The Indus River Basin, 1999-2008

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An intellectual history in hydropolitics

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Abbreviations

IWRM	-	Integrated Water Resources Management
IWT	-	Indus Waters Treaty
J&K	-	Jammu and Kashmir
PCA	-	Permanent Court of Arbitration, in Hague
PIC	-	Permanent Indus Commission

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1. Introduction

> Water cannot be managed for a single purpose: all water management serves multiple objectives and navigates among competing interests. Within a nation, these interests - domestic users, farmers, hydropower generators, recreational users, ecosystems - are often at odds, and the probability of a mutually acceptable solution falls exponentially in proportion to the number of stakeholders. Add international boundaries, and the chances drop yet again. Without a mutual solution, these parties can find themselves in dispute, and even violent conflict, with each other or with state authorities. Still, water-related disputes must be considered in the broader political, ethnic, and religious context. Water is never the single - and hardly ever the major - cause of conflict. But it can exacerbate existing tensions and therefore must be considered within the larger context of conflict and peace.[1]

This thesis examines India's management of the Indus River system. I will refer to this as *Indus Basin hydropolitics* in the rest of the thesis.[2] I analyze the writings of Indian water experts, within the context of Indus Basin hydropolitics between 1999 and 2008.

In this period, India and Pakistan had a dispute concerning the construction of the Baglihar hydroelectric project (Baglihar), on the Chenab River in India. The Baglihar dispute is analyzed as an important excerpt from the modern history of the Indus River, and it is contextualized as a case that reflects the major issues of hydropolitics in the region, i.e. the struggle for sharing the Indus river-waters, utilizing the river-water for hydropower generation, and implementing sustainable water management.

As one of the major rivers of the world, the Indus and its tributaries (the Indus River system) have played an important role in great power politics and in the everyday lives of hundreds of millions of people for thousands of years. The Indus River system originates in the Himalayas, Karakoram and Hindu Kush ranges. Indus and its five main tributaries flow through Jammu and Kashmir (J&K) in India before they reach Pakistan.

The Indus waters constitute most of Pakistan's fresh water supply, and are immensely important to the agriculture of Pakistan. In upstream India, there are several dams for

[1] Aaron T. Wolf et al., "Managing Water Conflict and Cooperation," *State of the World 2005: Redefining Global Security* (2005): 81.

[2] "Hydropolitics is the systematic study of conflict and cooperation between states over water resources that transcend international borders." Arun P. Elhance, *Hydropolitics in the Third World : conflict and cooperation in international river basins* (Washington, D.C.: United States Institute of Peace Press, 1999), p. 3.
A basin is a region where precipitation and snowmelt drain downhill into another body of water, such as a river, lake, or dam.

hydropower generation and headworks for diverting river water to irrigation canals, which enables Indian control over the flow of the rivers. It is therefore important for Pakistan to maintain a relationship with India that contributes to safeguarding their water supply.

The Indus Basin, which is the watershed of the Indus River system, is populated by approximately 230 million people. India and Pakistan have to an increasing extent faced problems of water scarcity and poor water management in the Indus Basin since the 1990s. In order to provide water for their inhabitants it is essential that India and Pakistan manage and share their water resources sustainably and avoid conflicts over water.

Unfortunately, India and Pakistan have a troubled relationship. Since the birth of the two nations in 1947, they have experienced a bloody partition, a continued dispute over Kashmir, three wars, violent conflicts and cross-border terrorism. Both countries have nuclear weapons and political oppositions whose rhetoric includes threats of war against their neighbor.

Despite this, India and Pakistan have managed to cooperate over their shared water resources. In 1960, they signed the Indus Waters Treaty (IWT), which allocates rights of usage of water in the Indus River system. The treaty is famous for being unchanged and still functioning in 2013. Neither of the two countries has violated the treaty, not even during wartime.

Since the 1990s, water relations have to an increasing extent been troublesome. Increasing water scarcity combined with both nations' desire to utilize more of the water resources have led to a trend of ongoing disagreements concerning utilization of the Indus River system. The usefulness of the IWT has been questioned by Indian water experts, and observers have feared an Indo-Pakistani conflict over water, or an environmental disaster in the Indus Basin, or both.

It is in this context that the Baglihar dispute emerged. In 1999, India started constructing the Baglihar on the Chenab River, a tributary to the Indus River which was allocated to Pakistan under the IWT. Pakistan therefore demanded that India stopped constructing, because Baglihar interfered with water supply in "their river". After years of negotiation, India and Pakistan were not able to find a solution bilaterally.

In this thesis, I analyze Indian water experts' attitudes towards Indus Basin hydropolitics during the Baglihar dispute chronologically, based on the premise that water experts play an important role in providing policy makers with knowledge and information.[3]

Research Questions and argument

In order to avoid conflict over water, India had to maintain cooperation with the contenders for water in the Indus Basin. The government of India had to balance their water sharing relations with Pakistan and the Indian state J&K. During the Baglihar dispute, India and Pakistan were on the verge of violent conflict over water, while at the same time struggling to cope with increasing water scarcity in the Indus Basin. Simultaneously, the state government of J&K criticized India for neglecting the development of hydropower in the state.

A few mistakes in the Indian policy could have resulted in dire consequences, and knowledge-based advice from water experts was much in need. There were not many experts on Indus Basin hydropolitics in India at this time, but I argue that Indian experts played an important role in providing knowledge and information on how to deal with hydropolitical issues, by participating in debates that constituted a particular element to the overall Baglihar dispute. The Baglihar dispute was an on-going long-term tension, and such tensions are usually not resolved within a forum of conflict processing, because they may emerge again and require further processing. The debates carried out by Indian experts can be viewed as a form of conflict management.

In making my argument, I pose the following two research questions:

a) How was the hydropolitical situation in the Indus Basin during the Baglihar dispute?

b) What knowledge and information did the Indian water experts provide on Indus Basin hydropolitics during the Baglihar dispute?

By answering the first question, I provide the necessary context in order to answer the second question.

[3] Geoffrey D. Gooch and Alistair Rieu-Clarke, "The Science-Policy-Stakeholder Interface and Transboundary Water Regimes," in *Science, Policy and Stakeholders in Water Management*, ed. Geoffrey D. Gooch and Per Stålnacke (London: Earthscan, 2010).

The Indian perspective

I have chosen to focus on Indian perspectives on the Baglihar dispute. There are three reasons for this: First, India is in many ways the dominant part in this bilateral issue. They are the upper riparian country and therefore have more control over the Indus waters than Pakistan does. India can divert water before it reaches Pakistan; India can hold back water in dams and reservoirs; and India can pollute the waters before they flow into Pakistan. American Professor of Political Science, Neda Zawahri, argues that Pakistan also has the ability to affect the river on the Indian side of the border, but these means must be viewed as minor compared to India's.[4] What India decides to do with the water resources is therefore interesting for both countries. If Pakistan decided to build an enormous dam, it would not directly affect India to a great extent.[5]

The other two reasons for focusing on the Indian perspectives are practical. Most Indian scholars write their texts in English and I was therefore able to read Indian articles and newspapers, which make up my source material. The third reason was that I was able to get an internship at an Indian research institute were I undertook a field study in 2011.

The chronological end of the analysis

A problem with writing history on contemporary history is setting a chronological end of the study. Aspects of the Baglihar dispute is still debated (May, 2013) and is therefore still on-going. [6] The official end of the official Baglihar dispute between the Government of India and the Government of Pakistan can be set somewhere between 2007 and 2010 depending on the definition of dispute.

The end of this analysis is set to late 2008, but includes certain aspects from the period after 2008. There are three reasons for ending the analysis in 2008: First, the official Baglihar dispute had just ended and the dam was commissioned. Second, the attention towards Indus Basin hydropolitics began focusing on the Kishenganga dispute instead of the Baglihar dispute. And third, in November 2008, ten Pakistani terrorists trained by Lashkar-e-Tayiba

[4] Neda A. Zawahri, "International rivers and national security: The Euphrates, Ganges–Brahmaputra, Indus, Tigris, and Yarmouk rivers," *Natural Resources Forum* 32, no. 4 (2008): p. 283-84.
[5] For several years, Pakistani engineers have argued that Pakistan should build a huge reservoir in the Skardu Valley.
[6] This has to do with another water dispute between India and Pakistan. The Indian Kishenganga project dispute were taken to the International Court of Arbitration in Haag, July 2010. The verdict was presented in February 2013 and it contrasted the decision in the Baglihar case, thereby questioning the validity of the verdict of the Baglihar dispute. This will be clarified at the end of chapter 4.

killed 163 people and wounded 300 in terror attacks in Mumbai.[7] According to Ahmed Rashid, "The Mumbai attack brought India and Pakistan close to war."[8] The US government accused the leader of the Pakistani militant group Jamaat-u-Dawa, Hafiz Saeed, of being one of the organizers of terror attacks.[9] The role of Saeed is relevant because he has highlighted how important the Indus River system is to Pakistan. Saeed has accused India constructing "illegal dams",[10] and of diverting water from rivers allocated to Pakistan under the IWT. He has therefore demanded that the Pakistani government should take action against what he calls "Indian water terrorism."[11] Protest marches, led by Saeed, have used slogans and banners threatening India with "water flows or blood" and "water or war".[12] The position of Saeed is supported by many in Pakistan. For example, in 2011, Pakistani newspaper *Nawa-i-Waqt* encouraged the Pakistan government to take action against the alleged water theft of India, stating that: "Pakistan should convey to India that a war is possible on the issue of water and this time war will be a nuclear one."[13] Thus, this might change the future conflicts over water sharing.

Contextualizing the Baglihar dispute

In the following, I give my reasons for choosing the Baglihar dispute as a case, with an emphasis on the connection between the Baglihar dispute and the history of the Indus Basin in general and water sharing relations of India and Pakistan in particular.

The Indus Basin has seen great civilizations and many different rulers, it is home of several hundred million inhabitants and the world's largest irrigation system, and it has experienced numerous floods and droughts. The Indus Basin has also been the battlefield of several wars, and India and Pakistan have been in armed conflict on top of the Indus River's glacial headwaters, the Siachen.

[7] Stanley Wolpert, *India and Pakistan: Continued conflict or cooperation?* (Berkeley: University of California Press, 2010), p. 3.
[8] Ahmed Rashid, *Pakistan on the brink : the future of Pakistan, Afghanistan and the West* (London: Allen Lane, 2012), p. 57.
[9] Saeed has denied any connection to the terror attacks.
[10] "Water or war, roars Hafiz Saeed at JuD rally," *The Indian Express*, 8 March 2010.
[11] Ibid.
[12] Niharika Mandhana, "Water wars: why India and Pakistan are squaring of over their rivers," *Time*, 16 April 2012.
[13] Quoted in "Unquenchable thirst," *The Economist*, 19 November 2011.

India began constructing Baglihar in 1999 and finished it in 2008.[14] During these years, Pakistan protested against the construction, arguing that Baglihar interfered with the flow of water in Chenab River and would cause harm to downstream areas in Pakistan.[15] Pakistani officials claimed that Baglihar would give India too much control over the river flow. Pakistan's objections caused a delay in the construction, and the following negotiations involved high ranking diplomats, the Foreign Secretaries of both nations, and the World Bank. The dispute was officially solved in 2007. This was the first time India and Pakistan were not able to solve one of their hydropolitical issues through bilateral negotiations.

According to the provisions of the IWT, the dispute was officially termed "differences", but this thesis has a different focus than examining the official negotiations. This is a study of the debates about Baglihar carried out by Indian water experts, and because of the risks involved and the tension in the debates, it is more precise to term the debates connected to Baglihar a "dispute". In order to emphasize the difficult situation, Indian media and observers linked water conflict with the Baglihar dispute, and Baglihar attracted more attention from Indian written press towards the IWT than ever before. The Baglihar dispute can be viewed as a "conflict", but I have chosen to use "dispute", since conflict easily can be confused with, or interpreted as violent conflict by the reader.

The Baglihar dispute encapsulates many of the different aspects of Indo-Pakistan relations in general, and hydropolitics in the Indus Basin specifically. I will highlight three aspects of the Baglihar dispute which makes it an interesting case study in order to understand the contemporary history of the Indus Basin.

The first aspect is Baglihar's geographic position. Baglihar is located in J&K, a partly autonomous state in India, viewed by Pakistan and most Kashmiris as disputed territory. The Indian constitution divides the power sharing between the federal government and the states in India in three lists: The Union list, the State list, and the Concurrent list. The Union and State lists describe the items which the federal government and the states respectively have exclusive power to legislate. J&K has a special autonomy which says that:

[14] India plans to upgrade it to a 900MW project; Chandrakant D. Thatte, "Indus Waters and the 1960 Treaty between India and Pakistan," in *Management of Transboundary Rivers and Lakes*, ed. O. Varis, C. Tortajada, and A. K. Biswas, *Water Resources Development and Management* (Berlin: Springer-Verlag Berlin, 2008).
[15] "The Indus Waters Treaty," in *419 U.N.T.S. 126.* (Signed in Karachi, 19 September 1960).

> no law enacted by the Parliament of India, except for those in the field of defense, communication and foreign policy, will be extendable in Jammu and Kashmir unless it is ratified by the state legislature of Jammu and Kashmir.[16]

The IWT is controversial because it denies J&K rights to consume (through irrigation), and to store water from the Indus River system that run through the state. The legislative assembly of J&K has several times expressed a desire to build more hydroelectric projects on the western rivers in order to generate more electricity. But when India and Pakistan signed the IWT in 1960, these rivers were allocated to Pakistan.

The different Government of India has partially supported the J&K government, but the Government of Indian and other Indian states are also eager to transfer water and potential hydroelectricity from J&K to other parts of the country, especially to New Delhi. The Government of Pakistan objects to any kind of infrastructure on the three western Indus Rivers which might interfere with the flow of water. Baglihar is therefore, because of its geographic position, a part of what has been called "the unfinished business of partition".[17]

Secondly, the Baglihar dispute illustrated the water crisis in the Indus Basin in a micro perspective. The Baglihar is defined as a run-of-the-river hydro project, which implies that it does not divert any water, and it does not have a large reservoir that enables India to hold back huge amounts of water for a long period of time. But if the design of Baglihar does not interfere with the amount of water flowing to Pakistan, why did it become a dispute? The answer to this lies partly in the ecological situation in the Indus Basin. There are serious environmental challenges in the Indus River system and their magnitude seems to be growing. This will be further explained in the thesis, but the main linkage between the Baglihar dispute and the environmental issues, is what Baglihar symbolizes in a water scarce Pakistan. Pakistan has been labeled as "water stressed" for many years and is close to facing “water scarcity” which is below an average of 1000m^3 of water per person per year.[18] Any interference with the river water upstream in India will be feared in downstream Pakistan, even a run-of-the-river project such as Baglihar.

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[16] A.S. Anand, *The constitution of Jammu & Kashmir: its development & comments* (Universal Book Traders, 1994).

[17] By for example former president of Pakistan, Pervez Musharraf: Alvin Powell, "Pakistan's Musharraf speaks at KSG," *Harvard University Gazette*, 19 September 2002., accessed online at http://news.harvard.edu/gazette/2002/09.19/19-musharraf.html, 10 January 2013.

[18] D. R. Archer et al., "Sustainability of water resources management in the Indus Basin under changing climatic and socio economic conditions," *Hydrol. Earth Syst. Sci.* 14, no. 8 (2010)., accessed 2 August 2012,
And the Aquastat database from Food and Agriculture organization

The third aspect of Baglihar that connects it to the Indus Basin history in general, and Indo-Pak water relations specifically, is the cooperation between the two nations during the dispute. The negotiations and the official solution to the dispute provided another example that India and Pakistan actually are able to cooperate over water under difficult conditions. At least cooperate on a minimum level, which enables them to avoid conflict. This is an example of why the IWT has become a famous water treaty. India and Pakistan have not violated the treaty since its creation and they have continued cooperation according to the provisions of the IWT, even during wartime. Almost 20 years after World Bank vice-president Ismail Serageldin proclaimed that "the wars of the next century will be about water,"[19] a prophesy which found a lot of support, India and Pakistan have proven that they are able to avoid conflict over water.

To sum up, this thesis contextualizes the Baglihar dispute as an essential part of Indus Basin history and Indo-Pakistani relations. In order to achieve this, the Indus Waters Treaty, and the commission under it, have played an important role.

The Indus Waters Treaty

The partition of India in 1947 bisected the Indus River system and the vast irrigation system within the basin, between India and Pakistan. The Ferozepur and Madhopur headworks, vital for the irrigation canals in Pakistani Punjab, were located in Indian territory.

In December 1947, a temporary agreement on allocation of water from India to Pakistan was signed. This agreement was set to expire March 1948, while the two countries fought the first Kashmir War. On April 1, 1948 the Indian provincial government in East Punjab shut off the supply of water from canals leading into Pakistan.[20]

This demonstrated the immense power India had over Pakistan, as the upper riparian power in the Indus Basin. Indian constructions on the Indus River system could have an adverse effect on the quantity and quality of the water running into Pakistan. The water running through the Indus and its tributaries accounts for almost all of Pakistan's water supply. The north-western parts of India are hugely dependent on the Indus Basin, but not nearly as dependent as Pakistan.[21]

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[19] Aaron T. Wolf, "Conflict and cooperation along international waterways," *Water Policy* 1, no. 2 (1998).
[20] Robert G. Wirsing, "Rivers in contention is there a water war in South Asia's future?" Universitätsbibliothek der Universität Heidelberg, --.10.2008, http://archiv.ub.uni-heidelberg.de/volltextserver/frontdoor.php?source_opus=8783
[21] Tom Roberts, "The Indus - Life-blood of Pakistan," *Asian Affairs* 36, no. 1 (2005).

Map 1. The Indus River Basin[22]

Although the first Kashmir War ended late 1948, it did not result in a long term plan for cooperation along the Indus River system. Negotiations began immediately after the war ended, but progress seemed absent. The World Bank worked as a mediator from 1951 and proposed a solution in 1954. It took six more years of bargaining before the IWT was signed by Indian Prime Minister Jawaharlal Nehru and Pakistan President Mohammad Ayub Khan in 1960.[23] According to Former senior water adviser for the World Bank in New Delhi, John Briscoe, the reason it took a decade to negotiate was:

[22] Source: http://en.wikipedia.org/wiki/File:Indus_river.svg
[23] Neda A. Zawahri, "India, Pakistan and cooperation along the Indus River system," *Water Policy* 11, no. 1 (2009).

> Because of the thorny issue of balancing, on the one hand, the reasonable expectation by India that it could use the hydroelectric potential of 'Pakistan's rivers' (The Chenab, Jhelum and Indus) before these rivers entered Pakistan and, on the other, the reasonable expectation by Pakistan that this would neither decrease the flow to Pakistan nor change the timing of the flow. This was dealt with in the IWT essentially by hardwiring into the Treaty limitations on the amount of manipulable (or "live") storage which India could develop in its projects.[24]

This "thorny issue of balancing" would also be an important aspect of the Baglihar dispute almost 50 years later.

The IWT divided the rights of utilization of the Indus River system between India and Pakistan. In addition to the Indus River, the treaty dealt specifically with Indus' five main tributaries: the Jhelum, the Chenab, the Ravi, the Beas and the Sutlej. India received rights over the three latter, which were named the Eastern Rivers. The rights to the Western Rivers: Indus, Jhelum and Chenab were given to Pakistan.[25] Pakistan received a one-time compensation of 62 million pounds sterling as India gained rights over canals from the Eastern Rivers leading to Pakistan.[26] India (supported by the World Bank) paid the compensation so Pakistan should be able to:

> construct and bring into operation, with due regard to expedition and economy, that part of a system of works which will accomplish the replacement, from the Western Rivers and other sources, of water supplies for irrigation canals in Pakistan which, on 15th August 1947, were dependent on water supplies from the Eastern Rivers.[27]

India and Pakistan are required to inform the other country if "either Party plans to construct any engineering work which would cause interference with the waters of any of the Rivers and which, in its opinion, would affect the other Party materially."[28]

The Permanent Indus Commission (PIC) was created to ensure that neither of the two countries revoked the treaty. The PIC consists of a "high-ranking engineer competent in the field of hydrology and water-use" from each nation and the Commissioners "will be the representative of his Government for all matters arising out of this Treaty".[29] The PIC

[24] John Briscoe, "Winning the battle but losing the war," *The Hindu*(2013), http://www.thehindu.com/opinion/lead/winning-the-battle-but-losing-the-war/article4439676.ece.
[25] Indus Waters Treaty 1960, Article I-III
[26] Ibid, Article V
[27] Ibid, Article IV
[28] The Indus Waters Treaty 1960, Article VII(2)
[29] Ibid, Article VIII

members are required to meet regularly, and have done so at least annually since the treaty's creation.

Article IX in the treaty describes in detail the mechanism when a question is raised about an Indus Basin water issue, and the PIC is the prioritised authority to resolve it. Several PIC meetings are often required to arrive at conclusions. If the PIC is unable to settle a dispute, the issue is dealt with by India and Pakistan's Foreign Secretaries.[30] If the Foreign Secretaries are unable to resolve the dispute, one of the two countries may request a Neutral Expert, or an International Court of Arbitration to deal with the dispute.[31] The PIC has resolved almost all of the questions raised, since its creation. Among the successful negotiations was the agreement in 1982 on the amount of water India can irrigate from the Western Rivers. The PIC has also negotiated an enhanced delivery method of flood warnings from India to Pakistan.[32] Until the late 1980s, the IWT was not a major issue in Indo-Pak relations. A relatively stable IWT moderated competition for the Indus waters between the neighbouring countries.[33] Briscoe has summed up the history of the IWT and PIC in a single paragraph:

> As has often been recounted, the IWT worked well for decades, even through periods when India and Pakistan were at war. But the truth of the matter is that the Treaty was not really under stress until India started (quite appropriately, in my view) building hydropower plants across the Himalayas, and, in particular, on its side of the Line of Control in Jammu and Kashmir.[34]

While the correlation between hydroelectric projects and increasing issues under the IWT is valid, I also point out in this thesis that the IWT came under a lot of criticism from J&K because it allegedly hindered development in J&K.

Structure of the thesis

This thesis analyses the decade long Baglihar dispute, and is divided in five chapters. Chapter two presents the source material, the methodological approach and the theoretical framework

[30] Neda A. Zawahri, "Designing river commissions to implement treaties and manage water disputes: the story of the Joint Water Committee and Permanent Indus Commission," *Water International* 33, no. 4 (2008).
[31] The Indus Waters Treaty 1960, Article IX (2a)
[32] Zawahri, "India, Pakistan and cooperation along the Indus River system."
[33] M. Miner et al., "Water sharing between India and Pakistan: A critical evaluation of the Indus Water Treaty," *Water International* 34, no. 2 (2009).
[34] Briscoe, "Winning the battle but losing the war".

applied in this thesis. Chapter three and four contain the main analysis of the thesis, and are structured chronologically and partly thematically.

Chapter three describes and analyzes the developments from 1999 to the end of 2004. This was the beginning of the Baglihar dispute and shows that there is increased interest in Indus Basin hydropolitics, but not particularly towards the Baglihar dispute. This period was also marked by increasing dissatisfaction with the IWT in J&K. The paradigm of IWRM in water management clearly affected the Indian water experts, and there were suggestions on how to implement an IWRM-approach in the Indus Basin. I aim to understand the different perspectives that characterized debates on Indus Basin hydropolitics.

Chapter four is solely about the Baglihar dispute. In January 2005, Pakistan asked a third party to settle the Baglihar dispute, making it the first time India and Pakistan were unable to solve a water issue bilaterally. The Indian water experts urged India to be calm and put trust in the neutral expert, but also expressed increased concern over India's water management. There were dissatisfaction and anger in India directed towards Pakistan's politics of objecting to India's hydropower projects in J&K, and this led to increased interest in the Pakistan perspectives. Water issues gained a more prominent role in Indo-Pakistani relations.

In chapter five I summarize the findings and conclude how the findings have answered the research questions.

2. Theory and methodology

The first time I learned about transboundary river issues was in a book by Terje Tvedt from 1997.[35] He wrote that India and Pakistan had waged war over the Indus in the 1940s,[36] and that "India cut off the water supply to major Pakistani cities in 1949."[37] The geopolitics of India and Pakistan have long been an interest of mine, especially the unfinished business of Kashmir, and I learned that the truth was a bit more complex than how Tvedt described it. But the fact that one nation has the ability to shut of water supply to another country is intriguing. Almost all of Pakistan's fresh water supply comes from India, and given their troubled relationship and the shrinking water per capita in the region, I understood that this was a field of study where much was at stake.

In this chapter I present the source material, the methodological approach, and the theoretical framework applied in this thesis.

Source material and methodological approach

The source material, and the approaches to them, can be divided into three groups. The main group of source material consists of documents published by Indian water experts in the 1990s and 2000s. The second group of sources consists of Indian newspaper articles about Indus Basin hydropolitics during the Baglihar dispute. The third group of sources is based on a four month long field study I undertook in New Delhi, in 2011.

The three groups of source material are overlapping: some of the documents written by water experts are newspaper articles, and some of the water experts and journalists from newspapers participated in discussions and seminars I attended during the field study. The methodological approaches to the sources are also overlapping. All three groups of sources are important in order to understand the Indus Basin hydropolitics and the role of Indian water experts during the Baglihar dispute.

The texts that are analyzed were written by a group of scholars, Indian water experts, who provided knowledge and information on hydropolitical issues during the Baglihar

[35] My translation, from: Terje Tvedt, *En reise i vannets historie : fra regnkysten til Muscat* (Oslo: Bric forl., 1997).
[36] Ibid., 9.
[37] Ibid., 138.

dispute. The analyzing of attitudes and perspectives of experts over time and putting them in their context, is an attempt at writing intellectual history. A trend in Indian historiography the last 30 years have been *subaltern studies* which "concentrate on the subordinated parts of the population, the lower castes and primarily the peasants who had been generally ignored in the conventional elite historiography of the Indian nation."[38] The Indian intellectuals have gotten less, and perhaps too little, critical attention on account of the *subaltern* preoccupation. The theoretical framework of intellectual historical writing applied in this thesis will be presented later in this chapter.

The approach applied towards the source material is a document analysis. A historical document-analysis first of all seeks to establish a chronology, and place the documents within their context. The context in this analysis is Indus Basin hydropolitics and the Baglihar dispute.

In the following, the three groups of source material will be presented.

(i) Indian water experts – a document analysis

Documents written by Indian water experts commenting on the Baglihar dispute constitute the main part of the source material. This thesis analyses the information provided by the experts in documents published in the few years before and during the Baglihar dispute, 1999 – 2008. I aim to reflect upon my research questions by analyzing the values and interests that are most apparent in the texts[39]

In this text analysis, published documents by Indian water experts are given status as primary source material. The documents are compared with each other and I look for key terms in the texts, such as: *hydropolitics,* water *conflict* or water *cooperation*, water *scarcity, integrated water resources management (IWRM)* or *integrated/joint* management.

The documents were written in English by Indian scholars. Most of these Indians are based in India, and primarily New Delhi, but a few of them are working for academic institutes in other countries. The documents are analyzed in almost chronological order. The case study has been divided into two chapters, the first accounts for the years before Pakistan asked the World Bank help mediate in the Baglihar dispute in 2005, and the second part accounts for the second face of the dispute, 2005 – 2008, when the question of solving the dispute was in the hands of a neutral expert.

[38] Georg G. Iggers, Q. Edward Wang, and Supriya Mukherjee, *A global history of modern historiography* (Harlow: Pearson Longman, 2008), p. 285.
[39] Mary Brekke, *Å begripe teksten* (Kristiansand: Høyskoleforl., 2006), p. 79.

Some of the experts claimed that they provided objective knowledge while others openly had a more pro-Indian approach. Some of the important Indian experts commenting on the Baglihar dispute had ties to the Indian government. Ramaswamy R. Iyer and B.G. Verghese were, and still are the foremost Indian experts on this subject. They have commented on the IWT before, under, and after the period this thesis. Verghese and Iyer have both written journal- and newspaper articles, and books with comments on water issues, the Indus basin, and the IWT. The number of scholars which I have defined as Indian experts slowly grew between 1999 and 2008, and will according to Peter Mollinga, probably continue to expand, since water problems are likely to increase in the future.[40]

According to Aksel Tjora, a document analysis should first of all put the documents in their immediate context: who wrote them, where were they written, when were they written, who were the intended audience, and what was the purpose of writing the document?[41] Establishing the correct chronology is a typical goal for a historian in order to understand causality.[42]

(ii) Media analysis – Indian newspapers

The importance of the Baglihar dispute is supported by the media coverage in the period. In order to examine the attention toward the Indus Basin hydropolitics in India, the top three English language newspapers were examined quantitatively from 1999 till 2008. The study of newspaper articles is used to help establish a chronology and examine what the media focused on during the Baglihar dispute. The Indian water experts often responded to speculation about water conflict in the media, and I analyze the newspaper articles in order to establish a context, linking Indus Basin hydropolitics with public interest and reactions from Indian water experts.[43]

According to the Indian Readership Survey for 2007, the English daily newspapers with most readers were the Times of India, Hindustan Times and the Hindu.[44] The international newspaper database Factiva covers these newspapers in full text from 1998.[45] I

[40] Peter P. Mollinga, "Foreword," in *Water First*, ed. Kuntala Lahiri-Dutt and Robert J. Wasson (New Delhi: Sage, 2008).
[41] Aksel Hagen Tjora, *Kvalitative forskningsmetoder i praksis* (Oslo: Gyldendal akademisk, 2012), p. 163.
[42] Knut Kjeldstadli, *Fortida er ikke hva den en gang var : en innføring i historiefaget* (Oslo: Universitetsforlaget, 1999), p. 104.
[43] Text analysis of newspaper articles is based on Yngve Benestad Hågvar, *Å forstå avisa : Innføring i praktisk presseanalyse* (Bergen: Fagbokforlaget, 2007).
[44] Maya Ranganathan and Usha M. Rodrigues, *Indian media in a globalised world* (New Delhi: Sage, 2010), 52.
[45] For more information about the Factiva database, see: http://www.dowjones.com/factiva/index.asp

have examined how many times these three newspapers mentioned the IWT from 1999 till 2009 by searching in full text with the Boolean search phrase: "Indus Waters Treaty OR Indus Water Treaty". The correct name of the treaty is Indus Waters Treaty, but the *s* in waters is often dropped. I cross-checked the possibility that the newspapers wrote articles concerning the IWT without typing the full name. I searched for the terms *Baglihar*, and *Permanent Indus Commission*, and the results showed that most of these articles also mentioned the IWT.

The IWT in newspapers: 1999-2008. (Stats from Factiva)

Newspaper	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Sum**
The Hindu	9	1	5	19	23	13	58	9	18	13	168
Hindustan Times	1	0	0	13	4	22	162	27	9	1	239
Times of India	2	5	14	14	15	7	21	3	9	2	92
Sum	12	6	19	46	42	42	**241**	39	36	16	499
Other (world)	12	15	32	105	71	183	660	154	155	345	1732
Total	24	21	51	151	113	225	**901**	193	191	361	2231

The IWT was mentioned 257 times in English medium print between 1 January 1999 and 31st December 2002. 151 of these articles were published in 2002. Compared to frequency in later years, especially 2005 and 2008-9, these are small numbers. About half of the articles could be found in the top 3 Indian English language newspapers, *The Hindu, Hindustan Times, The Times of India,* or the news agency *Press trust of India.* Some of the articles which mentioned the IWT in this period focused mainly on Indo-Pakistani diplomacy where the IWT was briefly mentioned. About 90% of the articles examined from the three newspapers dealt with the Baglihar dispute.

The newspaper articles were also examined in order to find out when, and in which newspapers Indian experts' articles were published. The sources in group one, the documents written by experts, is overlapping the sources in group two, the newspaper articles.

(iii) Field research

Historians should seek to understand the period of time in the past they are studying based on the premises of that period, as far as it is possible. My approach to understanding Indus Basin hydropolitics has been hermeneutical. I started out with a topic and a few assumptions, and began analyzing the source material I have described above. In order to better understand the sources and their context I went to New Delhi, where much of my source material had been produced.

