani located in Lebanon territory. Furthermore, a similar claim may also arise with Syria concerning both the spring of the Banias River and part of the Yarmouk River located in Syrian territory. Finally, the Palestinian Authority may seek input over the part of the lower Jordan abutting the occupied West Bank.

The complexity of the hydrological nature of transboundary watercourses will give rise to future claims by neighboring affected riparians, particularly those involved in the Treaty. The primary basis for such claims will be that the use of the watercourse, by Jordan or Israel, "significantly" affects the flow or the quality of the river, therefore entitling them to participate in eventual consultation or even to become members in a larger bilateral agreement.¹⁸³

V. THE ACCORD IN VIEW OF INTERNATIONAL WATER LAW

Examining the procedural requirements for the conclusion of multilateral watercourse agreements is helpful in evaluating the legality of such agreements and their potential effects on neighboring riparians. Hence, this section analyzes the Treaty's provisions in light of the substantive and procedural requirements of the ILC Draft Articles.

Although the Treaty does not make reference to customary law or to the application of any international water law instrument, the drafters were significantly affected by the general legal principals governing international watercourses.¹⁸⁴ In particular, the substantive rules codified by the ILC Draft Articles that relate to equitable utilization and no significant harm principles seem to play a prominent, if not explicit, role in the Treaty.¹⁸⁵ Interestingly, the drafters of the Treaty have adopted both principles to govern

182. See discussion *infra* Part D.

183. See ILC Draft Articles, *supra* note 176, at 215 (draft art. 4).

184. See Wenig, *supra* note 37, at 363.

185. See discussion *supra* Part IV.

the rights and obligations of the parties.¹⁸⁶ As examined subsequently, the ILC Draft Articles seem to mitigate the previous primacy of the no harm rule by incorporating an approach where both duties are examined together in establishing the legal relation between the riparians.¹⁸⁷

A. *Equitable Utilization*

The most fundamental principle of international water law is the duty of equitable and reasonable utilization and participation.¹⁸⁸ This principle emerges from the doctrine of limited territorial sovereignty under which a state has a sovereign right to the waters of the international basin subject to the corresponding sovereign rights of other states. The Treaty does not explicitly mention the expression “equitable utilization.” The only similar language is the “rightful allocation” clause found in Article 6, section 1.¹⁸⁹ However, close examination of the relevant provisions reveals that the drafters intended to implicitly apply the equity doctrine.

Article 5 of the ILC Draft Articles sets out the principle of equitable utilization as not only a right to an equitable allocation but also as a positive duty to reasonably participate in the protection and development of the watercourse. Thus, Article 5 contains the fundamental rights and duties of the riparians. First, the states are to utilize and develop the watercourse in a manner that will result in optimal utilization of the watercourse consistent with its protection.¹⁹⁰ Second, the states should participate and cooperate in an equitable manner, in the use, development, and protection of the watercourse.¹⁹¹

Applying the principle of equitable and reasonable utilization appears to be the best method to solve transboundary conflicts. A proper application of the doctrine requires states to consider several

186. See Wenig, *supra* note 37, at 361.

187. See discussion *infra* Part IV.B.

188. See *id.* at 216 (draft art. 5).

189. See Treaty, *supra* note 15, art. 6, § 1.

190. See ILC Draft Articles, *supra* note 176, at 216 (draft art. 5, § 1).

191. See *id.* at 216 (draft art. 5, § 2).

relevant factors including geographic and ecological factors, social and economic needs of the states, the population's dependence on the watercourse, the effects of the use of the watercourse on another state, existing and potential uses, conservation and economic use, and the availability of the alternatives to a planned or existing use.¹⁹²

The ILC Draft Articles consider the equity and reasonableness in the uses of any particular watercourse and the weight given to each factor, depending on the nature of the specific watercourse.¹⁹³ However, in reaching a conclusion, all of the above-mentioned factors should be considered together as a whole, and no priority should be given to any of them.¹⁹⁴ In fact, Article 10 specifies that “[i]n the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses.”¹⁹⁵ Further, Article 10 adds that in case of conflict between uses of international watercourse, resolutions should be resolved in accordance with Article 5, equitable and reasonable utilization, and Article 7, no appreciable harm with “special regard being given to the requirements of vital human needs.”¹⁹⁶ Indeed, this principle, also found in the Helsinki Rules,¹⁹⁷ encourages flexibility in Article 10's application to specific watercourses.¹⁹⁸ The application of the relevant factors in the context of the Treaty is discussed below.

