

INNOVATIONS IN TRANSBOUNDARY WATER MANAGEMENT

AUGUST 2013
PACIFIC RESOLUTIONS



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Dear readers!

I would like to present for your attention a brochure, prepared under the direction of Mr. Alex Grzybowski, an international mediation expert and a long standing partner of the UN Regional Centre for Preventive Diplomacy for Central Asia (UNRCCA), on best practices in negotiating mutually beneficial agreements on the management of trans-boundary water resources based on the experience from different river basins.

This subject is important and relevant for the region of Central Asia where differences between the countries remain on the management of water resources and their use for agricultural, energy and other purposes. A sustainable long-term solution to this complex problem may be found by joint efforts through various forms of both bilateral and multi-lateral cooperation.

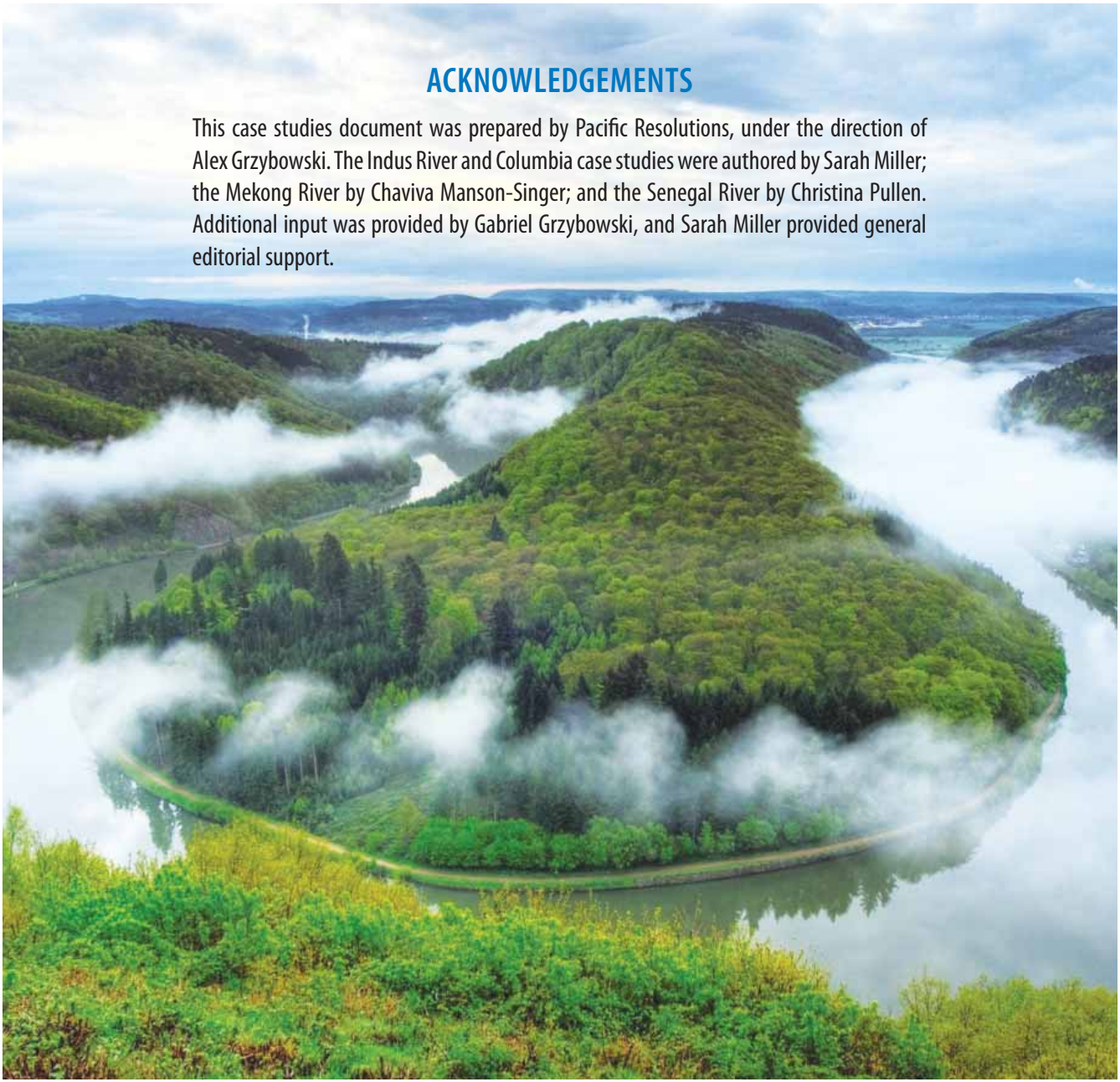
An important impetus to the development of regional cooperation in managing trans-boundary water resources was given by the visit of the UN Secretary-General Ban Ki-moon to Central Asia in 2010. During his trip, the Secretary-General had the opportunity to see the seriousness of water related problems in the region, including one of the major environmental challenges facing the planet in the area of the Aral Sea. He stressed that one country alone could not solve the problems in the region and urged all Central Asian states to take urgent actions to change the situation. He also emphasized the importance of the international community's support for these efforts.

