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A Critical Resource or Just a Wishing Well? A Proposal to Codify the Law on Transboundary Aquifers and Establish an Explicit Human Right to Water

Justin Carlson
American University Washington College of Law

NOTE

A CRITICAL RESOURCE OR JUST A WISHING WELL? A PROPOSAL TO CODIFY THE LAW ON TRANSBOUNDARY AQUIFERS AND ESTABLISH AN EXPLICIT HUMAN RIGHT TO WATER

JUSTIN CARLSON*

* J.D., M.A. May 2011, American University Washington College of Law, School of International Service; B.A. International Relations, 2006, Tufts University. I would like to thank the editors and staff of the *American University International Law Review*, with special thanks to Lindsay Ruffner and Omer Duru. Thanks also to Paul Williams, my faculty advisor on this article, for exposing me to international water law through his organization, the Public International Law and Policy Group. Finally, thanks to my family and friends, especially my parents Tom Carlson and Theresa Buria, for their love, support, and patience.

INTRODUCTION

The United Nations International Law Commission ("ILC"), an organization leading the effort to codify principles of international law,[1] plays an important role in the creation of a legal framework governing international groundwater resources.[2] The need for the protection and sustainable exploitation of groundwater reserves is more pressing in light of population growth, the impacts of climate

1. *See generally* Statute of the International Law Commission, G.A. Res. 174(II), U.N. GAOR, 2d Sess., 123d mtg., U.N. Doc. A/519 (Nov. 21, 1947) [hereinafter ILC Statute] (establishing an International Law Commission consisting of thirty-four individuals with international legal expertise elected by the General Assembly to fulfill the obligations in the U.N. Charter to develop and codify international law).

2. *See* Gabriel Eckstein, *A Hydrogeological Perspective of the Status of Ground Water Resources Under the UN Watercourse Convention*, 30 COLUM. J. ENVTL. L. 525, 533-39 (2005) (summarizing the International Law Commission's work, from its 1974 attempt to formulate a new agreement on water resources to its renewal of work in the 1980s, as well as the production of draft laws in the 1990s which culminated in the 1997 Watercourse Convention).

change, and resource scarcity.[3] This Note will analyze the most recent iteration in the development of international groundwater law: the draft articles on the Law on Transboundary Aquifers ("Aquifer Law").[4] It will also address the Convention on the Law of the Non-navigational Uses of International Watercourses ("Watercourse Convention"),[5] focusing on the use of terms and affirmative obligations placed upon states in both instruments.[6] The failure to ratify the Watercourse Convention fourteen years after its adoption makes the Aquifer Law the next—and perhaps last—opportunity to establish binding guidelines for the exploitation of this vital resource.[7] However, in order to improve the Aquifer Law's chances for ratification, the ILC should revise the current draft articles to improve clarity and afford states as much flexibility as possible to form bilateral and multilateral agreements governing their shared groundwater resources. To accomplish this, the ILC should look to existing practice with oil and natural gas extraction in drafting its new language.[8] It should also seize the opportunity to establish an

3. *See, e.g.*, Nigel W. Arnell, *Climate Change and Global Water Resources: SRES Emissions and Socio-Economic Scenarios*, 14 GLOBAL ENVTL. CHANGE 31, 31 (2004) (finding that stresses on water resources are increased by climate change); *cf.* Charles J. Vörösmarty et al., *Global Water Resources: Vulnerability from Climate Change and Population Growth*, 289 SCIENCE 284, 284 (2000) (concluding that increasing demand for water is more pressing than the problems of greenhouse warming).

4. *See generally* The Law of Transboundary Aquifers, G.A. Res. 63/124, pmbl., U.N. Doc. A/Res/63/124/Annex (Jan. 15, 2009) [hereinafter Aquifer Law].

5. *See generally* The Convention on the Law of the Non-navigational Uses of International Watercourses, G.A. Res. 51/299, Annex, U.N. Doc. A/Res/51/299/Annex (May 21, 1997) [hereinafter Watercourse Convention] (establishing binding obligations and guidelines for states regarding the use of rivers, lakes, and other types of surface water, as well as groundwater relating to them).

6. *Compare* Aquifer Law, *supra* note 4, arts. 4, 6-8 (imposing obligations on States to use transboundary aquifers responsibly and equitably, prevent significant harm, cooperate, and regularly exchange data and information), *with* Watercourse Convention, *supra* note 5, arts. 5, 7-9 (creating similar obligations with respect to international watercourses).

7. *See* Salman M.A. Salman, *The United Nations Watercourses Convention Ten Years Later: Why Has its Entry into Force Proven Difficult?*, 32 WATER INT'L 1, 8-9 (2007) (lamenting the reluctance of U.N. member states to ratify the Watercourse Convention due to their views that the obligations imposed by the Watercourse Convention unfairly advantage either upstream or downstream riparian states).

8. *See* Stephen C. McCaffrey, *The International Law Commission Adopts*

explicit human right to water and use this right as the basis for any obligations or restrictions on state action pertaining to transboundary groundwater resources.[9]

Part II of this Note examines the ongoing effort to codify international legal norms and the development of international law concerning groundwater.[10] It also reviews current practices with transboundary petroleum and natural gas deposits, as well as the present legal basis for the implied human right to water.[11] Part III argues that the Aquifer Law is necessary but unlikely to be ratified in its current form, providing a critical analysis of Aquifer Law and detailing its confusing overlap with—and damaging similarities to—the Watercourse Convention.[12] Part IV recommends that the ILC seize the opportunity to establish an explicit human right to water and to draft a treaty governing transboundary freshwater which will actually be ratified by the U.N. member states. It suggests the ILC may accomplish this by amending the language in the Aquifer Law to distinguish it from the Watercourse Convention and to include an explicit human right to water,[13] as well as by making most of the provisions non-binding, allowing states the same flexibility they

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Draft Articles on Transboundary Aquifers, 103 AM. J. INT'L L. 272, 274 (2009) (citing ILC Special Rapporteur Chusei Yamada's observation of the similarity between the legal frameworks governing both transboundary groundwater and oil and natural gas).

9. *Cf.* HENRY J. STEINER & PHILIP ALSTON, INTERNATIONAL HUMAN RIGHTS IN CONTEXT: LAW, POLITICS, MORALS: TEXT AND MATERIALS 185-87 (3d ed. 2008) (commenting on the duties imposed on states by human rights obligations and noting that the development of rights over time expands state responsibilities even when they are not explicitly required).

10. *See* discussion *infra* Part II (chronicling the work of the ILC and other international organizations throughout the twentieth century which played a role in the progressive development of international groundwater law).

11. *See* discussion *infra* Part II (characterizing current state and international practices for the extraction of transboundary petroleum and natural gas deposits as flexible due to the non-binding nature of the customary norms upon which the practices are based).

12. *See* discussion *infra* Part III (arguing that the current draft of the Aquifer Law is unlikely to be adopted as a Convention due to similarities with the Watercourse Convention and failure to distinguish its subject-matter, but that it is important to adopt the Aquifer Law as a Convention).

13. *See* discussion *infra* Part IV.A (recommending that the Aquifer Law refer to the Watercourse Convention to clarify which laws will apply to which types of groundwater, and by justifying any affirmative obligations pertaining to shared groundwater on an explicit human right to water).

enjoy when extracting transboundary oil and natural gas [14]

II. BACKGROUND

Underground aquifers represent a significant proportion of potentially available fresh water in the world.[15] A large amount of the world's population depends on groundwater for their basic needs,[16] and at least 273 aquifers span an international boundary.[17] This reality helps drive the ongoing effort to provide guidelines for the exploitation and preservation of groundwater resources, which is part of a greater endeavor to define legal norms and obligations for the utilization of transboundary resources.[18]

A. HISTORICAL OVERVIEW OF THE INTERNATIONAL LAW COMMISSION AND INTERNATIONAL LAW CONCERNING GROUNDWATER

Before the ILC existed, international law was created either through the drafting and enactment of treaties or through custom.[19] In

14. *See* discussion *infra* Part IV.B (suggesting that most of the articles of the Aquifer Law be framed as guidelines which states should follow, rather than affirmative obligations that they must adhere to, based on successful state practice organizing bilateral and multilateral agreements governing the extraction and utilization of transboundary oil and natural gas deposits).