I got an internship as a researcher at the Institute of Peace and Conflict Studies (IPCS). The IPCS is an independent institute that conducts research on South Asian security.[46] I worked there for almost four months, January - April 2011. In New Delhi, I combined the role as an insider who was a part of the faculty of researchers and living together with my one of my colleagues, but also as an outsider in the sense that I was there for a limited time and being relatively passive in the decisions and actions taken at the work place.[47] The aim of this method of research was to gain familiarity with the practices of the occupational group of individuals whose texts I analyze. This was early in the research process, and my presence and my participation in dialogues influenced my approach in this thesis.

Much of the time at IPCS was spent arranging seminars, conferences and other arrangements in collaboration with other think-tanks, institutes, embassies and high-ranking scholars. In addition to the events we arranged, I attended other seminars and conferences on water, energy, and climate change, arranged by other research institutes. Journalists from Indian newspapers were present at some of these conferences and seminars, and reporters often contacted different researchers at IPCS, to get their opinions and policy analysis on current affairs. The researchers at IPCS wrote several articles that were published in Indian newspapers – another example of overlap in my groups of source material.

I interacted with some of the scholars that have produced the source material in this thesis, thus with other academics interested in the Indus Basin and water politics. The director of IPCS during my time there, Suba Chandran, has written extensively on issues related to the Indus Basin, but mostly after the period analyzed in this thesis.

I learned that many scholars were interested in researching hydropolitical issues, but were bound to spend most of their time working on issues in nuclear security. It was much easier to get funding for research on nuclear proliferation than water issues.

This thesis analyzes the Indian side of a bilateral dispute, and I have only studied and interacted with the Indian side of a debate that tend to be polarized. Thus, my interaction with the Indian side only, may have affected my views.

[46] During my internship, 14-16 other people worked there, full time. For further information, see their webpage: http://www.ipcs.org/

[47] Kathleen M. DeWalt and Billie R. DeWalt, *Participant observation : a guide for fieldworkers* (Walnut Creek, Calif: AltaMira Press, 2002).

Previous research

There is little research on Indus Basin hydropolitics and the Baglihar dispute which utilizes the same approach as in this thesis. Research conducted is either performed by international relations experts or natural scientists with engineering or biological expertise. Most scholars examining the contemporary history of the Indus Basin aim to predict the future and give policy recommendations.[48]

Work done by Indian experts is a part of the source material analyzed, but also a part of "previous research". There is no clear division between these two. A few of the texts I have analyzed as primary source material briefly dealt with the Indian experts' perspectives on Indus Basin hydropolitics, but the texts are generally more interested in the Pakistani view than the Indian.[49]

One of the more useful studies in relation to this thesis is a research project carried out by the Indian think tank Observer Research Foundation (ORF) in collaboration with Lahore University. They argued that Pakistan and India have balanced between conflict and cooperation over water during the Baglihar dispute, and that "the decisions of both governments are made against a background of imperfect knowledge about the intentions and capabilities of the other."[50] Their research project on Indus Basin hydropolitics also analyzed the water crisis rhetoric in Pakistani and Indian media in 2010. They found that there had been a securitization of the Indus discourse.

The term *securitization* was introduced by Ole Wæver and the Copenhagen school in the mid-1990s:

> In theory, any public issue can be located on the spectrum ranging from nonpoliticized (meaning the state does not deal with it and it is not in any other way made an issue of public debate and decision) through politicized (meaning the issue is part of public policy, requiring government decision and resource allocations or, more rarely, some other form of communal governance) to securitized (meaning the issue is presented as an existential threat, requiring emergency measures and justifying actions outside the normal bounds of politics procedure).[51]

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[48] Per S. Refseth, *Proposal for water security research program at IPCS*, (IPCS: New Delhi, 2011), (Unpublished)

[49] See for example: Sundeep Waslekar, *The final settlement: restructuring India-Pakistan relations* (Mumbai: Strategic Foresight Group, 2005); Samuel Baid, "Not Kashmir but Kashmir's Water Is the Core Issue for Pakistan," *Greater Kashmir*, 28 March 2005; B. G. Verghese, "Political Fuss Over The Indus," *The Tribune*, 25 May 2005.

[50] "Re-Imagining the Indus," ed. Lydia Powell (Published online at www.orfonline.com: Observer Research Foundation and Lahore University of Management Sciences, 2011), p. 37.

[51] Barry Buzan, Jaap de Wilde, and Ole Wæver, *Security: a new framework for analysis* (Boulder, Colo.: Lynne Rienner, 1998), p. 23-24.

In short, securitization of the Indus discourse means that water management in the Indus Basin is increasingly treated as a national security concern. The ORF-Lahore study also found that criticism of the IWT had "been relatively moderate and sober in the media space", in the two periods they studied, during the spring and winter months of 2012.[52] Suba Chandran's articles on Indus Basin hydropolitics have also been useful, and he agrees with the ORF-Lahore study, that the water rhetoric needs to be de-securitized.[53]

There are several books and articles focusing on the mediation process in the 1950s, but these have first of all been relevant in order to understand the relevant historical background.[54] Aloys Michel has given a thorough examination of the mediation process and explained that David Lilienthal, one of the initiators of the treaty, argued that India and Pakistan should ideally have managed the Indus River system jointly.

Bashir Malik's book *Indus Waters Treaty in retrospect* provides one the few Pakistani perspectives on the history of the IWT. He is critical towards the provisions of the IWT, calling them unjust to Pakistan. Malik gives special attention to the negotiation process, arguing that the Indian Prime Minister at that time, Jawaharlal Nehru, paid more attention to the Indus Basin hydropolitics than the Pakistani rulers during the negotiations, and thereby secured a better deal for India. Josef Korbel on the other hand, has argued that the economic threat of India's controlling the headwaters of the Indus Rivers "was highly important in the minds of the Pakistani leaders".[55]

South African and former UN representative on water issues in South Asia, John Briscoe, has criticized the dominant Indian perspective on Indus Basin hydropolitics. He argues that India to some extent ignores the critical situation in Pakistan. Briscoe has suggested that Indians could be more transparent with their data on river-flood at their dams, and that this could benefit both nations.[56]

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[52] "Re-Imagining the Indus."
[53] Suba Chandran, "Harnessing the Indus Waters: Perspectives from India," *IPCS Issue Brief*, no. 122 (2009), http://www.ipcs.org/pdf_file/issue/IB129-Ploughshares-Suba.pdf.
[54] See for example, Aloys Arthur Michel, *The Indus rivers: a study of the effects of partition* (New Haven, Conn.: Yale University Press, 1967); Niranjan D. Gulhati, *Indus waters treaty: an exercise in international mediation* (Bombay: Allied publishers, 1973); Undala Z. Alam, "Mediating the Indus Waters Treaty" (Unpublished Ph.D. thesis, University of Durham, 1998); Asit K. Biswas, "Indus Waters Treaty - the negotiating process," *Water International* 17, no. 4 (1992).
[55] Josef Korbel and C. W. Nimitz, *Danger in Kashmir* (Princeton: Princeton University Press, 1954).
[56] John Briscoe, "Troubled Waters: Can a Bridge Be Built over the Indus?," *Economic and Political Weekly* 45, no. 50 (2010).

Neda Zawahri has conducted research on different aspects of Indus Basin hydropolitics.[57] She has stated that "[d]espite receiving many accolades for being the example of cooperation between adversarial states, India and Pakistan's peaceful management of their Indus River system remains largely unexamined."[58] She has examined the role of the IWT and compared it with other treaties and found that there are elements in the IWT that have proven successful and could be used as a model in other treaties. She has also argued that India and Pakistan's cooperation under the IWT has been *active*, not *passive.* She uses Keohane's definition of *active* cooperation: it exists when states "adjust their behavior to the actual or anticipated preferences of others."[59] Zawahri argues that "India and Pakistan have adjusted their behavior in accord with each other's preferences and incurred losses in the process."[60] Active or passive cooperation is not discussed in depth in this thesis, but it is relevant to the discussion on whether the IWT should be abrogated and renegotiated. Those who advocated renegotiation of the IWT argued that the new treaty should arrange for much more cooperation between India and Pakistan.

Arun Elhance's book *Hydropolitics in the Third World* has provided a useful insight in theory and case examples of transboundary river basin issues. The book examines six basins with many similarities to the Indus Basin, in terms of size, demography and economy. The aim of his book is to examine the connection between transboundary water management and risk of conflict.[61]

Terje Tvedt has written extensively on history of water. In his article on the discourse on water and hydropolitics in *Water, Geopolitics and the world order*,[62] Tvedt argues that:

> In order to understand how the relationship between water, cooperation and power is played out in the real world, one has to analyse not only the hydrological character of the particular river system and how this develops over time, but also human

[57] Zawahri, "India, Pakistan and cooperation along the Indus River system; "Designing river commissions to implement treaties and manage water disputes: the story of the Joint Water Committee and Permanent Indus Commission; "Third Party Mediation of International River Disputes: Lessons from the Indus River," *International Negotiation* 14, no. 2 (2009); "International rivers and national security: The Euphrates, Ganges–Brahmaputra, Indus, Tigris, and Yarmouk rivers; "Capturing the nature of cooperation, unstable cooperation and conflict over international rivers: the story of the Indus, Yarmouk, Euphrates and Tigris rivers," *International Journal of Global Environmental Issues* 8, no. 3 (2008).
[58] "India, Pakistan and cooperation along the Indus River system."
[59] Keohane, 1984: 53 quoted in ibid., p. 5.
[60] Ibid.
[61] Elhance, *Hydropolitics in the Third World : conflict and cooperation in international river basins*.
[62] Terje Tvedt, "Water: A source of wars or a pathway to peace? An empirical critique of two dominant schools of thought on water and international politics," in *Water, geopolitics and the new world order*, ed. Terje Tvedt, Graham P. Chapman, and Roar Hagen, *A history of water: Series 2* (London: Tauris, 2011).

> modifications of this system and how the different actors conceive the river at different points in time.[63]

Analyzing "how different actors conceive the river" is in line with this thesis' aim, i.e. how Indian experts conceive the Indus River.

Brahma Chellaney thinks water is the world's most underappreciated and undervalued commodity. Chellaney argues that South Asia's transboundary rivers are likely to cause tensions between states. According to Chellaney, water scarcity and economic growth cannot go hand in hand and he believes that if drastic acts are not implemented there will be inter-state water conflict in Asia, and India and Pakistani are possible contestants.[64] Robert G. Wirsing also recognizes water scarcity in transboundary river basins as a potential cause for future water war in South Asia, but he also emphasizes that it might also be a catalyst for more cooperation.

Theory

In this section I outline the theoretical framework for this thesis. I examine the importance of water experts, and I place the approach of this thesis within intellectual history. Further, I describe a framework for how hydropolitics and water management are used in this thesis. Key terms such as water *conflict* and water *cooperation*, water *scarcity* and *integrated water resources management* (IWRM) and their mutual relations are explained.

The importance of water experts

The field is too new for there to be a body of literature on Indian experts' debates about Indus Basin hydropolitics, but there is some literature on the role of water experts in a more general sense. Evers and Gerke describe experts as "a 'knowledge elite' who use knowledge that has been produced elsewhere in specifically defined contexts".[65]

This thesis makes use of Gooch and Stålnacke's theory, that experts play an important role in providing policy makers with knowledge and information. The foremost scholar on Indus Basin hydropolitics, Ramaswamy R. Iyer, confirmed in a personal correspondence with me that experts' role is important to the Indian water policy:

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[63] Ibid., p. 78.
[64] Brahma Chellaney, *Water: Asia's New Battleground* (Washington D.C.: Georgetown University Press, 2011).
[65] Hans-Dieter Evers and Solvay Gerke, "Knowledge is Power: Experts as Strategic Group," (Bonn: ZEF Working Paper 8a, 2005).

> I have been writing extensively on India-Pakistan water relations and on the Indus Waters Treaty 1960. Whenever the water issue flares up between the two countries, the Ministries of External Affairs and Water Resources and even the Prime Minister call me in for consultations. I have a degree of readership in Pakistan too. I am an active participant in Track II initiatives between the two countries. [66]

He has also been asked to write articles by Pakistani newspapers, and has from time to time been consulted by the High Commission of India in Pakistan. [67]

Experts in general often claim to provide objective information, but their opinions are produced within a world of paradigms and they "are far from value free."[68] Gooch and Stålnacke believe that the "special role of science and experts in water management calls for particular attention."[69] The role of experts is special because they provide important knowledge and information, but they are not directly responsible for the consequences in the same manner as policy makers.

Ken Conca points out that expert networks that provide information and pressure governments have been important for international environmental cooperation. This includes promoting "the creation of institutions for supranational environmental governance, including but not limited to treaty-based interstate regimes."[70]

Information provided by experts has been important in the context of Indus Basin hydropolitics, where public and media opinion have been characterized by local, regional and national agendas rather than a holistic basin approach. BG Verghese has warned that the situation is a worrying:

> Because of lack of understanding and knowledge about the water issues […], various interest groups exploit these issues to push their limited and sometimes dangerous agendas.[71]

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[66] Ramaswamy R. Iyer, personal e-mail correspondence, November 2012
[67] Ramaswamy R. Iyer, personal e-mail correspondence, November 2012
[68] Geoffrey D. Gooch and Per Stålnacke, "Science, policy, and stakeholders in water management," (London: Earthscan, 2010), p. 4.
[69] Ibid.
[70] Ken Conca, *Governing water : contentious transnational politics and global institution building* (Cambridge, Mass.: MIT Press, 2006), p. 125.
[71] Joyeeta Bhattacharjee, "Water key to cooperation in South Asia, says B.G. Verghese ", (2011), http://www.observerindia.com/cms/sites/orfonline/modules/report/ReportDetail.html?cmaid=21250&mmacmaid=21251.

Few scholars and institutes covered contemporary Indus Basin hydropolitical issues before the late 1990s. This changed during the Baglihar dispute. Since 1997, several research projects on water security have examined the past, present and future issues of the IWT. Project reports and individual scholars have given recommendations on how to improve water management and keep the cooperation peaceful. Even though there has been an upsurge in research on hydropolitics since the 2000s, all is not well. Verghese said in 2011 that discourse on water often is driven by ideologies and myths which are perceived as truth. And these perceived truths contribute to create antagonistic feelings which can result in the escalation of conflicts.[72]

In the words of the Indo-Pakistani research report *Re-imagining the Indus*, "de-securitization of the discourse" is the key in order to establish cooperative management of the Indus River system, and that "interactions must be facilitated between journalists from both countries […] to produce counter-narratives centered on water management to take on the security centered narratives."[73] I would add that also experts are key actors in a process of desecuritizing. Peter Mollinga believes the debates about water resources in South Asia have been dichotomous and polarized:

> Critical and public perspectives have been pitted against mainstream and instrumental perspectives, with full effort on each side to delegitimize the opposition. Both poles run the risk of strategic essentialism, that is, the risk to translate the singular focus on 'core' points in practical politics into single perspective, reductionist, frameworks of analysis. This no doubt reflects the intensity of the controversies and the high stakes involved, but also creates practical and discursive deadlocks, and underwrites 'winner takes it all politics'.[74,75]

During the Baglihar dispute, attempts at securitizing and de-securitizing the water discourse have played a role in the debates on Indus Basin hydropolitics. Securitization leads India and Pakistan to believe that their water resources must be protected, and that they are willing to risk conflict and war to secure the water. This can be described as "water nationalism".[76]

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[72] Ibid.
[73] "Re-Imagining the Indus," p. 6-7.
[74] Mollinga, "Foreword," p. xv.
[75] Spivak introduced the concept strategic essentialism, but has later expressed regret with how the concept has been used. Dourish defines strategic essentialism as "the ways in which subordinate or marginalized social groups may temporarily put aside local differences in order to forge a sense of collective identity through which they band together in political movements"; Paul Dourish, "Points of Persuasion: Strategic Essentialism and Environmental Sustainability" (paper presented at the Persuasive Pervasive Technology and Environmental Sustainability, Workshop at Pervasive, 2008).
[76] "Re-Imagining the Indus."

Intellectual history

The approach in this thesis can be described as intellectual history. Intellectual history refers to the study of intellectuals and intellectual patterns over time, primarily in written form. It seeks to understand the ideas of the past within their context.

The rise of intellectual history coincided with the enlightenment and Dutch classical scholar G.J. Vossius spoke about a *historia literaria* defined as "the lives and writings of learned men and the invention and progress of the arts."[77] It has roots in history of ideas, and in some definitions it is practically the same thing. [78] Arthur O. Lovejoy listed the disciplines that defined the limits of the history of ideas, but these could just as well be limits for intellectual history. [79] Most intellectual history denies, unlike history of ideas, that "an idea can be defined in the absence of the world".[80] Annabel Brett says that "intellectual history has come a long way from the isolated study of the 'great ideas' of 'great thinkers': that is, history of human thought or thinking as distinct from human action or doings."[81]

Brett identifies two paths intellectual history has taken in recent decades, of which "the study of language or discourse and its relation to human action and agency" is the relevant one in this thesis.[82] Brett writes, "we can only know what an author was doing in writing a particular text if we know the circumstances of that doing."[83] This results in a,

> method which argues that to understand texts for the specific speech acts that they are, we need to understand the historical context in which they were uttered. … 'context' can be multidimensional: a specific political situation.[84]

In my case the context is the Indus Basin hydropolitics during the Baglihar dispute. A part of this context is the linguistic context – what other people were saying at the time and the conventions governing that saying.[85] I am particularly interested in the contemporary debates on transboundary water management and transboundary conflict and cooperation. The first

[77] Quoted in Donald R. Kelley, "Intellectual History: From Ideas to Meanings," in *The Sage handbook of historical theory*, ed. Nancy Partner and Sarah Foot (London: SAGE Publications Ltd, 2013), p. 82.
[78] Ibid., p. 81.
[79] Ibid., p. 86.
[80] Peter E. Gordon, "What is intellectual history: A frankly partisan introduction to a frequently misunderstood field," (2009), http://history.fas.harvard.edu/people/faculty/documents/pgordon-whatisintellhist.pdf.
[81] Annabel Brett, "What is intellectual history now?," in *What is history now?*, ed. David Cannadine (New York: Palgrave, 2002), p. 114.
[82] Ibid.
[83] Ibid., p. 116.
[84] Ibid., p. 117.
[85] Ibid., p. 116.

was dominated by a recent shift towards an IWRM-paradigm, while the other was characterized by studies that repudiate the water war prophesies.

The intellectual history applied in this thesis has more in common with cultural history, and as Professor Peter E. Gordon describes it, "the line between intellectual history and cultural history is not always easily discerned".[86] This thesis is mainly interested in the intellectual elite, the Indian water experts, while cultural historians are more interested in public discourse. The difference between these two is not necessarily clear.

Writing the history of a river could be an attempt at environmental history. Environmental historians are interested in the interaction between people and nature over time. According to Samuel P. Hays, an environmental historian aims to "chart the growing numbers of people and the way they use the environment, and … to examine the changes in that environment that have resulted from this human load."[87] This thesis examines Indian water experts' attitude towards the Indian policy in the Indus Basin, which certainly affects the environment. The main focus however, is on the attitudes of people, not the changes in nature over time.

What is hydropolitics?

This thesis uses Elhance's definition of hydropolitics, "The systematic study of conflict and cooperation between states over water resources that transcend international borders."[88] The usage of water conflict in this thesis refers to interstate violent conflict. But in the specific case of this thesis, it is necessary to add an aspect to the definition of hydropolitics. As explained earlier, this thesis analyzes how Indian experts participated in debates on hydropolitics, and thereby constituting to the overall Baglihar dispute. These debates are a form of conflict management process, and therefore a part of the hydropolitics of the Indus Basin. Successful conflict management would be that the partners did not take recourse to violence.

There have been several incidents of water conflict around the world, but these have been intrastate and non-violent. Mohan has stated that "conflicts over water have steadily increased" in South Asia, but the conflicts they refer to are typically conflicts between local

[86] Gordon, "What is intellectual history: A frankly partisan introduction to a frequently misunderstood field".
[87] Samuel P. Hays, "Toward Integration in Environmental History," *Pacific Historical Review* 70, no. 1 (2001).
[88] Elhance, *Hydropolitics in the Third World : conflict and cooperation in international river basins*, p. 3.

farmers protesting against large dams or, or conflict between local communities caused by perceived inequality in intrastate water sharing.[89]

The prophecy that scarcity of water in transboundary rivers would lead to water conflict was popular in the 1980s and 1990s, both in academic writing and elsewhere.[90] In 1993, Peter Gleick argued that:

> The maldistribution of fresh water together with current trends in population and development suggest that water is going to be an increasingly salient element of interstate politics, including violent conflict.[91]

Gleick pointed out four links between water and conflict: Water as political and military goal, water as a weapon of war, water resources infrastructure as a target of war, and conflict that may arise from disputes over inequities in water distribution and management.[92] Serageldin statement on the link between water and war[93] was reiterated by former Secretary-General of UN Kofi Annan in 2001, who said that "[f]ierce competition for fresh water may well become a source of conflict and wars in the future,"[94] and by Ban Ki-Moon in 2007, referring to the crisis in Darfur.[95]

Competition over natural resources as one of several root causes for modern warfare is not a new idea, but according to a paper by Gleditsch and Diehl in 2001, "it was not until the recent emergence of environmental issues on the international political agenda that more specific claims about environmental disruption and violent conflict emerged."[96] Gleditsch and Diehl emphasized that rivers know no borders, and this implies a potential for water related dispute.

The main criticism towards the water war literature has been its lack of empirical support. From the mid-1990s several scholars, and especially Professor of Geography, Aaron T. Wolf, have argued that shared water resources will rather be a catalyst for cooperation

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[89] N. Shantha Mohan, "Locating Transboundary Water Sharing in India," in *River water sharing : transboundary conflict and cooperation in India*, ed. N. Shantha Mohan, Sailen Routray, and N. Sashikumar (New Delhi: Routledge, 2010), p. 3.
[90] See for example: Joyce R. Starr, "Water Wars," *Foreign Policy*, no. 82 (1991).; John K. Cooley, "The War over Water," ibid., no. 54 (1984); Thomas F. Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," *International Security* 19, no. 1 (1994).
[91] Peter H. Gleick, "Water and Conflict: Fresh Water Resources and International Security," ibid.18(1993): p. 79.
[92] Ibid.
[93] Wolf, "Conflict and cooperation along international waterways."
[94] Aaron T. Wolf, Alexander Carius, and Geoffrey D. Dabelko, "Water, Conflict and Cooperation," in *ECSP-report 10* (Woodrow Wilson International Center for Scholars, Environmental Change and Security Program, 2004).
[95] Tvedt, "Water: A source of wars or a pathway to peace? An empirical critique of two dominant schools of thought on water and international politics."
[96] Paul F. Diehl and Nils Petter Gleditsch, *Environmental conflict* (Boulder, Colo.: Westview Press, 2001), p. 2.

between states.[97] Wolf accompanied by Yoffe and Giordano analyzed 1,831 interstate water-issues between 1946 and 1999 and found that only 37 were violent. Fully 414 of the 507 of the cases were "conflictual" but most of these could be classified as "rhetorical hostility".[98]

However, even though history suggests that there have been few violent water conflicts and no water wars; most scholars recognize the likelihood of future water conflicts. This is grounded in the complexity of water issues, and that it is an essential resource. Wolf and Amery believe that "political boundaries often ignore this critical resource, and because water flows vary in space and time, disputes are bound to arise …"[99] Elhance agrees that the complexity of transboundary rivers needs special attention if conflict shall be avoided:

> If the international community is to help prevent the emergence of acute conflicts among the states and peoples sharing transboundary water resources, it needs to acquire a much more sophisticated understanding of hydropolitics. (…) the attainment of sustainable economic development, environmental well-being, human security, and human rights in large parts of the world is not possible without cooperation among states and peoples that share major river basins.[100]

Transboundary rivers are a special challenge for water management as they involve cooperation between two (or more) different sovereign states, each with their own legal system and institutions. In some cases, such as the Indus River, they may also straddle between two different political systems. This complicates the cooperation necessary for efficient water management. Terje Tvedt has criticized the theory of linkages between water scarcity and cooperation or conflict, asserting that it is deterministic and simplistic.[101]

India and Pakistan cooperate on water sharing according to the provisions of the IWT. But one of the big questions during the Baglihar dispute was whether the IWT was adequate to prevent conflict. It could not prevent disputes to arise, and disagreements over the Indus River system were increasing between India and Pakistan. Indus Basin hydropolitics during the Baglihar dispute are examined in the context of Arun Elhance's argument that if nation

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[97] Wolf, "Conflict and cooperation along international waterways."; This was also supported in: Wolf, Carius, and Dabelko, "Water, Conflict and Cooperation."; Hans Petter Wollebæk Toset, Nils Petter Gleditsch, and Håvard Hegre, "Shared rivers and interstate conflict," *Political Geography* 19, no. 8 (2000).; Nils Petter Gleditsch, "Armed Conflict and the Environment: A Critique of the Literature," *Journal of Peace Research* 35, no. 3 (1998).

[98] S. Yoffe, A. T. Wolf, and M. Giordano, "Conflict and cooperation over international freshwater resources: Indicators of basins at risk," *Journal of the American Water Resources Association* 39, no. 5 (2003).

[99] Hussein A. Amery and Aaron T. Wolf, *Water in the Middle East : a geography of peace* (Austin, Tex.: University of Texas Press, 2000), p. 2.

[100] Elhance, *Hydropolitics in the Third World : conflict and cooperation in international river basins*, xiii.

[101] Tvedt, "Water: A source of wars or a pathway to peace? An empirical critique of two dominant schools of thought on water and international politics," p. 79.

states are unwilling to cooperate and manage the transboundary rivers in a sustainable and equitable manner, "the potential for acute (violent) conflict over water … will keep growing."[102]

Water scarcity in the Indus Basin

While, successful conflict management was defined as when the partners managed to avoid violent conflict, the success of the Indian experts did also depend on the management of the water resources in the river basin. The Baglihar dispute was a part of a trend of on-going tension in the water sharing relations between India and Pakistan. This trend was partly caused by the increased water scarcity in the Indus Basin. Elhance defines water scarcity as "a lack of secure, uninterrupted, and long-term availability of adequate amounts of freshwater, of required quality, on a regular basis, and for multiple needs."[103] This thesis views the water scarcity both in neo-Malthusian notion that population rise leads to resource scarcity, but also that water scarcity is caused by inefficient and unsustainable water management.

Since the 1950s, freshwater availability per capita in India has decreased by nearly 60% and research reports argue that it will continue to decline in the next decades. According to some definitions India is already on the verge of being labeled as 'water stressed' (below an average of 1700 m^3 available freshwater per person per year). Pakistan has been water stressed according to this definition for many years and is close to facing "water scarcity" which is below an average of 1000m^3 of water per person per year.[104] In addition to the uncertainties caused by decreased freshwater availability per capita, climate change predictions have been a factor of increasing concern about the future of the Indus Basin.[105]

> Although the water expert at Centre for Policy Research in New Delhi, BG Verghese, has stated that "India has proceeded to harness its water resources with a growing measure of environmental discipline,"[106] a number of other water experts fear that India is facing a water crisis in the future.[107] In 2012, India's population growth rate

[102] Elhance, *Hydropolitics in the Third World : conflict and cooperation in international river basins*, p. 3.
[103] Ibid., 4.
[104] Archer et al., "Sustainability of water resources management in the Indus Basin under changing climatic and socio economic conditions.",
And the Aquastat database from Food and Agriculture organization
[105] Ramaswamy R. Iyer, "Indus Treaty: A Different View," *Economic and Political Weekly* 40, no. 29 (2005); Verghese, "Political Fuss Over The Indus."
[106] "Ideology threatens Indus Treaty," *The South Asian Journal* (2010).
[107] See for example Gitanjali Bakshi and Sahiba Trivedi, *The Indus Equation* (Mumbai: Strategic Foresight Group, 2011).; Robert G. Wirsing and Christopher Jasparro, "River rivalry: water disputes, resource insecurity and diplomatic deadlock in South Asia," *Water Policy* 9, no. 3 (2007).; Ramaswamy R. Iyer, *Towards water*

> was 1.312%, and the demand for fresh water in India will therefore probably increase.[108] Further economic development and urbanization can contribute to the declining availability per capita.[109] India's National Commission on Water reported in 1999 that by 2050, India's annual water per capita average will fall below 1000m^3.[110]

Thus, there are two different ways of interpreting the causes of the crisis of water. scarcity in the Indus Basin. Many politicians will define it as a crisis of availability, while it would perhaps be more precise to define it as a crisis of management, or *mis*management.[111] Those who view the situation as a crisis of availability believe there is enough water in the Indus River system for everyone, if it is just utilized to its full potential. The solution to prevent the crisis, according to this perspective, might include constructing big reservoirs and canals to divert and link rivers. The argument that river-water running into the ocean is wasted water, can sometimes be heard, even though it was more common in earlier decades.[112] The other way is to treat the issue of scarcity in the Indus Basin as a crisis of mismanagement. The mismanagement of water resources has an enormous environmental impact. There are considerable problems of sedimentation, waterlogging, salinization in the Indus plains, and problems connected to less freshwater in the Indus delta.

The world's largest contiguous irrigation system can be found in the Indus Basin, and irrigation is by far the largest user of basin water (constituting over 90% of total withdrawal).[113] According to Ramaswamy R. Iyer the irrigation system is not operated effectively by international standards, and maintenance of it is poor. A report from 2000 stated that irrigation canals in the Indus Basis lose up to 40% of the water due to seepage,[114] and Iyer has stated that there are "serious equity issues in the operation of major/medium irrigation projects."[115] According to Peter Mollinga, food production could be doubled in

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wisdom: limits, justice, harmony (New Delhi: Sage Publications, 2007).; Archer et al., "Sustainability of water resources management in the Indus Basin under changing climatic and socio economic conditions."

[108] "The World Factbook," Central Intelligence Agency, https://www.cia.gov/library/publications/the-world-factbook/geos/in.html.

[109] Miner et al., "Water sharing between India and Pakistan: A critical evaluation of the Indus Water Treaty," p. 208.

[110] National Commission for Integrated Water Resource Development, *Report to the Government of India.* (New Delhi: National Commission for Integrated Water Resource Development, 1999)

[111] Iyer, *Towards water wisdom: limits, justice, harmony*, p. 20.

[112] See for example: S. Shivananda, "Political and Legal Aspects of the Indus Water Dispute between India and Pakistan" (Unpublished MA thesis, University of Washington, 1961)., quoted in Alam, "Mediating the Indus Waters Treaty."

[113] A. N. Laghari, D. Vanham, and W. Rauch, "The Indus basin in the framework of current and future water resources management," *Hydrol. Earth Syst. Sci. (HESS)* 16, no. 4 (2012).

[114] Miner et al., "Water sharing between India and Pakistan: A critical evaluation of the Indus Water Treaty."

[115] Iyer, *Towards water wisdom: limits, justice, harmony*, p. 24.

India, just by distributing water more equitably and utilizing the current irrigation system more effectively.[116]

River basin water management

In the following, I outline the recent development within water management research, in which the concept of IWRM has had a hegemonic status since the 1990s.