In this context, UNRCCA sees its role in contributing to the creation of an environment conducive to reaching durable solutions in the interests of all parties. UNRCCA attaches great importance to international best practices in the management of trans-boundary water resources and designs its programmatic activities in order to familiarize its partners with a range of international legal instruments and initiatives related to water management and dispute resolution.

There is a growing understanding in the region that Central Asian countries need to develop their inter-state relations on the basis of International Law and best practices. In this regard, UNRCCA has been working to promote relevant trans-boundary water management provisions and dispute resolution models through its programmatic activities, including the establishment of an early warning mechanism, the application of a scenario-based approach to the integrated use of water resources and, most recently, the development of a modern legal framework proposal that could guide the management of trans-boundary waters in the Aral Sea basin while protecting the interests of all riparian states.

I hope you will find the materials presented in this brochure useful.

Sincerely,
Miroslav Jenča
Special Representative of the UN Secretary-General,
Head of UNRCCA



ACKNOWLEDGEMENTS

This case studies document was prepared by Pacific Resolutions, under the direction of Alex Grzybowski. The Indus River and Columbia case studies were authored by Sarah Miller; the Mekong River by Chaviva Manson-Singer; and the Senegal River by Christina Pullen. Additional input was provided by Gabriel Grzybowski, and Sarah Miller provided general editorial support.

INTRODUCTION

This document has been prepared by Pacific Resolutions for the United Nations Regional Centre for Preventive Diplomacy for Central Asia (UNRCCA). It is a voluntary contribution in support of a UNRCCA-sponsored special focus event at the High Level International Conference on Water Cooperation held in Dushanbe, Tajikistan, on August 20th, 2013. The case studies within this document are intended to provide background for discussion on recent developments and innovations in cooperation over transboundary water resources in a number of river basins around the world. Examples of transboundary cooperation relating to the Indus River, the Mekong River, the Senegal River, and the Columbia River are summarized in order to highlight the ongoing efforts of these riparian nations to settle their differences and cooperate with each other in a constructive manner.

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THE INDUS RIVER[1]

Summary

The Indus Waters Treaty (hereafter known as the Treaty), concluded between India and Pakistan in 1960, has lasted more than 50 years. It has survived despite the precarious political relationship of the riparian states, which has collapsed into numerous instances of outright hostility and three wars, in 1965, 1971, and 1999. Currently, the strength of the Treaty is being tested, not due to broader political conflict between India and Pakistan, as in the past, but instead due to a heated dispute over India's construction of the Kishenganga hydroelectric project.

The Treaty created a joint management system for the Indus River, addressing Pakistani fears over Indian control of the River. It allocated control and usage rights (with some restrictions) of the Western rivers – the Indus, Jhelum, and Chenab – to Pakistan, and the Eastern rivers – the Sutlej, Beas, and Ravi – to India. The Treaty has been noted as special because of its unique approach; instead of determining terms for shared use of the water within each river, it divided the rivers between the parties[2]. It did not address the controversial issues of ownership or sovereignty over the rivers or their surrounding areas, particularly Jammu and Kashmir[3].

Figure 1

The Treaty established the Permanent Indus Commission, which is comprised of one commissioner from each state. It also established three different categories of issues that may arise between Pakistan and India based on the severity of the issue, and accordingly three different ways in which to address them. First, an issue is classified as a "question", which may be resolved by the Commission through agreement. If this fails, the "question" may become a "difference",

[1] *Case study prepared by Sarah Miller*

[2] *Dinar and others, 2007, p.270*

[3] *Court of Arbitration, 2013, Partial Award, para 360*

which can be resolved by a neutral expert, as was the case of the dispute over the Baglihar hydroelectric project. Alternatively, if an issue is found to be inappropriate or impossible for an expert to decide, it may become a "dispute", which is resolved by the two Governments or by the Court of Arbitration[4].

Dispute over Kishenganga

India's construction of the Kishenganga hydroelectric project led Pakistan to institute proceedings at the International Court of Arbitration in May 2010[5], the first time an issue has been brought to the Court in the lifetime of the Treaty[6]. This dispute arose in 1988, when India first began to work on the concept[7].


Figure 2

The Kishenganga River is in the Indian-administered part of Jammu and Kashmir, and is a tributary of the Jhelum River, over which Pakistan was given usage rights in the Treaty[8]. The project is a run-of-the-river plant, which involves India diverting water from the Kishenganga to a powerhouse, and then back to Bonar Nallah, also a tributary of the Jhelum River[9].

Pakistan brought two disputes to the courts. The first dispute concerns whether India's planned diversion of water from the river violates the terms of the Treaty[10], which obliges India to "let flow" the Western rivers and maintain the natural channels of the rivers[11].

The second dispute brought forth by Pakistan refers to whether India can bring the reservoir level of a run-of-the-river plant below Dead Storage Level in situations other than an unforeseen emergency[12], as it was planning to do through its use of drawdown flushing in the reservoir. Drawdown flushing is a technique used to clear sediment from the river, in which the water level is drawn down close to the riverbed, thus lifting up sediments and removing them through outlets in the dam[13].