15. *See* Stephen Foster, *Essential Concepts for Groundwater Regulators*, *in* GROUNDWATER: LEGAL AND POLICY PERSPECTIVES: PROCEEDINGS OF A WORLD BANK SEMINAR 15, 15 (Salman M.A. Salman ed., 1999) (stating that of the estimated thirty-seven million cubic kilometers of freshwater present on the planet, twenty-two percent is located below the Earth's surface, which represents ninety-seven percent of freshwater not already contained in the polar ice caps).

16. *See* Gabriel Eckstein & Yoram Eckstein, *A Hydrogeological Approach to Transboundary Ground Water Resources and International Law*, 19 AM. U. INT'L L. REV. 201, 201-02 (2003) (citing statistics that in parts of Europe and the United States dependence on groundwater to supply drinking water exceeds 90 percent).

17. *See* Catherine Brahic, *A Law to Stop the Wells From Running Dry?*, NEW SCIENTIST, Nov. 8, 2008, at 8 (emphasizing the importance of the Aquifer Law in helping to resolve anticipated critical water shortages given the abundance of trans-border aquifers).

18. *See* G.A. Res. 57/21, ¶¶ 2, 7, U.N. Doc. A/Res/57/21 (Jan. 21, 2003) (illustrating the U.N. General Assembly's approval of the ILC's decision to continue its work on a number of topics, including shared natural resources, which will be added to the Commission's work programme).

19. *See* JEFFREY S. MORTON, THE INTERNATIONAL LAW COMMISSION OF THE UNITED NATIONS 1-2 (2000) (critically assessing these two methods of creating international law with emphasis on the potential for confusing and contradictory

the twentieth century, custom ceased to function as the primary method of establishing international law. [20] Instead, customary laws are now used as precedent by international courts and by organizations seeking to codify international norms through treaties and other agreements.[21] Shortly after its establishment in 1947, the ILC undertook fourteen initial topics, and then added topics referred from the General Assembly.[22] Over the years the Commission has produced a number of important international codes, including the Law of Treaties, the Law of the Sea, and draft articles on Jurisdictional Immunities of States and Their Properties.[23]

Currently, the ILC consists of thirty-four members, each from a different country pursuant to the requirements of its statute.[24] The ILC reports to the Sixth Committee of the General Assembly, which addresses legal issues and questions for the General Assembly.[25] Article 16 of the ILC specifies the procedure for the ILC's consideration of a topic, allowing for appointment of a rapporteur responsible for the topic and numerous consultations on drafts before the final draft is proposed.[26] Among the ILC's most recent projects

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norms).

20. *Contra* Anthea Elizabeth Roberts, *Traditional and Modern Approaches to Customary International Law: A Reconciliation*, 95 AM. J. INT'L L. 757, 757 (2001) (differentiating between traditional and modern uses of custom as a source of international law in order to describe the current resurgence of the importance of custom).

21. *Id.*

22. *See* Clyde Eagleton, *First Session of the International Law Commission*, 43 AM. J. INT'L L. 758, 760 (1949) (listing the selection of the first topics for consideration by the ILC which were the Law of Treaties, Arbitral Procedure, and the Regime of the High Seas).

23. *See* MORTON, *supra* note 19, at 15-18 (chronicling the history of the ILC in a decade-by-decade analysis to demonstrate both the progress and difficulties the ILC has faced in codifying international law).

24. *See Membership*, UNITED NATIONS INT'L LAW COMM'N, http://www.un.org/law/ilc/ (last visited May 18, 2011) (listing each of the thirty-four members and their nationalities and providing the relevant text from Article 2 regarding its establishing statute governing membership); *see also* MORTON, *supra* note 19, at 9 (charting the growth and increasing diversity of the ILC composition from fifteen to thirty-four, including the addition of nine Third World representatives from Africa, Latin America and Asia not included in the initial grouping).

25. *Cf. Membership*, *supra* note 24 (describing the Sixth Committee as the primary forum for consideration of allocating ILC seats to U.N. Member States).

26. *See* ILC Statute, *supra* note 1, art. 16 (outlining a process starting with the

were the draft articles on the Watercourse Convention.[27]

The first organization to approach the issue of international groundwaters was not the ILC, but rather the International Law Association ("ILA").[28] Unlike the ILC, which was established by the United Nations, the ILA was founded by a group of scholars in the 19th century to codify the law of nations.[29] The ILA promulgated the Helsinki Rules on the Uses of the Waters of International Rivers ("Helsinki Rules") in 1966.[30] The Helsinki Rules defined drainage basins as "including [both] surface and underground waters, flowing into a common terminus."[31] In 1986, the ILA released a new set of rules called the Seoul Rules, expanding the definition in the Helsinki Rules by including aquifers that relate to surface waters, as well as aquifers which do not.[32]

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formulation of a work plan, followed by numerous stages of consultations with governments and experts, and concluding with the proposal of a draft to the General Assembly through the Secretary General).

27. *See* MORTON, *supra* note 19, at 18 (including the Watercourse Convention in a list of new topics added during the ILC's fifth decade of work, which the author describes as consisting of substantially less developed and codified areas of law than in previous years).

28. *See* Charles B. Bourne, *The International Law Association's Contribution to International Water Resources Law*, *in* SLAVKO BOGDANOVIĆ, INTERNATIONAL LAW OF WATER RESOURCES: CONTRIBUTION OF THE INTERNATIONAL LAW ASSOCIATION (1954-2000) 3-5 (2001) (charting the beginning of the ILA's work on international fresh water resources to 1954 when it was prompted by a series of international river disputes).

29. *See* BOGDANOVIĆ, *supra* note 28, at xxvii (chronicling the origins of the ILA which was established as the Association for the Reform and Codification of the Law of Nations in Brussels in 1873).

30. THE HELSINKI RULES ON THE USES OF THE WATERS OF INTERNATIONAL RIVERS (1966), *reprinted in* 1 INTERNATIONAL WATER LAW: SELECTED DOCUMENTS 125 (Claudia Tofan & Simona Strambu eds., 2008) [hereinafter HELSINKI RULES].

31. HELSINKI RULES, *supra* note 30, art. 2; *see* SALMAN M.A. SALMAN, THE WORLD BANK POLICY FOR PROJECTS ON INTERNATIONAL WATERWAYS: AN HISTORICAL AND LEGAL ANALYSIS 54, 56 (2009) (describing the Helsinki Rules as a grouping of principles and resolutions relating to international freshwater resources, including the developing concepts of "reasonable and equitable utilization").

32. *See* THE SEOUL RULES ON INTERNATIONAL GROUNDWATERS (1966), *reprinted in* 1 INTERNATIONAL WATER LAW: SELECTED DOCUMENTS 123 [hereinafter SEOUL RULES] (requiring through Article 1 that aquifers not connected to surface waters intersect the boundary of two or more states in order to fall within the scope of the rules).

In 1994, the ILC completed its review of the draft Watercourse Convention and presented a set of draft articles to the U.N. General Assembly.[33] After the promulgation of the Watercourse Convention, the ILC reexamined the types of groundwater included under the Convention's provisions and submitted its draft articles on the Aquifer Law to the U.N. General Assembly in August 2008.[34] The General Assembly passed a resolution commending the ILC's work and included the Aquifer Law draft for further discussion in the agenda of its Sixty-Sixth Session in 2011.[35]

B. THE CURRENT LEGAL BASIS FOR THE HUMAN RIGHT TO WATER AND EXISTING PRACTICE CONCERNING SHARED GROUNDWATER RESOURCES

The "right to water" is a basic human right most often applied in the context of meeting people's water consumption needs for survival.[36] No explicit legal authority creates this right; however, a number of treaties and agreements refer to the goal of meeting basic water needs in the context of other guaranteed rights.[37] For instance, some states recognize the right to water as an aspect of the right to

33. *See* Stephen McCaffrey, *International Groundwater Law: Evolution and Context*, *in* GROUNDWATER: LEGAL AND POLICY PERSPECTIVES: PROCEEDINGS OF A WORLD BANK SEMINAR 139, 155 (Salman M.A. Salman, ed., 1999) (relating the history of the final enactment of the Watercourse Convention, which was prepared by the Sixth Committee of the General Assembly and passed in 1997).

