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Beyond International Water Law: Successfully Negotiating Mutual Gains Agreements for International Watercourses

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ABSTRACT

Water, energy, and agricultural issues are often found inextricably linked in the more than 260 international watercourses in the world. International water law provides an important foundation from which agreements regarding the conservation and management of international watercourses can be successfully negotiated. A mutual gains approach towards successfully negotiating agreements for international watercourses is presented and illustrated by various examples. The approach is a process model, based on experimental findings and hundreds of real-world cases, that facilitates negotiating better outcomes while protecting relationships and reputation. A central tenet of the approach, and the robust theory that underlies it, is that a vast majority of negotiations in the real world involve parties who have more than one goal or concern in mind and more than one issue that can be addressed in the agreement they reach. The approach allows parties to improve their chances of creating an agreement superior to existing alternatives. Application of the approach in an international watercourse context moves beyond merely meeting international legal rights and obligations.

I. INTRODUCTION

Water, energy, and agricultural issues are often found inextricably linked in the more than 260 international watercourses and countless international aquifers which cross the political boundaries of two or more countries. Water for agriculture is so fundamental that the term "water" is often used to indicate arrangements necessary to support agriculture, as in the first water agreements negotiated some 5000 years ago. Water for energy includes water for hydropower and biofuels, both of which increase with the demand for energy generally. Water

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for energy may also have environmental and social impacts. For example, hydropower production and transmission may conflict with food production that utilizes energy. Energy for water includes the pumping of water for extraction and conveying uphill and over what can be very long distances. Energy for water also includes energy for desalinization—a particularly energy-intensive process - and energy for wastewater treatment.[1] According to Tony Allan, a recognized expert in the field, "[i]f water and energy are available as free or very cheap goods then they are used in ways that seriously hurt the collective good."[2]

As demand for water and energy rise, so will the importance of paying attention to protecting social and environmental values, which often fall victim to hurried efforts to produce water and energy. This is particularly true in relation to international watercourses.

II. INTERNATIONAL WATERCOURSES AND INTERNATIONAL LAW

International watercourses cover 45.3% of the land surface of the earth, are relied upon by about 40% of the world's population, and account for approximately 80% of global river flows.[3]

International watercourses have certain characteristics that make their conservation and management particularly challenging, the most notable of which is the tendency for regional politics to regularly exacerbate the already difficult task of understanding and managing complex natural systems.[4] The law governing international watercourses will take either of two general forms: treaty law or customary international law.[5]

If the states sharing an international freshwater resource are not parties to an applicable treaty, their rights and obligations are governed by customary international law.[6] Currently, the best known multilateral international water law agreement is the 1997 United Nations Convention on the Law of the Non-

1. Interview with Scott Slater, Partner, Hatch & Parent, Sacramento, Cal. (Feb. 17, 2009) (on file with Stephen C. McCaffrey) (each day, the Hyperion Treatment Plant sends an amount of water the equivalent of the USA's fifth largest river into the ocean). *See also* City of Los Angeles Stormwater Program, *Hyperion Treatment Plant*, http://www.lastormwater.org/siteorg/general/hypern1.htm (last visited Dec. 23, 2009).

2. John Anthony Allan, Distinguished Guest Lecturer at the Royal Society of Chemistry, Lecture at the University of Saskatchewan: Water and Energy: Three Weddings and Avoiding Two Funerals (Sept. 10, 2009).

3. Aaron T. Wolf, Jeffrey A. Natharius, Jeffrey J. Danielson, Brian S. Ward & Jan K. Pender, *International River Basins of the World*, 15 INT'L J. OF WATER RES. DEV., 387, 392 (1999); STEPHEN C. MCCAFFREY, THE LAW OF INTERNATIONAL WATERCOURSES 16 (2nd ed. 2007).

4. James Kraska, *Sustainable Dev. is Security: The Role of Transboundary River Agreements as Confidence Building Measure (CBM) in South Asia*, 28 YALE J. INT'L L. 465, 490 (2003) (competition over freshwater resources often exacerbates international tension).

5. Richard Kyle Paisley & Timothy L. McDaniels, *International Water Law, Acceptable Pollution Risk and the Tatshenshini River*, 35 NAT. RES. J. 111, 117-118 (1995) (international treaty law consists of explicit agreements between international bodies while customary international law consists of the practices of international bodies that are relatively uniform, generally accepted and enforced by a relevant community of states). *See generally* MCCAFFREY, *supra* note 3, at 16.

6. IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 2 (7th ed. 2008).

Navigational Uses of International Watercourses. Although not yet in force, this Convention is generally regarded as reflecting the fundamental rules of customary international law applicable in the field.[7] Other key international agreements include the 1992 United Nations Economic Commission for Europe's Convention on the Protection and Use of Transboundary Watercourses and International Lakes,[8] and the historically important 1966 Helsinki Rules and associated commentary.[9]

There are several rules of international law of a general and fundamental nature that govern the conduct of states in relation to international watercourses.[10] The most basic of these are the following:

- States are to use an international watercourse in a way that is "equitable and reasonable"[11] vis-à-vis other states sharing the watercourse.
- States are to take "all appropriate measures"[12] to prevent causing "significant harm"[13] to co-riparian states.
- States are to "consult"[14] with the other international watercourse states and provide prior, "timely notification"[15] about any new use or change in an existing use of an international watercourse that could have significant adverse effects on co-riparian states, along with relevant technical information.