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4 *Court of Arbitration, 2013, Partial Award, para 271*
5 *Permanent Court of Arbitration, 2013*
6 *Shashank, 2013*
7 *Court of Arbitration, 2013, Partial Award, paras 140-145*
8 *Shashank, 2013*
9 *Court of Arbitration, 2013, Partial Award, para 155*
10 *Pakistan's Request for Arbitration, para 4(a), cited in Court of Arbitration, 2013, Partial Award, para 162*
11 *Court of Arbitration, 2013, Partial Award, para 163*
Pakistan's Request for Arbitration, para 4, cited in Court of Arbitration, 2013, Partial Award, para 465
13 *Court of Arbitration, 2013, Partial Award, para 266*

A partial award was given to India on 18 February 2013, which allowed India to operate the project, as long as it ensures a minimum flow downstream of the plant[14], but barred it from using drawdown flushing that would bring the water level below Dead Storage Level[15]. The Court says that it expects to give the final award, determining the minimum flow of water that India is required to release in the Kishenganga, by the end of 2013[16].

India has recently sought clarification on the second part of the Court's award, asking that it be made project-specific, as drawdown flushing was earlier approved in the case of the Baglihar Dam[17].

Past Issues

While the dispute over Kishenganga has been the most recent and perhaps most potent test of the Treaty's strength, there have been a number of challenges that have arisen over the years, which the Treaty has managed to endure. They have predominately stemmed from Pakistan objecting to India's construction of power projects, claiming that they give India too much control over the waters and can be used to adversely affect Pakistan.

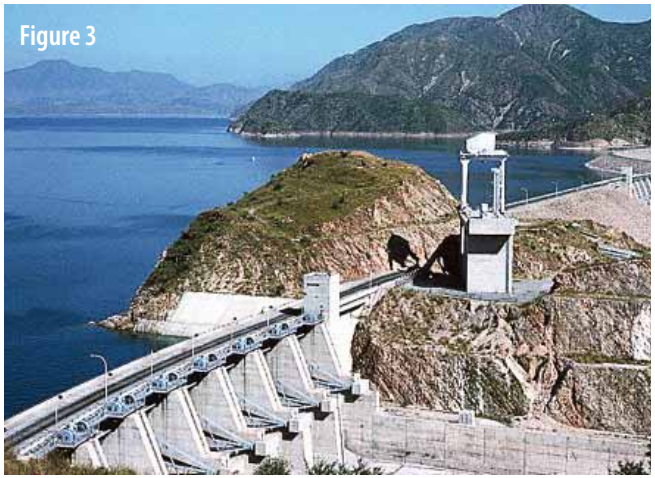
Figure 3

There has been a long-term disagreement over the Tulbul Navigation Project, which arose in 1986. Pakistan has claimed that it is a storage project that enables India to control the waters, and therefore violates the terms of the Treaty. India has at times suggested that it would like to pursue international arbitration over the issue[18], but as of yet nothing has been set in motion with the International Court of Arbitration or the World Bank.

There was a disagreement over the Baglihar hydroelectric project on the Chenab River, which India began planning in 1992[19]. Pakistan objected to the design of the dam and argued that its construction would temporarily deplete the flow in the River[20]. The difference was referred to the World Bank in 2005, which appointed the "neutral expert" Professor Raymond Lafitte, a Swiss civil engineer, to settle the case. He decided in favour of the project, but placed restrictions on its design and size[21]. Pakistan has since claimed that Lafitte "exceeded

[14] *Ibid., para 445*
[15] *Court of Arbitration, 2013, Partial Award, Decision B(3)*
[16] *Permanent Court of Arbitration, Press Release, 2013*
[17] *Parsai, 2013*
[18] *Parsai, 2012*
[19] *Dinar and others, 2007, p.278*
[20] *Ibid., p.278*
[21] *Ibid., p.279*
[22] *Court of Arbitration, 2013, Partial Award, para 343*

his competence" in some of his decisions, particularly in his statement on when drawdown flushing is permissible[22].

Pakistan has also objected to the Nimoo-Bazgo power project, a run-of-the-river project designed to deliver electricity to the Ladakh region of Jammu and Kashmir[23]. However, in 2012, Pakistan decided against taking the dispute to the International Court of Arbitration[24].

Conclusion

It is not surprising that there have been a number of challenges in India and Pakistan's joint management of their transboundary water resources. Pakistan and India face increasing water scarcity problems[25], and their populations are growing extremely quickly, which is putting increased strain on their water resources. Additionally, the unstable and often antagonistic political relationship between the two countries creates a dearth of trust and makes cooperation, even on a functional level, much more difficult. Nevertheless, the Indus Water Treaty has endured the differences and disputes of the past 50-odd years, and may be well positioned to endure for another 50.