1. Existing Use versus Natural Attributes

The natural characteristics of an international watercourse constitute only one factor in determining the equitable allocation of its waters. In fact, such characteristics would be significant only in providing a background for the analysis of other relevant

192. See *id.* at 216 (draft art. 6).

193. See *id.* at 216 (cmt. 3).

194. See *id.*

195. *Id.* at 256 (draft art. 10, § 1).

196. *Id.* at 256 (draft art. 10, § 2).

197. Helsinki Rules, *supra* note 172, art. IV (“A use or category of uses is not entitled to any inherent preference over any other use or category of uses.”).

198. See Lazerwitz, *supra* note 175, at 260.

factors.¹⁹⁹ For example, states should assess the alternative uses factor by considering how and where water is found in the region.²⁰⁰ By the same token, the relative efficiency of alternative water uses would be determined in light of natural characteristics.²⁰¹

Nevertheless, some argue against the use of natural characteristics to determine equitable allocation and assert that the scarcity of water in a region may require looking beyond those factors. For example, one authority argues that a division based on contribution to the watercourse is inequitable in the particular case of the Jordan Basin.²⁰² Indeed, if Israel were to concede the occupied territories in an eventual peace plan with Lebanon and Syria, Lebanon and Syria would be the major contributors to the Jordan River.²⁰³ However, Lebanon and Syria have the greatest alternative resources and thus the least need for the waters of the Jordan River.²⁰⁴

Another commentator contends that the Palestinians could argue that nature's apportionment would entitle them to the western and northern aquifers in the occupied territories.²⁰⁵ However, that argument is rather weak. For example, Egypt has always depended on water from the Nile but has no claim to the Nile based on natural characteristics, illustrating the weakness in this argument. The suggestion that these waters should be divided on the basis of the natural characteristics of the Nile would radically and inequitably change Egypt's long-lasting dependence on the Nile.²⁰⁶

Some argue that prior and existing uses should be given priority in establishing the equitable utilization of the waters.²⁰⁷ The

199. See Wenig, *supra* note 37, at 349-50.

200. See *id.* at 350.

201. See *id.*

202. See *id.* at 348.

203. See *id.*

204. See *id.*

205. See Elmusa, *supra* note 6, at 235-36.

206. See *generally id.* at 236 ("To suggest that such waters be divided not according to the natural characteristics of the Nile would seem precipitous.").

207. See Wenig, *supra* note 37, at 350.

priority would constitute an assurance and protection of states' existing rights in allocations, thus encouraging them to invest in long-term development projects.²⁰⁸ Israel has always supported the prior and existing use concept during its negotiations, opting for the status quo.²⁰⁹ The prior and existing use concept benefits Israel because it allows Israel to preserve an allocation that it obtained in past decades from its military presence on the river tributaries.²¹⁰

Arguably, this concept would convert the fundamental principle of equitable utilization. One authority supports this supposition by claiming that the doctrine of equitable utilization requires the examination of many factors together as a whole. As a result, it implicitly considers the element of stage of economic development.²¹¹ Indeed, the riparians, particularly the Palestinians, were not in a position to extract larger amounts of water from the common aquifers due to the social and economic conditions prevailing before the 1967.²¹² Further, the prior uses allocations favored by Israel were established unilaterally and without prior notification to Jordan.²¹³

Due to the nature of the Jordan Basin, the two factors of natural characteristics and prior use should not be given dominant importance in the analysis of the doctrine of equitable utilization. Rather, these factors should be referred to, when relevant, as two of many factors to be considered.

2. Social and Economic Needs versus Alternative Resources

Another way to assess water allocation is by looking at the social and economic needs of the states sharing the watercourse.²¹⁴ This method "helps us to view water as a means rather than an end."²¹⁵ Estimating the need requires consideration of the

208. *See id.*

209. *See Elmusa, supra note 6, at 235.*

210. *See id.* at 234.