There is no rule of international law concerning the use of international watercourses more fundamental than that of equitable and reasonable utilization.[16] In the *Gabčíkovo-Nagymaros Project* case the International Court

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7. United Nations: Convention on the Law of the Non-Navigational Uses of International Watercourses, *opened for signature* May 21, 1997, 36 I.L.M. 700 (not yet in force) [hereinafter UN Watercourses Convention]. *See* MCCAFFREY, *supra* note 3, at 375-77.

8. The Convention on the Protection and Use of Transboundary Watercourses and International Lakes, March 17, 1992, *available at* http://www.unece.org/env/water/pdf/watercon.pdf (the UNECE Water Convention, which was adopted in Helsinki in 1992 shortly before the Rio conference and entered into force in 1996, provides a legal framework for regional cooperation on shared water resources like rivers, lakes, and groundwaters).

9. International Law Association, Helsinki Rules on the Uses of the Waters of International Rivers, 52 Int'l L. Ass'n Rep. Conf. 484, (Aug. 1966), *available at* http://webworld.unesco.org/water/wwap/pccp/cd/pdf/educational_tools/course_modules/reference_documents/internationalregionconventions/helsinkirules.pdf [hereinafter Helsinki Rules].

10. *See* MCCAFFREY, *supra* note 3, at 375-77; *see also* RICHARD KYLE PAISLEY, INTERNATIONAL WATERCOURSES / RIVER BASINS INCLUDING LAW, NEGOTIATION, CONFLICT RESOLUTION AND SIMULATION TRAINING EXERCISES (2008).

11. UN Watercourses Convention, *supra* note 7, at art. 5.

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

13. *Id.*

14. *Id.* at art. 11.

15. *Id.* at art. 12.

16. *See* Richard Paisley, *Adversaries Into Partners: International Water Law and the Equitable Sharing*

referred to a riparian state's "basic right to an equitable and reasonable sharing of the resources of an international watercourse."[17] This rule requires each riparian state to ensure, in an ongoing manner, that its use is equitable and reasonable vis-à-vis other riparian states. What is equitable and reasonable in any given case may be determined only by taking into account all relevant factors and circumstances—both natural (e.g. climate, hydrography) and human-related (e.g. social and economic needs of the riparian states, effects of uses in one state on co-riparians, existing and potential uses).[18]

Another fundamental rule of international watercourse law is that one state should not cause "significant harm" to another.[19] This principle has been recognized in several important decisions in international cases.[20] However, the application of the principle to international watercourses can be controversial.[21] While it is clear that one state may not intentionally cause harm to another through, for example, flooding or deliberate releases of toxic pollution, questions are sometimes raised about whether one state's use that reduces the available supply in another state is prohibited by this norm. The better view is that the latter situation is governed first and foremost by the principle of equitable utilization: if harm is caused through a pattern of utilization that is otherwise equitable and reasonable, it should not be prohibited.[22]

Although it has been controversial in the past, today there is little doubt that customary international law also requires a state planning a new use to provide notice thereof to other states that the use might adversely affect. This rule applies to all projects (including both new uses and changes in existing uses) that have the potential to change the regime of the watercourse in a way that would be prejudicial to other riparian states. More recently, it has been recognized that adverse legal effects should also be covered by the rule—for example, if a large downstream project could foreclose, or at least curtail the extent of, future uses in an upstream state by altering the equitable balance of uses and making downstream uses more susceptible to being harmed by new projects upstream, then notice should be given.[23]

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of Downstream Benefits, 3 MELB. J. OF INT'L L. 280, 283 (2003); and MCCAFFREY, *supra* note 3, at 365-67.

17. *Gabčíkovo-Nagymaros Project* (Hung. v Slovk.), 1997 I.C.J. 7, 54 (Sept. 26).

18. MCCAFFREY, *supra* note 3, at 363, 384-405.

19. UN Watercourses Convention, *supra* note 7, at art. 7(1).

20. *See, e.g., Gabčíkovo-Nagymaros Project* (Hung. v Slovk.), 1997 I.C.J. 7 (Sept. 26).

21. *See* Paisley, Adversaries, *supra note* 16, at 283 n.10. *See generally* MCCAFFREY, *supra* note 3.

22. Paisley, Adversaries, *supra note* 16, at 283 n.10; MCCAFFREY, *supra* note 3, at 365-67, 436.

23. This possibility is recognized by WORLD BANK, OPERATIONAL MANUAL, OP 7.50 - PROJECTS ON INTERNATIONAL WATERWAYS, OPERATIONAL POLICIES (2009), *available at* http://www.worldbank.org; *see generally* MCCAFFREY, *supra* note 3, at 407.