Figure 4

[23] *Akhter, 2012*

[24] *Ibid.*

[25] *Dinar and others, 2007, p.270*

THE COLUMBIA RIVER[26]

Summary

The Columbia River Basin is an international drainage basin shared between the United States (US) and Canada. The river is the fourth largest in North America[27] and the largest in the Pacific Northwest[28]. A massive flood in Vanport, Oregon, in 1948, in addition to increasing power needs in the Pacific Northwest, provided the impetus f or the negotiation of a treaty to manage the river[29]. Canada and the US signed the Columbia River Treaty (CRT) in 1961, and implemented it in 1964. It is seen as "one of the most successful transboundary water treaties based on equitable sharing of downstream benefits"[30], and "the standard against which other international water coordination agreements are compared"[31].

Figure 5

There are Entities on both sides of the border that have responsibility for implementing the Treaty. The Canadian Entity is the British Columbia Hydro and Power Authority (BC Hydro), and the American Entity is comprised of the Administrator of the Bonneville Power Administration and the Northwest Division Engineer of the U.S. Army Corps of Engineers[32]. The Treaty also created the Permanent Engineering Board (PEB), whose purpose is to monitor the results of the management practices and to reconcile differences and disagreements between the Canadian and American Entities on operational or technical issues[33]. The US and Canada appoint two members each to the PEB. If the Entities have an unresolved dispute, it may be referred to the International Joint Committee between Canada and the US, and then to an Arbitration Tribunal if the Committee does not respond within three months; however, neither mechanism has been used to date[34].

[26] *Case study prepared by Sarah Miller*
[27] *Hyde, 2010, p.2*
[28] *Bankes and Cosens, 2012, p.4*
[29] *BC Ministry of Energy and Mines, 2013, p.i*
[30] *Hyde, 2010, p.1*
[31] *US Army Corps of Engineers and Bonneville Power Administration, 2009, p.7*
[32] *Ibid., p.4*
[33] *Ibid., p.4*
[34] *Hyde, 2010, p.7*


Figure 6

The purpose of the CRT, and perhaps the reason for its continued strength and success, is to deliver flood control and power production benefits to both countries while maintaining constructive, technically based relationships, and avoiding legal disputes between the parties. In addition to sharing power production and flood control benefits, the Canadian and American Entities work together as much as possible on win-win solutions, focussed on maximizing the benefits to both parties[35] from the Columbia River.

The Columbia River is now the highest producer of hydroelectric power of any river in North America[36]. Under the provisions of the Treaty, Canada agreed to build three dams in order to provide water storage and control flooding. In response, the US agreed to pay Canada $64.4 million for flood control benefits over the following 60 years (1964-2024), which was estimated to be 50% of the value of future flood control benefits[37]. The US also agreed to pay a "Canadian Entitlement" for the estimated downstream power generation benefits realized in the US[38], calculated at 50% of the estimated increase in dependable capacity and annual usable energy in the US[39]. The Canadian Entitlement is agreed upon every 5 years and cannot be changed if the actual rates differ from those estimated[40].

The CRT at a Crossroads

The Columbia River Treaty is now at a crossroads. Both countries have their first opportunity to terminate the Treaty in 2024, if they give a minimum of 10 years' written notice, meaning they must decide by 2014 in order to terminate the Treaty in 2024. Both


Figure 7

[35] *Hyde, 2010, p.13*
[36] *Bankes and Cosens, 2012, p.4*
[37] *US Army Corps of Engineers and Bonneville Power Administration, 2009, p.6*
[38] *Ibid., p.6*
[39] *Hyde, 2010, p.9*
[40] *Ibid., p.10*

Canada and the US are currently reviewing the Treaty, and engaging with the local populations affected by its provisions, in order to decide whether to allow the Treaty to continue in its current form (with the exception of flood control, as provisions relating to flood control will change automatically in 2024); to modify elements of the Treaty; or to terminate most of its provisions. If either party chooses to terminate the Treaty, certain provisions would nevertheless continue: Canada would still be required to provide "called upon" flood control to the US, and the US would be able to continue its operation of the Libby Dam and the Koocanusa reservoir[41] which extends into Canada.

The Treaty's treatment of flood control measures will change automatically in 2024, unless the parties agree to modify the relevant provisions. Under the original provisions of the Treaty, the US received both assured operation and on-call operation types of flood control: the assured element requires Canada to maintain 8.45 million acre feet (MAF) of storage space, and the on-call element requires Canada to comply with US requests to operate additional storage to meet its flood control needs on an ad hoc basis, although no requests have been made so far[42]. In 2024, the assured operation element will be dropped and flood control will be maintained exclusively through called-upon management[43]. There is uncertainty as to the point at which the US can use the called-upon measure[44], in particular how high the discharge must be at The Dalles, Oregon to warrant its use[45] and which US reservoirs must be used to reduce flood risk before calling on Canada for assistance.

The CRT, with its almost exclusive emphasis on hydroelectricity and flood control, does not currently directly address environmental and ecological concerns, such as the protection of fish populations, or issues pertaining to irrigation. However, the Entities have entered into supplemental agreements in order to provide improved environmental flows. Many people are critical of the severely limited incorporation of other values into the terms of the Treaty, and want ecosystem function, in particular, to become a key objective of a modified Treaty[46].