34. *See* Rep. of the Int'l Law Comm'n, 60th sess., May 5–June 6, July 7–Aug. 8, 2008, ¶¶ 46-49, U.N. Doc. A/63/10; GAOR, 63d Sess., Supp. No. 10 (2008) (adopting the draft articles and recommending that U.N. member states approve them and consider forming bilateral and multilateral treaties around them, in addition to urging the General Assembly to adopt a Convention on the subject); *see also* Aquifer Law, *supra* note 4, art. 2 (failing to define groundwater and instead including a definition of aquifer as "a permeable water bearing geological formation underlain by a less permeable layer and the water contained in the saturated zone of the formation").

35. *See* Aquifer Law, *supra* note 4, pmbl. (recommending that the member states and General Assembly take the articles under further consideration before working towards any potential Convention based upon their provisions).

36. *See* 2 INTERNATIONAL WATER LAW: SELECTED DOCUMENTS 111 (Claudia Tofan & Simona Strambu eds., 2008) (prioritizing the use of water for drinking, cooking, and other life-sustaining needs when determining what activities will be covered by a codified right to water).

37. *See id.* (citing the 1977 Mar del Plata Statement, the 1986 U.N. Right to Development, and the 1992 Earth Summit as examples of instruments referring to the need to include a right to water in providing for "basic needs").

food.[38] Based on this state practice, it is widely viewed that a human right to water is recognized by Article 11 of the International Covenant on Economic, Social and Cultural Rights ("ICESCR").[39] In addition, several state policies guaranteeing the right to basic human needs include the right to water.[40] Indeed, some states have already incorporated the human right to water into their constitutions.[41] Others deal with aquifers by legislation, such as Brazil's National Water Resource Policy, which retains government control over certain water rights.[42]

The human right to water is fundamentally different from a "water right," which is a "legal right to abstract and use a quantity of water from a . . . river, stream or aquifer."[43] For example, a water right may grant the holder permission to store a quantity of water prior to use.[44] However, while water rights grant certain privileges, they can also place certain restrictions and obligations on the holder of the right.[45]

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38. *Cf.* Amy Hardberger, *Whose Job is it Anyway?: Governmental Obligations Created by the Human Right to Water*, 41 TEX. INT'L. L.J. 533, 539 (2006) (noting the role of Comment 15 on the International Covenant on Economic Social and Cultural Rights in establishing a right to water and the choice by several governments to include this right among their state policies).

39. *Cf.* International Covenant on Economic, Social and Cultural Rights art. 11, Dec. 16, 1966, 993 U.N.T.S. 3 (recognizing the right to an adequate standard of living, which includes "adequate food, clothing and housing," as well as the "continuous improvement of living conditions").

40. *See* Hardberger, *supra* note 38, at 539-40 (noting that South Africa, for example, includes the human right to water as a right afforded to all its citizens, and acknowledging that both state legislation and U.N. documents have increased recognition that establishing a right to water is a necessity).

41. *See, e.g.*, S. AFR. CONST., 1996, art. 27 (establishing the human right to water as part of South Africa's Bill of Rights).

42. *See generally* Decreto No. 9.433, de 8 de Janeiro de 1997, DIÁRIO OFICIAL DA UNIÃO [D.O.U] de 08.01.1997. (Braz.) (covering the extraction of water from aquifers for final consumption and for the use of hydroelectric power). Brazil's National Water Resource Policy also declares that, in times of scarcity, the use of water is to be prioritized for human and animal consumption, further emphasizing the human aspect of water as opposed to the economic (or agricultural) aspect of water use. *Id.* art. 1.

43. *See* STEPHEN HODGSON, FOOD & AGRIC. ORG. OF THE UN, MODERN WATER RIGHTS: THEORY AND PRACTICE 4-5 (2006) (discussing the tremendous variety in global conceptions of water and water rights).

44. *See id.* at 5 (describing potential benefits to a water right holder, including the ability to divert water flow, extract gravel, fish, pollute, or use sewage water for purposes related to irrigation).

45. *See id.* at 6 (noting that rights holders can seek judicial enforcement of their

Many states have already organized regional cooperation agreements for utilization of aquifers without the benefit of guidelines for such cooperation.[46] These agreements are sometimes born out of a state's interest in its oil revenue base, which can lead to the development of new groundwater resources.[47] Unfortunately, the population growth of less-developed states exacerbates the dire need for water in areas least equipped with the technology capability to access it.[48] These disparities in the ability of states to access groundwater may lead to uneven utilization and, ultimately, to unfair dependence on shared groundwater by some aquifer states to the detriment of their neighbors.[49]

C. DEVELOPMENT OF INTERNATIONAL LAW AND PRACTICE GOVERNING TRANSBOUNDARY NATURAL RESOURCES AND THE CURRENT FRAMEWORK FOR INTERNATIONAL EXTRACTION AND UTILIZATION OF PETROLEUM AND NATURAL GAS

In 2002, the ILC incorporated into its work programme the topic

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rights and receive compensation in cases of violation).

46. *See, e.g.*, Raya M. Stephan, *Transboundary Aquifers in International Law: Towards an Evolution, in* OVEREXPLOITATION AND CONTAMINATION OF SHARED GROUNDWATER RESOURCES: MANAGEMENT, (BIO)TECHNOLOGICAL, AND POLITICAL APPROACHES TO AVOID CONFLICTS 33, 37 (Christophe J.G. Darnault ed., 2008) (discussing Egypt and Libya's Joint Authority for the Management of the Nubian Aquifer, founded in 1992 and later expanded to include Sudan and Chad).

47. *See Nubian Aquifer Project – Background: More People, More Development*, INT'L ATOMIC ENERGY AGENCY, http://www-naweb.iaea.org/napc/ih/IHS_projects_nubian_efforts.html (last visited May 18, 2011) (linking domestic oil exploration revenues in Libya to the government's funding of water investigations, which led to the discovery of the Hamada, Kufra and Murzuq freshwater reservoirs in the Sahara Desert).

48. *See, e.g.*, UNITED NATIONS ENVIRONMENT PROGRAMME [UNEP], SUDAN: POST-CONFLICT ENVIRONMENTAL ASSESSMENT 301 (2007) (attributing both financial limitations and lack of technical information to the prevalence of water crises in Sudan).

49. *Cf.* KHALED M. ABUZEID & MOHAMED H. ELRAWADY, CENTER FOR ENV'T & DEV. FOR THE ARAB REGION & EUROPE, SUSTAINABLE DEVELOPMENT OF NON-RENEWABLE GROUNDWATER 3, 5 (2007), *available at* http://water.cedare.int/files15%5CFile2837-.pdf (expressing concern that Egypt and Libya's increased dependence on the Nubian Aquifer, evidenced by the increasing amounts extracted over the years, could substantially impact Sudan and potentially lead to further conflict in the region since Sudan also relies on the aquifer).

of shared natural resources, which included groundwater, oil, natural gas, and other transboundary resources.[50] The Aquifer Law and its nineteen articles constituted one part of the ILC's analysis of this topic.[51] While the U.N. member states considered the draft Aquifer Law, the Special Rapporteur on Shared Natural Resources submitted a report on transboundary oil and gas by request of the ILC Working Group on Shared Natural Resources.[52] The report commented on the similarities and differences between oil and gas deposits and groundwater, recommending that the ILC move forward separately with the Aquifer Law to avoid further delay in developing the law.[53]

After plenary debate and considerations by a working group, the ILC submitted a questionnaire to U.N. member states and the Special Rapporteur issued a report based on the preliminary results.[54] Some states responded in favor of further study on codifying transboundary oil agreements.[55] Other states opposed this, preferring to maintain the case-by-case flexibility of current state practice.[56] This preference

50. *See* McCaffrey, *supra* note 8, at 274 (citing the appointment of Chusei Yamada as Special Rapporteur and noting his preference to begin by addressing groundwater as he continued the ILC's work on the Watercourse Convention).

51. *See* Special Rapporteur on Shared Natural Resources, *Fourth Rep. on Shared Natural Resources: Transboundary Groundwaters*, ¶¶ 1, 3, U.N. Doc. A/CN.4/580 (Mar. 6, 2007) (by Chusei Yamada) [hereinafter Yamada Report] (recounting the work of the ILC in developing the draft articles of the Aquifer Law within the context of the broader issue of transboundary natural resources).