Before the 1970s, the field of water resources studies had mostly been occupied by natural science scholars such as hydrologists and water resources engineers.[117] From the 1970s this situation slowly changed, when a global network of water professionals started to develop. This network consisted of scholars not only from natural science disciplines, but from a various range of social sciences which developed expertise in issues of water. The UN Water Conference in Mar del Plata, Argentina in 1977 can be viewed as a starting point. The conference themes were narrow and discussions were mainly about safe drinking water and sanitation. Attempts to discuss transboundary cooperation were problematic because of the implications for states' sovereignty over natural resources.[118] In the 1980s and 1990s the international water expert network developed through organizations and forums, into becoming a force that would legitimatize water resources as an important and complex cross-disciplinary field of study. Ken Conca writes that alongside the growth of the water expert networks since the 1970s, a corresponding "idea of integrated water resources management has emerged to offer a new paradigm for water-related decisions and practices."[119] Conca believes an evidence of the joint success of the idea of IWRM and the development of the water expert network was "the near-hegemony that IWRM phrases and concept had come to enjoy by the late 1990s as the language of international water policy."[120]

The paradigm shift towards a new thinking with an IWRM framework as a central element has been described by Peter Gleick.[121] An idea of managing water resources based on IWRM-principles was also apparent among the experts providing analysis on the Indus Waters. But what are the basic principles of IWRM? First of all it recognizes the complex range of uses of water, and it advocates a cross-sectorial integrated planning involving actors

[116] Peter Mollinga, "A cultural political economy perspective on the Indian irrigation bureaucracy", presentation at the University of Oslo, September 3, 2012.
[117] Mollinga, "Foreword," xiv.
[118] Conca, *Governing water : contentious transnational politics and global institution building*, p. 129-30.
[119] Ibid., p. 160.
[120] Ibid.
[121] Peter H. Gleick, *The world's water 1998-1999 : the biennal report on freshwater resources* (Washington D.C.: Island Press, 1998).

and institutions at local, national and transnational levels.[122] Global Water Partnership's definition of IWRM is largely accepted:

> IWRM is a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment.[123]

Despite IWRM's hegemonic status, it has been problematic to implement. Especially at transnational levels, since states are not likely to give up the sovereign claim to natural resources. When Pakistan and India signed the IWT, they decided to divide the water resources instead of sharing them. The paradigm shift towards an understanding that IWRM-principles are necessary for improved water management has made the provisions of the IWT outdated. To deal with increasing water scarcity, experts have argued that India and Pakistan need to improve their water management that requires further cooperation.

There have been a paradigm shift in the water resources scholarship since the 1970s, but the IWT has remained unchanged. Suba Chandran has written that the IWT was "signed in 1960, almost fifty years back, in a different political, economic, demographic, ecological and energy environment. Today there has been a considerable change in all these five areas".[124] But even though the IWT has been viewed as outdated by some scholars, most scholars recognize that the IWT has helped India and Pakistan to cooperate peacefully on the Indus River system. The discussion on whether India and Pakistan can implement IWRM-principles in the Indus Basin is therefore interrelated with the discussion on whether how nations can cooperate on transboundary rivers and avoid conflict.

Personal perspectives

Indus Basin history is not very well known to the common Norwegian. If anyone has heard about it, it is a good chance it is through the books and TV-documentaries by Terje Tvedt. A certain distance to the field of study can be positive, especially when studying an issue in Indo-Pakistan relations. The reason behind my choice of research topic is not because I like to travel in India, or I am particularly fond of a South Asian culture. I am first of all interested in the question of sharing a transboundary river. The Indus Basin hydropolitics and the Baglihar

[122] Conca, *Governing water : contentious transnational politics and global institution building*.
[123] Global Water Partnership, "What is IWRM?," http://www.gwp.org/The-Challenge/What-is-IWRM/.
[124] Chandran, "Harnessing the Indus Waters: Perspectives from India".

dispute made an interesting case study, because there is so much at stake, and it involves so many people.

I have already described my field work, and recognized that my interaction with the Indian side may have affected my objectivity to one way or the other. I have tried to analyze Indian experts' attitude in an unbiased and impartial manner. But I recognize of course, in such a heated debate that some may try to put me in one category or another. In the preface of his book on the Indus Rivers in 1967, Aloys Michel wrote that:

> As any scholar must, I have tried to preserve impartially in evaluating the attitudes and positions of both nations in the struggle over Partition, in Kashmir, and in the Indus Waters Dispute. Unavoidably, some readers will feel that I have slighted India or Pakistan – or perhaps both.[125]

British scholar, Undala Z. Alam, who wrote her Ph.D. about the Indus Basin, has family relations on both sides of the border. Although she aimed to be careful in how she worded things she has often been thought to be the "other" by both sides.[126] I share both the goals and the concerns of Michel, but I also expect to be viewed as the other by both Indians and Pakistanis.

[125] Michel, *The Indus rivers: a study of the effects of partition*, p. xii.
[126] Alam, Undala Z. E-mail correspondence with the author 2012.

3. The Baglihar dispute: 1999-2004

In 1999, the same year Indo-Pakistani relations were at crisis because of the Kargil Conflict[127], another important incident happened that did not grab the media's attention at that time.[128] India decided to initiate construction of the Baglihar.[129] However, since India kept information about the initiated construction a secret, Pakistan was not aware of it before 2001. This chapter clarifies the hydropolitical situation in the Indus Basin between 1998 and 2005 and analyses the attitude of Indian water experts in this period. The chapter is divided in three chronological sections.

The beginning of this chapter examines the hydropolitics of the Indus Basin in the late 1990s, just before the Baglihar dispute. This period was characterized by tension and uncertainty in Indian-Pakistani relations. Both nations tested nuclear weapons in 1998, and in 1999 they fought in the Kargil Conflict, and Pervez Musharraf seized power in Pakistan through a coup d'état. Indo-Pakistani hydropolitics seemed to be at status quo, but there was tension between the Indian government and the state government of J&K. The Indian experts began identifying potential hydropolitical issues in the Indus Basin.

In the second part, 2001-2002, attention towards the IWT was growing. Critique towards the IWT in J&K increased, and terror attacks in India were linked with Indus Basin hydropolitics. Indian media and experts discussed whether India would violate or abrogate the IWT, and whether J&K's interests were kept in view when India signed the treaty.

The last part of this chapter examines 2003 and 2004, when Baglihar negotiation stalled, and Pakistan warned that they might request the World Bank to interfere in the dispute. The attention towards the IWT was still present, but there were a slight decrease in scholarly texts written by Indian experts.

[127] The Kargil Conflict was an armed conflict, or *undeclared war*, that took place between India and Pakistan between May and July 1999. Pakistani troops infiltrated the Indian state Jammu and Kashmir, which led to a response by the Indian military and government. The conflict was resolved when Pakistan withdrew its forces, due in part to international pressure.

[128] Neither Indian officials nor the press mentioned that India had started construction of Baglihar before

[129] Bakshi and Trivedi, *The Indus Equation*. According to the provisions of the IWT, the Baglihar is not defined as a "dam", and I will simply call it "Baglihar" in this thesis, since the name will not be used in any other meaning than the run-of-river hydroelectric project.

1999-2000: Dissatisfaction in Jammu and Kashmir

In the late 1990s, Indo-Pakistani relations were on a roller-coaster ride. After both nations had tested nuclear weapons in 1998, there were signs of improvements in early 1999. Indian Prime Minister Vajpayee and Pakistani Prime Minister Nawaz Sharif initiated the "bus diplomacy" in February 1999, marked by Vajpayee's bus ride across the border on his way to bilateral talks in Lahore, discussing ways to improve relations.

However, a few months later, Pakistani insurgents occupied Indian territory in Kargil, and India responded with air strikes. The Kargil Conflict almost turned into a war, but Pakistan withdrew their support to the insurgents in July 1999, after international pressure, and the conflict ended. Three months later, Pervez Musharraf, generally thought to be the one who planned the troop movements that led to the Kargil Conflict, seized power through a coup d'état in Pakistan.

At the same time policy makers in J&K expressed disappointment with the lack of investment from the Indian government in hydropower projects in the region. The Chief Minister Farooq Abdullah and other representatives complained that the IWT hindered development in J&K. India had to balance their Indus Basin policy, considering the IWT and their relations with Pakistan, but also the voices from J&K which began demanding rights to utilize the water resources within the state.

Indus Basin hydropolitics around 1999

The troubled Indus Basin hydropolitics did not begin with Baglihar. The Baglihar dispute resembled hydropolitical issues between India and Pakistan in the 1950s, 1970s and the 1980s. As mentioned in the introduction, the Baglihar dispute reflects important aspects of the Indus River history and the Indo-Pakistani relations. However, the Baglihar dispute was special.

The scarcity of water in the Indus Basin, and the linkages between water scarcity and water conflict in academic writing provided a context in which the Baglihar dispute could have led to inter-state violent conflict.[130] Both nations were in possession of nuclear weapons and had just fought an armed border conflict in Kargil. Pakistan had been water stressed for

[130] See discussion in Chapter 2, under *Theory*.

many years and was close to facing water scarcity, while India could face water scarcity within 2050.[131]

Conflict over water in the Indus Basin was reckoned as a potential consequence of increasing water scarcity, but the IWT seemed to function well as a conflict mediator. However, the IWT was signed in another time when the availability of water per capita was much different. Former Foreign Secretary of India, Jagat S. Mehta, had estimated in 1988 that it might be necessary to scrap the IWT within 25 years because of the changing demography of the Indus Basin.[132]

Even though water scarcity could serve as reason for conflict over water, there was no single Indus Basin hydropolitical issue that could turn into conflict in the late 1990s. India and Pakistan still disagreed sharply on the Tulbul Navigation Project,[133] as they had done since the 1980s, but dispute did not escalate further.

However, from the late 1990s, policy makers in J&K began expressing their disappointment with the Indian government over the lack of investments in hydropower projects in the region. In 1998, Farooq Abdullah asked the Indian government to initiate the construction of Baglihar. It is within this context, that the Indian government secretly initiated the construction of Baglihar. Perhaps an appeasing move towards J&K, but a potential case for conflict with Pakistan.

The design of Baglihar

The purpose of Baglihar was to generate electricity and it was projected to be a run-of-the-river hydropower plant with a capacity of 450MW.[134]

India informed Pakistan about their plans for the Baglihar project in the early 1990s, but Pakistan made objections to the plans from the beginning.[135] Pakistan at least wanted to inspect the construction site before they could possibly accept that India built the dam, but

[131] National Commission for Integrated Water Resource Development, *Report to the Government of India.* (New Delhi: National Commission for Integrated Water Resource Development, 1999)
[132] J. S. Mehta, "The Indus Water Treaty - a case-study in the the resolution of an international river basin conflict," *Natural Resources Forum* 12, no. 1 (1988).
[133] The project is described in chapter 3.
[134] India plans to upgrade Baglihar with a second turbine which will double the power generation capacity, but constructing on the upgrade has not started (March 2013).
[135] According to Zawahri, Baglihar was first discussed in 1990: Zawahri, "India, Pakistan and cooperation along the Indus River system." However, Rajesh Sinha, "Two Neighbours and a Treaty: Baglihar Project in Hot Waters," *Economic and Political Weekly* 41, no. 7 (2006). asserts that the project was conceived in 1992 and this is supported by water resources ministry sources: "India rebuts Pak charge of flouting Indus Treaty," *Times of India*, 21 February 2002. Media reported in the early 1990s that India had made plans for Baglihar. The estimated design of the project was reported to be two dams of 450MW each. This made Baglihar a 900MW hydroelectric project. In 2012, still only one of the 450MW hydro plants is built.

India did not permit any inspection. Indian officials declared that there were no reason the Pakistani Indus Commissioner should inspect the site.[136]

The Pakistani officials were particularly worried about the size of the pondage of the dam. The size of the pondage, or operating pool, is decided by the storage capacity, and the design and height of the sluice gates on the dam.[137] According to the IWT, India is allowed to construct run-of-the-river projects on the Indus, Chenab and Jhelum, as long as the projects do not have more than a minimum of storage.[138] A reservoir would enable India to stop the flow of the river while they filled the reservoir, and maneuverable sluice gates at a low level on the dam would enable India to flush out water from the reservoir.

Baglihar was projected to be a run-of-the-river project with small storage capacity, but with hydraulic sluice gates, or *gated spillways*. A hydropower project with a reservoir can operate more efficiently, because they can store water in the reservoir during the night when the need for electricity is lower. The gated spillways enable flushing of water and silt. Silt- or sediment control is essential at hydropower projects on the Indus River system because the rivers carry high amounts of silt, which potentially can make hydroelectric projects inefficient in a few years if there is lack of sedimentation-control.

Before Baglihar, the Salal project was the only hydroelectric project of considerable size India had constructed on the western rivers. Thus, there were few or no reasons for India to start a dispute over water.

The IWT before 1999: an acceptable treaty

Since there were few disputes over water before the late 1990s, the IWT and its Permanent Indus Commission (PIC) was perceived as an acceptable treaty that would enable India and Pakistan to cooperate over shared water resources. The Baglihar was an issue that the PIC would deal with. Indian water experts were not worried and suggested that the IWT could be used as a model for transboundary river treaties in other regions. The same view was present in much of the earlier research on Indus Basin hydropolitics, which mainly focused on the 1950s and the treaty negotiations. The IWT had been an interesting research topic because it

[136] The Indian Government has not released any information about the exact date of when construction began, but according to different sources, it was probably late in the year 1999. See for example: "Two Neighbours and a Treaty: Baglihar Project in Hot Waters."
[137] Tapan R. Mohanty and Adil Hasan Khan, "Dam of Division: Understanding the Baglihar Dispute," ibid.40, no. 29 (2005).
[138] Annexure D of the Indus Waters Treaty, paragraph 8c says that maximum pondage in the operating pool must not exceed twice the pondage required for firm power.

proved that a functioning water treaty and diplomatic relations between two neighboring countries with a problematic relationship was possible.

However, the IWT and the PIC had not settled the 15 year old disagreement over the projected Tulbul Navigation Project[139] on the Wular Lake in India, and now India began constructing Baglihar without Pakistan's permission. Could the PIC settle the Baglihar dispute, considering that they were unable to reach an agreement on the Tulbul Navigation Project? These questions were not asked before some years later. In 1999, the dissatisfaction in J&K was India's main hydropolitical concern in the Indus Basin.

Critique from Jammu and Kashmir

In the Indian state J&K, where large parts of the Indus River system originate, newspapers reported critique towards the IWT from officials and politicians. In the J&K budget speech in 1999, the state's Finance Minister Muhammad Shafi referred to the treaty as "a nightmare" and that "the State of J&K needs to be compensated for the sacrifice it has to make in the national interest."[140] Critique towards the IWT in J&K was not an entirely new phenomenon, but the dissatisfaction with the IWT remained a minor issue in J&K politics for a long time. This changed when the Farooq Abdullah-led National Conference won 57 out of 87 seats in the state assembly elections in 1996. Muhammed Shafi stated in November 1996 that J&K should be "compensated since the state has been put to a great disadvantage by the Centre signing the Indus Water Treaty."[141] Chief Minister of J&K, Farooq Abdullah, asked the Indian government to hand over ownership of two hydroelectric power plants to the state government in J&K. According to Abdullah, this would serve as compensation for the economic losses in J&K caused by the IWT.[142] In an interview in 2000, Farooq Abdullah was asked why representatives from J&K just recently had uttered grievances against the IWT. Farooq Abdullah replied, "we have always been talking about it", and that his father, Sheikh Mohammed Abdullah,[143] often had informed the government in New Delhi about the disadvantages of the IWT.[144] But Shafi's speech in 1999 marked the beginning of more frequent critical statements reported in media from officials in J&K in the years that followed.

[139] Pakistan refers to this project as the Wular Barrage while India has named it the Tulbul Navigation Project.
[140] "Jammu and Kashmir wants review of water pact with Pakistan," *Pioneer*, 7 March 2000.
[141] "J&K on the verge of fiscal collapse," *Business Standard*, 7 November 1996.
[142] The Indus Waters Treaty gives India restrictions on uses of the three western rivers that run through Jammu and Kashmir
[143] Former leader of the National Conference, Prime Minister of Jammu and Kashmir 1948-1953, and Chief Minister of Jammu and Kashmir 1975-1977.
[144] Masood Hussain, "`We want autonomy - we had it earlier'," *The Economic Times*, 13 June 2000.

The critique from J&K said that the IWT restrained that state government from constructing hydroelectric projects on the Indus, Jhelum and Chenab. The critique reached a voltage peak in the spring of 2002 when the J&K Legislative Assembly called for a review of the IWT,[145] and elected members from the National Conference, the Bhartiya Janata Party, and Communist Party of India all denounced the IWT.[146]

The dissatisfaction in J&K and the initiation of Baglihar must be seen as the most important hydropolitical events in 1999 and 2000. However, the critique from J&K was almost totally ignored by the IWT experts in the same period. It was not before late 2001 and spring 2002, that Indian experts recognized the importance of the policy makers in J&K. This will be examined in the second part of this chapter.

The Indian experts

In the late 1990s, Indian experts focused on the mediation process of the treaty (1950s) and they discussed how to improve water management in South Asia. The dominating attitude was that the IWT had functioned satisfactory, but that it might need improvements in the near future in order to prepare for enhanced water management in the Indus Basin.

Between 1999 and 2000 there were three articles written by Indian experts that discussed Indus Basin hydropolitics.[147] Ramaswamy R. Iyer, Asit K. Biswas and Ashok Swain wrote relevant journal articles,[148] and I am also including an article by BG Verghese from 1997.[149] His utterances can be put in much of the same categories as those of the three other authors.

None of the four articles was written mainly about Indus Basin hydropolitics. The experts mentioned IWT in a general discussion on transboundary river issues, as a model for cooperation. According to Iyer, Biswas and Verghese, the IWT had functioned well as a conflict resolution in the Indus Basin since 1960. Indian water expert at the Department of Peace and Conflict Research in Uppsala University, Ashok Swain, was less positive, but none

[145] "Clinton should tell Pakistan to stop terrorism - Farooq," *The Times of India*, 11 March 2000. and ; Parul Chandra, "Indus Treaty may be abrogated," ibid., 26 December 2001.
[146] Kulbushan Warikoo, "Indus Waters Treaty: View from Kashmir," *Jammu and Kashmir insights*(2006), http://www.jammu-kashmir.com/insights/insight20060601a.html., accessed 10 September 2010.
[147] Ashok Swain's: "Water Wars: Fact or Fiction?," is included in this section since it thematically dealt with the same issues as the other texts. The analysis does not include Ph.D. thesis of British born, with Indian parents: Alam, "Mediating the Indus Waters Treaty."
[148] Ramaswamy R. Iyer, "Conflict-resolution: Three river treaties," *Economic and Political Weekly* 34, no. 24 (1999)., A. K. Biswas, "Management of International Waters: Opportunities and Constraints," *International Journal of Water Resources Development* 15, no. 4 (1999)., and Ashok Swain, "Water wars: fact or fiction?," *Futures* 33, no. 8–9 (2001).
[149] B. G. Verghese, "Water conflicts in South Asia," *Studies in Conflict & Terrorism* 20, no. 2 (1997).

of the experts discussed the Indus Basin in depth. Iyer and Verghese were more concerned at that time about the eastern Himalayan Rivers and India's water treaties with Nepal and Bangladesh.[150]

Founder of the Third World Centre for Water Management in Mexico, Asit K. Biswas, dealt with the role of third parties in water treaties, and argued that the World Bank played a successful role as a mediator when the IWT was negotiated. Biswas pointed out that the IWT was "a mutually acceptable agreement between the two countries on the sharing of the waters of the Indus River system."[151]

A focus on the negotiating process and the early years of the IWT can be found in the articles of all four authors. This focus was in accordance with much of the earlier research on the IWT, which thus far had been devoted to the negotiations and the role of the World Bank as a mediator.[152] 1948-1960 was a period of conflict and tension in the Indus Basin and attention towards conflict has characterized much of the research on the Indus Basin hydropolitics.

Around 2000 there was a growing concern that water scarcity in the region could lead to new tension and conflict over freshwater resources. Therefore, focus shifted gradually from attention towards the early years, to the then present and future issues. This perspective was most evident in Verghese's article from 1997 and Swain's article from 2001. They warned that water management and cooperation perhaps needed to be improved to avoid conflict and war over water.

Was the Indus Waters Treaty outdated?

The fear of a conflict over water in the Indus Basin was grounded on two ideas. First, the theory that competition over scarce water resources in transboundary river basin would lead to conflict.[153] Secondly, that the IWT and the PIC, the instance and institution that had created peaceful cooperation in the Indus Basin, was an outdated and far from optimal treaty when it came to sustainable water management.

[150] Iyer, "Conflict-resolution: Three river treaties."
[151] Biswas, "Management of International Waters: Opportunities and Constraints."
[152] See for example: Michel, *The Indus rivers: a study of the effects of partition*., Gulhati, *Indus waters treaty: an exercise in international mediation*., Mehta, "The Indus Water Treaty - a case-study in the the resolution of an international river basin conflict.", Biswas, "Indus Waters Treaty - the negotiating process."; Syed Kirmani and Guy Le Moigne, *Fostering riparian cooperation in international river basins: the World Bank at its best in development diplomacy*, vol. 335, World Bank technical paper (Washington, D.C.: The Bank., 1996).; and Alam, "Mediating the Indus Waters Treaty."
[153] Discussed in the introduction

The dominant position argued that IWT had been successful the first 30 or 40 years, but Indian experts speculated whether the IWT might not stand the test of time. Iyer stated that the treaty had "been working reasonably well despite a difficult political relationship between the two countries".[154] The then present issues did not worry Iyer. He described the disagreement in the 1970s over the Salal hydroelectric project as an important dispute, but emphasized that it was resolved peacefully according to the IWT provisions. Iyer asserted that the disagreement over the Tulbul Navigation Project was nothing to worry about, stating that "there is no reason to believe that agreement will not eventually be reached."[155] Later, in 2002, Iyer changed this optimistic view. The change towards a more negative view will be dealt with later in this chapter.

Iyer described the water sharing under treaty as "quite simple."[156] The IWT had merely bisected the whole river basin into two different segments managed unilateral. This was far from optimal according to the IWRM-paradigm which had become dominant in water management discourse in the 1990s. As defined in chapter two, this thesis uses Global Water Partnership's definition of IWRM.[157]

Basing his ideas on IWRM-principles, Ashok Swain went further than Iyer in his critique of the IWT. Swain said the treaty was only a limited solution and that the treaty needed improvement. He argued that the objective of the IWT was to solve a water scarcity problem in the 1950s but that the treaty had not considered the issues which later became apparent, in the 1990s and 2000s. However, contrary to what Swain suggested, the Indus Basin region was not viewed as water scarce in the 1950s, and that the IWT-negotiations first of all aimed to reach an equitable solution both countries could agree upon, safeguarding both countries need for a stable and reliable amount of water.[158] The then Indian Prime Minister Jawaharlal Nehru also optimistically hoped that the IWT could have led to a solution of the Kashmir dispute.[159] The region was seen as rich on water resources, which both countries could exploit further.[160] Despite this, Swain stated that:

> Signing of a sharing agreement might solve the water scarcity problem for a short period of time, but it does not provide a long-term solution. The recent threats to

[154] Iyer, "Conflict-resolution: Three river treaties."
[155] Ibid.
[156] Ibid.
[157] Partnership, "What is IWRM?".
[158] Gulhati, *Indus waters treaty: an exercise in international mediation*.
[159] Ibid., p. 345.
[160] See for example: Bruce Grant, "Indus River Agreement," *The Age*, 22 September 1960. and; Shivananda, "Political and Legal Aspects of the Indus Water Dispute between India and Pakistan."

the survival of the Indus River Agreement of 1960 […] confirm this apprehension.161

Swain did not define what a long-term solution is, but the IWT had functioned for 40 years at that time, it had never been violated, and it was still unchanged and functioning. While Swain argued that India should consider renegotiation of the IWT, Ramaswamy R. Iyer advocated that the IWT should be kept.

A new treaty based on IWRM-principles?

Assuming that the IWT was outdated and that it could not prevent conflict over water in the future, Swain presented a list of recommendations for enhancing cooperation. These suggestions were based on the main IWRM-principle: "coordinated development and management of water", i.e. river basins should be managed as single units, and management of transboundary rivers not should be split up on the basis of political boundaries. Freshwater binds land areas together and if rivers are divided between countries, interference at one place in the river basin will have consequences for other riparian countries. Most often the consequences of the interference will be negative.[162] While Swain argued that an IWRM-approach could enhance and optimize the management of the Indus River system, Iyer, Mehta, and Alam all agreed that it was not possible that India and Pakistan could incorporate an IWRM-approach.[163]

Verghese suggested that if India and Pakistan wanted to deal with the looming water crisis in the Indus Basin, the IWT should be renegotiated into an 'Indus-II'. A more cooperative Indus treaty could, according to Verghese, optimize the utilization of the water resources in J&K. More cooperation, or joint management, is perhaps the foremost principle of an IWRM regime. However, it is difficult to implement IWRM in river basin with one or more states.

Verghese therefore noted that improved Indo-Pakistani relations would be necessary to achieve more cooperation under an Indus-II. The Kargil Conflict in 1999 and terror attacks in India in 2001 were the opposite of what Verghese hoped for. Despite troubled Indo-Pakistani relations, Verghese did not give up his idea of an Indus-II. This will be clarified later in this thesis.

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[161] Swain, "Water wars: fact or fiction?."
[162] Alam, "Mediating the Indus Waters Treaty," p. 21-23.
[163] Ibid., p. 23-24.; Mehta, "The Indus Water Treaty - a case-study in the the resolution of an international river basin conflict," p. 69-70.; Iyer, "Conflict-resolution: Three river treaties."

Another interesting aspect of Verghese's idea of an Indus-II was that he was the only Indian expert between 1997 and 2001 that explicitly mentioned J&K in connection to Indus Basin hydropolitics, despite that this period was characterized by a number of IWT-critical statements from policy makers in J&K.

Cooperative water sharing in the Indus Basin

Most Indian experts agreed that the IWT and the PIC managed to keep the water sharing between India and Pakistan peaceful. Therefore, most agreed, it was an acceptable and partly successful treaty. However, most experts also agreed that the treaty was far from optimal in terms of water management.

Ramaswamy Iyer described the water sharing under the IWT as "quite simple". Simplicity is not merely a negative attribute. Iyer did not elaborate on the negative aspects of the simplicity in 1999,[164] but argued that the PIC had worked well because it had a simple job: to monitor the implementation of a simple treaty:

> As we have seen, the Indus Treaty finally allocates some rivers as a whole to Pakistan and others to India, and does not allocate shares in the same river. Thus, there is no continuing process of water-sharing in a given river, requiring operations, measurements, monitoring, etc.[165]

Iyer wrote that the PIC had worked reasonably well, but that their task was not difficult compared to the tasks of for instance the Indo-Bangladesh *Joint River Commission* under the Ganga Treaty.

"No continuing process of water-sharing" could be interpreted as little or passive cooperation between India and Pakistan. Zawahri has criticized three Indian experts: Jagat S. Mehta, Ramaswamy R. Iyer and BG Verghese for describing the India and Pakistan's cooperation on water as *passive*. Mehta, Iyer and Verghese have argued that ideally, cooperation over water in the Indus Basin should have included a basin-wise water management planning. According the IWRM-principles, joint management is necessary to implement enhanced water management in the Indus Basin. Since India and Pakistan never have cooperated in such a manner, their cooperation could be described as passive.

[164] He did in a later article which I will discuss later: "Was the Indus Waters Treaty in Trouble?," *Economic and Political Weekly* 37, no. 25 (2002).
[165] "Conflict-resolution: Three river treaties."

However, according to Conca, it is questionable whether any further cooperation is realistic because of the implications for states' sovereignty over natural resources.[166] Zawahri agreed with Conca, arguing that India and Pakistan's cooperation on water was as good as it could get:

> Generally, states are less likely to accept an integrated approach because it impinges on their political sovereignty and the amount of cooperation required to arrive at an integrated development is beyond the capacity of states to achieve.[167]

Zawahri uses Keohane's definition of active cooperation: it exists when "states adjust their behavior to the actual or anticipated preferences of others."[168] According to Zawahri, the cooperation had been active because "India and Pakistan have adjusted their behavior in accord with each other's preferences and incurred losses in the process."[169] Zawahri used a definition of active cooperation that required states to incur some losses in the process of adjusting their behavior.[170] If this reasoning is to be followed, any further cooperation between India and Pakistan is unrealistic. A few of the Indian experts however, mentioned enhanced cooperation as a possibility.

Mehta, Verghese and Iyer all agreed that the treaty was a triumph of conflict resolution, but that it did not arrange for optimal water management. Zawahri put their attitudes within the same category, but there more differences between the three Indian water experts than Zawahri asserted.

Former Foreign Secretary of India, Jagat S. Mehta, argued in an article in 1988 that the IWT was a suboptimal success.[171] He proposed that joint management of the Indus Basin was the key to optimization of water resources in the region. Further, he criticized the role of the two Indus Commissioners, stating that these professional engineers "must not be allowed to dominate and determine the strategy or inhibit broader and long-term goals."[172] Mehta wrote that the Foreign Secretaries of India and Pakistan could, and should, have played more important roles in Indo-Pakistani water cooperation instead of the two Indus Commissioners (who are professional engineers). According to Mehta, this would make the PIC more

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[166] Conca, *Governing water : contentious transnational politics and global institution building*, p. 129-30.
[167] Zawahri, "India, Pakistan and cooperation along the Indus River system."
[168] Keohane, 1984: 53 quoted in ibid., p. 5.
[169] Ibid.
[170] For discussion on this definition: Keohane, R. O. (1984). After Hegemony. Princeton University Press, Princeton, NJ., p. 53
[171] Jagat Singh Mehta was Foreign Secretary of India from 1976-79 and took part in the negotiations which solved the disagreement about the Salal hydroelectric project on the Chenab River in 1978.
[172] Mehta, "The Indus Water Treaty - a case-study in the the resolution of an international river basin conflict."

effective because the Foreign Secretaries were more likely to make "enlightened and bolder decisions,"[173] than the commissioners. He exemplified that this had been the case when he himself took part in the negotiations on the disagreement over the Salal hydroelectric project in the 1970s.[174]

In 1988, when Mehta wrote this article, the Salal dam had just been commissioned. Today, Mehta's so called 'enlightenment' can be criticized because the Salal dam has experienced huge problems of sedimentation, partly caused by modifications to the design which Mehta accepted. This has decreased the power generating capacity and the life expectancy of the dam.

Mehta's perspective towards the roles of the Indus Commission separated him especially from Ramaswamy Iyer who argued that the commission was a well-functioning tool in Indus Basin hydropolitics. Iyer argued that in comparison with the Indo-Bangladesh *Joint River Commission,* the PIC functioned far better. First of all because the PIC had a less complicated task than the Joint River Commission, i.e. the PIC "merely had to monitor the implementation of the treaty".[175] While Mehta hoped to replace the engineers as Indus Commissioners because of their rigidity in for example the Salal dispute, Iyer had a different perspective:

> The Indus commissioners meet regularly in either country, and the working relationship between the engineers at the commission level is very cordial. Differences do arise from time to time, but these usually get resolved within the framework of the treaty.[176]

Zawahri's decision to juxtapose Iyer's and Mehta's attitude towards the cooperation is a simplification, and although Iyer ideally would have wanted joint cooperation, he did not define the cooperation as passive.

Verghese's classification of the cooperation was more in tune with how Zawahri had labeled him. Verghese wrote that the IWT was not optimal for providing drainage, storage or energy, and that the cooperation needed to be improved to avoid conflict and war over water.[177] Zawahri had put the three Indian experts in the same category, but there were considerable differences, especially between Mehta's and Iyer's view.

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[173] Ibid.
[174] Ibid.
[175] Iyer, "Conflict-resolution: Three river treaties," p. 1516.
[176] Ibid.
[177] Verghese, "Water conflicts in South Asia."

2001-2002 Water as a weapon – abrogating the IWT?

In 1999, Indo-Pakistani relations were in a crisis because of the Kargil Conflict. Two years later, terror attacks in Srinagar on the 1st of October and in Delhi the 13th December caused a new downturn in Indo-Pakistani relations. India mobilized a great number of troops at the border from December 2001 till October 2002 to prevent cross-border terrorism.[178] There were suggestions in the Indian newspapers that the crisis could cause India to abrogate the IWT.[179]

The continued IWT-criticism in J&K and the link between the terror attacks and the IWT caused a great deal of attention to Indus Basin hydropolitics in Indian media. Indian experts discussed whether India would violate or abrogate the IWT, and whether J&K's interests were kept in view when India signed the treaty.