Additionally, both parties to the Treaty are changing the way in which they engage with affected populations and stakeholders. One of the most prevalent criticisms of the initial negotiation and implementation of the CRT, especially in Canada[47], has been the lack of engagement with the local populations in areas affected by

Figure 8

[41] *Bankes and Cosens, 2012, p.7*
[42] *Ibid., p.8*
[43] *Ibid., p.8*
[44] *Ibid., p.8*
[45] *Ibid., p.8*
[46] *Ibid., p.v*
[47] *Hyde, 2010, p.12*

the Treaty provisions. Whole communities were relocated due to the construction of dams in BC[48], and many people feel that they were not adequately compensated for their losses[49]. In Canada, the Columbia Basin Trust (CBT) was established, as partial compensation to the region for the impacts of the Treaty dams.

Disagreements and Cooperation to Date

There have been a number of disagreements and disputes since the Treaty's inception, but most have been resolved before requiring the involvement of the Permanent Engineering Board or either Government[50].

There have also been negotiations over the operation of non-Treaty storage in the Mica Dam[51]. A 10-year non-Treaty Storage Agreement was reached in 1984 and extended until 2004. A new non-Treaty Storage Agreement was entered into in 2012[52].

Figure 9

There have been multiple disputes over the US' operation of the Libby Dam. In 1994, Canada argued that the US' operation of the dam adversely affected Canadian power and violated the CRT[53] [54]. 5 years later, in 1999, the Canadian and American Entities finally reached agreement on the issue. While neither side abandoned their position, they agreed to the continuation of Libby's operation for fish, with an exchange of power between the Bonneville Power Administration and BC Hydro, resulting in BC Hydro gaining the difference in market value of the exchanged power[55]. This was finalized in the 2000 Libby Coordination Agreement[56].

The US created new flood control procedures at the Libby Dam based on variable outflows, called VarQ, in 2003. Canada has claimed that these new procedures have adversely affected Canadian power and potentially flood control, and has requested compensation under the Libby Coordination Agreement[57]. The issue is currently ongoing[58].

[48] *Ibid., p.12*
[49] *CBT, 2012, Oct*
[50] *Hyde, 2010, p.13*
[51] *Ibid., p.14*
[52] *Jull, 2013*
[53] *Government of British Columbia, 2012*
[54] *Hyde, 2010, p.18*
[55] *Ibid., p.18*
[56] *Government of British Columbia, 2012*
[57] *Hyde, 2010, p.19*
[58] *Government of British Columbia, 2012*

The Libby Coordination Agreement also formalized the storage swapping that had been taking place since 1996 between Arrow and Libby Dams[59]. Canada has used this strategy several times to improve recreation conditions for residents surrounding the Koocanusa Reservoir[60].

The Treaty review processes in both countries are highlighting the differences in perceived value that the two countries place on the Treaty through the Entities. The US Entity has recently released its draft recommendation, which reflects a strong interest in enhanced coordination for a broader range of values while also criticizing the Canadian Entitlement calculation for generating excessive benefits to Canada. This has occurred because the US Entity has been forced by US regulators to re-regulate flows for increased fish benefits at the expense of power benefits. The Canadian Entitlement calculation does not account for this difference and assumes that power production will be maximised. The Canadian view is that if the US chooses to re-regulate for fish then they are placing a higher value on fish than electricity and are therefore still receiving a similar quantum of benefits, just in a different form. The contrasting Canadian views are exemplified in a recent publication from the Canadian Entity, which outlines the many benefits of the Treaty to the US. Both countries appear to be ready to consider a continuation of a coordinated flood risk management approach after 2024, but their perspectives on what that coordination is worth and what the fall-back of Called Upon flood control entails are quite different. At this point, it appears that the US is seeking more benefits for less cost, while Canada is seeking increased compensation for the continuation of coordinated management for a broader range of values and a renewed approach to coordinated flood risk management. If the Treaty is terminated, it is doubtful that Canada will be able to make up the full value of the Canadian Entitlement through unilateral management for power production and other values. Similarly, the US will certainly lose many of the benefits that coordination currently provides to navigation, fisheries, recreation, flood control and power production.

Conclusion

Canada and the US have had marked success in their joint management of the Columbia River through the Columbia River Treaty, which has enabled them to reap benefits from the River that would otherwise be left unrealized. Despite issues and disagreements that have come up since the Treaty's inception, the parties have managed to continue a constructive and flexible engagement with each other to solve problems and achieve mutual benefits. Notwithstanding this track record of success, the Treaty is now at a crossroads, as both are considering whether to continue the Treaty in its current form, or to modify or terminate it.

[59] *Hyde, 2010, p.17*

[60] *Government of British Columbia, 2012*

THE MEKONG RIVER[61]

Summary

The Mekong River stretches through China, Myanmar, Thailand, Laos, Cambodia, and Vietnam. The Mekong Basin is one of the largest basins in the world that remains significantly underdeveloped[62]. The riparian states, despite turmoil and hostilities amongst themselves and with the wider world, have undertaken multiple efforts to cooperate with regards to their shared water resources. But the tensions between the participating states, some recent and some deeply entrenched, have complicated and restricted the extent of their cooperation over the Mekong[63].