52. *See id.* ¶ 3 (noting the interconnection between groundwater and oil and natural gas).

53. *See id.* ¶¶ 13-15 (calling for the Special Rapporteur to treat oil and groundwater individually, due to the fact that, unlike oil, groundwater is not normally traded internationally, that oil extraction often takes place at sea while groundwater extraction is on land, and most importantly that groundwater is essential for life while oil and gas are commodities).

54. *See* Special Rapporteur on Shared Natural Resources, *Paper on Oil and Gas*, ¶ 6, U.N. Doc. A/CN.4/608 (Feb. 18, 2009) (by Chusei Yamada) (identifying key issues on the subject including the common practice of forming bilateral agreements between states as well as between national oil and gas companies, which provide for, *inter alia*, cooperation, information exchange, equitable sharing, and environmental protection).

55. *See id.* ¶¶ 5, 7 (noting that eighteen states responded to the questionnaire, with one supporting simultaneous work on oil and water while others supported their separate consideration).

56. *See id.* ¶ 7 (relating the desire of some states that the ILC not consider the oil and gas topic, believing that the issue is "bilateral, highly technical and politically sensitive"); *see also* Rolf Einar Fife, Dir. Gen., Nor. Ministry of Foreign Affairs, Transboundary Oil and Gas Reserves (Oct. 27, 2008), *available at*

could be explained by the longstanding practice of utilizing bilateral cooperation agreements for the exploitation of oil, which is sometimes regarded as customary international law.[57]

Although there are many well-established international norms concerning state cooperation for oil extraction, no international obligation exists to compel states into a particular kind of agreement.[58] Indeed, state practice varies in order to accommodate the different needs of transboundary oil states.[59] Two common measures used to exploit transboundary oil and gas reservoirs are joint development agreements[60] and transboundary unitization.[61] Additionally, the provisions of the agreements are constantly evolving to improve the efficiency of extraction and the satisfaction of the states involved.[62] These changes reflect lessons learned from

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http://www.norway-un.org/Statements/2008/Committe-Meetings/291008_oilandgas/ (representing the view of the five Nordic states that the ILC should not codify international practice regarding transboundary oil and gas).

57. *See, e.g.*, Rainer Lagoni, *Oil and Gas Deposits Across National Frontiers*, 73 AM. J. INT'L L. 215, 243 (1979) (concluding that the nearly uniform practice of cooperation enumerated in international agreements obligates parties to bilaterally "negotiate in good faith" upon the discovery of a future common oil deposit).

58. *See* Peter D. Cameron, *The Rules of Engagement: Developing Cross-Border Petroleum Deposits in the North Sea and the Caribbean*, 55 INT'L & COMP. L.Q. 559, 564 (2006) (highlighting the absence of duty to form a specific type of agreement under the Convention on the Law of the Sea, which only "imposes a general obligation to cooperate when a[n oil] deposit is found to cross boundary lines").

59. *See* David M. Ong, *Joint Development of Common Offshore Oil and Gas Deposits: "Mere" State Practice or Customary International Law?*, 93 AM. J. INT'L L. 771, 788-92 (1999) (listing three basic models of transboundary oil utilization: 1) "one state manages the development of the deposits on behalf of both states"; 2) a system of joint ventures is established between states and their oil companies; or 3) an agreement between states to set up an international joint authority with legal personality is made, providing a mandate to oversee the development of the resource); *see also* Cameron, *supra* note 58, at 559.

60. *See* Lagoni, *supra* note 57, at 222-24 (explaining that joint development agreements involve first reaching a preliminary agreement to divide the resource between the parties, and then readjusting the division after gathering information about the actual resource deposits).

61. *See id.* at 224 (defining unitization as designating one entity to oversee use of a transboundary oil deposit); *see also* Ong, *supra* note 59, at 778 (stating that joint development and transboundary unitization demonstrate the willingness of state parties to cooperate regarding use of transboundary oil and gas deposits while maintaining the sovereign right of each state to use the resources).

62. *See* Cameron, *supra* note 58, at 570-77 (summarizing the evolution of the

decades of state experience with bilateral agreements concerning transboundary oil.[63]

Most importantly, the bilateral and multilateral agreements governing transboundary oil and gas extraction have many provisions relevant to groundwater law.[64] In addition, the desire expressed by many oil states for the ILC to refrain from imposing any binding guidelines on the practice might suggest a parallel motivation underlying those states' reticence to ratify the Watercourse Convention.[65] The ability of these states to negotiate their own agreements in the total absence of international guidelines may also provide a useful model for the Aquifer Law.[66]

III. ANALYSIS

Although the General Assembly resolution on the Aquifer Law does not mandate its adaptation into a Convention, there are important reasons for doing so.[67] For instance, the ILC's Aquifer

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Framework Agreement reached by North Sea States, beginning with the maritime delimitation agreement between the United Kingdom and Norway in 1965 and continuing through the 2005 Agreement, which allowed States involved enough flexibility in regulating use of transboundary petroleum to maximize economic benefit).

63. *See id.* at 571 (noting the considerable influence of several decades of cross-border cooperation and unitization on both the United Kingdom and Norway in drafting their 2005 agreement).

64. *See, e.g.*, Framework Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway concerning Cross-Boundary Petroleum Co-operation, U.K.-Nor., art. 1.10, Apr. 4, 2005 [hereinafter U.K.-Nor. Cross-Boundary Petroleum Agreement], *available at* http://www.official-documents.gov.uk/document/cm67/6792/6792.pdf (ensuring the exchange of information relating to the cross-boundary project and recognizing that the interconnection of the U.K.-Norwegian offshore pipeline and production will affect upstream and downstream systems).

65. *See* discussion *infra* Part III.B (discussing the failure to ratify the Watercourse Convention and the underlying reasons some state parties chose not to ratify it).

66. *Cf.* Yamada Report, *supra* note 51, ¶¶ 13-15 (making it apparent that the ILC intends to separate its work on groundwater from its work on oil and gas, thus preventing consideration of the implications of oil practices on groundwater).

67. *See* Aquifer Law, *supra* note 4, ¶¶ 5-6 (encouraging states to consider the provisions of the draft articles in their agreements and including deliberation of their eventual form onto the General Assembly agenda); *see also* Eckstein & Eckstein, *supra* note 16, at 201-05 (emphasizing the importance of groundwater as a source of drinking water).

Law fills a void left by the Watercourse Convention, which did not cover groundwater resources unconnected to surface water.[68] Some suggest that the Watercourse Convention also represents a regression in the law, limiting the protections afforded by broader provisions of the Seoul Rules.[69] Despite its shortcomings, the Aquifer Law is necessary to fill in gaps and potentially provide a new and improved framework from the previous rules and Watercourse Convention.[70] However, the lack of precision of terms between the Aquifer Law and Watercourse Convention limits the utility of the Aquifer Law.[71] Furthermore, the reuse of the same controversial language in the Watercourse Convention makes it unlikely that any eventual Convention based upon the Aquifer Law would be adopted.[72]

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68. *See* Gabriel E. Eckstein, *Commentary on the U.N. International Law Commission's Draft Articles on the Law of Transboundary Aquifers*, 18 COLO. J. INT'L ENVTL. L. & POL'Y 537, 551 (2007) (arguing that the imprecise definition of "groundwater" led to the use of "aquifer" as the preferred term by which to analyze such rights). *Compare* Watercourse Convention, *supra* note 5, art. 2 (defining "watercourse" as "a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus"), *with* SEOUL RULES, *supra* note 32, art. 1 ("The waters of an aquifer . . . intersected by the boundary between two or more States are international groundwaters if such an aquifer . . . forms an international basin . . . whether or not the aquifer and its waters form surface waters part of a hydraulic system flowing into a common terminus.").

69. *See* McCaffrey, *supra* note 8, at 283 ("Rather than focusing on the geologic formation, the [Aquifer Law] could usefully have followed the approach of the . . . Seoul Rules on International Groundwaters, which regulate 'the *waters* of international aquifers.'").