III. A MUTUAL GAINS APPROACH TO NEGOTIATING INTERNATIONAL WATERCOURSE AGREEMENTS[24]

The fundamental tenets of international water law described above provide an overall basis for transboundary water use and management between states.[25] Beyond customary international legal obligations lie treaties and other agreements that are negotiated between states in an effort to address particular watercourse management issues, to clarify how customary obligations will be met, and in some cases to jointly develop opportunities that neither state could fully capitalize on if acting independently. It is this latter type of circumstance - the opportunity for mutual gain through cooperation—that arguably provides the most powerful, positive and sustainable incentives to cooperate.[26]

The Mutual Gains Approach to negotiation is a process model, based on experimental findings and hundreds of real-world cases, that lays out various steps for negotiating better outcomes, often including equitable sharing of benefits, while protecting relationships and reputation. A central tenet of the model, and the robust theory that underlies it, is that a vast majority of negotiations in the real world involve parties who have more than one goal or concern in mind and more than one issue that can be addressed in the agreement they reach. The model allows parties to improve their chances of creating an agreement superior to existing alternatives.

When states identify and develop opportunities with reciprocal sharing of benefits, they position themselves to sustain their agreements on the basis of the ongoing benefits from doing so. Rather than simply reflecting the legal principles summarized above—avoiding significant harm, sharing in a reasonable and equitable manner, providing timely notification of changes and developments—opportunities for mutual gain expand the potential rewards associated with cooperation. Mutual gains arrangements shed a whole new light on the implications of cooperation. The focus of negotiation can shift away from limiting impacts on sovereignty, to planning and devising ways and means of maximizing benefits.

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24. Mutual Gains bargaining is an approach to collective bargaining intended to reach win-win outcomes for the negotiating parties. Instead of the traditional adversarial (win-lose) approach (aka positional bargaining), the mutual gains approach is similar to that first described by Roger Fisher (in his book Getting to YES), where the goal is to reach a sustainable agreement that all parties in a multi-party negotiation can live with and support.

25. *See* McCaffrey, *supra* note 3.

26. *See* Shlomi Dinar, *Power Asymmetry and Negotiations in International River Basins*, 14 INT'L NEGOTIATION 329 (2009) (stating that, "Cooperation, in general, materializes when both states, but particularly the stronger state, realize that benefits can accrue from coordination and joint action. In other words, to harness the river in an efficient manner, cooperation must ensue and the downstream state's participation is important. Even when the benefits to cooperation are not clear, i.e. when the upstream riparian does not foresee immediate economic incentives to cooperation, coordination may still be attained through the manipulation of incentives (or strategic interaction) . . . ."); *see also* Neda A. Zawahri & Andrea K. Gerlak, *Navigating International River Disputes to Avert Conflict*, 14 INT'L NEGOTIATION 211 (2009).

Contrast the following hypothetical—but not unrealistic—negotiation scenarios where the focus shifts from limiting impacts on sovereignty ("Narrow") to seeking opportunities for mutual gain ("Open")).

Scenario # 1:

A "Narrow" negotiation bogs down in trying to grapple with the definitions section of a treaty where country A is seeking to limit the definition of "tributary" in an international watercourse to first order streams. The underlying interest of A is to reduce explicit obligations to consult with riparian neighbors B and C regarding significant hydropower developments that A is planning on secondary and tertiary tributaries. This position flies in the face of the general principles of both integrated water resources management and international law, which apply to the entire watercourse system. B and C protest that the proposed approach makes no sense from a technical watershed management, or international legal, perspective and eventually discussions and negotiations get to the real issues, which are related to the extent to which consultation obligations create unnecessary transaction costs, requirements to adjust plans in response to legitimate concerns regarding harm, or in a subtle manner, establish a veto for other states. All of this dialogue is set in a context of uneasy suspicion about hidden motives and concern about the political implications of appearing to sacrifice independence to neighboring states. After considerable time and expense, compromises are eventually reached, and obligations are set out that are not dissimilar to the customary international legal obligations, and more practically speaking, with the requirements of international funding institutions from which financing may be required.

Scenario # 2:

An "Open" negotiation starts by recognizing that international legal obligations are what they are, and that time and effort should be spent exploring potential opportunities for mutual gain through cooperative development of water resources. Country A has considerable potential for hydropower production and water storage. Country B has untapped agricultural potential that requires irrigation and a favorable flow regime. It also lies between A and international markets for electricity, and is committed to shifting away from coal fired generation plants as a source of domestic energy supply. It needs a source of cleaner, cheaper electricity and A may be able to provide it. Country C needs flood control in order to develop agricultural and tourism opportunities on a delta downstream from A, as well as more energy for domestic and industrial use.