Figure 10

A joint Mekong Committee was first established by Laos, Thailand, South Vietnam and Cambodia in 1957. The purpose of the Committee was to "promote, coordinate, supervise, and control the planning and investigation of water resources development projects in the lower Mekong Basin"[64]. It was the first of three periods of cooperation over a forty-year period. The Committee was set up to manage negotiations between the parties about issues regarding resource development and the allocation of water in the Mekong Basin. Over the years, regional cooperation, in all its forms, has faced numerous setbacks and challenges due to the natural transition in changes in water management practices, regional geopolitics, and international development assistance.

The Mekong Committee (1957-1975)

In the mid-1950s, the United Nations helped to create the Economic Commission for Asia and the Far East (ECAFE) in part to explore water resource development options in the Mekong Basin. It was through ECAFE that the Mekong Committee was established. The UN

[61] *Case study prepared by Chaviva Manson-Singer*

[62] *Ibid., p.228*

[63] *Ibid., pp.230-231*

[64] *Government of Cambodia and others, Statute of the Committee, Article 4*

envisioned that damming the Mekong River would allow ECAFE to produce hydroelectric power, reduce flooding, and increase dry season flows[65]. The Mekong Committee was exceptional for its ability to continue to exist and function through times of extreme tensions, even war[66]. For example, the exchange of electricity and payments between Laos and Thailand never ceased, despite periods of tension and outright conflict between the two states[67]. In anticipation of major upcoming resource development projects, the Mekong Committee established the 1975 Joint Declaration. The Joint Declaration required unanimous approval by all committee members in order to create inter-basin diversions[68]. While the prospect of future development looked promising, major political shifts began occurring. In 1975-76, South Vietnam, Cambodia, and Laos were each taken over by communist governments and the Mekong Committee, along with the hopes of collaborative development projects in the Mekong Basin, collapsed[69].

The Interim Mekong Committee (1978-1995)


Figure 11

Diplomatic relations resumed in 1978, though the relationships between the four countries were strained and tensions remained high. In contrast to the Mekong Committee, the Interim Mekong Committee (IMC) Declaration called only for the promotion of water resource projects, restricting the main goal of the IMC to seeking assistance from donor countries[70]. Throughout the 1980s, while collaborative water development projects were put on hold, individual countries began to move forward with their own water development plans[71]. This fuelled conflict and a zero-sum mentality[72]. In this period, joint cooperation was seen as a submission to the power of one's neighbours, and the Committee was seen as an impingement on national sovereignty[73]. With international assistance, the riparian states agreed to establish a new legal framework. It became evident that the primary objective of the new organization would be to create a functional system for sharing water[74].

[65] *Browder and Ortolano, 2000, p. 505*
[66] *Dinar and others, 2007, p.225*
[67] *Ibid., p.225*
[68] *Browder and Ortolano, 2000, p. 508*
[69] *Ibid., p. 509*
[70] *Ibidi., p 510*
[71] *Ibid., p. 512*
[72] *Dinar and others, 2007, p.235*
[73] *Ibid., p.235*
[74] *Browder and Ortolano, 2000, p. 517*

Mekong River Commission Era (1995-present)

In 1995, Laos, Cambodia, Thailand and Vietnam ratified the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (1995 Mekong Treaty), creating the most recent phase of the Mekong regime, the Mekong River Commission (MRC). With an increasing population along the Mekong Basin paired with increasing water scarcity, the MRC faces the challenge of protecting the interests of all parties. The four parties have agreed upon "the general doctrine of 'reasonable and equitable utilization' of international waters"[75]. The MRC's primary goal is the coordination of long-term water development plans[76]. This agreement has been said to "represent a milestone in international water resources management treaties due to its emphasis on joint development, ecological protection, and a dynamic process of water allocation"[77].

The Mekong Agreement also mandated the restructuring of the organization. The MRC is now divided into three separate bodies: the council, the joint committee, and the secretariat. The council is composed of one representative from each MRC member government and is responsible for policy-making; the joint committee is the operational decision-making body; and lastly, the function of the secretariat is to seek international assistance and administer projects[78]. In contrast to the previous Mekong committees, the MRC "is a policy-making body whose decisions have binding authority upon the riparian governments"[79].

Additionally, the MRC has provided a dispute resolution mechanism for the parties. For example, it brokered disputes over the Se San hydropower project between Vietnam and Cambodia in 1998-1999, and the proposed navigation channel improvement in the Upper Mekong, between China, Laos, Myanmar, Thailand, Cambodia, and Vietnam[80].

The Agreement provides a cooperative framework that allows the negotiation of bilateral and multilateral auxiliary agreements[81]. These have yielded a number of achievements, including agreements on procedures for prior notification, consultation, and consent; data information sharing and exchange; and minimum downstream flows. Other achievements since 1995 have included: web-based flood forecasting; dry season river flow monitoring; a regional flood management program and hydropower strategy; a navigation program; an integrated approach to agriculture, irrigation, and forestry; and the creation of a fisheries research institute in Cambodia[82]. At the same time, the multitude of bilateral and multilateral agreements came, to an extent, at the expense of basin wide cooperation, which undermined the strength of the MRC[83].