Indus Basin hydropolitics 2001

On the 30th of May 2001, the PIC held their annual meeting, discussing the issues of concern under the treaty. These concerns were mainly related to information on water statistic during flood season, but Pakistan also raised a question about Baglihar. India informed Pakistan that Baglihar was constructed according to the provisions of the IWT. Since Baglihar was not on the agenda for the meeting, the PIC decided that the discussion would be continued at the next meeting, which was planned to be held one year later.[180] But long before a year had passed, the very existence of the IWT was questioned, and there was doubt whether the PIC would meet in 2002. It was now clear that India had begun constructing Baglihar, but there seemed to be little correspondence on the issue. Did this imply that India acted unilaterally, in conflict with the IWT?

After the terror attacks against the Parliament of India in New Delhi 13 December 2001, tensions between India and Pakistan were high. India claimed that Pakistan was responsible for the attack, and Indian government representatives stated that "nuclear-capable

[178] PR Chari, "India-Pakistan Relations: In need of external direction?," *Indo-Pak - Articles*(2004), http://www.ipcs.org/article/indo-pak/india-pakistan-relations-in-need-of-external-direction-1604.html. accessed on 10 July 2012

[179] India blamed Pakistani –backed Kashmiri militants for both attacks, and Chief Minister of Kashmir called on the Indian government to launch a war against military training camps in Pakistan. See for example: Parul Chandra, "India can breach Indus Waters Treaty to flood Pak," *Times of India*, 28 December 2001.; Nilanjana Bhaduri Jha, "CSS to decide on next step in diplomatic offensive," *The Times of India*, 27 December 2001.

[180] "Pak. concern over Chenab hydel plant," *The Hindu*, 2 June 2001.

missiles were in position to strike Pakistan".[181] In two newspaper articles from December 2001, Parul Chandra asked whether India would violate the IWT, and reported that "speculation is rife on the issue".[182]

In addition to the tension after the terror attacks, the speculation regarding the violation was rooted in India's need to release large amount of water and silt from the Salal hydro plant. As mentioned earlier in this chapter, the Salal hydro plant was constructed on the Chenab River and commissioned in 1988. It soon lost its efficiency due to siltation. After lengthy negotiations in the 1970s, Pakistan accepted that India constructed Salal on the terms that India agreed to block the low-level gated spillways on the dam permanently. In 2001, the storage at Salal was filled with up to 90 meters of silt and India considered using the gated spillways they had agreed to never use. Drawdown flushing could have helped the power plant to operate much more effectively, but it would also violate the IWT. Releasing large amount of water and silt could possibly flood and damage crops in downstream areas. This would have included areas both in India and in Pakistan. Using the low-level gated spillways would also have reduced the level of water in Salal to a level below the dead storage, enabling India to stop the flow of water in Chenab while re-filling the storage.[183]

Indian media started reporting in 2002 that India considered abrogating the IWT. These speculations arose because of the problems at Salal, the terror attacks, and the dissatisfaction with the IWT in J&K. In April 2002, the J&K Legislative Assembly called for a review of the IWT. A representative from the assembly was complaining that "[w]e are exporting water to Pakistan and in return Pakistan is exporting cross-border terrorism".[184] In the first 5 months of 2002, several Indian newspapers continued to report that India considered scrapping the IWT.[185]

The consequences of a possible abrogation were highly uncertain. There seemed to be benefits in unexploited hydropower potential in J&K, but how would this affect the relations with Pakistan? Could India discard the IWT without adverse consequences? Indian Minister of Water Resources, Bijoya Chakraborty, stated in May 2002 that the IWT could be scrapped

[181] Rahul Bedi, "India, Pakistan ready missiles: U.S. Secretary of State calls for restraint as two nuclear rivals move closer to war," *National Post*, 27 December 2001.
[182] Chandra, "India can breach Indus Waters Treaty to flood Pak." "Indus Treaty may be abrogated."
[183] Ramaswamy R. Iyer, "Jubilation at Indus win is premature," *The Hindu*, 28 February 2013.
[184] Zarir Hussain, "Indian minister says Pakistan water treaty could be scrapped," *Agence France-Presse*, 23 May 2002.
[185] E.g. "Kashmir water clash," *Japan Times*, 27 May 2002; "India, Pak review Indus treaty," *Business Standard*, 30 May 2002; "Scrap Indo-Pak water treaty: Chautala," *The Times of India*, 20 January 2002; "War may force India to scrap Indus Treaty: Minister," *The Times of India*, 30 May 2002; "Prime Minister takes stock of situation in J&K," *The Times of India*, 24 May 2002.

and that the consequences would be adverse for Pakistan: "If we decide to scrap the Indus Water Treaty, then there will be drought in Pakistan and the people of that country would have to beg for every drop of water."[186] The importance and the tension in Indo-Pakistani hydropolitical relations in 2001/2002 attracted more attention towards the Indus Basin and there seemed to be much uncertainty about whether India and Pakistan would still be able to cooperate on water sharing in the Indus Basin. Information and knowledge provided by experts in the field of water were much in need. What did the Indian water experts recommend?

Demand for a review of the IWT

More Indian experts presented their perspectives in this period. One of these was Kashmiri professor Kulbushan Warikoo, who argued that the IWT was unfair to India and especially to J&K. Calculations by Warikoo based on population, drainage area, length of rivers and cultivable area, showed that India should have been given 42.8 % of the river water in the Indus Basin. Warikoo estimated that India only had gotten about 20%. He therefore strongly supported J&K Legislative Assembly's demand for a review of the IWT.[187]

Brahma Chellaney went further than Warikoo in his IWT-criticism.[188] Chellaney had been National Security Council advisory board member until 2000, and served as a member of the Policy Advisory Group headed by the Foreign Minister of India. He believed that the competition over water resources in the Indus Basin would lead to conflict between India and Pakistan. As a reaction to the terror attacks against the Indian Parliament, Chellaney stated that "[t]he time for peaceful negotiations is over".[189] In an article in 2002, Chellaney wrote that he was surprised that the upcoming PIC-meeting would be hosted by India, considering Indo-Pak relations at that time. Several Indian and Pakistani newspapers reported beforehand that the PIC meeting scheduled for May 2002 would be cancelled by India.[190] These concerns were, according to *The Times of India,* confirmed by sources in the Water Resources Ministry in India.[191]

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[186] "Indian minister says Pakistan water treaty could be scrapped."
[187] Kulbushan Warikoo, "Indus Waters Treaty: View From Kashmir," *Journal of Himalayan Research and Cultural Foundation* 6(2002).
[188] His major study is: Chellaney, *Water: Asia's New Battleground*.
[189] Bedi, "India, Pakistan ready missiles: U.S. Secretary of State calls for restraint as two nuclear rivals move closer to war."
[190] See for example: Shivani Singh, "Rethink in India on Indus waters meet," *Times of India*, 22 May 2002.; "Prime Minister takes stock of situation in J&K."
[191] "Rethink in India on Indus waters meet."

Under the headline, “India should act, not just talk,” Chellaney advocated that India should abrogate the IWT. However, Chellaney advised that before India pulled out of the IWT, they should construct more storage capacity on the Indus River system, and thus have the option of using the water as a weapon.[192] Could India have used an abrogation of the IWT as a means of punishing Pakistan, and could India use water as a weapon? Iyer discussed this, stating on the one hand that “no immediate punishment of Pakistan would have been possible,” while on the other hand admitting that India could use existing structures to retain or divert waters.[193]

India had at that time constructed nearly 20 dams on the Indus, Jhelum and Chenab, all of them designed with only a small storage capacity, in accordance with the provisions of the IWT. However, the combined effect of 20 dams withholding or releasing water would cause damage on Pakistan.[194] Editor of the magazine *Dams, River & People,* Himanshu Thakkar stated that:

> While India does not have storage on the three rivers – the Indus, Chenab, and Jhelum - allocated to Pakistan under the treaty, it can inflict damage on Pakistani territory by opening the gates of the smaller structures constructed on them in the Indian territory and thus release water suddenly into Pakistani territory. It can do something similar in the case of the three rivers allocated to India under the treaty - the Sutlej, Beas and Ravi.[195]

Iyer argued that this water weapon would only cause a temporary hardship for Pakistan, and both Iyer and Himanshu asserted that it would also adversely affect India, and it should therefore not be done.

India could construct new dams with storages on the western rivers. India had several dams on the drawing board, and small or medium dams can be constructed in a few months.[196] Iyer estimated that any storage on the western rivers will take 10-15 years to be built. That may be true, but small and medium dams can inflict harm on Pakistan, and large dams can be constructed in less than 10 years. Consider Baglihar with its capacity of 450MW which was constructed in about 8-10 years with considerable interruptions, or the Lower

[192] Brahma Chellaney, "India should act, not just talk," *Hindustan Times*, 30 May 2002.
[193] Iyer, "Was the Indus Waters Treaty in Trouble?."
[194] Exemplified when India filled the Baglihar dam in 2009.
[195] Chandra, "India can breach Indus Waters Treaty to flood Pak."
[196] F. Lempérière, Design and Construction of Dams, Reservoirs, and Balancing Lakes, (2012), http://www.hydrocoop.org/publications/2.12.1.1.article.pdf. , accessed 23 May 2012

Subansiri Dam (2000MW) in Arunachal Pradesh estimated to be completed in 7 years,[197] or the Cetin Dam (517MW) in Turkey which has been under construction since 2011 and will be completed by 2015.[198] Chellaney was eager to explore ways to punish Pakistan. He agreed with Iyer that India would need to build more storage before they could implement the retaining of water as a political weapon, but added that India could "play havoc with downstream operations by withholding or delaying data on water flows to Pakistan."[199]

Verghese and Iyer warning against abrogation

In 2002, Ramaswamy R. Iyer and BG Verghese described the IWT similarly to earlier texts by Iyer (1999), Swain (2001) and Biswas (1999) and Verghese (1997), i.e., it was an acceptable and partly successful treaty, and because it had functioned despite Indo-Pakistani wars. In 2002 Verghese strongly advised that India should keep the IWT, and he praised the treaty as "one of the major triumphs of the United Nations system."[200]

Verghese and Iyer both denied that the IWT was in trouble and the suggestions that there was no correspondence between the two countries on the Baglihar issue. Iyer suggested that the Baglihar dispute had been difficult to resolve because of the troubled relations between India and Pakistan in the recent years, and that it "may have been resolved […] in due course if the circumstances had been normal."[201] Iyer asserted that the idea of abrogation was an "irresponsible and indefensible argument". [202] Verghese similarly rejected Chellaney's advice to pull out of the treaty, arguing that:

> Abrogation would be indefensible on any understanding of international water law, international humanitarian law and the rules of war. Further, it would lend credence to Pakistan's claim to J&K as a "lifeline" because the Indus, on which it is almost solely dependent for water, flows through that state.[203]

[197] Biswajit Das, "Planning and Building the Subansiri Lower Dam and Hydro Project," Article,(2012), http://www.hydroworld.com/index/display/article-display/9303458802/articles/hydro-review-worldwide/Vol-20/issue-1/articles/dam-design/Planning-and-Building.html., accessed 22 May 2012
[198] Statkraft, "Statkraft to build its third hydropower plant in Turkey," (2011), http://www.statkraft.com/presscentre/press-releases/2011/statkraft-to-build-its-third-hydropower-plant-in-turkey.aspx. , accessed 22 May 2012
[199] Chellaney, "India should act, not just talk."
[200] B. G. Verghese, "Talk of Abrogating the Indus Water Treaty," *The Tribune*, 29 April 2002.
[201] Iyer, "Was the Indus Waters Treaty in Trouble?."
[202] Ibid.
[203] He also warned that an abrogation might legitimize sabotage of Indian dams. Verghese, "Talk of Abrogating the Indus Water Treaty."

Verghese gives two reasons for rejecting abrogation: that it contradicts international law and that it would help Pakistan's claim to J&K. Iyer agreed with the first point and added that reactions from the World Bank and the international community would have been adverse. If India abrogated the IWT, Iyer asserted that Nepal and Bangladesh would lose faith in their cooperation with India over the Ganga and the Brahmaputra.

The international convention which according to Iyer guided what India could do as an upper riparian, and according to Verghese would make abrogation indefensible was *The United Nations Convention on the Law of the Non-navigational Uses of International Watercourses*.[204] This convention has been regarded as the most authoritative set of principles on trans-boundary river waters.[205] Yet, the convention was merely adopted by the U.N., not ratified, and there is no mechanism in place to enforce the principles.[206] This does not imply that the convention has been worthless, and there seems to be a consensus that the convention can be important as a set of basic principles which future agreements can be based on.[207] But the central point is that these principles did not make abrogation of the IWT either indefensible or illegal. The U.N. convention could not restrict India from constructing storages on the western rivers of the Indus River system.

Renegotiating the Indus Waters Treaty

Although defending the IWT against abrogation-advocacy, both Iyer and Verghese suggested that the treaty could be improved. They both touched upon this in their articles from in 1997 and 1999, and elaborated a bit in 2002.

Verghese was the only expert thus far who had commented on the dissatisfaction in J&K. In 1997, he suggested that his idea of an enhanced Indus treaty, an "Indus-II", would optimize the water management with great benefits for J&K.[208] The Chief Minister of J&K at that time, Farooq Abdullah, complained that the IWT constrained the state from utilizing the potential in the western rivers of the Indus Basin. Verghese disagreed with Abdullah, although

[204] They did not explicitly state the law they referred to.
[205] Stephen C. McCaffrey, "The contribution of the UN Convention on the law of the non-navigational uses of international watercourses," *International Journal of Global Environmental Issues* 1, no. 3 (2001).
[206] List of the states that have signed and ratified "The UN Convention on the law of the non-navigational uses of international watercourses", located at: http://treaties.un.org/Pages/ViewDetails.aspx?src=UNTSONLINE&tabid=2&mtdsg_no=XXVII-12&chapter=27&lang=en#Participants.
[207] See for example McCaffrey, "The contribution of the UN Convention on the law of the non-navigational uses of international watercourses.", Joseph W. Dellapenna, "The Berlin rules on watercourses: the new paradigm for international water law," (2007).
[208] Verghese, "Talk of Abrogating the Indus Water Treaty."

recognizing that "there could be an element of in-built restraint in the more distant future."[209] Verghese argued that there was room for improvement in the understanding of the details in the IWT. According to the IWT, India can exploit the waters in the western rivers to a greater extent.[210] Verghese wrote that the dissatisfaction in J&K was ungrounded, because India had not utilized the western rivers to the extent that the IWT allowed them to.[211]

The IWT says that India can build storages meant for run-of-the-river hydro plants, non-consumptive uses or flood mitigation for a total of 3.60 million acre feet of water. Verghese stated that India had not built any storage so far but should look into how to best exploit the potential in accordance with the treaty provisions. The definition of *storage, non-consumptive uses,* and *run-of-the-river* are carefully explained in the IWT. Even though storages will decrease the amount of water downstream because of evaporation and reduced speed of flow, India is allowed to construct run-of-river hydro plants with small storage capacity.

Iyer responded to the critique from J&K, stating that J&K's interests were kept in view while negotiating the IWT. Iyer was partly right because the treaty specifies that India can exploit the western rivers in J&K to some extent, and that that potential had not yet been fully exploited, as Verghese pointed out. However, Brahma Chellaney stated in 2012 that former Prime Minister Jawaharlal Nehru ignored the interest of J&K when he signed the treaty. [212] The governments of India and Pakistan acted as monoliths during the mediation process and the different regional states of the two countries were not represented during the negotiations.[213] The final result, i.e. the IWT, did not totally ignore J&K. It gave the partly autonomous state rights to utilize water for irrigation, hydro-electric power generation and non-consumptive uses. Yet Chellaney was perhaps more right in a long-term perspective. Water scarcity in the Indus Basin has been severely increasing since 1960, and power shortages in J&K are considerable. Even if India and J&K had exploited the full potential the IWT allowed them, there would still be issues. These issues could be dealt with by implementing joint management of the river basin and other IWRM-principles.

Iyer gave his reasons for arguing that the interests of J&K were kept in view when signing the IWT by describing that the negotiation were "long and hard" and that "the Indian

[209] Ibid.
[210] "The Indus Waters Treaty." Annexure E, paragraph 7
[211] "Talk of Abrogating the Indus Water Treaty."
[212] Brahma Chellaney, "Water treaties & diplomacy: India faces difficult choices on water," *The Economic Times*, 10 May 2012.
[213] An excellent analysis of the mediation process can be read in: Alam, "Mediating the Indus Waters Treaty."

team did its best under whatever briefing it had from the government."[214] Expert on the mediation process, Undala Alam, does not suggest that the lengthy negotiations had much to do with the interest of J&K. Although Nehru was Kashmiri, he was blamed by Indians for ignoring the needs of J&K and giving away 80% of the water. The Former President of Pakistan, Ayub Khan is likewise criticized in Pakistan for giving away all of the water in the three eastern rivers which normally would have flown into Pakistani Punjab. The interests of J&K did not seem to be prioritized, but in 2002 they at least attracted more attention from Indian experts, which previously had ignored them in their published texts. Warikoo and Chellaney openly supported the demand for water in J&K, while Iyer and Verghese were more reserved.

Verghese's again suggested to improve water management by renegotiating a new Indus treaty – an "Indus –II". He wrote that the Indus-II "would be a means of bringing both sides of J&K across the [Line of Control] as a single, bountiful natural resource region."[215] This must be understood as a suggestion of implementing IWRM-principles in the Indus Basin water management. In 1997, he said that improved Indo-Pakistani relations would be necessary if India and Pakistan should be able to manage the Indus River system jointly, and considering the poor relations in 2002, his idea seemed unrealistic at that point.

Abrogation denied

Late May 2002, the 88th PIC meeting took place in Delhi. During the meeting, Pakistan again expressed their concern over Baglihar and expressed their desire to visit the construction site, but India refused. The Pakistani officials stated that the Baglihar dispute should be resolved within three months. If not, Pakistan would consider referring the matter to a third party – a "Neutral Expert".[216] That would in case have been the first time a third party would be involved in an issue under the IWT.

Perhaps viewed as a more urgent issue than Baglihar at the time, Indian abrogation of the IWT was denied. Indian Minister of Water Resources, Bijoya Chakraborty, announced that "there is no question of abrogating the treaty. The present tension will have no bearing on the talks."[217] Chakraborty explained that abrogation of the IWT would only be considered if Pakistan would resort to war. The Indian government had acted as Iyer and Verghese had

[214] Iyer, "Was the Indus Waters Treaty in Trouble?."
[215] Verghese, "Talk of Abrogating the Indus Water Treaty."
[216] "Pak threatens to refer objections on Treaty to experts.," *Press Trust of India*, 11 June 2002.
[217] "India, Pak review Indus treaty."

advised them to, and seemingly ignored the demand for a review of the IWT in J&K and those who called for a tougher line against Pakistan. While the PIC meeting took place in Delhi, two people were killed and 25 others injured in Garend village in Kashmir. Police had fired at a group of villagers fighting over sharing water from an irrigation stream.[218]

In November 2002, the new Chief Minister of J&K, Mufti Mohammad Sayeed, said he accepted that India had not scrapped the IWT, but he still called the treaty discriminatory to J&K.[219] Sayeed asked for compensation for the loss suffered by J&K on account of the IWT, and soon after the Indian government granted J&K additional resources of 1.37 billion Rupees. In addition, the construction of Baglihar went on. Was India finally acknowledging the hydropower interest of J&K, and how did Pakistan react to this?

2003-2004: No progress on the Baglihar dispute

Media and scholarly attention towards the IWT gradually increased in 2001 and 2002. In 2000, *The Hindu*, *Hindustan Times* and *The Times of India*, had written six articles which mentioned the IWT. In 2001, the number of articles had increased to 19. In 2002, the number of articles was 46, while both in 2003 and 2004, the number of articles per year was 42.[220] Most of the articles from 2003 and 2004 dealt with the Baglihar dispute.

In January 2003, four Pakistani High Commission officials were expelled from India. They were accused of "indulging in activities incompatible with their official status", but Indian press suggested that it rather was a retaliation after the Indian chargé d'affaires in Islamabad had been harassed earlier that month.[221] It was therefore a surprise when the Indian Indus Commissioner traveled to Islamabad in early February to meet his Pakistani counterpart. The two Indus commissioners were accompanied by several officials in the water sector and Ministry of Foreign Affairs. The agenda for the meeting was the dispute over Baglihar. The Pakistani Indus commissioner, Syed Jamaat Ali Shah, again asked if a Pakistani team could inspect the Baglihar construction site, but no agreement were reached. Shah reiterated that Pakistan considered referring the dispute to a neutral expert. The meeting was unfruitful.[222]

In Pakistan, there were signs of frustration over India's decision to go ahead with the construction of Baglihar despite Pakistan's objections. The then Pakistani President of Azad

[218] "Kashmir water clash."
[219] "NDC - India," *Press Trust of India*, 22 December 2002.
[220] The method of how I obtain this data is explained in chapter 2.
[221] "India expels four Pak High Commission officials," *Times of India*, 22 January 2003.
[222] B. Muralidhar Reddy, "Indo-Pak. meet on hydro-electric plant today.," *The Hindu*, 4 February 2003.

Kashmir, Sardar Sikandar Hayat Khan, asked whether "Pakistan [is] going to stay put and wait until India diverts the river? Pakistan would be devastated."[223] Khan emphasized the importance of the Indus River system to Pakistan, and suggested that any manipulation of the waters on the Indian side could lead to an attack from Pakistan: "Many people say that in the future wars may be fought over water. You cannot ignore that because the whole economy of Pakistan is centered around the water that flows from Kashmir."[224] He expressed a common view in Pakistan, stating that "without the rivers of Kashmir, Pakistan will become a desert. The freedom fighters of Kashmir are in reality fighting for Pakistan's water security".[225] Several Pakistani officials were quoted expressing similar views in Pakistani during late 2002 and early 2003.[226]

Another inconclusive PIC-meeting

In May 2003, the PIC met again, and Pakistan reiterated their complaint that Baglihar was violating the IWT.[227] India finally agreed to let a team lead by the Pakistani Indus Commissioner Syed Jamaat Ali Shah inspect the Baglihar construction site. Shah wanted to inspect the site to see if there was any need for constructing gated spillways at a low level on the dam. The Indian commissioner argued that these gated spillways were warranted at the site. The issue was similar to the Pakistan's issue with the Salal hydro plant in the 1970s. The gated spillways would enable India to flush silt from the storage, while Pakistan feared that the gates would enable India to release huge amount of water to flood the downstream areas.

Despite disagreeing over the design of Baglihar, Shah expressed optimistically that the issue would be solved according to the provisions of the IWT.[228] However, Shah had already before the inspection tour recommended to the Pakistani Government that they should refer the Baglihar dispute to a neutral expert. This was one of the conflict resolution mechanisms under the IWT that either of the countries could invoke if the PIC was not able to solve disagreements under the IWT. The involvement of a third-party had not happened since the mediation process of the treaty.

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[223] Bronwyn Curran, "'Jugular veins' of Pakistan carry trigger for holocaust," *Agence France-Presse*, 15 April 2003.
[224] Ibid.
[225] Waslekar, *The final settlement: restructuring India-Pakistan relations*, p. 48.
[226] Ibid.
[227] "Indus Water Meet - Pak sticks to stand on Baglihar," *The Times of India*, 1 June 2003.
[228] "Pakistani teams says solving water dispute can improve ties with India," *Agence France Presse*, 21 October 2003.

Even though the Baglihar dispute was linked with conflict and war by Pakistani officials, and a third party mediation seemed likely, none of the Indian experts published texts commenting on the Baglihar dispute in 2003 and 2004. Was the issue of gated spillways viewed as a minor issue that would probably be solved, or at least not lead to conflict? India and Pakistan had discussed the Tulbul Navigation Project for 20 years without agitation. But the Tulbul project would not generate electricity for J&K, and the officials of J&K had first of all demanded hydropower, pressuring India to complete the Baglihar.

Silt control was important at the Salal hydro plant, and seemed to be important again at Baglihar. However, Chief Minister of J&K, Mufti Muhammad Sayeed, stated that the objections raised by Pakistan were not justified, since Baglihar would not store any river water he argued, and thereby ignoring the fact that Baglihar would have a small reservoir. Sayeed believed that the Baglihar issue would be solved, but based these assumptions on slightly improved Indo-Pakistani relations from mid-2003. Sayeed asked the Indian Prime Minister Atal Bihari Vajpayee to re-open negotiations on the Tulbul Navigation Project. Sayeed stated that "the project will also help Pakistan in the lean season."[229] From 2005, other Indian experts similarly claimed that the Indian projects on the western rivers could help Pakistan, providing flood control and storage for the lean season.[230]

Sayeed's wishes were fulfilled. During the first round of the Composite Dialogue talks between India and Pakistan in 2004, the Secretaries of the respective countries Water Ministry Departments reaffirmed commitment to the IWT and agreed to discuss the Tulbul Navigation Project at the next round of talks. Baglihar were also discussed and progress on the issue was reported, without specifying what kind of progress.[231]

While Indo-Pakistani relations in general seemed to be improving and Indian press reported that the two countries showed commitment to the IWT, there were not any real improvement on water issues. In late 2004, the Pakistani official grew tired of the prolonged and unsuccessful talks on Baglihar, and warned India that if the issue was not solved before January 7, 2005, they would invoke third party mediation, i.e. referring the Baglihar dispute to a "neutral expert".[232]

No Indian experts published any texts commenting on the developments in 2003 and 2004, but two publications discussed Indus Basin hydropolitics to a certain degree.

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[229] "Mufti hopeful on Baglihar project," *The Hindu*, 23 December 2003.
[230] See for example: *The final settlement: restructuring India-Pakistan relations*; Chellaney, *Water: Asia's New Battleground*; B. G. Verghese, "It's time for Indus-II," *The Tribune*, 26 May 2005.
[231] M Manoharan, "India-Pakistan Composite Dialogue 2004: A Status Report," *Indo-Pak - Articles*(2004), http://www.ipcs.org/article/indo-pak/india-pakistan-composite-dialogue-2004-a-status-report-1505.html.
[232] "Pak sets January 7 deadline on Baglihar issue," *Hindustan Times*, 30 December 2004.

Indian experts

Indian researcher, Roshni Chakraborty published an article on Indian hydropolitics in 2004.[233] Whether Chakraborty was a water expert is questionable, but her article is interesting because it was published in the well-renowned journal *Water International*.[234] The article provides an example of the growing attention toward the Indus Basin hydropolitics. She mainly summarized and paraphrased the attitude of other water experts on the topic. There are some confusing remarks in the article such as:

> India has recently been labeled as water scarce. It has not been able to derive sustainable water management results, and the chances of water conflicts are obvious.

Followed shortly after by,

> If this continues, India may attain the ambiguous designation of being a water scarce region by the year 2050.[235]

There were also a few examples of plagiarism in the article. A paragraph of her article was copied from an article written by Iyer.[236] Iyer himself used sections of this article as a chapter in his book *Water: Perspectives, Issues, Concerns* published in 2003, but with a few changes and comments.[237] Chakraborty copied a paragraph from Iyer's article from 1999 and referred to Iyer's book from 2003. In the book however, Iyer had removed the paragraph.[238]

Managing water conflict

Indian experts did not publish any articles on Indus Basin hydropolitics in 2004. Talk of abrogating the IWT had cooled off, but India and Pakistan were still discussing the Baglihar without any seemingly progress. The only Indian expert that published a text commenting on Indus Basin hydropolitics was Ashok Swain. In his book *Managing Water Conflict* he

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[233] Roshni Chakraborty, "Sharing of River Waters among India and its Neighbors in the 21st century: War or Peace?," *Water International* 29, no. 2 (2004).

[234] Ibid.
[235] Ibid.
[236] Iyer, "Conflict-resolution: Three river treaties."
[237] *Water: perspectives, issues, concerns* (New Delhi: Sage Publications, 2003), p. 219-21.
[238] Chakraborty, "Sharing of River Waters among India and its Neighbors in the 21st century: War or Peace?."

analyzed water scarcity in transboundary river basins in Africa, the Middle East and Asia. He concluded that there was a water crisis in several of the river basins, and that unless a comprehensive approach to river basin management would be implemented, there would be conflict over water in the near future.[239]

Swain position himself within the school of thought that believes water scarcity in transboundary river basin might lead to conflict over water.[240] Swain argued that the connection between water scarcity and water conflict was evident in empirical studies from a number of river basins around the globe. One of the examples was the Sikh secessionist movement in Punjab which reached its voltage peak in the 1980s. Swain asserted that demand for more water in Punjab was one of the reasons for conflict. In the 1950s and 1960s, India began diverting water from the three eastern rivers in the Indus Basin: Ravi, Beas and Sutlej, from Punjab and into the neighboring states Haryana and Rajasthan.[241] This was still a tense issue when Swain published *Managing water conflict*, both between Punjab, Haryana and Rajasthan but also within the states. In 2004, four people were killed and over 30 people were injured during protests over allocations of water between towns in Rajasthan. The protestors demanded more water from the Indira Gandhi Irrigation Canal which diverts water from Sutlej and into Rajasthan.[242] Before 1960, the Sutlej flowed into Pakistan, but the IWT allowed India to divert most of the water that historically had fed Pakistani Punjab.

From 2004, the Indian Punjab state government denied Rajasthan any rights to the waters of Ravi or Beas. Punjab contended that the availability of water was less than earlier estimated, and they fear that there will not be enough to provide the farmlands of Punjab with enough water for irrigation if Rajasthan gets their estimated share. Everyone wants more water, or at least, they want what they view as "their share of the water". But it does not seem to be enough to cover the demands of both Punjab and Rajasthan. Although this thesis does not examine the disputes between states within India and Pakistan, they are part of the potential crisis in the Indus Basin.

Ramaswamy R. Iyer has argued that if India and Pakistan had signed a more cooperative treaty than the IWT, based on IWRM-principles, with sharing and joint management on each of the six Indus Rivers, the situation would have been completely different. Pakistan's rights as a lower riparian would have been prioritized over Indian Punjab and Rajasthan, and the Indira Gandhi Canal would not have been constructed. Punjab and

[239] Ashok Swain, *Managing water conflict: Asia, Africa and the Middle East* (London: Routledge, 2004).
[240] Ibid., pages: 12, 19, 21, 24-25, 27, 28, 30.
[241] Ibid., p. 21-23.
[242] "Police kill water protestors in India," *Hindustan Times*, 4 December 2004.

would have had less availability of water, and Rajasthan would have had no rights to the Indus waters.[243] Swain examined other examples of intra-state conflict as well, but found few examples of violent conflict over water between states. Swain argued that water has played an indirect role in wars, and that a war over territory which contains water resources can be viewed as a water war, because wars are rarely fought over just one issue. He therefore concluded that "by just looking at the simple data sets, we should not dismiss the war causing potential of water scarcity".[244]

Swain listed "riparian dispute over Indus" as an example of an international water conflict, and referred to the conflict in 1948 when India diverted water away from Pakistan during the India-Pakistan War.[245] In addition, Swain suggested that riparian dispute over Indus, water war and the Kargil Conflict could be connected. He wondered whether an in-depth study of the Kargil Conflict might reveal that control over water resources was a motive for the armed conflict on the Siachen Glacier. This assumption was later supported one year later by another Indian expert, Sundeep Waslekar. His text, which will be examined in the next chapter, argues that the then Pakistani president Pervez Musharraf's Kashmir policy was to secure "Pakistan's lifeline", i.e. the Indus River system.[246] Swain did not speculate which role Musharraf had played in the Kargil Conflict or on water issues, but Swain viewed the 2000s as a period of tension and uncertainty in Indus Basin hydropolitics.

Swain believed India and Pakistan had been on the verge of water conflict in 2002. He referred to that India considered abrogating the IWT, and he claimed that contact between the two Indus Commissioners had been at a minimum since late 2001. While the speculations about IWT-abrogation were supported by Indian officials, the argument about lack of PIC-meetings is unfounded. Swain viewed a period of six months without any meetings, December 2001 to May 2002, as an example of how bad relations were, when in fact, the two Indus Commissioners were only supposed to meet at least once a year.[247] There were speculations in media that the PIC would not meet in 2002, but they met as scheduled in May 2002.[248] Thus, the PIC met in 2001 and 2002, in accordance with the IWT. Did Swain simplify the causal connection between water scarcity and water conflict?