Country representatives from A, B, and C engage in extensive technical discussions of alternative scenarios that attempt to maximize benefits for all countries through hydropower development, energy transmission and trade, flow regime management, and agricultural trade. These discussions require explicit

commitment that ideas and information are exchanged on a "without prejudice" and confidential basis in order to create opportunities to safely consider a wide range of options without implying any commitments. Country representatives dispense with excessive formalities and collaboratively define potential opportunities. If it turns out that there are no opportunities for mutual gain through cooperation (a highly unlikely prospect) then the fall-back is a simple acknowledgement of international legal principles. After considerable negotiation, fueled by detailed analysis of various options, an agreement is reached that involves joint investment in infrastructure needed to facilitate development opportunities that would not be possible without cooperation. A develops hydropower facilities and sells electricity to B and C. B and C get flow regime commitments needed to facilitate development of agricultural and opportunities in the delta. B sells transmission rights through its territory to A. As in the "Narrow" scenario, the negotiations take time and money to complete but the resulting stream of benefits associated with the final agreement is quite different.

The contrasts between these scenarios are obvious. If co-riparians are not going to get beyond what is already customary international law, then why bother negotiating a transboundary water agreement? It is not as if treaty obligations are backed up by strong enforcement provisions. Consider how few international water disputes have actually found their way to the International Court of Justice, recognizing of course that this requires the agreement of all states concerned, either as part of the treaty (a very rare occurrence), or at the time of the dispute (an even rarer occurrence).

Having articulated this criticism, there is a persuasive argument to be made that such "basic" treaties do create a foundation and institutional structures that foster good relationships and make meeting international legal obligations easier to achieve.

Basic treaties can also attract considerable investment by international funding organizations with the consequential economic benefits from expenditure of those investments—some of which are on projects that result in sustainable developments on the ground. While these may be the benefits of a "Narrow" type approach to treaty negotiation, it is notable that co-riparians that pursue and actually implement an "Open" approach can achieve all of these benefits set within the context of economic returns that are sustained by the developments facilitated through the treaty which may have been impossible to achieve acting independently or through a "Narrow" negotiation. In this circumstance, good relations are founded in, and reinforced by, mutual gain, and the institutional arrangements are sustained by the desire to maintain the stream of benefits created by the associated developments. This is very different than commitments to do what customary international law and International Financial Institution ("IFI") rules already require with institutional arrangements that are funded by external sources that are unlikely to be sustained over the long term.

Closely related to the "Narrow" and "Open" scenarios are very different approaches to negotiation that alternately make the process awkward and inefficient with respect to finding solutions, or make it constructive and creative. The first approach is Positional and lacks coordinated and impartial administrative, technical, legal and mediation support. In contrast, the second approach is Interest-based, and has coordinated and impartial administrative, technical, legal and mediation support. The Positional approach suffers from all of the inefficiencies associated with applying positional negotiations in a context where it is relatively easy to miss opportunities for mutual gain because the underlying interests and their synergies are not well understood. The parties are focused on maintaining positions rather than exploring alternatives that may integrate their respective interests. If administrative support is viewed as biased, the negotiation platform itself can become tangled up in the negotiation, as parties bring process issues to the negotiating table while substantive issues are being addressed. If technical and legal advice are not provided through an impartial mechanism that ensures transparent understanding of conflicting perspectives, then the negotiation can be diverted into a dialogue or conflict between experts as opposed to focusing on how well national interests are being addressed. Finally, if mediation and facilitation support is either separated from these other functions, or nonexistent, then the opportunities for these resources to maximize the potential for productive outcomes are hard to deliver.

An Interest-based approach is significantly different. Administrative, technical, legal, and mediation support is coordinated, and process design issues are worked through and agreed upon separately from substantive matters. The process is designed to maximize opportunities for safe and constructive discussion of alternatives that may deliver valuable outcomes for all riparian parties. Technical and legal advice is provided in response to issues raised through investigation of alternative solutions. They are not driving the discussion; they are supporting it. Mediation support provides the capacity to both manage the process for success for all parties, and to investigate alternatives where direct discussions may be difficult or impossible.

In summary, if the process is interest based and well supported, then time is spent on constructive problem solving and relationship building, rather than on unproductive exchanges of positions and negotiation tactics that have little or no relationship to the mutually beneficial opportunities that may well exist.

In practice, there are a growing number of Open type international agreements, which provide for the return, either in kind or in cash, of an equitable share of the benefits resulting from cooperation. Some examples are described below.