[75] *Ibid., p. 520*
[76] *Ibid., p. 523*
[77] *Radosevich and Olson, 1999, p.1, cited in Jacobs, 2002, p. 360*
[78] *Browder and Ortolano, 2000, p. 524*
[79] *Jacobs, 2002, p. 361*
[80] *Mekong River Commission, 2004, p.4*
[81] *Dinar and others, 2007, p.242*
[82] *Ibid., p.242*
[83] *Ibid., p. 243*

There has also been significant progress on basin wide planning. The MRC has undertaken assessments of different basin wide development scenarios, giving the member states important information for assessing the benefits and risks of future development[84]. The parties are also increasingly working collaboratively on climate change issues.

In 2011, the MRC implemented two central strategies in order to "shape a more comprehensive and new direction for the agency"[85]. The Integrated Water and Related Resources Management Strategy (IWRM) focuses on regional perspectives for development planning, and outlines how the riparian nations will manage the Mekong River in order to achieve the goals of the 1995 Agreement. The MRC states that this "moves towards comprehensive basin planning that addresses the Mekong's future development opportunities, challenges and risks in the water sector as well as in fisheries, navigation, flood and drought, tourism, watershed management and environment"[86].

Conclusion

Over its evolution, regional cooperation amongst Mekong riparians has faced several challenges and a great deal of instability. Adjustments have had to be made to both the functions and objectives of cooperative initiatives to adapt to the current circumstances. The key to its continued existence has been the desire of each of its member states to work together, despite tensions, and the support received from international organizations. The MRC is now in a position to promote the sustainable development of the Mekong Basin, but to do so, it needs to fully embrace the challenges of basin wide planning.

Figure 12

[84] *Mekong River Commission, Basin Development Plan Programme*

[85] *Mekong River Commission, Vision and Mission*

[86] *Mekong River Commission, Basin Planning*

THE SENEGAL RIVER[87]

Summary

The Senegal River is the second-largest river in West Africa. The river originates in the Fouta Djallon Mountains of Guinea, and then flows approximately 1,800 kilometres through Mali, Mauritania, and Senegal on its way to the Atlantic Ocean. It is a significant resource for all countries located in the basin, and has traditionally been relied upon as a water source for migratory livestock herds, agriculture, and fishing. The river basin has a history of cooperation, as multilateral agreements have been consistently implemented as a means to ensure effective basin management in an ongoing effort to provide mutual benefit to all states. Several multilateral organisations have formed to coordinate such development, the first being the Interstate Committee (CIE, Comité Inter-Etats l'Amenagement du fleuve Sénégal) in 1963, and the latest being the Organisation for the Development of the Senegal River (OMVS, Organisation pour la Mise en Valeur du fleuve Sénégal) in 1972. The OMVS was initially established by Mali, Mauritania, and Senegal, and upholds many of the goals of its predecessor, the Organisation of the Boundary States of the Senegal River (OERS, Organisation des Etats Riverains du Sénégal). Guinea joined the OMVS in 2006. The OMVS provides an organizational platform to "establish a comprehensive vision of development of the Senegal River Basin integrating different sectoral objectives," (OMVS, undated, translation) such as the development of food security, a reduction in economic vulnerability due to climate change, an increase in economic development, hydropower, navigation, and irrigated farming techniques.

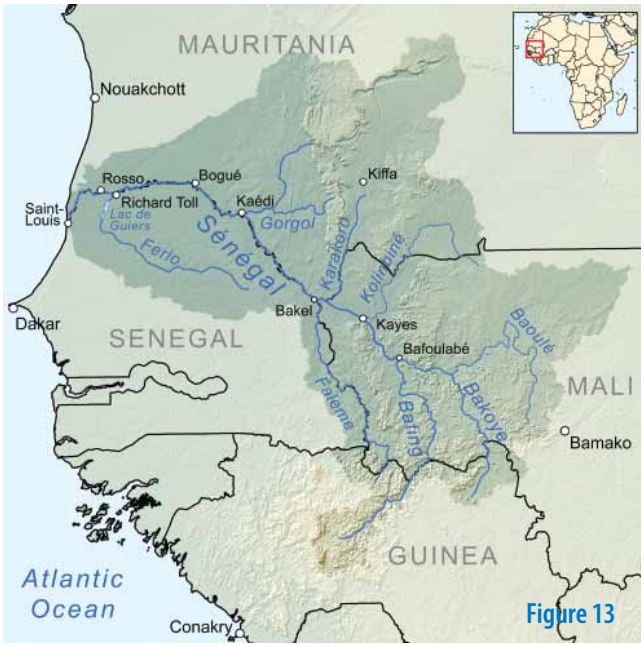

Figure 13

[87] *Case study prepared by Christina Pullen*

The OMVS has provided for cooperation and multilateral control of the Senegal River resources, with a strong emphasis on mutual gain and benefit sharing. Such high levels of cooperation have been attributed by some to a sense of commonality and Pan-Africanism between the four basin states. The resources and benefits of the Senegal River are appreciated equally by all four stakeholder states. A unique feature of the cooperation between these basin states is their willingness to limit their sovereign independence in favor of cooperative engagement. This contrasts with more conventional practices in international basins, in which unilateral control of resources is often a goal. Together the states have constructed the Manantali Dam, located in Mali, and the Diama Dam, located along the border of Mauritania and Senegal. While located in separate countries, both dams are controlled and used by all basin states, demonstrating a sense of extensive cooperation driven by hydro-interdependency.