[243] Iyer, *Towards water wisdom: limits, justice, harmony*, p. 103-05.
[244] Swain, *Managing water conflict: Asia, Africa and the Middle East*, p. 30.
[245] Ibid., 30.
[246] Waslekar, *The final settlement: restructuring India-Pakistan relations*.
[247] "The Indus Waters Treaty."Article VIII, paragraph 5.
[248]"Pak withdraws objections to two J&K power projects," *The Hindu*, 31 May 2010.. The Indus Commissioners had in 2010 met 105 times since the signing of the IWT in 1960. A little more than 2 times a year in average.

Exaggerating the risk of water war?

The connection between water scarcity and water conflict is much debated.[249] While there are several historical examples of violent conflict over water,[250] and this thesis argues that India and Pakistan were on the brink of conflict during the Baglihar dispute, there are also reasons to question whether the risk of water conflict might be exaggerated. According to Julian L. Simon, there are four reasons to why false bad news dominates public discussion about resource scarcity: 1. It is easier to get funding for research that presents bad news. 2. It sells more books, newspapers and magazines. 3. Humans have a psychological predisposition to compare the present to an ideal, and therefore the present looks worse/bad. 4. Idealistic belief that dire predictions can mobilize to make things better.[251]

The Indian experts that warned explicitly about water conflict in the Indus Basin were Chakraborty, Chellaney and Swain. They are all considerable younger than Iyer, Verghese who rejected violent interstate water conflict. During the period 1999-2004, Swain, Chakraborty and Chellaney all published their first texts on hydropolitics. Simon's two first reasons for exaggerating the risk of conflict might be relevant for scholars trying to establish themselves.

David Katz points out an incentive that causes academics to exaggerate risk of violent conflict: to raise the profile of author or organization.[252] Swain and Iyer both recognized issues of water scarcity in the Indus Basin, but Iyer was not alarmed by the possibility of conflict over the water. Iyer had already established himself as one of India's foremost water experts, while Swain got his professorate after the publication of *Managing Water Conflict.* Katz elaborates on this incentive:

> In the case of academics, connecting water to security also offers researchers a way to raise the profile of their work, given the salience of security issues in high-level policy circles and with the general public. Doing so increases the potential to gain access to policy-makers and the media. There is some evidence that water research stressing conflict potential may be more likely to be published.[253]

[249] Discussed in chapter 2 *Theory and Methodology*
[250] Wolf, "Conflict and cooperation along international waterways; Tvedt, "Water: A source of wars or a pathway to peace? An empirical critique of two dominant schools of thought on water and international politics."
[251] Julian L. Simon, "Resources, Population, Environment: An Oversupply of False Bad News," *Science* 208, no. 4451 (1980): 1436-37.
[252] David Katz, "Hydro-Political Hyperbole: Examining Incentives for Overemphasizing the Risks of Water Wars," *Global Environmental Politics* 11, no. 1 (2012).
[253] Ibid., p. 22.

Katz' emphasized that his incentive are suggestive rather than conclusive, and his theory lacks a "method for identifying when such incentives are in fact responsible for actions by a given party".[254]

According to my newspaper survey it seems likely that the speculation about abrogation and conflict led to increased attention toward the Indus Basin during the early years of the Baglihar dispute. However, there seemed to be little reason to exaggerate the risk, considering the quotes on how important the Indus waters were viewed, both in India and in Pakistan.

Summary

This chapter has outlined the Indus Basin hydropolitics from the late 1990s up to and including 2004. Before 2001, there was little tension in the Indo-Pakistani water sharing relations. Contemporary Indus Basin hydropolitics did not attract much attention among Indian experts. The experts agreed that the IWT was not a treaty that arranged for optimal water management in the Indus Basin, but that it was an acceptable treaty because it had enabled India and Pakistan to avoid conflicts over water.

However, officials in J&K criticized the IWT sharply, because it hindered J&K from developing their hydropower potential. The critique from J&K was almost totally ignored among Indian experts. On the other hand, the Indian government seemed to heed the calls from J&K when they started constructing Baglihar in 1999.

From that point onwards, India had to deal with criticism from both J&K and Pakistan. J&K called for more hydropower projects on the western rivers and demanded a review of the IWT, while Pakistan objected to any Indian interference on these rivers. The Indian experts had to provide information on how India could maintain relations with both J&K and Pakistan, while at the same time enhancing their water management.

While Brahma Chellaney advocated that India should abrogate the IWT, most Indian experts rejected this as a dangerous idea. Verghese and Swain proposed that a new treaty should be renegotiated, based on IWRM-principles, but Iyer refused this as unrealistic. India dealt with the situation in accordance with how Iyer had suggested: to keep the IWT and rely on the PIC to resolve any disputes. According to Iyer, J&K had little reason to criticize the IWT.

[254] Ibid., p. 30.

However, the PIC did not seem to reach an agreement on the Baglihar dispute, and Pakistani official suggested that the World Bank should intervene in the dispute. In the next chapter, the involvement of the World Bank and a neutral expert is examined.

4. The Baglihar dispute: 2005-2008

> The struggle for water in the [Indus River system] will determine whether the nuclear powers, India and Pakistan, will wage war or have peace, and to a large degree determine the question of Kashmir.[255]

Pakistan's annual freshwater availability per capita had declined from 5,600 cubic meters in 1947 to 1,200 cubic meters in 2005. Groundwater was increasingly exploited and the annual flow of water in the Indus River system was dropping. Expectations for the hydrological future of Pakistan were grave, and securing their water supply became more important than ever.[256]

January 2005, the Government of Pakistan requested the World Bank to appoint a "Neutral Expert" to solve the long pending dispute with India over the Baglihar.[257] Involving a neutral expert is one of four institutionalized methods of solving hydropolitical disagreements on the sharing of the Indus River system between India and Pakistan. When the World Bank appointed Swiss engineer Raymond Lafitte as the neutral expert in May 2005, it marked the ending of an era of Indus Basin hydropolitics. This was the first time India and Pakistan were unable to solve a bilateral water dispute since the IWT came into force in 1960.

The same day Pakistan requested a neutral expert, India killed five Pakistani terrorists crossing the Line of Control into the Poonch sector of the Jammu Region in India. A few hours later, Pakistani mortars were fired into Poonch. The Indian Defense Minister, Pranab Mukherjee, responded saying that India was considering re-deploying troops along the Line of Control, troops that had been withdrawn a few months earlier as a confidence building measure in Indo-Pakistani relation.[258] Confusion and uncertainty characterized the situation. A little over a year after India and Pakistan had signed a cease-fire, and relations seemed to be improving, bilateral talks on Baglihar broke down and the cease-fire was violated by both countries. The Baglihar dispute seemed to suggest that water issues were more important than ever to both countries.

[255] Terje Tvedt, *Vann : reiser i vannets fortid og fremtid* (Oslo: Kagge, 2011), p. 142. (My translation).
[256] Aditi Phadnis, "A water conflict in Kashmir," *Business Standard*, 16 May 2005.
[257] The World Bank, *World Bank Receives Request From Pakistan Under Indus Waters Treaty*, Press Release No:2005/287/SAR, 18.01.2005
[258] Josy Joseph, "Mortar and missile, with love from Pakistan," *The Times of India*, 20 January 2005.

This chapter explores the Indus Basin hydropolitics from 2005 till late 2008. The chapter is divided in five sections. The first section focuses on Pakistan's request for a neutral expert, and the reactions among Indian experts. The second section deals with the increasing attention towards the Pakistani view regarding the Baglihar dispute. Indian experts questioned the Pakistani motives for objecting to Baglihar, and discussed whether they were legitimate. A few experts also suggested how India should respond.

The third part examines the perspectives and interests of commentators in J&K. Indian experts connected the interest of J&K with the idea of renegotiating the IWT. The fourth section deals with the neutral expert's verdict in the Baglihar dispute and reactions to the verdict. The last section briefly examines the hydropolitics development after the Baglihar dispute officially ended. It becomes clear that there were still issues concerning Baglihar that might provoke India or Pakistan into further aggression. In addition, India started constructing other hydro plants on the western rivers.

Third party interference at the request of Pakistan

When a hydropolitical issue arises between India and Pakistan, the IWT describes in detail how the issue shall be dealt with. The PIC is the prioritised authority to resolve the issue.[259] Several PIC-meetings are often required to arrive at conclusions. If the PIC is unable to solve the question, the issue is sent to the member states' Foreign Secretaries for negotiation.[260] If the Foreign Secretaries are unable to resolve the issue there are two other possibilities to solve the issue: The dispute can either be dealt with by a 'Neutral Expert', or a Court of Arbitration.[261]

When neither the PIC nor the Foreign Secretaries of India and Pakistan were able to solve the Baglihar dispute, Pakistan requested the World Bank to appoint a neutral expert. The process of appointing a neutral expert was complicated. Indian officials initially refused, demanding that the Baglihar dispute should be solved bilaterally. The World Bank therefore asked Pakistan to substantiate that the dispute had indeed reached a stage where a neutral expert was needed. Pakistan sent a lengthy report to that effect, and India replied with an equally voluminous report. This exchange of documentation through the World Bank went on

[259] PIC consists of a high-ranking water expert from each country. For an in depth analysis of the dispute solving mechanisms under the IWT, see: S. M. A. Salman, "The Baglihar difference and its resolution process - a triumph for the Indus Waters Treaty?," *Water Policy* 10, no. 2 (2008).

[260] Neda A. Zawahri, "Designing river commissions to implement treaties and manage water disputes: the story of the Joint Water Committee and Permanent Indus Commission." *Water International* 33, no. 4 (2008).

[261] The Indus Waters Treaty 1960, Article IX (2a)

for three rounds. After a thorough analysis of the reports, the Bank concluded that it was necessary to appoint a neutral expert. On April 25, 2005, the Bank informed the parties of this conclusion and started its consultation on the appointment of the neutral expert.[262]

Reactions to Pakistan's request

Immediately after Pakistan requested the World Bank to interfere, there were reactions from India. The number of newspaper articles covering Indus Basin hydropolitics reached an all-time high in 2005. The earlier "record" was in 2002, when *The Hindu*, *Hindustan Times* and *The Times of India*, had written 46 articles which mentioned the IWT.[263] In 2005, there were 441 articles. Hindustan Times covered the Baglihar dispute on a nearly daily basis, presenting a range of Indian perspectives on the latest development. It was apparent that the interference of a neutral expert had created anticipation and uncertainty. The IWT and the PIC had been famous for solving hydropolitical issues, which the Pakistani request seemed to put an end to. Many of the articles speculated on possible outcomes of the dispute.[264] While Indo-Pakistani relations in general had seemed to be improving since 2004, the Baglihar dispute represented a counter-narrative.[265]

Most Indian reactions to Pakistan's approach to the World Bank were negative, and also Pakistani officials were skeptical. Pakistan Minister of Education, Qazi Javed Ashraf, put little faith in the neutral expert's attempt to resolve the issue. Ashraf said that Pakistan should consider war against India if the Baglihar dispute was not settled and India did not stop constructing hydroelectric projects which allegedly violated the IWT.[266] Pakistani opposition leader, Raza Rabbani, criticized the Pakistani government for having remained silent when India constructed hydro plants such as Salal and Dulhasti on the western Indus Rivers, and for not being able to stop India from constructing Baglihar.[267]

While Pakistani reactions could be summed up as "too little, too late", the critique from India was opposite. Indian Foreign Secretary, Syam Saran, called the Pakistani request to the World Bank "premature". He criticized the Pakistani officials for ending the bilateral

[262] Salman, "The Baglihar difference and its resolution process - a triumph for the Indus Waters Treaty?," p. 109.
[263] The method for how I obtain this data is described in chapter two.
[264] E.g. "Rivers psychology," *Hindustan Times*, 21 November 2005; "War an option to solve Baglihar: Pak Minister," *Hindustan Times*, 16 February 2005; Gargi Parsai, "Baglihar: Lafitte says he could get lots of information," *The Hindu*, 8 October 2005; "Baglihar: India may go in for technical changes," *The Hindu*, 22 May 2005.
[265] "Pakistan urges establishment of Kashmir hotline in talks with India," *BBC*, 21 January 2005.
[266] "War an option to solve Baglihar: Pak Minister."
[267] "Pakistani minister says war with India "only option" to resolve dam issue," *BBC*, 16 February 2005.

talks on the issue. Pakistani officials replied that they would only return to the negotiation table if India immediately stopped constructing the hydro plant, which India refused.[268]

India had continued constructing Baglihar after negotiations broke down, claiming that suspending construction would be too costly. The construction costs of two other hydro plants on Chenab River, Salal and Dulhasti, had been enormous. Construction of the Dulhasti hydroelectric project began in 1983 was completed in 2007. The project came to a halt in the mid-1980s due to terrorist activity, and the costs of the project - which was estimated to be $50 million in 1983 – ended up costing well over $1 billion. Indian officials feared that if construction of Baglihar came to a halt, production costs would increase similarly.[269] Work on the Baglihar had already been problematic due to the mountainous terrain, and in July and August 2005, two of its diversion tunnels collapsed due to a landslides. The second landslide blocked the flow of Chenab River, causing the dam to overflow.

Indian experts

In 2005, Indian experts finally published texts providing knowledge and information about the Baglihar dispute, after years of almost completely ignoring the issue. Ramaswamy R. Iyer alone wrote five published articles in the first half of 2005.

Indian experts in general were disappointed and surprised by Pakistan's decision, especially considering the improved Indo-Pakistani relations the latest year. Researcher at the important Indian *Institute of Defense Studies and Analysis*, Uttam Kumar Sinha, called Pakistan's hydropolitical act, "typical lower-riparian bogey."[270] This was a common view among the Indian experts, who argued that the Baglihar did not pose a threat to Pakistan. An editorial in the Indian journal *Economic and Political Weakly* from February 2005 claimed that the differences over Baglihar were not difficult on a technical level. It claimed that political reasons underlay Pakistan's objections, a view also supported by BG Verghese.[271] According to the editorial, the Baglihar dispute could have been solved in the same manner as the Salal dispute in the 1970s, i.e. at inter-governmental level.[272]

Before Verghese's and the other Indian reactions are examined further, it is necessary to explain the design of Baglihar further and examine Pakistan's objections to the design.[273]

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[268] "Pak's move to approach WB 'premature': Indian Foreign Secretary," *Hindustan Times*, 17 February 2005.
[269] Binoo Joshi, "Kashmir's Dulhasti power project is ready," *Indo-Asian News Service*, 8 May 2007.
[270] Uttam Kumar Sinha, "Water Security: A discoursive Analysis," *Strategic Analysis* 29, no. 2 (2005): p. 324.
[271] Verghese, "Political Fuss Over The Indus."
[272] "A New Dispute," *Economic and Political Weekly* 40, no. 7 (2005).
[273] Generation of hydro-electric power by India on the western rivers is treated in the Annexure D of the Indus

The similarities between Salal and Baglihar have been described in earlier chapters, but there were also differences, and also lessons learned from the Salal project which the editorial seemed to ignore.

The design of Baglihar and Pakistan's objections[274]

Baglihar was to be a 144.5 meters high and 317 long concrete gravity dam.[275] Its location was about 120 km from the Pakistani border and about 65 km upstream of the Salal dam.[276] It would have an installed capacity of 450 MW, and another 450 MW after a second stage of the project was completed.[277] Pakistan's Indus Commissioner, Syed Jamaat Ali Shah, reported in July 2005 after a field visit to the construction site that large portions of the project had already been completed.

Pakistan complained that a number of different design features of Baglihar did not conform to criteria in the IWT. The objections can broadly be put in three categories. First, Pakistan argued that gated spillways on a low level on the dam were unnecessary. But if the neutral expert allowed India to keep the gated spillways, Pakistan argued that they should be located at a higher level. Secondly, Pakistan argued that the level for the power intake tunnels was placed too low, referring to paragraph 8f of Annexure D in the IWT which says that:

> The intakes for the turbines shall be located at the highest level consistent with satisfactory and economical construction of the Plant as a Run-of-River Plant and with customary and accepted practice of design for the designated range of the Plant's operation.[278]

Thirdly, Pakistan objected to the size of the dam's pondage. Pondage is a term used to describe the live storage capacity of a run-of-the-river hydro plant. John Briscoe explains that:

> water stored behind a dam is divided between 'live storage', which the operator of the dam can manage through both gated spillways and power intakes, and lower-level 'dead storage', which the operator cannot manage as he does not have outlets in the dam low enough to release this water.[279]

Waters Treaty.

[274] For a thorough examination of this see: Salman, "The Baglihar difference and its resolution process - a triumph for the Indus Waters Treaty?."; and Muhammed Siyad A. C. Siyad, "Indus Waters Treaty and Baglihar Project: Relevance of International Watercourse Law," *Economic and Political Weekly* 40, no. 29 (2005).

[275] According to the construction plans that India presented to the neutral expert, Raymond Lafitte.

[276] Map of the Indus in the introduction; Verghese, "Political Fuss Over The Indus."

[277] In August 2012, construction on stage-II of Baglihar has not started, due to lack of funding.

[278] "The Indus Waters Treaty."

[279] Briscoe, "Troubled Waters: Can a Bridge Be Built over the Indus?."

The annexure D of the IWT says that the maximum pondage shall not exceed twice the pondage required for so-called "firm power".[280] Pakistan argued that the pondage at Baglihar far exceeded what was required for firm power.

The Pakistani objections against Baglihar can be described in less technical wording: They feared India's growing control of the western rivers: Indus, Jhelum and Chenab, and intended to hinder India from constructing more projects. India on the other hand wanted to fully exploit the hydropower potential in these rivers. In order to achieve this, they sought to increase their sediment control of the silt-laden rivers.[281] With more pondage, India could hold back more water. Placing the gated spillways at a lower level increased the pondage. The gated spillways enabled India greater control of the discharge of water from the pondage.

Several Pakistani newspapers reported that India wanted to use Baglihar and other dams as a strategic weapon against Pakistan: filling the storage capacities of the dams in the lean season and discharging the maximum amount during floods.[282] This was supported by Bashir A. Malik, an authority on the IWT in Pakistan, who had been part of the Pakistani negotiation team during the IWT talks in the 1950s.[283]

These Pakistani statements opposed the view of the editorial in *Economic and Political Weakly*, which argued that since the two governments had solved the Salal dispute in the 1970s, they should also be able to solve the Baglihar dispute. Both Baglihar and Salal are run-of-the-river projects which India was allowed to construct on the western rivers if the design was in line with the provisions of the IWT. The two dams were constructed with many of the same design features. Both are located on the Chenab River, the height of Salal is 117m while Baglihar was projected to be 144.5m. The installed capacity of Baglihar is 450 MW, and Salal has a total capacity of 690 MW. However, when the editorial in *Economic and Political Weakly* argued that Baglihar should be solved in the same manner as Salal, it ignored the huge costs and problems at Salal.

The Salal was initially constructed with gated spillways at a low level, but India agreed with Pakistan to block and never use them. The pondage of Salal is therefore much smaller than the pondage of Baglihar. The Salal therefore enabled India less control of the flow of the river than the Baglihar would. The Salal dispute was resolved by the Foreign

[280] "Firm power" means the hydro-electric power corresponding to a minimum of discharge at the site of the hydro plant regularly calculated on the basis of a ten-year periods of river-flow in Chenab.
[281] The Indus River System carries about 43,500 hectare meters of silt every year. Waslekar, *The final settlement: restructuring India-Pakistan relations*.
[282] Ibid.
[283] Bashir A. Malik, *Indus Waters Treaty in retrospect* (Lahore: Brite Books, 2005).

Secretaries in 1978, after the PIC failed to reach an agreement. The construction time and costs were high before the dam was commissioned in 1987. Since then, it has experienced serious problems decreasing its efficiency and life expectancy. Maintenance of the dam has been much more difficult and costly than anticipated, because the level of silt in the dam has at times reached about 90 m in the 113 m high dam.[284] This was partly caused by the modifications to the design which were accepted by the Foreign Secretaries of India and Pakistan who solved the dispute.[285] Less priority given to the issues of sedimentation was much more common before the 1980s, and the treaty itself from 1960 was according to Raymond Lafitte, "not particularly well developed with respect to its provisions on sediment transport."[286]

Against the backdrop of the problems experienced at Salal, India argued that a different design was necessary at Baglihar. As explained above, the gated spillways at Baglihar would increase India's control of the sediment load and thereby increase the efficiency and the life expectancy of the dam. But the Pakistani officials pointed out that the gated spillways could be used to Pakistan's disadvantage if India decided to release huge amount of water, especially during floods. And perhaps more frightening for Pakistan: If India emptied the water in the reservoir before the lean season (January – February), Pakistan contended that India could stop the flow of the river for 26-28 days by re-filling the dam.[287]

Baglihar alone was probably not big enough to actually create a devastating flood or drought in Pakistan, but Pakistani officials were worried that if they accepted the design of Baglihar, it would have a precedent-setting importance.[288]

The editorial in *Economic and Political Weekly* did not consider the Pakistani fears - that Baglihar could be used as a weapon of war - as legitimate. The Pakistani perspective on Indus Basin hydropolitics had largely been ignored by Indian experts up to that point. In order to avoid water conflict in the Indus Basin, the Indian experts began to discuss the Kashmiri perspectives on water issues in 2002. The developments in the Baglihar dispute in 2005 similarly turned to wider interest in the Pakistani views. It seemed clear that India had to balance their water sharing relations with Pakistan and their internal politics in J&K in order to avoid water conflict in the Indus Basin.

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[284] Praveen Swami, "A treaty questioned," *Frontline*, 27 April 2002.
[285] S. Alam, "Sedimentation Management in Hydro Reservoirs," in *Water India (Conference)* (Delhi,2004).
[286] Raymond Lafitte, "Baglihar Hydroelectric plant: Expert determination on points of difference referred by the Government of Pakistan under the provisions of the Indus Waters Treaty," (Lausanne, Switzerland2007).
[287] Sinha, "Two Neighbours and a Treaty: Baglihar Project in Hot Waters."
[288] Robert G. Wirsing and Christopher Jasparro, "Spotlight on Indus River Diplomacy: India, Pakistan, and the Baglihar Dam Dispute," (Honolulu: Asia-Pacific Center for Security Studies, 2006).; and Malik, *Indus Waters Treaty in retrospect*.

Water through Pakistani eyes[289]

In order to understand the Baglihar dispute, it is necessary to understand the importance of each drop of freshwater to Pakistan. In June 2005, the editor of the Pakistani newspaper *The Friday Times* said that the Indus River system was more important to Pakistan than the resolution of Kashmir. The editorial asked India to recognize how important and sensitive the Baglihar issue was to Pakistan.[290] In news reports from Pakistan, opposition leaders were regularly quoted stating that the water disputes with India might derail the peace process with India, and lead to conflict.[291] The Indian experts seemed to respond. From 2005, the Pakistan perspective attracted increasing attention in both Indian media and among Indian experts.

The Pakistani perspective

Pakistani researcher, Haris Gazdar, published an article in *Economic and Political Weekly* in February 2005, presenting a Pakistani perspective on the Baglihar dispute. Gazdar introduced perspectives that had been in ignored up to that point in India. Gazdar proclaimed that Baglihar was a core issue of national interest for Pakistan. He criticized Indian commentators for being negatively surprised by Pakistan request for a neutral expert. Requesting a neutral expert was the only reasonable option for Pakistan, according to Gazdar. He argued that Baglihar threatened Pakistan's water supply which was "clearly critical to the economic prosperity and political stability of Pakistan."[292]

Gazdar pointed out that the IWT was an unequal treaty, because it failed to protect Pakistan's entitlement to the Indus River system from the actions of India. According to Gazdar, Pakistan had historic rights to some of the waters in the eastern rivers, and the allocation of these rivers conflicted with internationally accepted principles of riparian division.

Ramaswamy R. Iyer rejected most of Gazdar's arguments. Iyer was disappointed with the article because it "failed to rise above a nationalistic and partisan approach."[293] Iyer

[289] Also the title of an article by Iyer.
[290] Alok Bansal, "Baglihar and Kishanganga: Problems of Trust ", *India - articles*(2005), http://www.ipcs.org/article/india/baglihar-and-kishanganga-problems-of-trust-1762.html.
[291] "Water row threatens peace: Pak politician," *Hindustan Times*, 21 August 2005.
[292] Haris Gazdar, "Baglihar and Politics of Water: A Historical Perspective from Pakistan," *Economic and Political Weekly* 40, no. 9 (2005).
[293] Ramaswamy R. Iyer, "Indus Treaty: 'Core' and Other Issues," ibid., no. 11, http://www.jstor.org/stable/4416338.

especially questioned the argument that Pakistan had "historic rights" to the eastern rivers. Iyer pointed out, that neither India nor Pakistan had signed the UN Convention on the Law of the Non-navigational Uses of International Watercourses, and it was not ratified in the UN. IWT were therefore the only rules India and Pakistan had to follow.[294] Thus, Iyer contradicted what he had written in an article in 2002, when he argued that India could not abrogate the IWT because of the UN Convention which Iyer deemed irrelevant in 2005.[295]

Iyer also questioned Gazdar's definition of "riparian rights of Pakistan," on the basis that Pakistan had accepted that the three eastern rivers were allocated to India when they signed the IWT. Iyer pointed out that Gazdar's critique of IWT's allocations of the eastern rivers, was similar to the grievances in J&K because of the allocation of the western rivers to Pakistan. Iyer replied to Gazdar, similar to how he replied to the critique from J&K in 2002, by advocating that Pakistan (and J&K) had to accept the IWT, even though the IWT was far from an ideal treaty in terms of water management.[296]

Baglihar as a weapon of war

BG Verghese denied that Baglihar would interfere with the supply of water in Pakistan.[297] Similar to the editorial in *Economic and Political Weekly*, he asserted that Pakistan's objections to Baglihar were "political". Verghese claimed that Pakistan's Indus policy was to deny or delay "any Indian project" that would benefit J&K. The purpose, according to Verghese, was weakening India's popularity and grip in J&K.

In support of his argument, Verghese wrote that the Pakistani objections had little to do with their water supply, because the objections "were really pressed only recently".[298] However, as shown in this thesis, Pakistan objected to Baglihar immediately after they learned about the project in the early 1990s, and the PIC held a special meeting on the Baglihar Project in New Delhi in 2000.[299] In 2001, India announced that construction had begun and Pakistan immediately raised questions about the project. India denied Pakistan's demand for an inspection tour to the Baglihar site in 2002, and Pakistan stated for the first

[294] Dealt with in the previous chapter.
[295] Iyer, "Was the Indus Waters Treaty in Trouble?."
[296] "Indus Treaty: 'Core' and Other Issues".
[297] B. G. Verghese, "A Vision for J&K - 2015 - Part 2," *IPCS Indo-Pak articles*(2005), http://www.ipcs.org/article/indo-pak/a-vision-for-jk-2015-part-2-1706.html.
[298] "Political Fuss Over The Indus."
[299] Ministry of Water Resources (Government of India), "Annual Report 2000 - 2001," (New Delhi2001). Accessed online, 21 January 2013, at http://mowr.gov.in/writereaddata/linkimages/CHAPTER%20-%2071809012297.pdf

time that they considered requesting the World Bank to interfere.[300] Since 2002, Pakistan repeatedly wanted India to suspend construction, but India refused.[301]

Verghese attempted to create a narrative which described Pakistan's objections to Indian hydro plants as mainly political motivated, in order to hinder India's influence in J&K.[302] Verghese's assumption that Pakistan only objected "recently" was imprecise, but it suited this narrative. Verghese had advocated since the late 1990s that India should exploit the waters of the western rivers further, with or without Pakistan's consent, and he seemingly aimed to delegitimize the Pakistani objections.

Even though he downplayed the point, Verghese recognized that Pakistan's objections also were related to fear of increased Indian control of the western rivers. He labeled these fears as "fanciful".[303] Indian Foreign Secretary at the time, Shyam Saran, reacted similarly, stating that Pakistan's claims were not based on facts.[304]

Verghese argued that Pakistan had no reason to fear a sudden release of water to in the Chenab River valley in Pakistan, because this would affect upstream Indian towns before it would harm Pakistan. Verghese is partly correct, i.e. there are a few Indian towns along the Chenab River before it enters Pakistan. The largest is Akhnoor in the Jammu district, with a population of about 11.500. It is located where the Chenab River enters the plains, so a flood would definitely have an adverse effect on this area. However, Verghese did not mention that if India wanted to use water as a strategic weapon - releasing large amounts of water - the people in Akhnoor would of course be warned beforehand, while the people of Pakistan would probably be unaware until the flood reached their border.

Verghese also denied that Baglihar's storage capacity could dry up the river in Pakistan, but he refrained from elaborating on this point. Based on average flow of river and the size of the pondage at Baglihar, Pakistan had estimated that India could block the flow of the river for almost a month during the lean season in January and February.[305] John Briscoe, a former Senior Water Advisor for the World Bank, supported the Pakistani estimates, and he therefore believed Pakistan had every right to fear India's cumulative live storage on the western rivers.[306] Iyer replied to Briscoe in 2005, denying that the impact of Indian hydro projects was a legitimate concern. In 2011 however, Iyer revisited his earlier argument, and

[300] Sinha, "Two Neighbours and a Treaty: Baglihar Project in Hot Waters."
[301] "Pak. concern over Chenab hydel plant."
[302] See for example: Sinha, "Water Security: A discoursive Analysis."; "Pak's move to approach WB 'premature': Indian Foreign Secretary."
[303] Verghese, "Political Fuss Over The Indus."
[304] Mahendra Gaur, *Foreign policy annual, 2006* (Delhi: Kalpaz Publications, 2006), p. 99.
[305] Sinha, "Two Neighbours and a Treaty: Baglihar Project in Hot Waters."
[306] John Briscoe, "Troubled Waters: Can a Bridge Be Built over the Indus?," ibid.45, no. 50 (2010).

said "opinion is divided on the question" and believed this was "a concern that needs to be taken seriously and should be jointly studied."[307]

Blocking the water would not generate power for India, and would of course also have some effects on the Indian parts of the river downstream, but the Chenab River water was not used for irrigation in India, as it was in Pakistan. The agriculture of Pakistan depended on a relatively steady flow of water from the western rivers. Blocking the water in Chenab River for a month would have a considerable effect on the downstream agricultural areas. Pakistan would not have forgotten that India had earlier blocked river water in the Indus River system: During the Kashmir War in 1948, India diverted the Sutlej River water at Ferozepur Headwork. Verghese on the other hand, seemed to have forgotten the 1948 War, stating that: "the argument that every dam can be used as a strategic weapon is perverse reasoning."[308] With several dams similar to Baglihar, Pakistan would have reason to fear India's control over the Chenab River, especially during a war. Indian expert and former advisor to the Indian Foreign Minister, Brahma Chellaney, had earlier advocated that blocking water was exactly what India should aim to do when they had constructed more hydro plants. In 2005, India had soon completed three on Chenab River: Baglihar, Salal and Dulhasti. While Verghese suggested that Pakistan objected to Baglihar in order to hinder India from developing J&K, a joint Indo-Pakistani study of Pakistani attitudes towards Baglihar argued that Pakistan was genuinely worried about their water supply.[309]

Iyer and Verghese rejected the criticism of Pakistan, and maintained that the IWT was an acceptable treaty for both parties, but Indian experts seemed to think that the Pakistani perspective had to be examined further. Former chairman of the project on inter-linking of rivers in India, Suresh Prabhu, stated in April 2005:

> We often ignore the fact that water is the key to the ongoing Kashmir problem. It's an open secret that Pakistan doesn't like India to control the source of Indus river basin from which it gets regular flow of water. At present, Pakistan is facing huge water scarcity, and hence, it's pressurizing India to stop constructing the Baglihar project.[310]

Chellaney later linked the increased tension over Indo-Pakistani water issues in this period with inter-country politics in Pakistan.[311] The province of Punjab in Pakistan had increasingly utilized the waters in the Indus River system, with severe effect in the downstream province

[307] Ramaswamy R. Iyer, "Pakistan: Water on the boil again," *The Hindu*, 26 July 2011.
[308] Verghese, "Political Fuss Over The Indus."
[309] "Re-Imagining the Indus," p. 52-55.
[310] Shantanu Nandan Sharma, "No watershed in Indo-Pak CBMs," *The Economic Times*, 24 April 2005.
[311] Chellaney, *Water: Asia's New Battleground*, p. 223-24.

of Sindh. The reduction of water flow led to catastrophic consequences in the Indus delta. Salty sea-water has flown in to the river with a devastating effect on the ecology of the delta. Fishermen from the region have actually welcomed the recent huge floods as "good news", because they have brought fish back to the delta."[312] The inter-country water allocation in Pakistan has caused increasing tension between Sindh and Punjab. According to Chellaney, "the Punjabi elites that rule Pakistan have sought to scapegoat India for their appropriation and gross mismanagement of water resources."[313]

Kashmir's water was the core issue.