(1) *The Treaty of Versailles, 1919*; Article 358 of the Treaty of Versailles, 1919, gave France the exclusive right to use the waters of

the Rhine for power production, subject to France paying Germany one-half the value of the energy produced.[27]

(2) *The Barcelona Convention, 1921*; The Barcelona Convention, 1921, Article X, contains the idea of sharing downstream and even upstream benefits, providing that where a state is obliged under the Convention to take steps to improve the river or is put to expense to maintain it for navigation, it is entitled to demand a reasonable contribution to the costs involved.[28]

(3) *The Kunene River Agreement (South Africa and Portugal) 1926*; The agreement between South Africa and Portugal, regulating the use of the waters of the Kunene River, gave South Africa the right to build a dam upstream in Angola and certain diversion works. Article XII further provided as follows:

> No charge shall be made for the water diverted from the Kunene River for the purpose of providing means of subsistence for the Native Tribes in the Mandated Territory; but should it be desired to utilise a portion of the water referred to in Article six above [one half of the flood water of the river] for any other purposes, being for purposes of gain, . . . South Africa . . . shall pay, for such portion of the water so utilised, to . . . [Portugal] such compensation as may be mutually agreed upon.[29]

(4) *The Cunene River Basin Agreement (South Africa and Portugal), 1969*; A more recent treaty between Portugal and South Africa for the Kunene River (under the name of the Cunene River), sees one watercourse state paying another for benefits received by it as a result of developments of the watercourse in the other state. Under this agreement Portugal was to construct the Gove dam and South Africa agreed to participate in the financing of the dam in respect of components forming part of the storage function, but excluding costs incurred for hydro-power generation purely in the interest of the Portuguese government. In return, Portugal agreed not to extract more than fifty percent of the resulting regulated flow of the river, and to operate the dam so as to provide a regulated flow.[30] The treaty

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27. Treaty of Peace Between the Allied and Associated Powers of Germany, June 28, 1919, 3 U.S.T. 3714, [hereinafter Treaty of Versailles].

28. Convention and Statute on the Regime of Navigable Waterways of International Concern, Apr. 20, 1921, 7 L.N.T.S. 35 [hereinafter Barcelona Convention].

29. Agreement Between the Government of the Republic of South Africa and the Government of the Republic of Portugal Regulating the Use of the Waters of the Kunene River for the Purposes of Generating Hydraulic Power and of Inundation and Irrigation in the Mandated Territory of South West Africa, Port.-S. Afr., July 1, 1926, 70 L.N.T.S. 316 [hereinafter Kunene River Agreement].

30. Agreement between the Government of the Republic of South Africa and the Government of

also provided for the construction and operation of works for the diversion by means of pumping water from the Cunene River for human (including irrigation) and animal requirements in southwest Africa. South Africa agreed to pay for the construction and operation of the works, which would be done by the Portuguese authorities; South Africa was also to pay a fixed amount for the ground occupied and for the flooding caused by these works.[31]

(5) *The Rhine Chlorides Agreement, 1977*; The Rhine Chlorides agreement provides that the Netherlands is to pay a substantial share of the cost to France of disposing of waste salts from the Mines de Potasse d'Alsace in ways other than discharging them into the Rhine. Thus, in this example the downstream state pays the upstream state for the conferral of a benefit (freedom from pollution harm).[32]

(6) *The Lesotho Highlands Project Treaty, 1986*; The Lesotho Highlands Project Treaty is a treaty pursuant to which the downstream state, South Africa, was to pay a substantial share of the cost of constructing the project in Lesotho in return for the downstream benefits it would receive from the project.[33]

(7) *Gabčíkovo-Nagymaros Treaty (Czechoslovakia (Slovakia) and Hungary), 1977*; The 1977 Treaty between Czechoslovakia (now Slovakia) and Hungary which gave rise to the 1997 *Gabčíkovo - Nagymaros* ICJ case provided for the development of a series of dams and a hydroelectric plant, chiefly on a stretch of the Danube that forms the border between the two countries. Under the Treaty, this project was to produce the bulk of the electricity on a bypass canal wholly within what is now Slovakia. The majority of Danube water is diverted into that canal then rejoins the bed of the Danube. Under the Treaty, Hungary was to receive power from that plant as well as flood control and navigation benefits; all, at least in part, downstream benefits.[34]

Portugal in Regard to the First Phase of Development of the Water Resources of the Kunene River Basin, Port.-S. Afr., arts. 4.1.11, 4.1.12, Jan. 21, 1969, LEX-FAOC015963, *available at* http://faolex.fao.org/docs/texts/saf15963.doc.

31. *Id.* at arts. 4.2.6.9, 4.2.8.

32. Convention on the Protection of the Rhine Against Pollution by Chlorides, Dec. 3, 1976, 16 I.L.M. 265 [hereinafter Rhine Chlorides Agreement].

33. Treaty on the Lesotho Highlands Water Project Between the Government of the Kingdom of Lesotho and the Government of the Republic of South Africa, Lesotho-S. Afr., Oct. 24, 1986, *available at* http://www.fao.org/docrep/w7414b/w7414b0w.htm.

34. *See Gabčíkovo-Nagymaros Project*, *supra* note 20, at 18; for an analysis of the case *see* MCCAFFREY, *supra* note 3, at 210-21.