70. *Contra* Margaret J. Vick, *International Water Law and Sovereignty: A Discussion of the ILC Draft Articles on the Law of Transboundary Aquifers*, 21 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 191-94 (2008) (questioning whether a new convention is necessary to manage transboundary freshwater resources and concluding that adding a protocol to the Watercourse Convention, rather than creating new international regimes, would be best); *cf.* Coalter G. Lathrop, *Finding the Right Fit: One Design Element in the International Groundwater Resource Regime*, 19 DUKE J. COMP. & INT'L L. 413, 415 (2009) (indicating that "groundwater is being misconceived as a common resource subject to a regime with global scope" which could make the regime ineffective).

71. *See* Eckstein, *supra* note 68, at 555 (concluding, based on the confusing overlap of terms, that if the Aquifer Law were to become binding it would have to be harmonized with the Watercourse Convention, or some means of determining which instrument governs a particular situation would need to be developed).

72. *See* McCaffrey, *supra* note 8, at 281-82 (observing that most of the substantive articles of the Aquifer Law apply the principles of the Watercourse Convention except those refinements regarding special characteristics of

The United Nations remains undecided on how to approach the Aquifer Law, whether to turn it into a binding Convention or leave it in its current form as guidelines.[73] Admittedly, international customs are an important source of law for states, and non-binding instruments can eventually become binding as customary law.[74] Nonetheless, the obligation to protect the human right to life, which necessitates access to water, creates an urgent need for a binding law to protect this vital resource.[75] In addition, the technical limitations of developing states, which limit their access to subterranean freshwater, underscore the usefulness of the Aquifer Law in providing legal obligations to cooperate.[76]

A. THE AQUIFER LAW IS NECESSARY IN ORDER TO PROTECT THE HUMAN RIGHT TO WATER AND FACILITATE TECHNOLOGICAL COOPERATION IN ORDER TO OVERCOME THE DISPARITY IN STATES' CAPACITIES TO REACH GROUNDWATER RESOURCES.

The impact of aquifer utilization on human health, well-being and security is significant.[77] External factors, such as climate change and weather patterns, increasingly affect the availability of fresh water and amplify the importance of aquifers.[78] The acute reliance on

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groundwater).

73. *See* Aquifer Law, *supra* note 4, ¶¶ 4, 6.

74. *See, e.g.*, Alan E. Boyle, *Some Reflections on the Relationship of Treaties and Soft Law*, 48 INT'L & COMP. L.Q. 901, 902-03 (1999) (reasoning why soft law instruments may be viewed as an appealing alternative to treaties, which includes greater ease in forming agreements and avoiding the need for approval by domestic ratification procedures, thereby allowing states to adhere to the law's provisions more readily).

75. *See* DESHENG HU, WATER RIGHTS: AN INTERNATIONAL AND COMPARATIVE STUDY 102 (2006) (quoting Secretary-General Kofi Annan's statement that the "'[a]ccess to safe water is a fundamental human need and, therefore, a basic human right.'").

76. *Cf.* TEARFUND, DARFUR: RELIEF IN A VULNERABLE ENVIRONMENT 33 (2007) (recommending that UNEP engage in capacity-building and sustainable management projects with Darfur to ensure "water and energy security" and ameliorate the conflict).

77. *See* Menachem Elimelech, Special Paper, *The Global Challenge for Adequate and Safe Water*, 55 J. WATER SUPPLY: RESEARCH & TECH. 3, 5 (2006) (discussing the link between water scarcity and conflict between Israel and its neighbors, particularly Palestine and Syria, due in part to competing interests in the Sea of Galilee, the Coastal Aquifer, and the Mountain Aquifer, which are the three major sources of Israel's water supply).

78. *Cf.* UNEP, *supra* note 48, at 111 (expressing concern that the increased

aquifers to meet basic drinking needs makes them potential targets for attack.[79] In addition, some of the world's most volatile regions already rely on aquifers as a major source of freshwater.[80] Many of these states rely on international custom to guide their interactions with one another when utilizing their shared groundwater.[81] If water, and the basic human need for it, is not protected, many predict that international conflicts will soon follow.[82]

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dependence on groundwater at refugee camps may be unsustainable); *see also* TEARFUND, DARFUR: WATER SUPPLY IN A VULNERABLE ENVIRONMENT: PHASE TWO OF TEARFUND'S DARFUR ENVIRONMENTAL STUDY 11 (2007) (stating that average annual rainfall in Darfur decreased around 30% from the 1960s to the mid-1980s and has not yet recovered, and predicting that climate change will lead to less rain in the future); Rowena Mason, *Copenhagen Climate Summit: Nearly Half the World Will Suffer From Water Shortages 'Within 30 Years'*, TELEGRAPH, Dec. 7, 2009, http://www.telegraph.co.uk/earth/copenhagen-climate-change-confe/6745203/Copenhagen-climate-summit-Nearly-half-the-world-will-suffer-from-water-shortages-within-30-years.html (reporting on the conclusion of leading world scientists that climate change will cause water shortages, impacting farming, agriculture, and industry).

79. *See* Nicholas D. Kristof, *Dare We Call it Genocide?*, N.Y. TIMES, June 16, 2004, at A21 (describing the practices of the Sudanese Janjaweed poisoning wells with human and donkey corpses and limiting access to water by blowing up a dam that supplied water to farms during the crisis in Darfur).

80. *See* Elizabeth Burleson, *Middle Eastern and North African Hydropolitics: From Eddies of Indecision to Emerging International Law*, 18 GEO. INT'L ENVTL. L. REV. 385, 396 (2006) (describing the dependence of Israeli and Palestinian populations on the same aquifer); *see generally* AMNESTY INT'L, TROUBLED WATERS - PALESTINIANS DENIED FAIR ACCESS TO WATER (2009), *available at* http://www.amnesty.org/en/library /asset/MDE15/027/2009/en/e9892ce4-7fba-469b-96b9-c1e1084c620c/mde150272009en.pdf (accusing Israelis of using a disproportionate amount of the water from an aquifer shared with the Palestinians which effectively denies Palestinians access to water).

81. *See* Ian J. Silverbrand, *Israeli-Palestinian Water Literature's Misplaced Dependence Upon Customary International Law*, 37 ENVTL. L. 603, 621-625 (2007) (arguing that customary international law, such as the Helsinki Rules and non-binding Watercourse Convention, do not apply to the Israeli-Palestinian water problem).

82. *See* Jeffrey Sachs, *Stemming the Water Wars*, THE GUARDIAN (Apr. 26, 2009), http://www.guardian.co.uk/commentisfree/cif-green/2009/apr/26/water-shortage (reporting on the link between water shortages and international conflicts in arid lands, noting that "future water stresses will be widespread, [spanning] both rich and poor countries"); *see also* Yamada Report, *supra* note 51, ¶ 14 (arguing that, in contrast with oil as a source of energy, there is no alternative resource which humans can use to meet their basic water needs); Neil MacFarquhar, *Refugees Join List of Climate-Change Issues*, N.Y. TIMES, May 28, 2009, at A4 (claiming that some experts believe battling in Darfur between nomads and villagers over shrinking

A general duty to cooperate is prevalent throughout international law on transboundary resources, and is particularly helpful in situations where states differ in their technical capacity to locate and utilize the resource.[83] The Aquifer Law's provisions on technical cooperation can help facilitate the sharing of data and information, which disproportionally exist in the developed world.[84] Article 16 of the Aquifer Law requires states to promote "scientific, educational, technical, legal, and other cooperation . . . for the protection and management of transboundary aquifers."[85] Even between developing states, differences in financial and technological limitations impact their ability for groundwater development.[86]

The potential benefit of an obligation to share technology is profound.[87] One cooperative agreement, the Nubian Aquifer Regional Information System, provides its riparian states with access to cross-border groundwater information that they lacked.[88] Ideally, the Aquifer Law can provide guidelines and encourage more states to

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natural resources is the first significant conflict attributable to climate change).

83. *See, e.g.*, Ong, *supra* note 59, at 781-82 (describing the influence of the duty to cooperate found in the Law of the Sea Convention on state practice regarding common petroleum deposits).

84. *See* Eckstein, *supra* note 68, at 598-99 (stating that developed nations primarily possess the technical and logistical capacity to conduct appropriate hydrogeological studies and extraction).

85. *See* Aquifer Law, *supra* note 4, art. 16.