211. *See id.*

212. *See id.*

213. *See id.*

214. *See ILC Draft Articles, supra note 176, at 231 (draft art. 6, § b).*

215. *Elmusa, supra note 6, at 236.*

population variable.²¹⁶ Article 6 of the ILC Draft Articles lists population as a relevant factor in determining equitable utilization. Population was not listed a factor under the 1991 version.²¹⁷

The population variable was reflected in the Main Plan, in which allocation was related to irrigation water requirements.²¹⁸ However, recent decades have witnessed dramatic changes in the social and geographic parameters of the area. The growing population combined with severe scarcity and a decline in the quality of fresh water has made the water authorities shift their efforts to providing drinkable water to the population.²¹⁹ Indeed, the effects were visible in the significant changes in Israeli agricultural policy: The agricultural sector now accounts for less than 3% of Israel's gross economic product (GEP) and employment.²²⁰

Estimating available water requires the examination of alternative water resources and their comparative costs.²²¹ Alternative water resources include the desalination of brackish groundwater and seawater as well as imported water.²²² Although these additional sources could allow a more equitable allocation, like all other factors, they should not be determinative. Rather, they should be assessed relative to their availability and comparative cost to the concerned riparian, in relation to the riparian's capacity to reach those alternative resources.²²³

Before a state invokes the alternative resource argument against a co-riparian, the state should consider the co-riparian's ability to explore the alternative possibility. The desalination alternative puts Israel in a very advantageous position in the Middle East desalination market due to Israel's advanced technology and ability to

216. *See id.* at 237.

217. Compare ILC Draft Articles, *supra* note 176, at 231 (draft art. 6, § c) with Draft Articles of the International Law Commission on the Law of Non-Navigational Uses of International Watercourses, Art. 6. [hereinafter 1991 ILC Draft Articles].

218. *See* LOWI, *supra* note 21, at 86.

219. *See* Elmusa, *supra* note 6, at 236-37.

220. *See id.* at 240.

221. *See* ILC Draft Articles, *supra* note 176, at 231 (draft art. 6, § g).

222. *See* Elmusa, *supra* note 6, at 237.

223. *See id.*

afford such alternatives.²²⁴ Interestingly, Israel's awareness of Jordan's inability regarding desalination probably made Israel concede the ten mcm of desalinated water in addition to agreeing to assist Jordan with financing and building desalination facilities.²²⁵ Some experts viewed this concession as a peace gesture by Israel.²²⁶

As for the importation of alternative water, studies have shown that water from water-rich neighbors may fulfill the water needs of another area.²²⁷ For example, Turkey's Peace Canal could supply fresh water to other countries.²²⁸ However, this scheme would put poor countries, like Jordan and Palestine, under the mercy of Turkey or international financial institutions. Although Israel might not be harmed by the arrangement due to its military and economic dominance in the region, other countries like Syria view the project as a threat especially in light of Turkey's expansionist and goals.²²⁹

3. *Optimal Utilization and Cooperation*

The objective that riparian states seek in utilizing an international watercourse is the attainment of optimal utilization consistent with adequate protection of the particular watercourse.²³⁰ This principle, set forth by the ILC Draft Articles, implies "attaining maximum possible benefits for all watercourse States and achieving the greatest possible satisfaction of all their needs, while minimizing the detriment to, or unmet needs of, each."²³¹ Thus, the optimal utilization objective goes beyond achieving the most economic, technological, or efficient use of

224. *See id.*

225. *See Treaty, supra note 15, Annex II, art. I, § 2(d).*

226. *See Wenig, supra note 37, at 341 (stating that the agreement to cooperate in the procurement of an additional 50 mcm/yr of drinkable water for Jordan was a peace gesture by Israel).*

227. *See LONERGAN & BROOKS, supra note 63, at 182.*

228. *See id.*

229. *See id.* at 185.

230. ILC Draft Articles, *supra note 176, at 218 (draft art. 5, § 1).*

231. *Id.* at 219 (draft art. 5, cmt. 3).

water. Rather, the objective should focus on the long-term development and protection of every party's interests.²³²

Examining equitable use from such a perspective involves consideration of the efficiency, conservation, economy of use, development and protection²³³ of the watercourse within the respective territory of the riparians. This perspective also should involve regional cooperation because the system of surface waters constitutes a "unitary whole . . . by virtue of their relationship."²³⁴ Thus, efficiency and economy of use can be reached only through the participation of all riparian states.²³⁵

On the whole, international water law tends to address the efficiency of existing uses and allocations,²³⁶ while ILC Draft Article 10 emphasizes a "special regard" for "vital human needs."²³⁷ Thus, through cooperation, existing allocations would satisfy equity principles by responding to existing demand.²³⁸ Reaching equity in transboundary water allocations requires increasing conservation and efficiency, improving watercourse management and protection and adapting economic structures to satisfy water needs.²³⁹

The Treaty places great emphasis on cooperation and joint regional management in matters related to storage, development of existing resources, desalination, additional water,²⁴⁰ and prevention of contamination.²⁴¹ Further, the Treaty addresses the unitary and regional aspect of the watercourses by implementing a duty to cooperate in transboundary water matters.²⁴² The emphasis on cooperation is also reflected in the establishment of the Joint Water Committee.²⁴³

232. See discussion *supra* Part V.A.

233. See *id.* at 231 (draft art. 6, § f).

234. *Id.* at 199 (draft art. 2, § b).