IV. DETAILED INTERNATIONAL EXPERIENCES

A. The Columbia River Basin[35]

The widely acknowledged situation with regard to the equitable sharing of downstream benefits in relation to the Columbia River aptly illustrates both the existence, and the practical application, of a mutual gains approach leading to the equitable sharing of downstream benefits.[36]

The Columbia River is shared between Canada and the United States and is governed by the Columbia River Treaty.[37] The Treaty explicitly recognizes that the construction and operation of three Treaty projects upstream in Canada increases both the useable energy and dependable capacity of power plants downstream in the United States, as well as providing irrigation and flood control benefits in the United States. All of these would not be possible at the same cost without the three Treaty projects in Canada.[38]

In return for building the three Treaty projects in Canada, the Treaty entitled Canada to a lump sum payment for irrigation and flood control benefits, as well as one half of the additional power generated by power plants in the United States that resulted from storage across the border in Canada.[39]

There are three basic principles which govern the apportionment of power benefits under the Treaty, as well as the responsibility for the costs associated with production of those benefits:

1. the power benefits generated as a result of the cooperative development of Canada and the United States are to be shared on a substantially equal basis, provided that an equal division will result in an advantage to each country as compared with the alternatives available to it;

2. when an equal division of power benefits will not result in an advantage to each country, the countries must then negotiate and agree upon such other division of benefits as will be equitable to both countries and make cooperative development feasible; and

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35. *See* LEONARD ORTOLANO ET AL., WORLD COMM'N ON DAMS, GRAND COULEE DAM AND THE COLUMBIA BASIN PROJECT USA (2000); NIGEL BANKES, THE COLUMBIA BASIN AND THE COLUMBIA RIVER TREATY: CANADIAN PERSPECTIVES IN THE 1990S (1996); Nwcouncil.org, *Columbia River: Description, Creation, and Discovery*, http://www.nwcouncil.org/history/ColumbiaRiver.asp (last visited Dec. 23, 2009).

36. Treaty Between Canada and the United States of America Relating to Cooperative Development of the Water Resources of the Columbia River Basin, U.S.-Can., Jan. 17, 1961, 542 U.N.T.S. 244 (1964).

37. *Id.*

38. *Id.*

39. *Id.*.

3. each country is to bear all capital and operating costs for facilities it will provide in its own territory to carry out the cooperative development mandated by the Treaty.

According to Sanderson:

These deceptively simple principles contain considerable wisdom, a wisdom that I believe helps explain the Treaty's success in delivering the value that the Parties hoped it would in 1960. The principles effectively balance the theoretical potential of international cooperation on the one hand and the need to serve sovereign ambitions on the other. . . .

The practical affect of the principles was to cause each nation to determine the benefits it believed were attainable through cooperation. A bi-national structure was then developed to provide a mechanism to create those benefits. The principles provided that the benefits would normally be divided 50/50 and each party would bear its own costs. This benefit sharing formula would be adjusted if the normal approach did not provide a benefit to one of the Parties equal to or greater than what it thought it could obtain acting unilaterally.

The great attraction of this approach was and is that it focuses on gross benefits and eliminates the need for each country to calculate net benefits. It recognizes that determining what the net benefits and costs of a particular project might be in a way that is acceptable to both countries will often be impossible. The wisdom of finessing the need for the Parties to agree on valuing intangible attributes such as species at risk or reconciliation with First Nations is amply demonstrated by the difficulty the entities had in agreeing to the quantification of the CE spelled out in the Treaty. By allowing each Party to assess its own benefits and costs, the Treaty provides a solution which recognizes this limitation and leaves both countries to seize opportunities that make them better off than they would have otherwise been according to their own values and thus in a position to enthusiastically support whatever initiative is being undertaken.

Put simply, the power of the principles which gave rise to the sharing of benefits under the Treaty lies in the fact that those principles recognize the benefits in one country, and the costs in the other, without requiring a comparison of the two. Rather, they permit the development of a framework which facilitates a negotiation process that recognizes the

legitimacy of the concerns in each country, and introduces a formula which will enable both countries to reap benefits from the development.[40]

B. The Nile River Basin

The Nile is a paradigmatic example of how the upstream-downstream dynamic can produce a zero-sum game in the absence of benefit-sharing. The Nile Basin spans portions of the territories of ten countries: Burundi, the Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda. It is said to be the longest river in the world, flowing some 4,000 miles from its source in the Lake Victoria basin to the Mediterranean Sea. But this is only one branch of the great river, the White Nile. The other branch is the Blue Nile, which flows from Lake Tana, in the Ethiopian highlands, through a deep gorge to Khartoum where it joins the White Nile to form the Nile proper. The flow of the Blue Nile is around twice that of the White Nile and is characterized by seasonal torrents, accounting for the historic Nile floods and associated flood-recession agriculture in Egypt.

Egypt contributes virtually no water to the Nile and is almost entirely dependent upon it. It therefore decided to capture the flow of the Nile behind the Aswan High Dam (Sadd el Aali Dam), completed in 1970, in the Lake Nasser reservoir, with a storage capacity of about twice the Nile's average annual flow.[41] Egypt uses this water for both irrigation and hydroelectric power production, but suffers losses of some fifteen percent of the reservoir's water from evaporation.[42] Early British studies had concluded that storage in the upper basin would offer a technically preferable solution,[43] but for Egypt the massive dam and reservoir symbolized its post-World War II nationalism and were considered necessary to Egypt's water security in view of the country's dependence on the Nile.