The new turn in Pakistan's Indus Basin policy interested the Indian experts. As noted earlier, the Baglihar dispute did not attract much attention from the Indian experts before 2005. One hand, the Baglihar dispute was a part of a historical trend in Indus Basin hydropolitics.[314] On the other hand, the Baglihar dispute introduced new aspects in Indus Basin hydropolitics: First, India did not suspend construction even though Pakistan demanded it, and secondly, Pakistani officials and opposition leaders suggested the Baglihar dispute could lead to war. In addition to this, the Baglihar dispute happened during a period when freshwater availability per capita in the region was at an all-time low and shrinking.

Most Indian experts criticized Pakistani for requesting the World Bank and a neutral expert to interfere in the Baglihar dispute, but the experts also sought to understand the motives for Pakistan's policy decision.

President of the Mumbai-based think tank Strategic Foresight Group, Sundeep Waslekar, argued in his book *The Final Settlement,* that there had been a change in the Pakistan Indus waters policy.[315] He argued that the Pakistan government was not mainly interested in Kashmir because of political, religious or ideological reason – Pakistan's core issue was to secure their water supply. Several scholars were surprised by Waslekar's suggestion, and questioned why water was allegedly so important to Pakistan when their water supply was safeguarded in the IWT.[316]

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[312] Declan Walsh, "Pakistan's floodwater welcomed along Indus delta," *The Guardian*(2010), http://www.guardian.co.uk/world/2010/oct/05/pakistan-flood-waters-indus-delta.
[313] Chellaney, *Water: Asia's New Battleground*.
[314] 27 Indian hydro projects in total had been questioned by Pakistan: S. Seema, "Indo-Pak Water Disputes," *Indo-Pak - Articles*(2005), http://www.ipcs.org/article/indo-pak/indo-pak-water-disputes-1770.html.
[315] Waslekar, *The final settlement: restructuring India-Pakistan relations*.
[316] Verghese, "Political Fuss Over The Indus; Iyer, "Indus Treaty: 'Core' and Other Issues". Wirsing and Jasparro, "Spotlight on Indus River Diplomacy: India, Pakistan, and the Baglihar Dam Dispute."

Waslekar connected the Pakistani water policy to the rule of Pervez Musharraf. According to Waslekar, Musharraf had decided long before his coup in 1999 that the Indus River system should be Pakistan's core issue. As a student at the Royal College of Defense Studies in London in 1990, Musharraf published a paper arguing that the rivers of Kashmir were the key to the future conflict between India and Pakistan. Musharraf pointed out that Pakistan's economy and integrity depended on the Indus River system. If Waslekar was right about Musharraf's intention, the Baglihar dispute was more important to Pakistan than any of the Indian experts had imagined. Musharraf's plan was supposedly to get control of the whole Chenab River. Musharraf believed that it was possible to resolve the Kashmir conflict, and *the Chenab Formula* was the answer, Waslekar wrote.[317]

The Chenab Formula suggested that Kashmir should be divided between India and Pakistan along the line of the Chenab River, thereby giving Pakistan actual control of the Indus and the Jhelum River, and the northern banks of the Chenab River.[318] It was similar to the Dixon Plan, named after the UN representative Sir Owen Dixon who proposed a solution to the Kashmir dispute in 1950. Dixon suggested that the Jammu region should be split in two, and that a plebiscite would decide whether the Kashmir Valley would become a part of Pakistan or India. Pakistan had accepted this solution, but the Indian Prime Minister Jawaharlal Nehru refused.[319] Did Musharraf really believe it was possible that India would accept a plan they refused 50 years earlier?

If Waslekar's conclusion was right, Pakistan was not only interested in the Kashmir Valley, but also wanted access to the Chenab River basin in the Jammu region. If Pakistan could control the upper parts of Chenab, along with the upper parts of the Jhelum and Indus River, Pakistan would have secured their water supply, their *life-line.* Waslekar included a numerous collection of quotes by Pakistani newspaper editors, local politicians and military officers to support his thesis. Waslekar's sources expressed fear of the consequences of Indian hydro plants on the western rivers, and claimed that they would eventually turn the Sindh province into a desert. According to these sources, Pakistan should therefore demand control of the Indus, Jhelum and especially the Chenab River.

Waslekar concluded that Pakistan was neither interested in self-determination for the people of Kashmir nor annexing the state for political reasons. Kashmir-expert Robert G.

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[317] Waslekar, *The final settlement: restructuring India-Pakistan relations*, p. 48-49.
[318] The Chenab Formula was similar to the so-called "Dixon plan". The BBC web pages on South Asia has an illustrated overview over the details of the Chenab Formula, and other suggested solutions for Kashmir at BBC, "The Future of Kashmir," http://news.bbc.co.uk/2/shared/spl/hi/south_asia/03/kashmir_future/html/7.stm.
[319] A. G. Noorani, "The Dixon Plan," *Frontline* 19, no. 21 (2002).

Wirsing called *The Final Settlement* an "unusually provocative book" because it claimed that Pakistan treated the Kashmir conflict as a war with one purpose: to secure Pakistan's water supply.[320] Waslekar wrote that:

> A conflict over land between the people of Kashmir and the government of India will soon become a thing of the past. On the other hand, a water war between Kashmir and Pakistan is inevitable in the future.[321]

He argued that there was a connection between water availability in Pakistan and terrorism in J&K. The leadership of Pervez Musharraf allegedly played a significant role in this agitation and violence over water. Before Musharraf came to power, Pakistan's Kashmir policy in brief was that the state should belong to Pakistan because it had a Muslim majority. Waslekar argued that Musharraf brought change, recognizing the allocation of the Indus River system as the core issue.[322]

The link between Pakistani leadership and the Indus River

Indian expert on Pakistan, Samuel Baid, agreed with Waslekar: Musharraf played a decisive role in Indus Basin hydropolitics in the 2000s. Baid added that there was a parallel between the military leaderships of General Ayub Khan in Pakistan from 1958-1969 and that of Musharraf from 1999:

> In October 1958, General Ayub Khan turned his attention to the rivers of Jammu and Kashmir which, he said, were indispensable for the economic survival of his country. He made a failed attempt in 1965 to capture this State. After Ayub, General Pervez Musharraf is the second military ruler for whom Kashmir is the core issue not because of any ideology but because of Pakistan's water needs. […] Both Ayub and General Musharraf made water from Kashmir a condition for peace with India. Like Ayub, General Musharraf made an unsuccessful attempt to grab Kashmir in May 1999 by invading Kargil.[323]

If Waslekar and Baid were right, it was not merely water scarcity that increased the chance of conflict over water in the Indus Basin. India also had to consider the military leadership and personal opinion of General Musharraf.

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[320] Wirsing and Jasparro, "Spotlight on Indus River Diplomacy: India, Pakistan, and the Baglihar Dam Dispute."
[321] Waslekar, *The final settlement: restructuring India-Pakistan relations*.
[322] Ibid.
[323] Baid, "Not Kashmir but Kashmir's Water Is the Core Issue for Pakistan."

Ashok Swain had earlier suggested that the Kargil Conflict might have been connected to Pakistan's water issues.[324] Baid went further, asserting that it was Musharraf who ordered the Pakistani troop movement during the Kargil Conflict, in order to get control over the rivers of Kashmir.

While Waslekar and Baid argued that Musharraf had always viewed water as Pakistan's core issue, Verghese wrote that water had not been one of Musharraf's prioritizations before 2005.[325] A third view was presented by Gazdar, who agreed that Musharraf had brought change in Pakistan's Kashmir policy, but argued that Musharraf had neglected water issues. Gazdar also drew parallels between Ayub Khan and Pervez Musharraf, arguing that Ayub Khan and Musharraf both ignored the importance of water.

Punjab province vs. Sindh

Gazdar suggested that Musharraf's home in the Punjab province was of importance. Many of the Pakistani leaders during the IWT-negotiations in the 1950s came from Punjab, and Gazdar argued that these leaders were satisfied with the IWT as long as the Punjab province got enough water. Gazdar wrote that the situation was similar in the 2000s. As long as Punjab got enough water for irrigation, Musharraf would not complain. The downstream Sindh province had long suffered from decreasing water supply. In the 2000s, also the Punjab province was severely affected by the increasing water scarcity. Gazdar argued that the scarcity in Punjab was the reason Musharraf had decided that water was Pakistan's core issue. According to Gazdar, "military governments have been disdainful of Pakistan's federal political structure, which they regard as a source of disunity and weakness."[326]

Gazdar also suggested that Ayub Khan might have had "personal interest in the finalization of the [IWT], in the face of technical and diplomatic advice".[327] This critique towards the interest of Ayub Khan was supported by Bashir A. Malik, who was a technical advisor to the Pakistani under the negotiations.[328] During the Pakistani presidential elections in 1964, Fatima Jinnah[329] accused Ayub Khan of signing a treaty that gave away the water

[324] Swain, *Managing water conflict: Asia, Africa and the Middle East*.
[325] Verghese, "Political Fuss Over The Indus."
[326] Gazdar, "Baglihar and Politics of Water: A Historical Perspective from Pakistan," p. 816.
[327] Ibid.
[328] Malik, *Indus Waters Treaty in retrospect*, p. 152-55.
[329] Fatima Jinnah was the sister of Mohammad Ali Jinnah, the first President of Pakistan.

Indus, Jhelum and Chenab permanently. Ayub Khan defended himself and the IWT by stating that he got Rupees 900 crores in exchange for the rivers.[330]

If Swain, Waslekar and Baid's assumptions about Musharraf, the Chenab Formula and the Kargil Conflict were right, a water conflict between India and Pakistan seemed more likely than ever. Verghese's argument that Musharraf had suddenly changed the Pakistan water policy in 2005 lacked empirical evidence. While Verghese, Sinha, and Saran had tried to delegitimize Pakistan's take on the Baglihar dispute, Waslekar's study showed that Pakistani leaders thought the Baglihar dispute was extremely important to the Pakistani water supply. If Baglihar was *that* important, would Musharraf consider war if the dispute was not resolved, as Qazi Javed Ashraf had suggested? On the other hand, the ongoing bilateral talks between India and Pakistan seemed to show that Musharraf was prepared to settle Indo-Pakistani issues in a diplomatic manner.

Improving water management in the Indus Basin

There were three reasons why India considered abrogating the IWT in 2002.[331] First, India could use it as a strategic weapon against Pakistan, punishing Pakistan after the terror attacks in India in 2001. Secondly, the J&K Legislative Assembly demanded a review of the IWT, because they believed that the treaty hindered them from economic development. Thirdly, India needed to flush silt and water from their hydro plants on the western rivers in order to operate them more efficient, and this would violate the IWT.

When Pakistan requested the World Bank to intervene in the Baglihar dispute in 2005, the debate about abrogation and renegotiation of the IWT emerged again. There were clearly issues in Indus Basin hydropolitics which India and Pakistan struggled to cope with, even though they still cooperated under the IWT. The Indian experts criticized how the Pakistani government dealt with the Baglihar dispute, but they provided little that could inform what course India could take. One of the exceptions was Verghese, who suggested that the IWT should be renegotiating and that India (and Pakistan) should construct more hydro plants on the Indus Rivers.

Verghese advocated that India and Pakistan to exploit the water resources in the Indus Basin further because that would benefit both nations economically. He also argued that India and Pakistan should maximize the conservation storage as a precautionary measure, because

[330] Which equaled about $900 million in 1960.: Malik, *Indus Waters Treaty in retrospect*, p. 153.
[331] As described in the previous chapter.

of increasing chances of devastating floods: "with climate change, glaciers are in retreat both in the Karakoram […] as well as the Tibetan Plateau."[332] The glacier meltdown in the region was more uncertain than Verghese believed,[333] but he advocated precautionary measures for the common good of both countries.

Renegotiating the Indus Waters Treaty?

Throughout the 1990s and 2000s, Verghese provided policy recommendations in order to improve political relations and water management in the Indus Basin. In 2005, Verghese elaborated on an idea, the 'Indus-II', which he first had presented in 1997.[334] Verghese had earlier argued against abrogation of the IWT because the IWT had served a useful purpose, but he believed that a renegotiated IWT would help India and Pakistan in a number of ways.[335]

Verghese recommended water management in the Indus Basin could be greatly improved if the IWT was renegotiated, building on the foundations of the IWT.[336] According to Verghese, there was room for improvement in the understanding of the IWT provisions: it was possible to exploit the waters in the western rivers to a greater extent to the benefit of both India and Pakistan:

> Pakistan cannot continue to deny India its limited entitlement in the Western rivers and also freeze all further development if it wants to grasp what could be a far larger prize by way of additional storage, flood moderation and hydropower which both could share.[337]

Verghese argued that India and Pakistan management of the Indus River system should be based on IWRM-principles such as basin-wise planning and joint management. He thought that an Indus-II could be an important contribution to a peace process in the region. His reasoning was simple: Exploiting the water resources in the western rivers further through

[332] Verghese, "Political Fuss Over The Indus."
[333] In 2010, IPCC withdrew their assertion from 2007 that the Himalayan glaciers could melt away by 2035, and although IPCC stand by their prediction that the glaciers in the Himalaya are receding, other studies have argued that there is not enough data yet to predict how climate change will effect glaciers and the flow of rivers in the Himalaya, Karakoram and Hindu Kush: IPCC, "IPCC statement on the melting of Himalayan glaciers," (2010), http://www.ipcc.ch/pdf/presentations/himalaya-statement-20january2010.pdf.; Archer et al., "Sustainability of water resources management in the Indus Basin under changing climatic and socio economic conditions."; Kenneth Hewitt, "The Karakoram Anomaly? Glacier Expansion and the 'Elevation Effect,' Karakoram Himalaya," *Mountain Research and Development* 25, no. 4 (2005).
[334] Dealt with in the chapter three.
[335] Verghese, "Talk of Abrogating the Indus Water Treaty."
[336] As explained in chapter 2, p. 18-19.
[337] Verghese, "Political Fuss Over The Indus."

joint management would benefit both countries economically. It would especially be good for J&K and the provinces of Pakistan that suffered from lack of storage and flood mitigation. Economic development was important in order to create peace.

In 1997, Verghese had written that an Indus-II would merely be possible if Indo-Pakistani relations improved. In 2002, he glimpsed a faint hope of this. In 2005, the seemingly improved Indo-Pakistan relations in 2004 made him slightly more optimistic, despite the recent events concerning Baglihar. He wrote that:

> Indus-II needs to be fed into the current peace process as a means both of defusing current political strains over [IWT] and insuring against climate change. It could reinforce the basis for a lasting solution to the J&K question by helping transform relationships across the LOC and reinventing it as a bridge rather than merely as a boundary-in-the-making.[338]

Professor PR Chari at the *Institute of Peace and Conflict Studies*, in New Delhi, agreed with Verghese that negotiating an Indus-II "would be a huge Confidence Building Measure. It would engage both countries in a regional economic integration process."[339] If no steps were taken, Chari feared that the Indus Basin hydropolitics would be characterized by conflict in the future.

> Water sharing is increasingly becoming a source of tension that will grow as demands increase and supplies decrease. There is a growing consciousness of the scarcity of water as in the next two decades we might be witnessing water wars in the world. The link between water management and environmental degradation needs to be recognized and a national policy evolved.[340]

The Indian experts Suba Chandran[341] and M.S. Menon[342] also adopted Verghese's idea of a renegotiated treaty. Ramaswamy R. Iyer however, did not believe in it.

IWRM-principles are unrealistic

Iyer agreed that renegotiation was theoretically a good idea, but he did not think that it was a realistic solution. He agreed that a joint management of the Indus River system would have

[338] Ibid.
[339] Seema, "Indo-Pak Water Disputes"., accessed at http://www.ipcs.org/article/indo-pak/indo-pak-water-disputes-1770.html, 12 February 2013.
[340] Ibid.
[341] Chandran, "Harnessing the Indus Waters: Perspectives from India". , retrieved 12 September 2012.
[342] M. S. Menon, "Waters of discontent," *The Tribune*, 4 April 2010.

been a better solution for the ecology and the economy of the region, but he argued that the political climate made it difficult:

> No one would wish to deprecate such a vision. However, there is a basic difficulty here. If the [IWT] had been a constructive, cooperative water-sharing treaty, it could have been built upon and taken further; but is a negative, partitioning treaty, a coda to the partitioning of the land. How can we build cooperation on that basis?[343]

As he had written earlier, Iyer did not think of the IWT as an optimal treaty. But he believed that trying to renegotiate the treaty would reopen old issues that were settled when the IWT was signed:

> India cannot expect to restrict the re-negotiation to the western rivers; the eastern rivers will also be a part of the agenda. If India wants to seek more rights on the western rivers, it may have to give Pakistan some rights on the eastern rivers. Is that feasible at this stage? Would that not open a Pandora's Box?[344]

Iyer suggested that renegotiation would lead to conflict over water issues. The next best solution, according to Iyer, would be a sharing on each of the six rivers. This could have been possible if it was addressed during the negotiations in the 1950s, Iyer wrote, but it would also have caused a lot of Indo-Pakistani disputes. He therefore recommended the Indian government to "leave thing as they are, and hope that with improving political relations a more reasonable and constructive spirit will prevail in the future than in the past."[345]

Most experts agreed that both countries could improve their water management unilaterally, especially by making the irrigation in the region more efficient.[346] An article published in *Water International* in 2009 argued a position between Iyer's and Verghese's suggestion:

> There is scope for unilateral action (not joint action) by India and Pakistan for raising financing to build infrastructure for alleviating water scarcity and preventing pollution. […] addressing those issues could prevent future conflict and improve people's lives within Pakistan and India.[347]

[343] Iyer, "Indus Treaty: A Different View," p. 3144.
[344] Ibid.
[345] *Towards water wisdom: limits, justice, harmony*, p. 75.
[346] Ibid.
[347] Miner et al., "Water sharing between India and Pakistan: A critical evaluation of the Indus Water Treaty," p. 204.

The article suggested that India and Pakistan could use the permanent commission under the IWT and the water quality provisions in Articles IV and VIII to address the water pollution in the Indus Rivers. It also suggested that India and Pakistan should cooperate on seeking external financing to improve their management of the water resources, including managing groundwater.[348]

The ideal way to implement improved water management, if IWRM-principles are accepted, is through joint management of a river basin. But joint management was described as unrealistic by most experts apart from Verghese. Sundeep Waslekar agreed that joint management was "necessary to evade the impending water crisis in the subcontinent," but added that "the integrated development approach is Utopian. It is only possible with a paradigm shift in mindset and complete end to hostilities, both physical and psychological."[349] Zawahri argued that states in general were not likely to adopt an integrated approach because it conflicted with their political sovereignty. The Indo-Pakistani relations made joint management even less realistic.

The first debate about renegotiation in 2002 was closely related to the IWT-criticism in J&K. In 2005, observers from J&K were still making complaints.

The Kashmiri view

> "The treaty is unfair. It gave all the rivers that flow through Jammu and Kashmir to Pakistan without taking into account the interests of the people of the state." (Chief Minister of J&K, Omar Abdullah, 12 May 2005)[350]

> "Objections from Jammu and Kashmir are emotional" (Indus Waters Expert, BG Verghese, 21 June 2005)[351]

The previous chapter explored attitudes in J&K from the late 1990s. Officials in J&K believed that the IWT had favored Pakistan, and that the treaty strained development in J&K. Waslekar and a few other experts partly supported these claims.[352] Waslekar argued that J&K could potentially benefit greatly from an abrogation of the IWT. Then J&K would be free to develop their hydroelectricity potential. However, Waslekar also added that "abrogating the

[348] Ibid., 211-12. There is a framework for such action in the Indus Waters Treaty, Article IV and VIII.
[349] Waslekar, *The final settlement: restructuring India-Pakistan relations*, p. 79.
[350] "Omar Abdullah pitches for South Asian federation," *Hindustan Times*, 12 May 2005.
[351] Seema, "Indo-Pak Water Disputes".
[352] "Omar Abdullah pitches for South Asian federation."

treaty is an extreme step, which may be taken under coercive circumstances," and that renegotiating the treaty with Pakistan would be necessary to avoid conflict. Waslekar concluded therefore that India should not abrogate the IWT. He repeated what Iyer said earlier: abrogation would be criticized by the World Bank, the international community, and India's other neighboring countries, and India should not risk these consequences.[353]

Moderate separatist, and leader of the J&K Council for Human Rights,[354] Syed Nazir Gilani agreed with most other commentators in J&K that the IWT had obstructed economic development in J&K. He questioned Pakistan's legal right or moral right to the water resources in the state. Kashmiri Professor, Kulbushan Warikoo, supported Gilani's assertion, and argued that the IWT should be reviewed:

> The Treaty which has been in force for more than 45 years, has added to the economic woes of the people of upstream Jammu and Kashmir State by depriving them of the legitimate right to full usage of Jhelum, Chenab and Indus waters for hydro-electric generation, irrigation, navigation and other purposes. [355]

According to Warikoo, a new treaty should be modified so it addressed the changes in J&K since the IWT signed in 1960. Neither Warikoo nor Gilani mentioned that India had not utilized all the water in the western rivers the IWT allowed them, but they contended that the IWT greatly benefited Pakistan.

Experts from Pakistan and J&K both argued that the IWT was unfair to them. The different sides have aimed to delegitimize the other, and focused merely on their own interests. Verghese criticized the perspectives from J&K for being "emotional".[356] Peter Mollinga's description of the debates about water in South Asia as "dichotomous and polarized" seems to fit the different perspectives in the Baglihar dispute.[357] A study of the IWT-discourse in media found that Pakistani newspaper articles often described the IWT as "unfair" and that it was the cause of water shortage in Pakistan.[358]

There were several experts at the time who advocated a renegotiation of the IWT, but Verghese was the only expert who recognized that both Pakistan and J&K would have to benefit from a renegotiation. Negotiating a new treaty which both J&K and Pakistan could benefit from would imply IWRM-principles such as joint management of the river system, but

[353] Waslekar, *The final settlement: restructuring India-Pakistan relations*., p. 67
[354] A London-based NGO.
[355] Warikoo, "Indus Waters Treaty: View from Kashmir".
[356] Seema, "Indo-Pak Water Disputes".
[357] Mollinga, "Foreword," xv.
[358] Observer Research Foundation, "Re-Imagining the Indus," p. 52-54.

the "polarized and dichotomous" perspectives from Pakistan and J&K did not bring much hope. Other experts, such as Iyer, denied that his idea was realistic.[359]

The verdict

In August 2006, the neutral expert in the Baglihar dispute, Raymond Lafitte, stated that his verdict on the issue could be expected late in 2006. In the meantime, the Chenab River demonstrated its destructive force - independent of dams and hydropolitics - when flash floods severely affected the Jammu Region in India. In the Kathua district, six people were killed when a house suddenly collapsed due to the rapid flood, and several villages were inundated.[360]

Expectations to the verdict

In 2006, the Indian experts Rajesh Sinha, Verghese and Iyer believed that there still was a small hope of that India and Pakistan could reach a decision without waiting for Lafitte's verdict, but they were proven wrong. Officials from both countries stated beforehand that they were prepared to accept the neutral expert's decision.[361] Iyer said, "there is no question of not accepting."[362] He argued that the involvement of a third party was not worrying, because the role of the neutral expert in such matter was described in detail in the IWT.[363]

The neutral expert, Raymond Lafitte, had given no hints about his decision, hence there were much uncertainty concerning the verdict. Even though both countries' officials expected that Lafitte would announce "a fair verdict", few experts dared to suggest what the final outcome of the dispute would be. Iyer believed that anything was possible. There was also a possibility that Lafitte had decided that he could not solve the issue, and would request that the dispute was to be dealt with by a Court of Arbitration.[364] The Indian NGO, South Asia Network on Dams, Rivers & People, was one of the few Indian observers who tipped an

[359] Iyer, "Indus Treaty: A Different View; Rajesh Sinha, "Two Neighbours and a Treaty: Baglihar Project in Hot Waters," ibid.41, no. 7 (2006).
[360] Shujaat Bukhari, "Flood situation grim in J&K," *The Hindu*, 4 September 2006. Floods and drought had increasingly been affecting the Indus Basin. A UN report from 2011 showed increasing economic loss in Pakistan caused by natural disaster damages since 1990; UN's Economic and Social Commission for Asia and the Pacific (ESCAP), "Statistical Yearbook for Asia and the Pacific 2011," (2011), http://www.uis.unesco.org/Library/Documents/statistical-yearbook-asia-pacific-education-2011-en.pdf.
[361] Sinha, "Two Neighbours and a Treaty: Baglihar Project in Hot Waters."
[362] Iyer, *Towards water wisdom: limits, justice, harmony*, p. 84.
[363] "Baglihar: the points at issue," *The Hindu*, 19 October 2005.; "Baglihar, Neutral Expert and 'differences'," *The Hindu*, 9 June 2005. ; "The Indus Waters Treaty." Annexures F and G.
[364] *Towards water wisdom: limits, justice, harmony*, p. 83-84.

outcome: that Lafitte's background suggested he was a supporter of large dams, and that he therefore would accept India's design of Baglihar.[365]

Most expectations among the Indian experts suggested that the involvement of a third party in the Baglihar dispute was not viewed as a hydropolitical crisis. As described above, Verghese argued earlier that Pakistan objected to Baglihar in order to obstruct India's influence in J&K. Pakistani observers argued that the Baglihar was a core issue for Pakistan, but Indian experts such as Iyer and Saran had ridiculed this argument.[366] Indian experts attempted to delegitimize the Pakistani perspective, but these attempts also led to increased attention towards the Pakistani attitudes. From 2005, Indian experts began to recognize increasingly that it was necessary to consider the attitudes in Pakistan if India should be able to cooperate peacefully over the Indus River system in the future.

Pakistan's reasons for objecting to Baglihar were much debated. Pakistani commentators seemed to value water to such an extent that Baglihar was a matter of national security. This created uncertainty around whether Pakistan would eventually accept the verdict of the neutral expert. The Indian experts recommended the Indian government to accept the verdict, regardless of the outcome. But what if Pakistan was not happy with the decision? Opposition leaders in Pakistan had argued that war was an option if the neutral expert accepted the projected design of Baglihar.[367]

Not everyone concerned with hydropolitics in the Indus Basin waited patiently for the Baglihar verdict. Even though India had continued constructing Baglihar; there were protests in J&K because of the Indian government's alleged reluctance to invest in hydroelectric power in the state. On 6 February 2007, activists from J&K staged a *dharna* (a peaceful demonstration) to protest against the IWT. The activists demanded, as officials from the region had done the last 15 years, that J&K should be compensated for the losses on account of the IWT.[368]

The verdict

In February 2007, the neutral expert in the Baglihar dispute, Swiss civil engineer Raymond Lafitte, announced his decision. At that point, the Baglihar project was almost complete.

[365] Himanshu Thakkar, "Baglihar HEP: some crucial facts," *Dams, Rivers & People*(2007), http://www.sandrp.in/hydropower/Baglihar_Crucial_Facts_0207.pdf.
[366] "Pak's move to approach WB 'premature': Indian Foreign Secretary." Iyer, "Indus Treaty: 'Core' and Other Issues".
[367] As reported in "Unquenchable thirst."
[368] "Protest against treaty," *The Hindu*, 6 February 2007.

The verdict can be briefly summed up in the following: Pakistan's demands for ungated spillway and decreased maximum discharge capacity were denied, but India had to lower the dam's height and decrease the live storage capacity. Lafitte also determined that the turbine's intake level should be placed at a higher level.[369]

Both countries accepted the verdict, and the involvement of a neutral expert appeared to be successful. Lafitte was appointed May 10, 2005 and presented his decision February 12, 2007. While the PIC had discussed the Baglihar issue in intervals from 1992 till 2005 without reaching an agreement, Lafitte had resolved the dispute in 21 months.[370] Although India and Pakistan seemed to be on the brink of conflict over water during the Baglihar dispute, both countries had more or less patently abided the neutral expert's findings. The Indian experts who recommended that India kept calm over Pakistan's request for a neutral expert, appeared to have been giving sound advice.[371]

The Baglihar was the first hydropolitical issue that India and Pakistan were not able to solve bilaterally, and officials and opposition leaders in Pakistan and J&K had criticized the IWT and believed that the Indus Basin needed of hydropolitical change. Yet, after 21 months of evaluation, the neutral expert managed to find a solution that both countries consented.

Reactions to the verdict

Even though Pakistan originally claimed that Baglihar's pondage far exceeded the IWT-regulations, they eventually accepted Lafitte's verdict which ruled in favor for India's gated spillways on a low level of the dam. The then Pakistani Minister for Water and Power, Liaqat Ali Jatoi, stated in an interview that the final report was "good news for Pakistan", and India's Water Resources Minister Saifuddin Soz told the press that "We are very happy with the report."[372]

Both India and Pakistan had to accept adjustments to their claims, which for India's part led to an estimated loss of 9% in energy production. Pakistan had to accept that India increased its capacity to control the flow of the Chenab River. *The Times of India* reported that "the ruling has been fashioned in way so that both countries can claim a victory."[373]

[369] Zawahri, "India, Pakistan and cooperation along the Indus River system."
[370] Ibid.
[371] Iyer, *Towards water wisdom: limits, justice, harmony*.
[372] BBC, "World Bank rules on Kashmir dam," 2012, no. 20 September (2007), http://news.bbc.co.uk/2/hi/south_asia/6356061.stm. retrieved online 20 September 2012
[373] "Baglihar cleared, India has its way," *The Times of India*, 14 February 2007.

Verghese claimed that the verdict, and Pakistan's reaction to it, proved him right, i.e. that Pakistan's reason for objecting Baglihar was political. He wrote that:

> The Salal and Baglihar cases and contemporary hysteria reflect Pakistan's propensity to resort to horror scenarios and grandstanding, suggesting political more than genuine water issues as the real motivating factor.[374]

If Pakistani officials really were happy the verdict, then Verghese had a point. The adjustments India had to make to the design of Baglihar were minor, and if Pakistan were concerned about the Indian control of the river flow, there were little reason to celebrate Lafitte's decision.

Despite Pakistan's immediate happy reaction to the verdict, there were signs that all was not well. Indian journalist, Masood Hussain, wrote that contrary to what the victory celebrations in Pakistan suggested, "Islamabad has lost on the most crucial point it wanted to erase from the J&K flagship power project's design - the gated spillways."[375] An Indian senior engineer similarly questioned how Pakistan could reconcile to what they feared the most: India constructing a dam with gated spillways on the western rivers. Power minister in J&K, Nawang Zora, described the verdict as "a slap on Pakistan's face."[376] Was Pakistan really happy with the ruling?

Although the official statements from Pakistan repeatedly confirmed that they accepted the verdict, Pakistani media and opposition leaders discussed whether Pakistan should appeal and request a Court of Arbitration to assess the Baglihar issue.[377] There were several observers who argued that Lafitte had ruled in favor of India,[378] and most Indian experts agreed. Iyer wrote that:

> On the whole, India has reason to be somewhat more satisfied than Pakistan with these findings, as the Project *per se* stands vindicated, and the changes suggested are relatively minor.[379]

Verghese and the Indian Minister for Water Resources, Saifuddin Soz, said that the verdict clearly went in India's favor because it required them to make only minor changes.[380]

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[374] Verghese, "Ideology threatens Indus Treaty."
[375] Masood Hussain, "Baglihar dam: Spillways a blow to Islamabad," *The Economic Times*, 14 February 2007.
[376] "Baglihar cleared, India has its way."
[377] Chidandand Rajghatta, "Pak backs down on Baglihar 'victory' claim," ibid., 15 February.
[378] Brett Walton, "Pakistan and India in Dam Building Race," *Circle of Blue*(2010), http://www.circleofblue.org/waternews/2010/world/pakistan-and-india-in-dam-building-race-interpreting-the-indus-water-treaty/. published online 30 November, retrieved 25 September 2012.
[379] Iyer, *Towards water wisdom: limits, justice, harmony*, p. 85.