235. See Wenig, *supra* note 37, at 352.

236. *Id.*

237. ILC Draft Articles, *supra* note 176, at 256 (draft art. 10, § 2); see *id.* at 353.

238. See Wenig, *supra* note 37, at 353-54.

239. See *id.* at 354.

240. The additional 50 mcm is allocated to Jordan. See Treaty, *supra* note 15, Annex II, art. I, § 3.

241. See *id.* art. 6.

242. See *id.* art. 6, § 4; see also *id.* Annex II, art. VI (regarding cooperation).

243. See *id.* Annex II, art. VII.

Furthermore, the Treaty places a significant emphasis on cooperation in the management, development, and protection of the shared water and need to cope with the existing and potential needs of the riparians.²⁴⁴ Emphasis on the regional aspect of the issue and the necessity of cooperation raise the question of whether the Treaty is a step toward the community of interest doctrine.

B. No Significant Harm

In expanding the substantive protection of the usage of international rivers, ILC Draft Article 7 embodies the *sic utere* principle of international law that requires riparians to exercise due diligence to prevent causing significant harm to co-riparians.²⁴⁵ The ILC Draft Articles differ from the 1991 Draft Articles by using the term “significant” instead of “appreciable,” which has the dual meaning of “measurable” or “significant.”²⁴⁶ The goal of the Commission was not to raise the standard but to create a standard that would require states to present objective evidence of a “real impairment of use.”²⁴⁷

The 1991 Draft Articles also gave primacy to the no significant harm rule by prioritizing the right of equitable use below the duty not to cause harm.²⁴⁸ Although the 1994 version does not reverse the rule of the 1991 Draft Articles, the later version mitigates the rule by imposing the due diligence obligation on the states’ conduct as opposed to basing the obligation on the result of that conduct.²⁴⁹ Thus, a breach of obligation has occurred when a state has intentionally or negligently caused or failed to prevent an event that could have been avoided.²⁵⁰ In other words, “the fact that an activity involves significant harm would not of itself necessarily constitute a basis for barring it.”²⁵¹

244. See *id.* Annex II, art. VI.

245. See ILC Draft Articles, *supra* note 176, at 236 (draft art. 7).

246. *Id.* at 211 (draft art. 3, cmts. 14-15).

247. *Id.* at 211 (draft art. 3, cmt. 14).

248. See *id.* at 236-37 (draft art. 7, cmts. 1-5).

249. See ILC Draft Articles, *supra* note 176, at 236 (draft art. 7, cmt. 4).

250. See *id.*

251. *Id.* at 236 (draft art. 7, cmt. 2).

A state can remedy a breach of due diligence by fulfilling the consultations requirement in the 1994 version of Article 7. If the states have not otherwise agreed to the use, the state causing the harm must consult with the harmed state.²⁵² This requirement enhances the possibility that the states would resolve the problem by agreement. If the consultations fail, the states may resort to third party dispute resolution mechanisms.²⁵³

By the same token, whether a showing of due diligence and equitable utilization would relieve the harmful state from its duty under Article 7 is not clear.²⁵⁴ This type of showing might be useful only in a dispute settlement with an opponent. At the same time, some kinds of significant harms may never be excused as equitable. The ILC clarified this point when it stated that “a use which causes significant harm to human health and safety is understood to be inherently inequitable and unreasonable.”²⁵⁵ In sum, these two principles should seemingly be applied together. As McCaffrey argues, “one could conclude that even if it is established that the harming state’s use is equitable and reasonable, consultations must continue over the possibility of ad hoc adjustments to the harming state’s use and the question of compensation.”²⁵⁶

The Treaty mentions the no significant harm duty in several places. Article 6, section 2 of the Treaty states that “[t]he parties . . . jointly undertake to ensure that the management and development of their water resources do not, in any way, harm the water resources of the other party.”²⁵⁷ Several other references to the no significant harm rule are in Annex II.²⁵⁸ In particular, one

252. *See id.* at 236 (draft art. 7, § 2).

253. *See id.* at 236 (draft art. 7, § 2).