History of Legal and Regulatory Frameworks

The first water management organisation in the Senegal River Basin was the Interstate Committee (CIE), established 26 July 1963, which recognized the basin as an international waterway. Despite political tensions between the newly independent basin states during the 1960s, they recognized the need for collective efforts in order to maximize the development potential of the river basin. The CIE required unanimous approval of all proposed development projects, thus giving each riparian a veto. The organisation sought to inspire cooperation and integrate the economies of the four states. The need for increased cooperation and integration was reflected in the establishment of the Organisation of Boundary States of the Senegal River on 24 March 1968.

Figure 14

The OERS had an extended mandate and more comprehensive goals than the CIE. The OERS required unanimity and aimed to politically and economically integrate the basin states as much as possible. Political boundaries and state sovereignties were actively suppressed in pursuit of the collective basin development goals of the riparian states. Through tumultuous periods the OERS continued to have annual Council of Ministers and Heads of State meetings. Such meetings acted as a kind of dispute resolution mechanism, as they demonstrated the four basin states' dedication to cooperation.

At the beginning of the 1970s, a larger political crisis occurred that halted progress within the basin significantly, leading Guinea to withdraw from the organisation in 1972. This withdrawal was followed by Mali, Mauritania, and Senegal annulling their membership and establishing the Organisation for the Development of the Senegal River (OMVS), later that same year, in a commitment to regional integration. The OMVS had a narrower mandate than the OERS and changed its decision making process, giving heads of state the ability

to intervene if a unanimous decision could not be reached. While the organisation does not have a formal dispute resolution mechanism, it relies on shared principles of equity and solidarity, as well as strong diplomatic relations, to enforce regional cooperation. The OMVS functions with the following permanent management bodies: Conference of Heads of State and Government, Council of Ministers, High Commission, and the Permanent Water Commission. The organisation is strong, yet flexible at all levels of operation.

In May 2002, Senegal, Mauritania, and Mali signed the Senegal River Water Charter, which established a legal and regulatory framework for use of river water that complements the work of the OMVS. The charter set out procedures for the allocation of river water in various sectors, and stated that resources were to be used by riparian states based on necessity. Following the charter, the four-year Water and Environmental Management Project was set up to study and "provide a framework for sustainable development and transboundary land-water management" in the basin[88].

Acting as a community, the Senegal River Basin established a cooperation formula to negotiate the costs of the joint infrastructure. The formula entailed "joint fiscal responsibility for their shared infrastructure even if the immediate outcomes did not benefit all states" and "a share in the benefits that was congruent with each country's needs"[89]. Thus, even though Mali guaranteed a loan for the construction of the Diama Dam, it would not be required to repay any outstanding debt for the dam, as it would not directly benefit from the project. Donors could develop agreements with individual countries directly for loan repayments, and "any OMVS debt was to be serviced by revenues generated from the infrastructure"[90]. However, due to frequent national economic crises, the OMVS was a fragile institution that depended on the financial responsibility of each basin state.

1989 Mauritania-Senegal Conflict

The largest threat to the success of the OMVS came in 1989 during a border dispute between Senegal and Mauritania. As populations of both states rose between 1972 and 1988, they both wanted to develop the valley's agricultural potential to help improve their socio-economic situations. In April 1989 a violent conflict broke out between the two nations over grazing rights along the vague river border. Issues such as race and ethnic identity were drawn upon, and the conflict resulted in hundreds of thousands of refugees and the severing of diplomatic ties. Encouraged by the OMVS, bilateral diplomatic talks were initiated in 1991, as the two involved basin

Figure 15

[88] *Newton, 2007*
[89] *Alam, 2012, p.186*
[90] *Ibid., p.186*

states acknowledged the value of cooperation within the Senegal Valley in order to achieve hydroelectricity and expanded irrigation. An agreement was signed in July 1991, recognizing their shared interests in the jointly owned dams, and diplomatic relations were officially restored 2 May 1992.

Conclusion

Senegal, Mauritania, Mali, and Guinea have experienced significant success in their joint management of the Senegal River Basin through the establishment of several multilateral agreements and organisations since the 1960s. The basin is an ideal example of transboundary water management, and is characterized by deep and extensive cooperation and integration. Such strong diplomatic relations between the four basin states has allowed for the effective development of the region, which has led to expanded irrigation, increased waterway navigation, and hydroelectricity production. Despite instances of regional political instability and the establishment of several successive river basin organisations, the riparian states have managed to solve conflicts and achieve benefits based upon a mutual understanding of the importance of regional solidarity.

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