As is typical throughout the world, Egypt, the ultimate downstream state on the Nile, developed its water resources far earlier, by thousands of years, than any of the upstream riparians. Egypt's use of Nile water is so intensive that little actually flows into the Mediterranean Sea. This has led Egyptian leaders to threaten military action against Ethiopia if that country "touch[es] the waters of the Nile."[44] Thus the zero-sum game: whatever Ethiopia (or, theoretically, upstream states on the White Nile) uses, Egypt loses. Ethiopia has emphasized that it has a right to utilize Nile waters in a manner that is equitable and reasonable vis-à-vis Sudan and Egypt. Indeed, equitable utilization theoretically

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40. Chris Sanderson, Partner at Lawson and Lundell LLP, Paper Prepared for Transboundary River Governance in the Face of Uncertainty: The Columbia River Treaty, 2014: The Columbia River Treaty After 2004 16 (Apr. 2, 2009).

41. *See generally* MCCAFFREY, *supra* note 3, at 358-61.

42. *Id.*

43. *See, e.g,* SIR WILLIAM GARSTIN, REPORT UPON THE BASIN OF THE UPPER NILE 194-95 (1904).

44. ROBERT O. COLLINS, THE NILE 214 (2002) (quoting Anwar el-Sadat). *See also* JOHN WATERBURY, THE NILE BASIN 71, 83 (2002).

avoids the harm to an upper riparian state that would result from locking in quantities used historically by a lower riparian. This is, however, of little comfort to Egypt, which continues to develop Nile water resources,[45] utilizing virtually all of the water that enters her territory. Egypt tends to rely more heavily on the "no-harm" principle as support for its argument that it is entitled to the same quantity of Nile water it has used historically and is currently using.[46]

It is apparent that reconciling Egypt's insistence on continuing to receive present quantities with Ethiopia's development plans cannot be accomplished through apportionment of water alone. The two countries have therefore been discussing possibilities for benefit-sharing within the framework of the Nile Basin Initiative (NBI), a development program supported by the World Bank and various bilateral donors.[47]

In 2002, Nile Basin states established the NBI as an international organization with its headquarters in Entebbe, Uganda. Nile Basin countries developed a Benefit Sharing Framework at a meeting in June 2009 and Egypt, Ethiopia, and Sudan continue to work on identification of benefit-sharing projects relating to their sub-basin through the Eastern Nile Subsidiary Action Program, one of two Investment Programs under the umbrella of the NBI. An example of these projects is the Eastern Nile Regional Power Trade Investment Program, whose objective is: "[t]o promote regional power trade through coordinated planning and development of power projects and transmission interconnection in the context of multi-purpose water resources development."[48] As with the basin as a whole, major investment in the Eastern Nile will have to await approval of the Nile Basin Cooperative Framework Agreement, the first basin-wide treaty governing the Nile, on which the riparian states have been working since the late 1990s. At their meeting in Alexandria, 27-28 July 2009, the Nile Council of Ministers in charge of water affairs decided to allow a period of six months for the conclusion of an inclusive Cooperative Framework Agreement—i.e., one that is participated in by all nine Nile Basin states that have taken part in the negotiations.[49] It is hoped that these final negotiations will meet with success.

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45. The development is on the "Peace Canal," under the Suez Canal to the Sinai, and the "New Valley" or Toshka project, which pumps water from Lake Nasser west to the desert. *See* WATERBURY, *supra* note 44, at 70-71, 84.

46. Egypt also relies on a 1929 treaty with Great Britain which it says is now binding on the Nile riparian states that were British colonies at the time, including Sudan, Kenya, Tanzania and Uganda. *See* MCCAFFREY, *supra* note 3, at 265. The latter three states contest this assertion; the relations between Egypt and Sudan are governed by the Agreement between the United Arab Republic and the Republic of Sudan for the Full Utilization of Nile Waters, Nov. 8, 1959, 453 U.N.T.S. 51.

47. *See generally* Nile Basin Initiative, *Nile Basin Initiative*, http://www.nilebasin.org/ (last visited Dec. 23, 2009).

48. Nile Basin Initiative Subsidiary Action Program, *ENSAP—Eastern Nile Regional Power Trade Investment Program* (2009), http://ensap.nilebasin.org/index.php?Itemid=127&id=41&option=com_content&task=view.