254. *See id.* at 236 (draft art. 7).

255. *Id.* at 242 (draft art. 7, cmt. 14).

256. Stephen S. McCaffrey, *The International Law Commission Adopts Draft Articles on International Watercourses*, 89 AM. J. INT’L L. 395, 400 (1995).

257. Treaty, *supra* note 15, at art. 6, § 2.

258. *See id.* Annex II, art. 2, § 2; Annex II, art. 3, § 1; Annex II, art. 3, § 6.

provision charges the Committee with the responsibility of surveying existing uses for the prevention of appreciable harm.²⁵⁹

Despite the Treaty's recognition of the doctrine of no significant harm, some provisions do not fully conform with the doctrine. For instance, the diversion of saline water from springs on the Upper Jordan into the Kinneret may be equitable in terms of allocation. However, such a diversion could cause significant harm because it will affect the quality of the water available to Jordan for withdrawal from the Lower Jordan.²⁶⁰ The same argument applies to the over-extraction of the underground water from aquifers: Over-extraction damages the aquifers, reduces their productivity, and allows for the intrusion of sea-water, thereby harming the quality of the aquifer waters.²⁶¹

C. Procedural Duties

The ILC Draft Articles contain several provisions dictating procedural duties for the riparians. First, Article 12 requires notification of any plan that might have a significant adverse impact upon other states.²⁶² Notified states have six months to study and assess potential effects of the plan.²⁶³ Second, the ILC Draft Articles introduce the obligation to exchange important data²⁶⁴ and include a new provision on dispute settlement, applying to "any watercourse dispute concerning a question of fact or the interpretation or application of the present articles."²⁶⁵

The Treaty also contains a specific provision on notification and agreement concerning artificial changes made on the course of the Yarmouk or the Jordan.²⁶⁶ As in the ILC Draft Articles, each country has the obligation to notify the other within six months of

259. See *id.* Annex II, art. I, § 2(c). The Treaty uses the expression "no appreciable harm" instead of "no significant harm." This difference probably results from the drafters' reliance on the 1991 ILC Draft Articles. See *id.* at art. 30.

260. See Wenig, *supra* note 37, at 362.

261. See *id.*

262. See ILC Draft Articles, *supra* note 174, at 260 (draft art. 12).

263. See *id.* at 267 (draft art. 13).

264. See *id.* at 269 (draft art. 14).

265. *Id.* at 322 (draft art. 33).

266. See Treaty, *supra* note 15, Annex II, art. V, § 1.

any intended project that is likely to affect the flow or the quality of the shared rivers.²⁶⁷ The time period allows for consultations and discussions through the Committee in order to prevent, or at least mitigate, the impact of the proposed project.²⁶⁸ Similarly, the Treaty creates the obligation to exchange information concerning any proposed project through the Committee.²⁶⁹

Although the Treaty covers the basic procedural requirements established by the ILC Draft Articles, the Treaty is missing a crucial stipulation governing dispute settlement between riparians. That omission may reflect the climate surrounding the negotiations, in that the parties may have chosen to forgo such a pessimistic provision in order to accelerate the agreement. The accord does not provide for any resolution mechanism in case of failure of the agreement. This loophole could allow one state to disregard the opposition of its neighbor and continue with its project upon expiration of the Treaty-mandated six month deadline. On the other hand, this issue simply might have been left for future determination by the Committee.

VI. FINAL ANALYSIS

The primary objective of the ILC Draft Articles is to provide a flexible framework for the parties to reach a suitable agreement for the particular nature of their shared watercourse. Similarly, the doctrine of equitable utilization is a flexible legal principle that can be met by balancing the different relevant factors that the ILC forwarded. However, equitable utilization is subject to a significant limitation; namely the duty not to cause a significant harm to a co-riparian.

The best approach to fulfill these international legal principles would be to consider the equitable utilization and no significant harm principles simultaneously as a continuous source of rights and obligations and to weigh their related factors with an equal and dependent group of parameters. This approach would allow

267. See *id.* § 2; ILC Draft Articles, *supra* note 176, at 260 (draft art. 12).

268. See Treaty, *supra* note 15, Annex II, art. V, § 2.

269. See *id.* Annex II, art. VI, § 1.

the parties to reach an optimal utilization of their resources by assuring efficiency, economy of use, protection, and development.