John Briscoe, a former Senior Water Advisor for the World Bank, agreed that Lafitte's verdict favored India, but criticized how Lafitte defined "live storage", or pondage in the decision. The pondage of a dam is decided by the amount of water stored behind a dam which the operator of the dam can manage. The IWT sets a limit to the size of the pondage on Indian hydro plants on the western rivers. Pakistan claimed that Baglihar's pondage exceeded this. According to Briscoe, Lafitte's definition of live storage was unusual:

> The neutral expert, applying considerable semantic subtlety, essentially argued that live storage was not the same as "manipulable storage". He argued that only storage that could be used for the operational purpose of generating power constituted "live storage". So if India was creating more "manipulable storage" on the grounds that this was necessary for silt management, then, in the judgment of the neutral expert, this was not live storage and should be allowed. This finding would only make sense if Pakistan's concern in the treaty was to define exactly where the power outlets could be in the Indian dams (which it never was and is not). But it makes no sense if Pakistan's concern was India's capacity to manipulate flows into Pakistan (which it always was and still is).[381]

In the verdict, the neutral expert Raymond Lafitte explained why he accepted that India increased the amount of manipulable water, made possible by the low-level gated spillway:

> In 1960, when the Treaty was signed, the phenomenon of reservoir sedimentation was not recognized everywhere to its full degree of significance. It was only 20 years later, in 1980 that the concept of an integrated reservoir sedimentation management began to be clear and coherent.[382]

Pakistan was mainly concerned with India's ability to control the river flow. Lafitte, on the other hand prioritized silt-control. Briscoe stated that Lafitte's decision was reinterpretation of the IWT which removed,

> the fundamental physical protection (limits in manipulable storage) which Pakistan had against the creation of an Indian ability to seriously manipulate the timing of flows of water into Pakistan.[383]

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[380] Verghese, "Ideology threatens Indus Treaty."
[381] Briscoe, "Troubled Waters: Can a Bridge Be Built over the Indus?."
[382] Lafitte, "Baglihar Dam and Hydroelectric plant. Expert determination - Executive summary."
[383] Briscoe, "Troubled Waters: Can a Bridge Be Built over the Indus?," p. 29.

This was a huge blow to Pakistan because it allowed India more control over the Chenab River water. According to Briscoe, the determination said that the physical limitations no longer made sense.[384]

Would the Baglihar Verdict set precedent?

Since this was the first time a third party had rules in an Indo-Pakistani water dispute, it was believed that the verdict would set a precedent for Indian hydro plants on the western rivers. Although a decision in one dispute under the IWT applies only to that specific case, it would, in the words of Iyer, "be absurd to adopt divergent principles in different cases, the decision in one case will tend to become a precedent for others."[385] Verghese wrote, "Pakistan invoked the Neutral Expert in the Baglihar case and that matter was resolved and significant principles laid down for future guidance."[386] If Lafitte's decision set up precedent, it allowed India to construct gated spillways on future run-of-the-river projects. Chief Minister of J&K, Ghulam Nabi Azad, hoped that the Baglihar verdict would clear the way for more hydro projects in J&K. Azad said, "Jammu and Kashmir is the real beneficiary, as it can use this power and sell it too," and described it as a "win-win situation for both India and Pakistan",[387] without actually elaborating on how Pakistan would benefit from Baglihar.

While most Indian experts were satisfied with Lafitte's decision, Former Secretary on the Indian National Committee on Irrigation and Drainage, M.S. Menon, called the Baglihar verdict "a tragedy".[388] Menon believed that the additional costs due to the modifications in design were not acceptable, and India should therefore not accept Pakistan's repeated objections to their hydro projects. India should instead insist on a review of the IWT. And if Pakistan did not agree to review the treaty, Menon argued that India had to abrogate the IWT.[389]

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[384] John Briscoe, "War or peace on the Indus," *The News*(2010), http://www.thenews.com.pk/TodaysPrintDetail.aspx?ID=232342&Cat=9&dt=4/3/2010.
[385] Ramaswamy R. Iyer, "Jubilation at Indus win is premature," *The Hindu*(2013), http://www.thehindu.com/todays-paper/tp-opinion/jubilation-at-indus-win-is-premature/article4460752.ece.
[386] Verghese, "Ideology threatens Indus Treaty."
[387] "Jammu and Kashmir is real beneficiary: Azad," *The Hindu*, 14 February 2007.
[388] M. S. Menon, "A redundant treaty," ibid., 8 April.
[389] Ibid.

In the aftermath of Baglihar

The Baglihar dispute was resolved and India could complete the Baglihar with Pakistan's approval. If the Indian experts' assumptions were right, the decision would have precedent-setting importance. The verdict was celebrated as a victory in India, and especially in J&K where officials now hoped to construct run-of-the-river project with gated spillways on the western rivers. Pakistani officials also expressed some satisfaction with the ruling. The Pakistan Foreign Minister, Khurshid Kasuri, said the Baglihar verdict was a "ray of hope" that both countries could resolve disputes in a civilized manner.[390] President Pervez Musharraf referred to the Baglihar dispute as an example of the progress in Indo-Pakistani relations, and stated that resolving the Kashmir conflict could be next.[391]

However, despite these reassuringly joyous statements, the Baglihar dispute and the verdict had its downsides. The costs of the project had risen 20% due to delays, partly caused by Pakistan's objections to the project. The costs of Baglihar became much higher than at most other similar Indian hydro plants. In order to become cost-benefit efficient, Baglihar would have to generate electricity for several decades.[392]

In addition, Pakistan soon after the Baglihar verdict announced that they might request a Court of Arbitration to settle the dispute over the Kishenganga hydroelectric project.[393] Hence, it became unclear whether the Baglihar verdict would actually set a precedent, since the Kishenganga would then be defined and settled as a different kind of dispute than Baglihar.[394]

Other hydropolitical issues also arose in the period shortly after the Baglihar verdict. The Pakistani Indus Commissioner, Jamaat Ali Shah criticized how J&K dealt with water pollution in the Indus River system. Shah also expressed concern about the water level in the western rivers, "particularly during the winters when only filth flows to Pakistan".[395] Water experts in J&K suggested joint Indo-Pakistani efforts to deal with the pollution in the western rivers. The Pakistan newspaper, *The Daily Times,* suggested additional reasons for pollution in the rivers:

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[390] Nirupama Subramanian, "Our peoples must maintain contact: Kasuri," ibid., 20 February.
[391] "Kashmir issue ripe for resolution: Musharraf," *The Hindu*, 16 February 2007.
[392] Thakkar, "Baglihar HEP: some crucial facts".
[393] In 2007, India started constructing Kishenganga hydroelectric project on a tributary to the Jhelum River.
[394] "Pak objects to Indus water plan," *Hindustan Times*, 4 June 2007.
[395] Quoted in Iftikhar Gilani, "Pakistan to raise river pollution issue with Delhi," *Daily Times*(2007), http://www.dailytimes.com.pk/default.asp?page=2007/05/28/story_28-5-2007_pg7_5., accessed 22 February 2013

> Jhelum is known for draining dirt, garbage and sludge over the years and during periods of high militancy, it could be also seen draining scores of corpses.[396]

Most of these issues were brought up at the PIC meeting in June 2007. Pakistani commissioner Shah also formally objected to the Indian Uri-II hydro project, on the Jhelum River. Although the design of Uri-II was similar to Baglihar, Shah argued that gated spillways were unnecessary at Uri-II, because Jhelum did not carry as much silt as Chenab did. Pakistan therefore requested India to stop work on Uri-II, and again threatened to request a Court of Arbitration to resolve the dispute.[397] At that point, it seemed as the Baglihar verdict was irrelevant in other water disputes.

However, India and Pakistan continued talks, and finally agreed on the design on Uri-II during the PIC meeting in 2010. Jamaat Ali Shah declared that Pakistan would not object to Uri-II and another Indian small run-of-the-river hydro project, Chutak, on the western rivers.[398]

Pakistan's acceptance of these hydro plants on the western rivers verified somewhat that they found the Baglihar acceptable. The then Pakistani Indus Commissioner Jamaat Ali Shah stated in several interviews afterwards that disputes under the IWT had been, and would continue to be resolved in a spirit of cooperation and goodwill.[399]

Filling the Baglihar dam

When Indian started constructing Baglihar, they planned to complete the project by 2005/2006.[400] After several delays, and increasing costs, Chief Minister of J&K, Ghulam Nabi Azad, declared in late 2007 that Baglihar was soon completed.[401]

However, in order to generate electricity, the hydro plant needed to be filled with water, and Pakistani officials were worried that this filling the dam might cause a period of drought in the Chenab River valley in Pakistan. Pakistani officials therefore wanted to inspect Baglihar before it was commissioned, in order to check that India had made the adjustment to the design that was agreed upon.[402]

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[396] Ibid.
[397] "IWT has not hampered Kashmir agriculture, hydro-electric potential: Shah," *Daily Times*, 5 June 2007.
[398] Suhasini Haidar, "Pak won't object to Indian projects on Indus " *CNN-IBN*, 2 June 2010. retrieved online: http://ibnlive.in.com/news/pak-wont-object-to-indian-projects-on-indus/116891-3.html , 25 September 2012
[399] Ibid.
[400] "Baglihar project to be ready by 2005," *The Hindu*, 12 December 2003.
[401] Luv Puri, "Baglihar to go operational in June: Azad," ibid., 24 December 2007.
[402] Nirupama Subramanian, "Pakistan wants to inspect Baglihar dam," ibid., 1 February 2008.

Baglihar went operational in October 2008, and at the inaugural ceremony, Indian Prime Minister Manmohan Sing emphasized how much the dam meant for the development of J&K. He also announced that the J&K government and the State Power Development Corporation, NHPC and the Power Trading Corporation would cooperate on constructing several other hydro projects in J&K in the future.[403]

While the IWT had long been a symbol of peaceful water-sharing relations, the completion of Baglihar signalized that India was willing to sacrifice the good reputation of IWT in order to further develop hydropower projects in J&K. As long as Pakistan eventually accepted the Indian hydro projects on the western rivers, it seemed as a successful policy. The criticism from J&K towards the Indian government and the IWT became less frequent after the Baglihar was commissioned.

Immediately after Baglihar was commissioned, Pakistani officials complained that the filling of the dam was not in line with the IWT provisions. The Pakistani Indus Commissioner, Jamat Ali Shah, claimed that the water discharge in the Chenab River was only one-fifth of minimum flow in early October 2007, and that this had, "created a drought-like situation in vast stretches" on the Pakistani side of the border.[404] Pakistan's President Asif Ali Zardari said, "Pakistan would be paying a very high price for India's move to block Pakistan's water supply from the Chenab River", and that Pakistan wanted compensation for the reduced flow of water, pointing out that this issue could damage Indo-Pakistani relations.[405]

An article in the Pakistani newspaper *Dawn* pointed out the importance of the Chenab River water, "Pakistan must understand that there is no substitute for this precious commodity,"[406] and the journalist suggested that Pakistan needed more than just compensation, "India should be asked to release water from its own share to save the Indus delta which has its own importance for keeping the regional ecosystem healthy," and this could only be achieved by renegotiating the IWT.[407] An article in *Daily Times* called the drought in Pakistan a water crisis, and warned that if the crisis was not soon resolved under the IWT, "the water situation may become extremely dangerous".[408]

President of Pakistan Muslim League-Quaid, Chaudhry Shujaat warned that the situation might lead to an Indo-Pakistan war. Quoted in *Daily Times,* Shujaat claimed that the

[403] Shujaat Bukhari, "Baglihar project commissioned," ibid., 11 October.
[404] Masood Hussain, "Pak complains of not receiving Chenab water," *The Economic Times*, 22 October 2008.
[405] Nirupama Subramanian, "Violation of treaty will damage ties: Zardari," *The Hindu*, 13 October 2008.
[406] Manzoor Chandio, "Renegotiate the Indus Treaty," *Dawn*, 11 November 2008.
[407] Ibid.
[408] "Water crisis may lead to Indo-Pak war: Shujaat," *Daily Times*, 3 November 2008.

Indus River system was already causing bloodshed between India and Pakistan, linking the fighting in Kashmir securing access to the Indus River system: "mujahedeen in Kashmir are in fact fighting for Pakistan."[409] According to Shujaat, there would be no strengthening of Indo-Pakistani relations before the water crisis was dealt with.

Water and terrorism

The Baglihar resolution did not put an end to the tense hydropolitical situation in the Indus Basin. The criticism from J&K became less frequent, but commentators in Pakistan increasingly presented Indian interference on the Indus River system as a threat to their national security.

26 November 2008, ten Pakistani members of the terrorist organizations Lashkar-e-Tayiba and Jamaat-u-Dawa killed 163 people and wounded 300 in terror attacks in Mumbai.[410] The Mumbai attacks worsened Indo-Pakistani relations severely.[411] The leader of Jamaat-u-Dawa, Hafiz Saeed was accused of organizing the attacks.[412] Saeed later led protest rallies in Pakistan, shouting slogans such as "liberate Kashmir to secure water", and threatening India with, "water flows or blood".[413]

Saeed was among several Pakistani observers who increasingly blamed India for stealing the water in the western rivers in the first two years after the Baglihar verdict.[414] Leaders of Lashkar-e-Tayiba called for jihad to liberate Kashmir and Pakistan from the "water terrorism" of India.[415] Pakistani newspaper *Nawa-i-Waqt* encouraged the Pakistan government to take action against the alleged water theft of India, stating that: "Pakistan should convey to India that a war is possible on the issue of water and this time war will be a nuclear one."[416] Iyer reported that,

> 'India is stealing Pakistan's water' has become a familiar cry at the popular level, echoed in the media, picked up by the jihadists, and acquiesced in at the official and expert levels through silence in Pakistan.[417]

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[409] Ibid.
[410] Wolpert, *India and Pakistan: Continued conflict or cooperation?*, p. 3.
[411] "Re-Imagining the Indus."
[412] Saeed has denied any connection to the terror attacks.
[413] Mandhana, "Water wars: why India and Pakistan are squaring of over their rivers."
[414] E.g. Asif Haroon Raja, "Water theft by India pose an existential threat to Pakistan," *Asian Tribune*(2009), http://www.asiantribune.com/node/21823; "Politicians criticised for not taking up water issue with India," *Dawn*, 27 July 2009.
[415] Verghese, "Ideology threatens Indus Treaty."
[416] Quoted in "Unquenchable thirst."
[417] Ramaswamy R. Iyer, "Water through Pakistani eyes," *The Hindu*, 6 August 2010.

Verghese denounced the utterances as "totally irresponsible" and "baseless rhetoric".[418]

At the annual PIC meeting in 2009, the Pakistani Indus Commissioner, Jamaat Ali Shah, complained about the filling of Baglihar, and objected to the Indian hydro projects Kishenganga and Uri-II projects on the western rivers.[419] However, Shah was afterwards accused in Pakistan for not being tough enough when negotiating with India.[420]

The PIC-meeting seemed similar to many of the previous meetings. The Pakistani commissioner complained about, or objected Indian hydroelectric project on the western rivers, while the Indian counterpart tried to assure that projects were in line with the IWT. It did not seem like the Baglihar verdict had set precedent, as the Indian experts had expected.

India and Pakistan continued discussing the different issues though, and finally agreed on the design of Uri-II during the PIC meeting in 2010. Jamaat Ali Shah declared that Pakistan would not object to Uri-II and another Indian small run-of-the-river hydro project, Chutak, on the western rivers.[421] Pakistan's acceptance of these hydro plants on the western rivers verified somewhat that they found the design of Baglihar and similar – but smaller - projects acceptable. Ali Shah also agreed to drop the complaint about the initial filling the Baglihar dam. Expert on water law, Salman M.A. Salman, argued that even though the Baglihar dispute had taken years to settle, the impartial and just manner of the process could be a standard for future differences under the IWT.[422] Jamaat Ali Shah stated in several interviews afterwards that disputes under the IWT had been, and would continue to be resolved in a spirit of cooperation and goodwill.[423]

Summary

This chapter has outlined the hydropolitical development in the Indus Basin and the Indian experts' attitudes towards the Baglihar dispute from 2005 till 2008. Even though India and Pakistan were never close to reaching an agreement before 2005, and Pakistani officials had

[418] Verghese, "Ideology threatens Indus Treaty."
[419] Suba Chandran, "Indus Waters Treaty-II: For Better Indus Waters Governance," (2009), http://www.ipcs.org/article_details.php?articleNo=2891.
[420] "Politicians criticised for not taking up water issue with India."
[421] Haidar, "Pak won't object to Indian projects on Indus ". retrieved online: http://ibnlive.in.com/news/pak-wont-object-to-indian-projects-on-indus/116891-3.html , 25 September 2012
[422] Salman, S. M. A. "The Baglihar difference and its resolution process–a triumph for the Indus Waters Treaty", *Water Policy*, 10, 2008
[423] Haidar, "Pak won't object to Indian projects on Indus ".

warned that they considered taking the dispute to a neutral expert, several Indian observers were surprised when Pakistan requested a neutral expert to interfere in the Baglihar dispute.

Water, and water sharing with India, seemed to be an increasingly important issue for Pakistan in the 2000s, but it was not before 2005 that Indian experts began analyzing the Pakistani Indus Basin policy. Indian experts such as Waslekar, Verghese and Iyer examined Pakistani motives for taking the Baglihar dispute to a neutral expert. According to Verghese, Pakistan objected to Baglihar in order to hinder Indian investment in J&K, and thereby weakening the Government of India's position in J&K. Waslekar connected the Pakistani Indus policy to the presidency of Pervez Musharraf, arguing that the Indus River system had become Pakistan's "core issue" in the 2000s. Iyer, on the other and, denied that water could be Pakistan's core issue, because the IWT safe-guarded Pakistan's water supply.

The neutral expert, Raymond Lafitte, decided that India could use the gated spillways on Baglihar, thereby reinterpreting the regulations of IWT, grounded on new technological knowledge about sediment management. Even though some Pakistani officials stated initially that they were satisfied with the verdict, it was generally accepted that the verdict favored the Indian claim.

Indian experts expected that the ruling in the case would set up precedent in later hydropolitical disputes. The solution to the disputes concerning two smaller Indian hydro projects on the western rivers: Uri-II and Chutak, in 2010, might have been affected by the Baglihar verdict. However, the much more important Kishenganga dispute, in terms of size and diversions of water, seemed to suggest that the Baglihar verdict would be largely irrelevant in later cases.

Epilogue: the Kishenganga dispute

Although the period of focus in this thesis is 1999 till 2008, it is necessary to comment on certain aspects of the hydropolitical development in the Indus Basin after this period. In 2007, India began constructing the Kishenganga hydroelectric project on Neelum River, a tributary to the Jhelum River. Kishenganga was designed to generate electricity, and divert water from the Neelum River in to the Wular Lake before it joined the Jhelum River.

Pakistan objected to Kishenganga because it diverted water, and because it was designed with gated spillways on a low level of the dam. The dispute was in several ways similar to the Baglihar dispute, and the case provided an example of what effect the Baglihar verdict had on later disputes under the IWT.

Pakistan took the Kishenganga dispute to the Permanent Court of Arbitration (PCA) in Hague, in July 2010. In February 2013, the PCA ruled in favor of India on the point of constructing Kishenganga and that it could divert water, in a partial award.[424] This was initially regarded as victory in Indian press, and by the Indian Ministry of External Affairs.[425]

If the Baglihar verdict had set precedent in future disputes, India could have constructed hydroelectric projects with low-level gated spillways, enabling silt-flushing an thereby increasing their live storage capacity on the western rivers. But the PCAs decision contradicted the neutral expert's verdict on the issue of gated spillways, deciding that India was not allowed to construct gated spillways on the dam.

Briscoe claimed that the Baglihar verdict allowed for new knowledge and technology on sediment management and thereby ignored Pakistan's fear of Indian control over the western rivers. The partial award in the Kishenganga case however, "restored the central protection – put into question by the Baglihar finding – which Pakistan had acquired when Nehru and Ayub Khan signed the IWT in 1960."[426]

One of the apparent reasons why the Baglihar verdict was such an important issue in Indus Basin hydropolitics, was that it was the first dispute a third party was requested to resolve. It was generally accepted that this would mean that Baglihar would have precedent setting importance. The hydropolitical development in the Indus Basin from 2008-2013 in general, and the Kishenganga dispute specifically, suggested that the Baglihar verdict had little influence in other water disputes. That does not imply that the Baglihar dispute was of small importance. The Baglihar dispute will continue to be disputed, as long as the IWT remains unchanged. In the words of Briscoe, "of course, Pakistan will continue to object to every project on the Indus Jhelum or Chenab in Indian-held Kashmir".[427]

[424] This ruling was a partial award. The final award will be announced in December 2013: Mubarak Zeb Khan, "India can divert only minimum water from Kishanganga: tribunal," *The Dawn*(2013), http://dawn.com/2013/02/19/india-can-divert-only-minimum-water-from-kishanganga-tribunal/.
[425] E.g. Ravish Tiwari, "India wins Kishanganga case at The Hague court," *The Indian Express*(2013), http://www.indianexpress.com/news/india-wins-kishanganga-case-at-the-hague-court/1076239/2; "Kishenganga project: India wins crucial hearing against Pakistan," *NDTV*(2013), http://www.ndtv.com/article/india/kishenganga-project-india-wins-crucial-hearing-against-pakistan-332605; Ministry of External Affairs - Government of India, "Award of the Court of Arbitration at the Hague on Kishenganga Hydro-Electric Project," *Media Briefings*(2013), http://www.mea.gov.in/media-briefings.htm?dtl/21192/Award+of+the+Court+of+Arbitration+at+the+Hague+on+Kishenganga+HydroElectric+Project.
[426] Briscoe, "Winning the battle but losing the war".
[427] Ibid.

5. Conclusion

This thesis is a work in intellectual history, and throughout the thesis I have studied the writings of Indian water experts, and ideas and arguments they provided within the context of Indus Basin hydropolitics during the Baglihar dispute, 1999-2008.

The Baglihar dispute was essentially a conflict between the Government of India and the Government of Pakistan, but also included a dispute between the state government of J&K and the Government of India. In addition, debates about Indus Basin hydropolitics were carried out by Indian experts in the English-language public sphere, thereby constituting a particular element to the overall Baglihar dispute.

I have presented the analysis chronologically, and examined how several experts entered the dispute at different times, and participated in debates on various sub-topics under the Baglihar dispute. These debates can be viewed as a form of conflict management, where the Indian experts provided knowledge and information, influenced by the new and growing field of studies of hydropolitics, i.e. the management of conflicts over water sharing.

The experts provided important knowledge and information, and expert networks which pressure governments can be important for international environmental cooperation. However, at this point, the practical effects of the arguments Indian experts offered, on the process of the management of the Baglihar dispute, cannot be known. This thesis is therefore a preliminary attempt, as I have examined one arena of conflict management, and the informal management process this constitutes.

India's dilemma: J&K or Pakistan

India had to balance their relations with J&K, who wanted to exploit the waters in the western rivers further, and with Pakistan, who objected to - and feared - Indian control over these rivers. J&K's position stood in clear contrast to Pakistan's, and India had to choose whose interest they would prioritize. J&K was a part of India, and it would be logical for India to prioritize J&K. However, neglecting the Pakistan position could open up Pandora's Box; it could lead to violent conflicts over water.

Since the IWT was signed in 1960, India and Pakistan had managed to avoid conflict over water. However, by constructing hydropower projects in J&K, India could potentially

violate the treaty. Although the causal relationship between water scarcity and violent conflict is much debated, the mere possibility of a violent conflict over water seemed to affect the Indian Indus Basin policy.

India avoided violent conflict during the Baglihar dispute, but their water sharing relations with Pakistan remained tense and conflictual. An increasing number of scholars joined the hydropolitical debates during the Baglihar dispute. When the Baglihar dispute officially ended, the Kishenganga dispute arose, and as long as India continues to build hydro plants on the western rivers, which they plan to do, Pakistan will probably object to most of them and new disputes will arise.

Putting the Baglihar dispute in a historical context

Why did Pakistan object to the Baglihar dam when, in the words of John Briscoe, "they could be spending their scarce human resources on more productive areas, like improving the management of water."[428] As shown in this thesis, there were different suggestions on what the Pakistani motives for objecting was, and it can best be answered by contextualizing the Baglihar dispute in the history of water sharing between India-Pakistan.

When The World Bank presented a proposal for an Indus river-water sharing treaty in 1954, India immediately agreed to it, but Pakistan refused. The Pakistani leaders refused to sign in 1954 because the allocation of water according to the treaty-proposal would be devastating to agricultural areas in the Punjab province, previously irrigated by water from Ravi, Beas and Sutlej.

Pakistan finally agreed to sign the IWT in 1960, when they received a huge one-time financial assistance, enabling them to construct dams and canals for transferring water from the western to the eastern rivers in the Indus Basin. When Pakistan had completed these works, the waters of Indus, Jhelum and Chenab would support the agriculture of the whole river basin.

The IWT was successful as a conflict resolution, and it is generally accepted that the IWT worked satisfactory the first 30-40 years. However, it functioned because there were few hydropolitical disputes in the Indus Basin. As Iyer have written, the PIC "merely had to monitor the implementation of the treaty".[429]

[428] Briscoe, "Winning the battle but losing the war".
[429] Iyer, "Conflict-resolution: Three river treaties," p. 1516.

It was not before the late 1990s that the treaty came under stress. Suba Chandran wrote in 2009, that the IWT was "signed in 1960, almost fifty years back, in a different political, economic, demographic, ecological and energy environment. Today there has been a considerable change in all these five areas".[430] In 1960, it was acceptable to split the allocation of water in the river basin between two political units, but the increasing water scarcity in the Indus Basin the next 40 years made the allocations of water under the IWT outdated in terms of water management.

Along with the changes Chandran described, there was an increased interest in India, and especially in J&K, to utilize the hydropower potential in the western rivers. However, when India signed the IWT in 1960, they accepted that they could not utilize the western rivers in any consumptive uses. Officials in J&K had never been satisfied with the IWT, but in the late 1990s they criticized the Government of India and the IWT more frequently.

Before 2002**,** most Indian experts ignored the criticism towards the IWT in J&K. Although most Indian experts agreed that the IWT hindered optimal water management in the Indus Basin, they viewed it as an acceptable treaty, because there had been few disputes and no conflicts over water since the treaty came into being. Avoiding conflicts was viewed as more important than enhancing water management, especially by Iyer. Swain on the other hand, connected these two, writing that enhanced water management could reduce the risk of conflict over water.

Debates on abrogation of the Indus Waters Treaty

While the Indian experts ignored the perspectives in J&K, the Indian Government at that time responded to it by initiating the construction of Baglihar. It had been on the drawing board since the early 1990s, but construction was not initiated before 1999. When Pakistan learned that Baglihar was under construction, they objected to it. Even though the IWT allowed India to construct run-of-the-river plants, Pakistan argued that Baglihar had too much storage capacity which would give India too much control over the Chenab River. Most Indian experts ignored the Pakistani objections at that time. Iyer suggested that Baglihar was only difficult to resolve because of the poor political relations between India and Pakistan at that time.

Pakistan's formal objection to Baglihar coincided with severe sedimentation issues at the Salal dam. India considered violating the IWT by flushing silt through gated spillways at

[430] Chandran, "Harnessing the Indus Waters: Perspectives from India".

the dam, in order to make the hydroelectric plant operational again. Together with the IWT-critique in J&K, these concerns led to a debate on whether India should abrogate the IWT. Indian Minister of Water Resources, Bijoya Chakraborty, gave words to the seriousness of the situation: "If we decide to scrap the Indus Water Treaty, then there will be drought in Pakistan and the people of that country would have to beg for every drop of water."[431]

Iyer and Verghese joined the debate and labeled abrogation as ridiculous, because it would lead to uncertainty and perhaps violent conflict over water. Chellaney suggested, as the only Indian expert, that India should abrogate the IWT and build several hydro plants which could be used as water weapons against Pakistan. India followed Iyer and Verghese's recommendation, and stood by the IWT.

Indo-Pakistani relations seemed to be improving in 2004, but that did not enable India and Pakistan to solve the Baglihar dispute. Even though Pakistan warned several times that they considered taking the Baglihar dispute to a neutral expert, most Indian experts were surprised when Pakistan did so, in 2005. This might suggest that there is an unclear connection between hydropolitics and political relations in general, i.e. that water issues are special. It has been pointed out repeatedly that India and Pakistan's cooperation under the IWT during wartime is remarkable. During the Baglihar dispute, several experts and other observers were surprised that India and Pakistan did not manage to solve the Baglihar dispute bilaterally at a time relations seemed to be improving.

The Pakistani view

Pakistan's request for a neutral expert attracted a lot of attention in Indian media and among Indian experts. Several experts immediately began analysis the Pakistani view on Indus Basin hydropolitics. Similar to how Iyer in 2002 had connected the unresolved Baglihar to the troubled Indo-Pakistani relations, several Indian experts suggested that Pakistan's request for a neutral expert was not motivated by their need for water; it was "political". Verghese argued that Musharraf had taken a recent "U-turn" on water issues, and that Pakistan only objected to Baglihar in order to hinder development in J&K.[432] Waslekar's empirical study of the Pakistani view rejected Verghese's claim. His studies showed that there was a real worry in Pakistan that Baglihar would threaten their water supply and that it gave India too much control over the river flow in Chenab.

[431] Hussain, "Indian minister says Pakistan water treaty could be scrapped."
[432] Verghese, "Political Fuss Over The Indus."

| In other words, the Baglihar dispute was a core issue of national interest for Pakistan. Iyer and Verghese both argued that there was no reason for Pakistan to worry, because Pakistan's water supply was safeguarded in the IWT regulations. But some Indian observers suggested that India needed to recognize the Pakistani perspectives in order to avoid conflict over water. However, the Pakistani position was opposite to the position of J&K, and how could India heed J&K's call for hydropower investments without provoking Pakistan?

Renegotiating the Indus Waters Treaty

Several of the Indian experts suggested that a solution to the hydropolitical dispute was to renegotiate the IWT. Verghese, Swain, Waslekar and Chandran advocated that a new Indus-treaty should be based on basic IWRM-principles, such as treating the river basin as one hydrological unit, and implementing joint Indo-Pakistan projects. This would arrange for optimized usage of the river water, for the benefit of both India and Pakistan.

However, Iyer called renegotiation unrealistic. Nation states are generally unwilling to give up sovereignty over natural resources, and Iyer argued that an attempt at renegotiating the IWT would have opened up old settled issues, leading to an increasing number of hydropolitical conflicts in the Indus Basin. Iyer delegitimized critique towards the IWT, whether it stemmed from India or Pakistan, because he deemed there were no other realistic alternative. Again, Iyer emphasized that avoiding conflict was more critical than enhancing water management.

India acted, like they did during the entire Baglihar dispute, closely in line with Iyer's recommendations: sticking to the IWT, and trusting that either the PIC or the other dispute-resolving mechanisms would solve water disputes.

The importance of Indian experts

Experts entered the debates on different times. The debates were reactions to the hydropolitics of the region. However, the reactions often came late, if they came at all. The dissatisfaction in J&K in the late 1990s, and the first Pakistani objections to the Baglihar dam, was largely ignored by Indian experts. The Kashmiri and the Pakistani views attracted little attention before the legislative assembly of J&K demanded a review of the IWT in 2002, and the Government of Pakistan took the Baglihar dispute to a neutral expert in 2005.