86. *See* UNEP, *supra* note 48, at 244 (providing the example of the Nubian Aquifer, which "remains largely untapped in both Sudan and Chad" while Libya and Egypt actively pump water for agricultural schemes via the Great Man-Made River and the South Valley Development).

87. *See generally International Workshop on Managing Shared Aquifers Resources in Africa: 2nd to 4th June 2002, Tripoli – Workshop Report and Recommendations*, UNESCO, http://webworld.unesco.org/water/ihp/tripoli_report.shtml (last visited May 18, 2011); *cf.* McCaffrey, *supra* note 8, at 282 (stating that improved technical understanding on the part of the ILC gives the Aquifer Law a scientifically sound basis).

88. *See* KHALED M. ABU-ZEID, CTR. FOR ENV'T & DEV. FOR THE ARAB REGION & EUR., REGIONAL MANAGEMENT OF THE NUBIAN SANDSTONE AQUIFER: "POTENTIAL ARAB REGION & LATIN AMERICA COOPERATION ON LARGE AQUIFERS" 2, 6 (2007) (describing the Nubian Aquifer Regional Information System as a regional information system that from 1997 to 2002 was designed to sustainably manage the Nubian Aquifer by providing member states with regional thematic maps and mathematical models. This support was made possible by the International Fund for Agricultural Development and an inter-regional organization, the Centre for Environment and Development for the Arab Region and Europe.).

form similar regional agreements.[89]

B. THE AQUIFER LAW CONSTRAINS STATE ACTION AND FAILS TO CLARIFY ITS SCOPE COMPARED TO THE WATERCOURSE CONVENTION, MAKING ADOPTION OF AN EVENTUAL CONVENTION UNLIKELY

The Aquifer Law's provisions are largely based, and in many cases are virtually identical, to the articles of the Watercourse Convention.[90] Despite the potential misconceptions of state parties, the obligations imposed by the Watercourse Convention have been blamed for the failure to enact it.[91] The similarity between the most objectionable provisions of the Watercourse Convention and Aquifer Law suggests that, absent some changes to the language and binding nature of the obligations, any Convention based on the Aquifer Law would suffer a similar fate.[92]

Some view the Watercourse Convention—and thus by extension the Aquifer Law—as a codification of customary international law regarding utilization of freshwater resources.[93] Complex and controversial conventions, such as the Convention on the Law of the

89. *Cf.* Salman, *supra* note 7, at 12 (noting the influence of the Watercourse Convention on the South African Development Community's revision of their Protocol on Shared Watercourse Systems to make it consistent with the Convention).

90. *See* McCaffrey, *supra* note 8, at 281-82; *see also* Eckstein, *supra* note 68, at 544-50 (assessing an earlier draft of the Aquifer Law and noting that it follows and builds on the Watercourse Convention).

91. *See* Alistair S. Rieu-Clarke et al., *The Role and Relevance of the UN Convention on the Law of the Non-Navigational Uses of International Watercourses to the EU and Its Member States*, 2008 BRIT. Y.B. INT'L L. 389, 26-31, *available at* http://www.internationalwaterlaw.org/bibliography/WWF/RA_European_Union.pdf (comparing attitudes of European states that have ratified the agreement with other European states that have expressed opposition, such as Spain).

92. *Cf.* Eckstein, *supra* note 68, at 555 (recommending that the Aquifer Law be amended if it is ultimately adopted into a Convention because of the confusion that would arise by the dual application of it and the Watercourse Convention).

93. ARIEL DINAR ET AL., BRIDGES OVER WATER: UNDERSTANDING TRANSBOUNDARY WATER CONFLICT, NEGOTIATION AND COOPERATION 62-66 (2007) (recounting the historical development of international law governing shared freshwater resources and noting that the Watercourse Convention is widely regarded as reflecting rules of customary international law).

Sea, can take a long time to enter into force.[94] However, the failure to ratify the Watercourse Convention raises significant doubts that any future Convention based upon the Aquifer Law would be approved.[95] The actual motivation of the states refusing to ratify the Watercourse Convention is ambiguous.[96] Nevertheless, the rhetoric surrounding the Watercourse Convention establishes objective reasons for the states' refusal to ratify it.[97]

Although the ILC clearly adopted lessons from the Watercourse Convention in the Aquifer Law, the two instruments are not explicitly linked beyond their similar subject matter.[98] Given the similar legal scope of the Watercourse Convention and Aquifer Law, it is important to clearly define which obligations apply to what body of groundwater.[99] Many water law experts have observed that the breadth of definitions in the Aquifer Law, while technically correct, may cause significant confusion over which law covers which body of groundwater.[100] This is because, while the Aquifer Law purports to cover water contained in all transboundary aquifers, the Watercourse Convention covers some of the same groundwater.[101]

Although the intent of the ILC was to address groundwater

94. Salman, *supra* note 7, at 12 (2007).

95. *Cf. id.* (noting that states are under a misconception about losing sovereignty over shared waters which makes it unlikely that the Convention will be ratified).

96. *Cf.* Rieu-Clarke et al., *supra* note 91, at 30 (arguing that the recent adoption of the 1992 UNECE Helsinki Convention and the 2000 EU Water Framework Directive by states opposing ratification may suggest that valid reasons no longer exist for those states to oppose the U.N. Convention).

97. *See* Salman, *supra* note 7, at 8-12 (giving six major reasons for states' hesitance to sign or ratify the Watercourse Convention, but explaining how each reason is misguided).

98. *See* Aquifer Law, *supra* note 4, art. 2 (failing to reference either the Watercourse Convention or define "groundwater," opting instead to introduce the term "aquifer" which does not appear in the Watercourse Convention).

99. *See* McCaffrey, *supra* note 8, at 292 (claiming that the Aquifer Law regulates not only shared freshwater that the Watercourse Convention does not cover, but also groundwater resources that it does).

100. *See id; see also* Eckstein, *supra* note 68, at 555 (explaining that the term "international aquifers" does not encompass all transboundary aquifers which makes the definition of "aquifer" in the Aquifer Law critical).

101. *Compare* Aquifer Law, *supra* note 4, art. 2 (employing broad definitions of both aquifers and aquifer systems with technically accurate but expansive terminology), *with* Watercourse Convention, *supra* note 5, art. 2.

resources, the phrase "groundwater" does not appear in the use of terms in Article 2 or anywhere else in the Aquifer Law.[102] Article 2 of the Aquifer Law describes the use of terms but does not mention either groundwater or watercourse.[103] The Watercourse Convention, on the other hand, defines watercourses and uses the term groundwater, not aquifer, in its definitions.[104] Geologically, some aquifers do flow and many are connected to surface waters.[105] However, a number of aquifers unconnected to surface water do not remain static and in one location.[106]

Another critical area of contention is the relationship between the principle of equitable and reasonable utilization and the obligation not to cause harm.[107] Article 6 of the Aquifer Law establishes the obligation of states not to cause significant harm.[108] Articles 4 and 5 require equitable and reasonable utilization and enumerate factors relevant to such utilization.[109] Currently, many upstream and downstream riparian states object to similar obligations imposed by the Watercourse Convention, claiming that the Watercourse Convention favors either upstream or downstream interests.[110]

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102. Eckstein, *supra* note 68, at 551.

103. Aquifer Law, *supra* note 4, art. 2.

104. Watercourse Convention, *supra* note 5, art. 2.

105. *See* Eckstein & Eckstein, *supra* note 16, at 209-12 (providing a technical description of aquifers, differentiating between confined and unconfined aquifers and describing aquifer recharge, permeability, and flow).

106. *Id.*

107. *See* Watercourse Convention, *supra* note 5, arts. 5, 7 (requiring states to use, develop, and protect an international watercourse in an equitable manner "attaining optimal and sustainable utilization thereof," while also imposing the requirement that states take all appropriate measures to prevent causing significant harm to other watercourse states).

108. *See* Aquifer Law, *supra* note 4, art. 6 (mandating that states undertaking activities impacting a transboundary aquifer, up to and including utilization, take all appropriate measures to prevent significant harm or eliminate and mitigate such harm as it occurs).

109. *See id.* arts. 4-5 (requiring utilization in a manner consistent with equitable and reasonable accrual of benefits, taking into consideration "population dependent on an aquifer," characteristics and potential utilization of the aquifer, and the role of the aquifer in the related ecosystems, among other factors).