Nonetheless, international water law has witnessed the rise of the community of interest theory by way of a transition from the right of equitable utilization to a duty of equitable participation. This transition is due to the fact that the theory of equitable utilization requires only a right of equitable apportionment among parties, subject to the duty not to cause significant harm to the neighboring state. However, it does not assure any cooperation among riparians. This modern trend favors the management of a transboundary watercourse as one economic and geographic unit regardless of the artificial international boundaries. This trend takes into account the urgent need for cooperation imposed by the current alarming scarcity.

The community of interest doctrine is reflected in the principles adopted in the Treaty. Based on the substance of the Treaty, the drafters apparently were aware of the inherent realities of the issue. The importance accorded to cooperation among the parties in various fields of water management and protection affirms this observation. Finally, the Treaty emphasizes the importance of dealing with water issues on a regional scale, thus involving the neighboring states as the only way to reach a complete and lasting agreement.

VII. CONCLUSION

International law has proven to be a key factor in determining the rights and duties of the riparian states. Reaching an agreed framework for the dealings of these states is an important economic and political issue. However, international law remains only one of several tools governing the relations of the international community.

Unfortunately, history bears witness to the reality that law by itself can neither resolve the long-lasting disputes among the states nor respond to the vital needs of humanity. Indeed, law has failed to prevent conflicts, avoid genocide, or feed the hungry. Therefore, determining how international law could assist in supplying humanity with water is difficult. Although laws have always been a means of assuring and enforcing justice, they have never been in

and of themselves a tool sufficient to do so. Indeed, the existence of justice relies on the efforts of individuals who have an influence on the faith of their peers. Thus, the goal of more universal justice must begin with a sense of justice in the minds of the leaders changing the course of history.

Present peace negotiations have had fierce opposition among negotiators, leading sometimes to considerable concessions in terms of land, water, and other human and social resources. As such, the peace negotiations are presently taking a bilateral trend. Although this trend may accelerate and facilitate agreements between the states on certain matters, such negotiations could also result in short-sighted resolutions of vital matters—like the allocation of water—that should otherwise be treated on a larger, regional scale in order to maintain stability in the area and assure peace.²⁷⁰ Further, the possibility of importing water from Turkey or the Nile, as well as large-scale desalination projects, offer great promise as significant alternative water resources. However, these options could have a greatly adverse impact on poorer countries by placing them at the mercy of the supplying states or of those possessing greater technology and economic power. This consequence could make water the most precious commodity of Middle East in the twenty-first century.

In order to avoid such potential dangers, the parties have to cope with the problem on a regional scale, taking into account the needs and the capacities of all parties. This goal would be best reached through the implementation of a permanent institution with a legal and technical framework, such as a regional Joint Water Committee that would ensure the achievement of such a crucial task.

270. For example, Israel could argue that under a regional plan Jordan or Palestine should have access to Syria's or Lebanon's water resources.

VIII. APPENDIX A

Reprinted with permission from the United Nations University Press.

VIX. APPENDIX B

Treaty of Peace, Oct. 26, 1994, Israel-Jordan 34 I.L.M. 43, art.6

With the view to achieving a comprehensive and lasting settlement of all the water problems between them:

1. The Parties agree mutually to recognise the rightful allocations of both of them in Jordan River and Yarmouk River waters and Arab Arava ground water in accordance with the agreed acceptable principles, quantities and quality as set out in Annex II, which shall be fully respected and complied with.

2. The Parties, recognising the necessity to find a practical, just and agreed solution to their water problems and with the view that the subject of water can form the basis for the advancement of co-operation between them, jointly undertake to ensure that the management and development of their water resources do not, in any way, harm the water resources of the other Party.

3. The Parties recognise that their water resources are not sufficient to meet their needs. More water should be supplied for their use through various methods, including projects of regional and international co-operation.

4. In light of paragraph 3 of this Article, with the understanding that co-operation in water-related subjects would be to the benefit of both Parties, and will help alleviate their water shortages, and that water issues along their entire boundary must be dealt with in their totality, including the possibility of trans-boundary water transfers, the Parties agree to search for ways to alleviate water shortages and to co-operate in the following fields:

- a. development of existing and new water resources, increasing the water availability, including cooperation on a regional basis as appropriate, and minimising wastage of water resources through the chain of their uses:
- b. prevention of contamination of water resources:
- c. mutual assistance in the alleviation of water shortages:
- d. transfer of information and joint research and development in water-related subjects, and review of the potentials for enhancement of water resources development and use.

5. The implementation of both Parties' undertakings under this Article is detailed in Annex II.²⁷¹

271. Treaty, *supra* note 15, art. 6.