49. Nile Basin Initiative, *17th Nile Council of Ministers in Charge of Water Affairs Reaffirm Basin-Wide*

C. The Senegal River Basin

The management of the Senegal River offers a unique example of benefit sharing between the riparian states. The river rises in Guinea and drains portions of that country, Mali, Mauritania, and Senegal. The most recent agreement concluded by the riparians is the 2002 Senegal Water Charter,[50] which responded to problems created by the construction of two dams pursuant to earlier agreements. These are the Manantali hydroelectric dam in Mali, completed in 1988, and the Diama saltwater intrusion barrier, near the mouth of the river where it forms the border between Mauritania and Senegal, completed in 1986.[51]

The dams had given rise to a number of problems in the downstream portion of the basin, including the degradation of ecosystems, the elimination of traditional flood-recession agriculture, and a variety of public health problems (including malaria, diarrhea, and schistosomiasis (bilharzia).[52] In adopting the Senegal River Water Charter, the riparians made the decision to alter the flow regime to mimic natural, pre-dam conditions to some extent, by creating artificial floods through releases from the Manantali Dam.[53] While this was done at the cost of some hydropower, benefits were gained by the amelioration, and possible elimination, of the conditions that gave rise to the problems that had beset the lower Senegal. This cooperative solution was made possible in part by the fact that the works constructed on the Senegal are jointly owned, pursuant to a 1978 treaty.[54] The Water Charter seeks to allocate water equitably among the different sectors, chiefly agriculture, fishing, navigation, and power production. It also contains the following innovative provision, one of a number of progressive features of the agreement: "The guiding principles of any distribution of the River's water will guarantee to the populations of the riparian States the full enjoyment of the resource, with respect for the safety of the people and the works, as well as the basic human right to clean water, in the perspective of sustainable development."[55]

Cooperation (2009), http://www.nilebasin.org/index.php?option=com_content&task=view&id=137&Itemid=70. Eritrea is the one Nile Basin state that has not participated in the negotiations. It participates in meetings of the Council of Ministers as an observer. *Id.*

50. Charte des Eaux du Fleuve Sénégal [Senegal River Water Charter], 18 May 2002, OMVS Resolution 005, art. 24, *available at* http://bd.stp.gov.ml/padelia/pdf/CHARTEDESEAUXDUFLEUVESENEGAL.pdf. For a discussion of the earlier treaties concerning the Senegal River Basin, *see* Margaret J. Vick, *The Senegal River Basin: A Retrospective and Prospective Look at the Legal Regime*, 46 NAT. RES. J. 211 (2006).

51. Vick, *supra* note 50, at 216.

52. *See* Int'l Dev. Ass'n, World Bank, *Regional Cooperation and Benefit Sharing in the Senegal River Basin*, *available at* http://siteresources.worldbank.org/EXTWAT/Resources/Senegal_River_Bain_Feature_Story.pdf (last visited Dec. 23, 2009); MCCAFFREY, *supra* note 3, at 274.

53. Int'l Dev. Ass'n, *supra* note 52.

54. Convention Relative au Statut Juridique des Ouvrages Communs [Convention concerning the Legal Status of Jointly-Owned Structures], Dec. 12, 1978, *available at* http://faolex.fao.org/docs/texts/mul16005.doc; supplemented by the Convention Relative aux Financements des Ouvrages Communs (Convention concerning the Financing of Jointly-Owned Structures), Mar. 12, 1982).

55. Senegal River Water Charter, *supra* note 50, at art. 4.

This provision of the Water Charter brings the focus back to the people who are affected by the large projects on the river. It clearly signals the intent of the parties to remedy the unforeseen problems mentioned earlier. It is especially interesting that the provision invokes the human right to water, the first time a treaty concerning international watercourses has done so.

V. CONCLUSION

International water law provides an important foundation from which agreements regarding the conservation and management of international watercourses can be successfully negotiated. However, there is much to be said for applying a "mutual gains" approach towards negotiating mutually beneficial agreements for international watercourses, often including equitable sharing of benefits, which move beyond merely meeting international legal rights and obligations. In support of such an approach, a number of case studies have been presented including more detailed analysis of the Columbia, Nile, and Senegal international river basins.

Why are there not more of these types of agreements given the obvious benefits they appear to provide? One reason for this is that states are often more concerned with how they can protect and maintain their independence and sovereignty than they are with how they may be able to cooperate to maximize mutual benefits. This starts negotiations off in a narrow context with negotiators that have strict instructions "not to give anything away while supporting and maintaining good relations." Another reason for the lack of open type negotiations is the absence of independent and coordinated institutional support. Institutional support is often provided by international funding organizations as part of a project of the organization for which an agreement is a deliverable. This can create a challenging dynamic within the process as those that are responsible for providing institutional support struggle to maintain neutrality while also delivering an agreement. This can undermine co-riparian confidence that the process will support them whether or not they choose to agree. It is only in recent years that the UN has begun to develop a more systematic mediation support service for transboundary water negotiations and this is still in its very early stages.[56] Also, while the theory of value creation that underpins a mutual gains approach appears to be easily recognized and understood by participants across various cultures, it is often less clear that the communication strategies that also underpin the approach, and which can vary in significant ways across cultures because of different social norms that govern individual and organization behavior, are as transferable.

56. *See* Press Release, United Nations, United Nations Announces New "On-Call" Mediation Team (Mar. 5, 2008), *available at* http://www.un.org/News/Press/docs/2008/pa1.doc.htm.