110. *But see* Salman, *supra* note 7, at 9 (refuting this objection based on data showing that a number of the countries that ratified the Watercourse Convention, including Iraq, the Netherlands, Portugal and South Africa, are lower riparian states and would therefore have ratified the treaty against their interests if the Convention contained any built-in bias).

Although a compromise was achieved in order to secure passage of the Watercourse Convention by the General Assembly, most of the states that accepted that compromise chose not to ratify the Convention.[111]

Many states also objected to the Watercourse Convention's treatment of existing agreements.[112] The Watercourse Convention acknowledges prior agreements, but asks member states to consider harmonizing them with the basic principles of the Convention.[113] Some states considered this an incomplete acknowledgement of their prior arrangements.[114] Ironically, the article in the Watercourse dealing with prior agreements which these states found so objectionable actually permitted states to "apply and adjust the provisions" of the Watercourse Convention, although no specific guidance is provided for when the Convention and the "watercourse agreements" come into conflict.[115] The Aquifer Law, by comparison, provides no additional insight whatsoever on how preexisting agreements are affected by its obligations.[116]

Due to similarities with the Watercourse Convention, the Aquifer Law is likely to raise similar concerns over potential bias in favor of downstream riparian states.[117] That concern relates to the duty of notification in the Watercourse Convention, which is absent in the Aquifer Law.[118] Instead, the ILC included an article in the Aquifer

111. *See id.* at 4, 8-9 (contrasting the approval of the Watercourse Convention by 103 U.N. member states against the scant sixteen which have ratified it to date).

112. *See id.* at 10-11 (indicating that some riparian states view the provision that watercourse states may consider harmonizing such agreements with the principles of the Convention as imposing an obligation to actually do so).

113. *See* Watercourse Convention, *supra* note 5, art. 3.

114. *See* Salman, *supra* note 7, at 10-11 (relating the concern among some states that the Watercourse Convention does not fully recognize prior agreements and the opposite concern of others not party to those agreements who believe that the Convention should rigidly subject those agreements to its requirements).

115. Watercourse Convention, *supra* note 5, art. 3.

116. *See* Salman, *supra* note 7 at 10; see also Aquifer Law, *supra* note 4, art. 9 (encouraging states to enter into agreements but not discussing how prior agreements are handled under the Aquifer Law).

117. *See* Salman, *supra* note 7 at 9 (noting "the perception by upper riparians that the notification process under the Convention favors downstream riparians and provides them with a veto power over projects and programs of upstream riparians").

118. *See generally* Watercourse Convention, *supra* note 5, arts. 11-19 (establishing detailed procedures for watercourse states to notify one another of

Law encouraging bilateral or regional agreements between states to manage aquifers.[119] The broader duty to cooperate, established in Article 7 of the Aquifer Law, appears much less controversial.[120]

Finally, the concept of sovereignty is one area in which the Aquifer Law and Watercourse Convention appear to differ tremendously.[121] States expressed reluctance to join the Watercourse Convention due to their "apprehension about loss of sovereignty over shared waters."[122] During the General Assembly's discussion of the draft Watercourse Convention, a few states criticized its failure to address the sovereignty of the watercourse states over the parts of the international watercourses located in their territory.[123] The Aquifer Law provides a definition of sovereignty, albeit one that creates ambiguity over whether sovereignty over aquifers is absolute, thus failing to address how the sovereignty of states sharing aquifers and surface water will be reconciled.[124]

The utility of the Aquifer Law in facilitating state cooperation and establishing norms to protect freshwater resources is undeniable. However, the similarity of a number of key provisions in the Aquifer Law to the language of the Watercourse Convention suggests that the Aquifer Law stands no better chance at ratification than the Watercourse Convention. If the ILC and the U.N. General Assembly wish to promulgate a useful international treaty, binding or otherwise, it will be important to change the document in advance of

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planned measures which may have a significant, adverse effect upon other watercourse states).

119. Aquifer Law, *supra* note 4, art. 9.

120. *Id.* art. 7 (establishing an obligation of aquifer states to "cooperate on the basis of sovereign equality, territorial integrity, sustainable development, mutual benefit and good faith").

121. *See generally* McCaffrey, *supra* note 8, at 285-93 (assessing Article 3 of the Aquifer Law and the concept of sovereignty of aquifer states).

122. Salman, *supra* note 7, at 12.

123. *See id.*

124. *See* McCaffrey, *supra* note 8, at 291-93 (concluding that the notion of sovereignty over shared groundwater should have no place in any set of rules governing the use, protection, and management of shared freshwater resources because it may encourage states to claim absolute sovereignty, absolute discretion, or create problems regarding shared surface water); *cf.* Boyle, *supra* note 74, at 902-03 (arguing the relative advantages of soft law over treaties and asserting that "soft law instruments appear to be just as useful a means of codifying international law as treaties").

the final consideration by the 66th General Assembly in 2011.

IV. RECOMMENDATIONS

Proposals for changes to the Aquifer Law are based on a wide variety of criticisms.[125] However, the General Assembly has not chosen a specific course of action for the ultimate disposition of the Aquifer Law.[126] Some argue that overlap between the Watercourse Convention and Aquifer Law demonstrates that the General Assembly need not take any further action.[127] Others argue that the Watercourse Convention already serves an important function and will continue to do so whether or not it ever enters into force.[128] Given the human rights implications of access to groundwater, the United Nations should modify the Aquifer Law and draft a convention based on it.[129]

A. THE ILC SHOULD AMEND THE AQUIFER LAW TO CLEARLY DISTINGUISH IT FROM THE WATERCOURSE CONVENTION AND TO ESTABLISH AN EXPLICIT HUMAN RIGHT TO WATER

Given the differences in terminology and requirements between the Aquifer Law and Watercourse Convention, states party to either agreement might be unable to discern which provisions apply.[130] The Aquifer Law would benefit from a reference to the Watercourse

125. *See, e.g.*, McCaffrey, *supra* note 8, at 285-92 (undertaking an article-by-article analysis of the Aquifer Law, focusing on the concept of state sovereignty over aquifer resources, while also criticizing the lack of technical clarity and other specific failings).

126. *See* Aquifer Law, *supra* note 4, pmbl., ¶ 4 (directing states to consider the draft articles without soliciting improvements for any particular purpose, such as adopting them as a Convention).

127. *See* Vick, *supra* note 70, at 193 (recommending that the Watercourse Convention be amended to cover all groundwater and that a new Convention is unnecessary).

128. *See* Salman, *supra* note 7, at 12 (noting that the International Court of Justice has cited the Watercourse Treaty in adjudicating a case over the Danube River and that the Southern African Development Community member countries used the Convention to revised its 1995 Protocol on Shared Watercourse Systems).

129. *Cf.* Boyle, *supra* note 74, at 903 (stating that soft law instruments are often as effective as treaties in codifying international law but treaties are preferred in areas of new law-making like expanding human rights law).

130. *See* Eckstein, *supra* note 68, at 555 (noting that harmonization of the two agreements would be necessary if the Aquifer Law were adopted as a binding international agreement).

Convention.[131] Article 2 should define groundwater in order to augment and clarify the scope compared to the term supplied by the Watercourse Convention.[132]

The Aquifer Law should also state whether it purports to clarify, narrow, or supersede the definitions and obligations provided in the Watercourse Convention.[133] Article 1, which defines the scope of the law, should also include a provision specifically referencing the Watercourse Convention, acknowledging that some of the subject matter is equivalent. Given the failure of the Watercourse Convention to achieve ratification, it would be prudent to have the definitions and obligations of the Aquifer Law supersede it.[134]

In addition, while any Convention based upon the Aquifer Law should compel as little state action as possible, there is a critical reason for imposing some restrictions on state action: the need to protect access to fresh water as a basic human right.[135] The United Nations Committee on Economic, Social and Cultural Rights' General Comment 15 to the ICESCR currently provides an implicit obligation to protect the human right to water.[136] The right is "implicit" because, although most view the right to water as inherent

131. *Cf.* Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery art. 1, Sept. 7, 1956, 18 U.S.T. 3201, 226 U.N.T.S. 3 (referring to the 1926 League of Nations Convention abolishing slavery to clarify terms between the two documents).

132. *See* Aquifer Law, *supra* note 4, art. 2 (defining only aquifer and aquifer system, both of which are highly technical and make no legal distinction from the Watercourse Convention).

133. *Cf.* Convention on the Rights of the Child, pmbl., art. 28, Nov. 20, 1989, 1577 U.N.T.S. 3 (protecting the same right to education as the International Covenant on Economic, Social and Cultural Rights, but specifying that the broad right to education be applied to children in a manner consistent with the child's human dignity).

134. *Cf.* Salman, *supra* note 7, at 13-14 (arguing that the inability to ratify the Watercourse Convention stemmed from misconceptions about the Convention's provisions).

135. *See* Yamada Report, *supra* note 51, ¶ 14 (noting that there is no alternative resource which humans can use to meet their basic water needs).

136. *See* HU, *supra* note 75, at 104 (relating to the argument in General Comment 15 to the ICESCR by explicitly linking the right to food protected by the Covenant to a right to water); *see generally* E.S.C. Res. 2002/12. U.N. Doc E/RES/2002/12 (Jan. 20, 2003) [hereinafter General Comment 15] (defining, *inter alia*, the legal bases of the right to water and inferring such a right from provisions of treaties which do not purport to explicitly establish such a right).

in the right to food recognized under the ICESCR, the actual Covenant makes no mention of the word "water" at any point.[137] Moreover, neither the Watercourse Convention nor the proposed Aquifer Law makes any reference to human rights at all.[138] Thus, the Aquifer Law should become the first binding international instrument to overtly refer to a human right to water, which may also increase its chances of adoption.[139] Furthermore, any affirmative obligations or restrictions upon state party action in a convention based on the Aquifer Law could be based on the need to protect this human right.

B. THE AQUIFER LAW SHOULD FOLLOW EXISTING PRACTICE FOR TRANSBOUNDARY OIL AND GAS EXTRACTION TO AFFORD STATES THE GREATEST FLEXIBILITY IN FORMING AGREEMENTS TO UTILIZE SHARED GROUNDWATER RESOURCES

The current norms for transboundary oil exploitation can provide insight into international groundwater law in the same manner that the provisions of the Law of the Sea helped guide and refine the development of state practices for exploiting transboundary oil.[140] Many states enter into agreements with private enterprises and other states that have the technical capacity to reach and refine otherwise inaccessible oil deposits.[141] A similar practice could also help overcome the disparity in capacity to access groundwater

137. *See* HODGSON, *supra* note 43, at 8 (elaborating upon the "right to water" as an extension of the right to an adequate standard of living, developed in General Comment 15 of the Covenant).

138. Both instruments do, however, make reference to "human needs" at various points. *See, e.g.*, Aquifer Law, *supra* note 4, arts. 5(2), 17(3); Watercourse Convention, *supra* note 5, art. 10.

139. *Cf.* Convention on the Rights of the Child, *supra* note 133 (exemplifying an international convention rooted in a basic human right that achieved widespread—nearly global—acceptance).

140. *See* Cameron, *supra* note 58, at 560 (advancing that a rule in favor of cooperation between states is emerging in customary international law, which may lead to bilateral agreements mandating cooperation with regard to common petroleum resources); Ong, *supra* note 59, at 782 (raising questions about the legal force of the obligation to cooperate but noting that Article 123 of the Law of the Sea Convention appears to call for cooperation).

141. *See* Ong, *supra* note 59, at 789 (describing the popular model of joint development consisting of "compulsory joint ventures between the interested states and their national or other nominated oil companies").

resources.[142] In fact, the Special Rapporteur acknowledged that the work on transboundary groundwaters could impact future codification of oil and natural gas.[143] Indeed, state practices in handling transboundary oil and gas may prove a more appropriate model for establishing rights and duties pertaining to aquifers.[144]

To that end, the ILC should craft an agreement providing states the flexibility to self-order. The preference for flexibility in self-ordering bilateral and multilateral agreements is already apparent in the state response to the ILC's proposed codification of transboundary oil and gas law.[145] The relative ease and functionality of state transboundary oil and gas agreements is largely attributable to states' flexibility in arriving at those agreements.[146]

Obligations can also be stated in such a broad fashion as to afford states the same flexibility as though no obligation had been imposed. For instance, in order to promote cooperation, Article 16 of the Aquifer Law requires states to "promote scientific, educational, technical, legal, and other cooperation" for the protection and management of transboundary aquifers but leaves it up to the states to determine how to meet that obligation.[147] Also, the Watercourse

142. *See* GREG MUTTITT, PLATFORM, PRODUCTION SHARING AGREEMENTS: OIL PRIVATISATION BY ANOTHER NAME? 5 (2005), *available at* http://www.platformlondon.org/carbonweb/documents/PSAs_privatisation.pdf (listing three state practice models for structuring an oil industry, including production sharing agreements in which states contract with foreign companies to attract capital and technical ability to extract oil resources); TEARFUND, *supra* note 76, at 61 (describing the technical, financial, and national security difficulties in building hafirs and dams).

143. *See* McCaffrey, *supra* note 8, at 274 (recognizing the overwhelming support of governments for the law on transboundary aquifers to be "treated independently of any future work of the Commission on the issues related to oil and natural gas").

144. *See* Ong, *supra* note 59, at 772, 778, 780, 798 (analyzing customary practices in international petroleum law which bear strong resemblances to the concepts the ILC is seeking to codify in the Aquifer Law, including sovereignty, preservation of the resource, the obligation to cooperate, and the obligation of mutual restraint).

145. *See, e.g.*, Fife, *supra* note 56 (requesting that the ILC refrain from codifying international practice regarding transboundary oil and gas due to the pre-existing system of bilateral agreements).

146. *Cf.* Ong, *supra* note 59, at 788-92 (describing three basic models of transboundary oil utilization as among the many flexible types of agreements states may create).

147. Aquifer Law, *supra* note 4, art. 16.

Convention provides language in Article 3 that could be borrowed and refined to allow states this flexibility.[148] By establishing broad guidelines and encouraging states to enter into bilateral and multilateral agreements, the ILC may avoid some of the criticisms and complaints of bias and unfairness that doomed the Watercourse Convention.

Ultimately, the failure to ratify the Watercourse Convention is another strong indicator that states will not voluntarily accept absolute obligations without a compelling interest to do so.[149] The willingness of states to conform to customary practices in forming bilateral oil and gas agreements demonstrates the effectiveness of this practice.[150] The ability of such agreements to change and evolve without the approval of the entire United Nations is also a superior mechanism to accommodate changing technology and dynamics. Thus, by giving states as much flexibility as possible without infringing on human rights, the ILC would promulgate a law with much improved chances of ratification based on current state practice and preferences.

V. CONCLUSION

The International Law Commission's work on the Aquifer Law represents an important step toward ensuring the protection and utilization of groundwater, which makes up ninety-seven percent of the Earth's freshwater resources excluding polar ice. However, the failure to ratify the Watercourse Convention suggests that the current Aquifer Law would meet a similar fate.

In order to achieve the eventual enactment of a Convention based on the Aquifer Law, the ILC should amend the current language to

148. *See* Watercourse Convention, *supra* note 5, art. 3(3) ("Watercourse States may enter into one or more agreements, hereinafter referred to as 'watercourse agreements', which apply and adjust the provisions of the present Convention to the characteristics and uses of a particular international watercourse or part thereof."). It should be noted that Article 3 does not specify whether such agreements can completely alter and supersede the Convention. The Aquifer Law should be clear which parts states can change and which parts they cannot.

149. *See generally* Salman, *supra* note 7, at 8-12 (describing six misconceptions states use as reasons for rejecting the Watercourse Convention).

150. *See, e.g.*, U.K.-Nor. Cross-Boundary Petroleum Agreement, *supra* note 64 (presenting the modern iteration of a fifty year, constantly changing agreement between the United Kingdom and Norway).

allow states flexibility to self-organize through bilateral and multilateral agreements as they currently do with transboundary oil and gas reserves. Any affirmative obligations should be based on the need to protect the human right to water, which ought to be explicitly stated in the Aquifer Law. The 66th General Assembly, which convenes in September 2011, should then either adopt a Convention based upon the Aquifer Law or propose additional changes to the ILC with the express purpose of promulgating a convention.