The importance of Indian experts can perhaps be examined by comparing the Baglihar dispute (1999-2008) with the Salal dispute (1974-1978). Although most scholars seem to

agree that the IWT functioned well before the 1990s, it is necessary to question why the Salal dispute has been perceived as successful by some Indian observers. Former Foreign Secretary of India, Jagat S. Mehta, played a decisive part in the Salal negotiations, and when resolving the dispute in 1978, Mehta accepted that the gated spillways at Salal were permanently closed. The Salal dam became an inefficient and costly project, mainly because of lack of sediment-control. Later, Mehta argued that professional engineers "must not be allowed to dominate and determine the strategy or inhibit broader and long-term goals."[433] According to Mehta, engineers tended to be too occupied with details, while Foreign Secretaries such as himself, were more likely to make "bolder decisions".[434]

This was an example of how effective conflict-resolution could have considerable downsides in terms of costs and water management, much like the IWT itself. The resolution to the Salal dispute, and the IWT, have both functioned politically, but have gradually failed in terms of water management.

It took ten years to construct Baglihar, and costs increased because of the dispute with Pakistan and the involvement of a neutral expert, but the sediment-control at Baglihar, enabled through gated spillways, will probably make it a more efficient project than the Salal. It would therefore be interesting to do a study of the influence of Indian water experts' in the Salal dispute and compare it with experts' role in the Baglihar dispute. At the time of this writing, it is too early to judge whether the Baglihar has been a successful project, and there is no available source material in order to examine the influence of experts upon the Indian government.

Baglihar and future disputes

The Baglihar dispute was the first Indo-Pakistani water dispute that was resolved by a neutral expert, and several Indian experts thought it would have precedent setting importance. However, in the PIC-meetings the first few years after the Baglihar verdict, new disputes arouse and the Baglihar verdict seemed largely irrelevant in these new cases. Especially the Kishenganga verdict was opposite to the Baglihar verdict on the issue of gated spillways, and Pakistan will therefore probably continue to object to future Indian projects in order to hinder India from increasing their control over the western rivers.

[433] Iyer was a professional engineer; Mehta, "The Indus Water Treaty - a case-study in the the resolution of an international river basin conflict."
[434] Ibid.

Although the Baglihar verdict did not set precedent it is still an important dispute. It showed that the IWT still functioned as a set of rules which India and Pakistan accepted, in a period of changing Indo-Pakistani relations and increased water scarcity. While several experts suggested that the IWT must be renegotiated, in order to deal with water scarcity in the Indus Basin, it seemed unrealistic that India and Pakistan could manage their water resources jointly. Iyer argued that the water management in the Indus Basin must be improved unilaterally, and was supported by a study from 2009 which suggested that "there is scope for unilateral action [which] could prevent future conflict and improve people's lives within Pakistan and India".[435]

If there is causation between water scarcity and water conflict, India and Pakistan seemed to be on the verge of violent conflict during the Baglihar dispute. India and Pakistan continued to cooperate on water issues according to a water treaty that was signed five decades earlier. India's hydropolitical policy during the Baglihar dispute was closely in line with the recommendations of Iyer, seemingly prioritizing the demands from J&K, but managing to avoid violation of the IWT at the same time. When India begins construction of new hydro plants – there are many on the drawing board – Pakistan will probably object, and there will be a new dispute. Some of these disputes might take form as scholarly debates, others as violent conflicts. It is perhaps timely to repeat the quote of Wolf, from the introduction of this thesis:

> Water is never the single - and hardly ever the major - cause of conflict. But it can exacerbate existing tensions and therefore must be considered within the larger context of conflict and peace.[436]

Further research could perhaps explore if any violent conflicts, such as the Kargil Conflict, or terror attacks, such as the Mumbai attacks in 2008, was connected to Indus Basin hydropolitics.

The different directions of the Baglihar dispute

The complexity of hydropolitics and water management makes it a topic which easily can be drawn in different directions, within different contexts. Along the decade long Baglihar dispute, the arguments of Indian experts varied to some extent. There were of course

[435] Miner et al., "Water sharing between India and Pakistan: A critical evaluation of the Indus Water Treaty," p. 204.
[436] Wolf et al., "Managing Water Conflict and Cooperation," p. 81.

differences (and similarities) between the separate experts, but the positions of the experts also seemed to change. One of the more explicit examples was Iyer, who referred to the UN Convention on the Law of the Non-navigational Uses of International Watercourses as a reason for India to keep the treaty in 2002, but later deemed the convention irrelevant in a debate with a Pakistani scholar. Another example was Verghese, who regularly pointed at the issues of water management in the Indus Basin, suggesting that renegotiating the IWT would be best for the ecology of the region. At other times however, Verghese delegitimized the Pakistani water worries, based on the argument that Pakistan's water supply was safeguarded in the IWT. An example of another kind was Chellaney, who recommended that India utilized the economic and military potential of the Indus River system in 2002, and later argued that drastic acts were necessary in order to avoid conflict over water in Asia.

The point being that within the Baglihar disputes there were several sub-disputes or debates, which have been tracked throughout this thesis, and the Baglihar dispute took on different meanings for the Indian experts in the various debates. This thesis has merely focused on one aspect of the Baglihar dispute, the informal conflict management process, constituted by Indian experts. Further research on the Baglihar dispute could explore other aspects on how disputes about river-water sharing can assume different forms in various debates, depending on its context, i.e. who are the debaters; when and where is the debate taking place; what were the goal of their debate participant, and who were their intended audience, both long term and short term.

BIBLIOGRAPHY

(ESCAP), UN's Economic and Social Commission for Asia and the Pacific. "Statistical Yearbook for Asia and the Pacific 2011." (2011). http://www.uis.unesco.org/Library/Documents/statistical-yearbook-asia-pacific-education-2011-en.pdf.

Alam, S. "Sedimentation Management in Hydro Reservoirs." In *Water India (Conference)*. Delhi,, 2004.

Alam, Undala Z. "Mediating the Indus Waters Treaty." Unpublished Ph.D. thesis, University of Durham, 1998.

Amery, Hussein A., and Aaron T. Wolf. *Water in the Middle East : a geography of peace*. Austin, Tex.: University of Texas Press, 2000.

Anand, A.S. *The constitution of Jammu & Kashmir: its development & comments*. Universal Book Traders, 1994.

Archer, D. R., N. Forsythe, H. J. Fowler, and S. M. Shah. "Sustainability of water resources management in the Indus Basin under changing climatic and socio economic conditions." *Hydrol. Earth Syst. Sci.* 14, no. 8 (2010): 1669-80.

"Baglihar cleared, India has its way." *The Times of India*, 14 February 2007.

"Baglihar project to be ready by 2005." *The Hindu*, 12 December 2003.

Baid, Samuel. "Not Kashmir but Kashmir's Water Is the Core Issue for Pakistan." *Greater Kashmir*, 28 March 2005.

Bakshi, Gitanjali, and Sahiba Trivedi. *The Indus Equation*. Mumbai: Strategic Foresight Group, 2011.

Bansal, Alok. "Baglihar and Kishanganga: Problems of Trust ", *India - articles* (2005). Published electronically 13 June. http://www.ipcs.org/article/india/baglihar-and-kishanganga-problems-of-trust-1762.html.

BBC. "The Future of Kashmir." http://news.bbc.co.uk/2/shared/spl/hi/south_asia/03/kashmir_future/html/7.stm.

BBC. "World Bank rules on Kashmir dam." 2012, no. 20 September (2007). Published electronically 13 February. http://news.bbc.co.uk/2/hi/south_asia/6356061.stm.

Bedi, Rahul. "India, Pakistan ready missiles: U.S. Secretary of State calls for restraint as two nuclear rivals move closer to war." *National Post*, 27 December 2001.

Bhattacharjee, Joyeeta. "Water key to cooperation in South Asia, says B.G. Verghese ", (2011). http://www.observerindia.com/cms/sites/orfonline/modules/report/ReportDetail.html?cmaid=21250&mmacmaid=21251.

Biswas, A. K. "Management of International Waters: Opportunities and Constraints." *International Journal of Water Resources Development* 15, no. 4 (1999): 429-41.

Biswas, Asit K. "Indus Waters Treaty - the negotiating process." *Water International* 17, no. 4 (Dec 1992): 201-09.

Brekke, Mary. *Å begripe teksten*. Kristiansand: Høyskoleforl., 2006.

Brett, Annabel. "What is intellectual history now?". In *What is history now?*, edited by David Cannadine, 113-31. New York: Palgrave, 2002.

Briscoe, John. "Troubled Waters: Can a Bridge Be Built over the Indus?". *Economic and Political Weekly* 45, no. 50 (11 December 2010): 28-32.

Briscoe, John. "Winning the battle but losing the war." *The Hindu* (2013). Published electronically 22 February. http://www.thehindu.com/opinion/lead/winning-the-battle-but-losing-the-war/article4439676.ece.

Briscoe, John "War or peace on the Indus." *The News* (2010). Published electronically 3 April 2010. http://www.thenews.com.pk/TodaysPrintDetail.aspx?ID=232342&Cat=9&dt=4/3/2010.

Bukhari, Shujaat. "Baglihar project commissioned." *The Hindu*, 11 October 2008.

Bukhari, Shujaat. "Flood situation grim in J&K." *The Hindu*, 4 September 2006.

Buzan, Barry, Jaap de Wilde, and Ole Wæver. *Security: a new framework for analysis*. Boulder, Colo.: Lynne Rienner, 1998.

Chakraborty, Roshni. "Sharing of River Waters among India and its Neighbors in the 21st century: War or Peace?". *Water International* 29, no. 2 (2004/06/01 2004): 201-08.

Chandio, Manzoor. "Renegotiate the Indus Treaty." *Dawn*, 11 November 2008.

Chandra, Parul. "India can breach Indus Waters Treaty to flood Pak." *Times of India*, 28 December 2001.

Chandra, Parul. "Indus Treaty may be abrogated." *The Times of India*, 26 December 2001.

Chandran, Suba. "Harnessing the Indus Waters: Perspectives from India." *IPCS Issue Brief* no. 122 (2009). Published electronically September. http://www.ipcs.org/pdf_file/issue/IB129-Ploughshares-Suba.pdf.

Chandran, Suba. "Indus Waters Treaty-II: For Better Indus Waters Governance." (2009). Published electronically 10 June. http://www.ipcs.org/article_details.php?articleNo=2891.

Chari, PR. "India-Pakistan Relations: In need of external direction?", *Indo-Pak - Articles* (2004). Published electronically 30 December. http://www.ipcs.org/article/indo-pak/india-pakistan-relations-in-need-of-external-direction-1604.html.

Chellaney, Brahma. "India should act, not just talk." *Hindustan Times*, 30 May 2002.

Chellaney, Brahma. "Water treaties & diplomacy: India faces difficult choices on water." *The Economic Times*, 10 May 2012.

Chellaney, Brahma. *Water: Asia's New Battleground*. Washington D.C.: Georgetown University Press, 2011.

"Clinton should tell Pakistan to stop terrorism - Farooq." *The Times of India*, 11 March 2000.

Conca, Ken. *Governing water : contentious transnational politics and global institution building*. Cambridge, Mass.: MIT Press, 2006.

Cooley, John K. "The War over Water." *Foreign Policy*, no. 54 (1984): 3-26.

Curran, Bronwyn. "'Jugular veins' of Pakistan carry trigger for holocaust." *Agence France-Presse*, 15 April 2003.

Das, Biswajit. "Planning and Building the Subansiri Lower Dam and Hydro Project." Article, (2012). Published electronically 1 January 2012. http://www.hydroworld.com/index/display/article-display/9303458802/articles/hydro-review-worldwide/Vol-20/issue-1/articles/dam-design/Planning-and-Building.html.

Dellapenna, Joseph W. "The Berlin rules on watercourses: the new paradigm for international water law." 2007.

DeWalt, Kathleen M., and Billie R. DeWalt. *Participant observation : a guide for fieldworkers*. Walnut Creek, Calif: AltaMira Press, 2002.

Diehl, Paul F., and Nils Petter Gleditsch. *Environmental conflict*. Boulder, Colo.: Westview Press, 2001.

Dourish, Paul. "Points of Persuasion: Strategic Essentialism and Environmental Sustainability." Paper presented at the Persuasive Pervasive Technology and Environmental Sustainability, Workshop at Pervasive, 2008.

Elhance, Arun P. *Hydropolitics in the Third World : conflict and cooperation in international river basins*. Washington, D.C.: United States Institute of Peace Press, 1999.

Evers, Hans-Dieter, and Solvay Gerke. "Knowledge is Power: Experts as Strategic Group." Bonn: ZEF Working Paper 8a, 2005.

Gaur, Mahendra. *Foreign policy annual, 2006*. Delhi: Kalpaz Publications, 2006.

Gazdar, Haris. "Baglihar and Politics of Water: A Historical Perspective from Pakistan." *Economic and Political Weekly* 40, no. 9 (2005): 813-17.

Gilani, Iftikhar. "IWT has not hampered Kashmir agriculture, hydro-electric potential: Shah." *Daily Times*, 5 June 2007.

Gilani, Iftikhar. "Pakistan to raise river pollution issue with Delhi." *Daily Times* (2007). Published electronically 28 May 2007. http://www.dailytimes.com.pk/default.asp?page=2007/05/28/story_28-5-2007_pg7_5.

Gleditsch, Nils Petter. "Armed Conflict and the Environment: A Critique of the Literature." *Journal of Peace Research* 35, no. 3 (1998): 381-400.

Gleick, Peter H. "Water and Conflict: Fresh Water Resources and International Security." *International Security* 18, no. 1 (1993): 79-112.

Gleick, Peter H. *The world's water 1998-1999 : the biennal report on freshwater resources*. Washington D.C.: Island Press, 1998.

Gooch, Geoffrey D., and Alistair Rieu-Clarke. "The Science-Policy-Stakeholder Interface and Transboundary Water Regimes." In *Science, Policy and Stakeholders in Water Management*, edited by Geoffrey D. Gooch and Per Stålnacke. London: Earthscan, 2010.

Gooch, Geoffrey D., and Per Stålnacke. "Science, policy, and stakeholders in water management." London: Earthscan, 2010.

Gordon, Peter E. . "What is intellectual history: A frankly partisan introduction to a frequently misunderstood field." (2009). http://history.fas.harvard.edu/people/faculty/documents/pgordon-whatisintellhist.pdf.

Grant, Bruce. "Indus River Agreement." *The Age*, 22 September 1960.

Gulhati, Niranjan D. *Indus waters treaty: an exercise in international mediation*. Bombay: Allied publishers, 1973.

Haidar, Suhasini. "Pak won't object to Indian projects on Indus " *CNN-IBN*, 2 June 2010.

Hays, Samuel P. "Toward Integration in Environmental History." *Pacific Historical Review* 70, no. 1 (2001): 59-67.

Hewitt, Kenneth. "The Karakoram Anomaly? Glacier Expansion and the 'Elevation Effect,' Karakoram Himalaya." *Mountain Research and Development* 25, no. 4 (2005/11/01 2005): 332-40.

Homer-Dixon, Thomas F. "Environmental Scarcities and Violent Conflict: Evidence from Cases." *International Security* 19, no. 1 (1994): 5-40.

Hussain, Masood. "Baglihar dam: Spillways a blow to Islamabad." *The Economic Times*, 14 February 2007.

Hussain, Masood. "Pak complains of not receiving Chenab water." *The Economic Times*, 22 October 2008.

Hussain, Masood. "`We want autonomy - we had it earlier'." *The Economic Times*, 13 June 2000.

Hussain, Zarir. "Indian minister says Pakistan water treaty could be scrapped." *Agence France-Presse*, 23 May 2002.

Hågvar, Yngve Benestad. *Å forstå avisa : Innføring i praktisk presseanalyse*. Bergen: Fagbokforlaget, 2007.

Iggers, Georg G., Q. Edward Wang, and Supriya Mukherjee. *A global history of modern historiography*. Harlow: Pearson Longman, 2008.

"India expels four Pak High Commission officials." *Times of India*, 22 January 2003.

India, Ministry of External Affairs - Government of. "Award of the Court of Arbitration at the Hague on Kishenganga Hydro-Electric Project." *Media Briefings* (2013). Published electronically 18 February. http://www.mea.gov.in/media-briefings.htm?dtl/21192/Award+of+the+Court+of+Arbitration+at+the+Hague+on+Kishenganga+HydroElectric+Project.

"India rebuts Pak charge of flouting Indus Treaty." *Times of India*, 21 February 2002.

India), Ministry of Water Resources (Government of. "Annual Report 2000 - 2001." New Delhi, 2001.

"India, Pak review Indus treaty." *Business Standard*, 30 May 2002.

"Indus Water Meet - Pak sticks to stand on Baglihar." *The Times of India*, 1 June 2003.

"The Indus Waters Treaty." In *419 U.N.T.S. 126.* Signed in Karachi, 19 September 1960.

IPCC. "IPCC statement on the melting of Himalayan glaciers." (2010). Published electronically 20 January. http://www.ipcc.ch/pdf/presentations/himalaya-statement-20january2010.pdf.

Iyer, Ramaswamy R. "Baglihar, Neutral Expert and 'differences'." *The Hindu*, 9 June 2005.

Iyer, Ramaswamy R. "Baglihar: the points at issue." *The Hindu*, 19 October 2005.

Iyer, Ramaswamy R. "Conflict-resolution: Three river treaties." *Economic and Political Weekly* 34, no. 24 (Jun 1999): 1509-18.

Iyer, Ramaswamy R. "Indus Treaty: 'Core' and Other Issues." *Economic and Political Weekly* 40, no. 11 (2005): 1075-76. http://www.jstor.org/stable/4416338.

Iyer, Ramaswamy R. "Indus Treaty: A Different View." *Economic and Political Weekly* 40, no. 29 (2005): 3140-44.

Iyer, Ramaswamy R. "Jubilation at Indus win is premature." *The Hindu* (2013). Published electronically 28 February. http://www.thehindu.com/todays-paper/tp-opinion/jubilation-at-indus-win-is-premature/article4460752.ece.

Iyer, Ramaswamy R. "Pakistan: Water on the boil again." *The Hindu*, 26 July 2011.

Iyer, Ramaswamy R. *Towards water wisdom: limits, justice, harmony*. New Delhi: Sage Publications, 2007.

Iyer, Ramaswamy R. "Was the Indus Waters Treaty in Trouble?". *Economic and Political Weekly* 37, no. 25 (2002): 2401-02.

Iyer, Ramaswamy R. "Water through Pakistani eyes." *The Hindu*, 6 August 2010.

Iyer, Ramaswamy R. *Water: perspectives, issues, concerns*. New Delhi: Sage Publications, 2003.

Iyer, Ramaswamy R. . "Jubilation at Indus win is premature." *The Hindu*, 28 February 2013.

"J&K on the verge of fiscal collapse." *Business Standard*, 7 November 1996.

"Jammu and Kashmir is real beneficiary: Azad." *The Hindu*, 14 February 2007.

"Jammu and Kashmir wants review of water pact with Pakistan." *Pioneer*, 7 March 2000.

Jha, Nilanjana Bhaduri. "CSS to decide on next step in diplomatic offensive." *The Times of India*, 27 December 2001.

Joseph, Josy. "Mortar and missile, with love from Pakistan." *The Times of India*, 20 January 2005.

Joshi, Binoo. "Kashmir's Dulhasti power project is ready." *Indo-Asian News Service*, 8 May 2007.

"Kashmir water clash." *Japan Times*, 27 May 2002.

Katz, David. "Hydro-Political Hyperbole: Examining Incentives for Overemphasizing the Risks of Water Wars." *Global Environmental Politics* 11, no. 1 (2012): 12-35.

Kelley, Donald R. . "Intellectual History: From Ideas to Meanings." In *The Sage handbook of historical theory*, edited by Nancy Partner and Sarah Foot, 81-92. London: SAGE Publications Ltd, 2013.

Khan, Mubarak Zeb. "India can divert only minimum water from Kishanganga: tribunal." *The Dawn* (2013). Published electronically 19 February. http://dawn.com/2013/02/19/india-can-divert-only-minimum-water-from-kishanganga-tribunal/.

Kirmani, Syed, and Guy Le Moigne. *Fostering riparian cooperation in international river basins: the World Bank at its best in development diplomacy*. World Bank technical paper. Vol. 335, Washington, D.C.: The Bank., 1996.

"Kishenganga project: India wins crucial hearing against Pakistan." *NDTV* (2013). Published electronically 18 February. http://www.ndtv.com/article/india/kishenganga-project-india-wins-crucial-hearing-against-pakistan-332605.

Kjeldstadli, Knut. *Fortida er ikke hva den en gang var : en innføring i historiefaget*. Oslo: Universitetsforlaget, 1999.

Korbel, Josef, and C. W. Nimitz. *Danger in Kashmir*. Princeton: Princeton University Press, 1954.

Lafitte, Raymond. "Baglihar Hydroelectric plant: Expert determination on points of difference referred by the Government of Pakistan under the provisions of the Indus Waters Treaty." Lausanne, Switzerland, 2007.

Laghari, A. N., D. Vanham, and W. Rauch. "The Indus basin in the framework of current and future water resources management." *Hydrol. Earth Syst. Sci. (HESS)* 16, no. 4 (2 April 2012): 1063-83.

Lempérière, F. *Design and Construction of Dams, Reservoirs, and Balancing Lakes*. 2012. http://www.hydrocoop.org/publications/2.12.1.1.article.pdf.

Malik, Bashir A. *Indus Waters Treaty in retrospect*. Lahore: Brite Books, 2005.

Mandhana, Niharika. "Water wars: why India and Pakistan are squaring of over their rivers." *Time*, 16 April 2012.

Manoharan, M. "India-Pakistan Composite Dialogue 2004: A Status Report." *Indo-Pak - Articles* (2004). Published electronically 22 September 2004. http://www.ipcs.org/article/indo-pak/india-pakistan-composite-dialogue-2004-a-status-report-1505.html.

McCaffrey, Stephen C. "The contribution of the UN Convention on the law of the non-navigational uses of international watercourses." *International Journal of Global Environmental Issues* 1, no. 3 (2001): 250-63.

Mehta, J. S. "The Indus Water Treaty - a case-study in the the resolution of an international river basin conflict." *Natural Resources Forum* 12, no. 1 (Feb 1988): 69-77.

Menon, M. S. "A redundant treaty." *The Hindu*, 8 April 2007.

Menon, M. S. "Waters of discontent." *The Tribune*, 4 April 2010.

Michel, Aloys Arthur. *The Indus rivers: a study of the effects of partition*. New Haven, Conn.: Yale University Press, 1967.

Miner, M., G. Patankar, S. Gamkhar, and D. J. Eaton. "Water sharing between India and Pakistan: A critical evaluation of the Indus Water Treaty." [In English]. *Water International* 34, no. 2 (2009): 204-16.

Mohanty, Tapan R., and Adil Hasan Khan. "Dam of Division: Understanding the Baglihar Dispute." *Economic and Political Weekly* 40, no. 29 (2005): 3155-58.

Mollinga, Peter P. "Foreword." In *Water First*, edited by Kuntala Lahiri-Dutt and Robert J. Wasson, xiii-xvi. New Delhi: Sage, 2008.

"Mufti hopeful on Baglihar project." *The Hindu*, 23 December 2003.

"NDC - India." *Press Trust of India*, 22 December 2002.

"A New Dispute." *Economic and Political Weekly* 40, no. 7 (12 February 2005): 588.

Noorani, A. G. . "The Dixon Plan." *Frontline* 19, no. 21 (12 October 2002).

"Omar Abdullah pitches for South Asian federation." *Hindustan Times*, 12 May 2005.

"Pak's move to approach WB 'premature': Indian Foreign Secretary." *Hindustan Times*, 17 February 2005.

"Pak objects to Indus water plan." *Hindustan Times*, 4 June 2007.

"Pak sets January 7 deadline on Baglihar issue." *Hindustan Times*, 30 December 2004.

"Pak threatens to refer objections on Treaty to experts.". *Press Trust of India*, 11 June 2002.

"Pak withdraws objections to two J&K power projects." *The Hindu*, 31 May 2010.

"Pak. concern over Chenab hydel plant." *The Hindu*, 2 June 2001.

"Pakistan urges establishment of Kashmir hotline in talks with India." *BBC*, 21 January 2005.

"Pakistani minister says war with India "only option" to resolve dam issue." *BBC*, 16 February 2005.

"Pakistani teams says solving water dispute can improve ties with India." *Agence France Presse*, 21 October 2003.

Parsai, Gargi. "Baglihar: India may go in for technical changes." *The Hindu*, 22 May 2005.

Parsai, Gargi. "Baglihar: Lafitte says he could get lots of information." *The Hindu*, 8 October 2005.

Partnership, Global Water. "What is IWRM?" http://www.gwp.org/The-Challenge/What-is-IWRM/.

Phadnis, Aditi "A water conflict in Kashmir." *Business Standard*, 16 May 2005.

"Police kill water protestors in India." *Hindustan Times*, 4 December 2004.

"Politicians criticised for not taking up water issue with India." *Dawn*, 27 July 2009.

Powell, Alvin. "Pakistan's Musharraf speaks at KSG." *Harvard University Gazette*, 19 September 2002.

"Prime Minister takes stock of situation in J&K." *The Times of India*, 24 May 2002.

"Protest against treaty." *The Hindu*, 6 February 2007.

Puri, Luv. "Baglihar to go operational in June: Azad." *The Hindu*, 24 December 2007.

Raja, Asif Haroon. "Water theft by India pose an existential threat to Pakistan." *Asian Tribune* (2009). Published electronically 13 July. http://www.asiantribune.com/node/21823.

Rajghatta, Chidandand. "Pak backs down on Baglihar 'victory' claim." *The Times of India*, 15 February 2007.

Ranganathan, Maya, and Usha M. Rodrigues. *Indian media in a globalised world*. New Delhi: Sage, 2010.

Rashid, Ahmed. *Pakistan on the brink : the future of Pakistan, Afghanistan and the West*. London: Allen Lane, 2012.

"Re-Imagining the Indus." edited by Lydia Powell. Published online at www.orfonline.com: Observer Research Foundation and Lahore University of Management Sciences, 2011.

Reddy, B. Muralidhar. "Indo-Pak. meet on hydro-electric plant today." *The Hindu*, 4 February 2003.

"Rivers psychology." *Hindustan Times*, 21 November 2005.

Roberts, Tom. "The Indus - Life-blood of Pakistan." *Asian Affairs* 36, no. 1 (2005): 1-11.

Salman, S. M. A. "The Baglihar difference and its resolution process - a triumph for the Indus Waters Treaty?". *Water Policy* 10, no. 2 (2008): 105-17.

"Scrap Indo-Pak water treaty: Chautala." *The Times of India*, 20 January 2002.

Seema, S. "Indo-Pak Water Disputes." *Indo-Pak - Articles* (2005). Published electronically 21 June. http://www.ipcs.org/article/indo-pak/indo-pak-water-disputes-1770.html.

Shantha Mohan, N. "Locating Transboundary Water Sharing in India." In *River water sharing : transboundary conflict and cooperation in India*, edited by N. Shantha Mohan, Sailen Routray and N. Sashikumar. New Delhi: Routledge, 2010.

Sharma, Shantanu Nandan. "No watershed in Indo-Pak CBMs." *The Economic Times*, 24 April 2005.

Shivananda, S. "Political and Legal Aspects of the Indus Water Dispute between India and Pakistan." Unpublished MA thesis, University of Washington, 1961.

Simon, Julian L. "Resources, Population, Environment: An Oversupply of False Bad News." *Science* 208, no. 4451 (1980): 1431-37.

Singh, Shivani. "Rethink in India on Indus waters meet." *Times of India*, 22 May 2002.

Sinha, Rajesh. "Two Neighbours and a Treaty: Baglihar Project in Hot Waters." *Economic and Political Weekly* 41, no. 7 (2006): 606-08.

Sinha, Uttam Kumar. "Water Security: A discoursive Analysis." *Strategic Analysis* 29, no. 2 (April-June 2005).

Siyad, Muhammed Siyad A. C. "Indus Waters Treaty and Baglihar Project: Relevance of International Watercourse Law." *Economic and Political Weekly* 40, no. 29 (2005): 3145-54.

Starr, Joyce R. "Water Wars." *Foreign Policy*, no. 82 (1991): 17-36.

Statkraft. "Statkraft to build its third hydropower plant in Turkey." (2011). Published electronically 16 September 2011. http://www.statkraft.com/presscentre/press-releases/2011/statkraft-to-build-its-third-hydropower-plant-in-turkey.aspx.

Subramanian, Nirupama. "Kashmir issue ripe for resolution: Musharraf." *The Hindu*, 16 February 2007.

Subramanian, Nirupama. "Our peoples must maintain contact: Kasuri." *The Hindu*, 20 February 2007.

Subramanian, Nirupama. "Pakistan wants to inspect Baglihar dam." *The Hindu*, 1 February 2008.

Subramanian, Nirupama. "Violation of treaty will damage ties: Zardari." *The Hindu*, 13 October 2008.

Swain, Ashok. *Managing water conflict: Asia, Africa and the Middle East*. London: Routledge, 2004.

Swain, Ashok. "Water wars: fact or fiction?". *Futures* 33, no. 8–9 (2001): 769-81.

Swami, Praveen. "A treaty questioned." *Frontline*, 27 April 2002.

Thakkar, Himanshu. "Baglihar HEP: some crucial facts." *Dams, Rivers & People* (2007). Published electronically May 2005. http://www.sandrp.in/hydropower/Baglihar_Crucial_Facts_0207.pdf.

Thatte, Chandrakant D. "Indus Waters and the 1960 Treaty between India and Pakistan." In *Management of Transboundary Rivers and Lakes*, edited by O. Varis, C. Tortajada and A. K. Biswas. Water Resources Development and Management, 165-206. Berlin: Springer-Verlag Berlin, 2008.

Tiwari, Ravish. "India wins Kishanganga case at The Hague court." *The Indian Express* (2013). Published electronically 19 February. http://www.indianexpress.com/news/india-wins-kishanganga-case-at-the-hague-court/1076239/2.

Tjora, Aksel Hagen. *Kvalitative forskningsmetoder i praksis*. Oslo: Gyldendal akademisk, 2012.

Toset, Hans Petter Wollebæk, Nils Petter Gleditsch, and Håvard Hegre. "Shared rivers and interstate conflict." *Political Geography* 19, no. 8 (2000): 971-96.

Tvedt, Terje. *En reise i vannets historie : fra regnkysten til Muscat*. Oslo: Bric forl., 1997.

Tvedt, Terje. *Vann : reiser i vannets fortid og fremtid*. Oslo: Kagge, 2011.

Tvedt, Terje. "Water: A source of wars or a pathway to peace? An empirical critique of two dominant schools of thought on water and international politics." In *Water, geopolitics and the new world order*, edited by Terje Tvedt, Graham P. Chapman and Roar Hagen. A history of water: Series 2, 78-108. London: Tauris, 2011.

"Unquenchable thirst." *The Economist*, 19 November 2011.

Verghese, B. G. "Ideology threatens Indus Treaty." *The South Asian Journal* (25 March, 2010).

Verghese, B. G. "It's time for Indus-II." *The Tribune*, 26 May 2005.

Verghese, B. G. "Political Fuss Over The Indus." *The Tribune*, 25 May 2005.

Verghese, B. G. "Talk of Abrogating the Indus Water Treaty." *The Tribune*, 29 April 2002.

Verghese, B. G. "A Vision for J&K - 2015 - Part 2." *IPCS Indo-Pak articles* (2005). Published electronically 20 April. http://www.ipcs.org/article/indo-pak/a-vision-for-jk-2015-part-2-1706.html.

Verghese, B. G. "Water conflicts in South Asia." *Studies in Conflict & Terrorism* 20, no. 2 (1997/04/01 1997): 185-94.

Walsh, Declan. "Pakistan's floodwater welcomed along Indus delta." *The Guardian* (2010). Published electronically 5 October 2010. http://www.guardian.co.uk/world/2010/oct/05/pakistan-flood-waters-indus-delta.

Walton, Brett. "Pakistan and India in Dam Building Race." *Circle of Blue* (2010). Published electronically 30 November. http://www.circleofblue.org/waternews/2010/world/pakistan-and-india-in-dam-building-race-interpreting-the-indus-water-treaty/.

"War an option to solve Baglihar: Pak Minister." *Hindustan Times*, 16 February 2005.

"War may force India to scrap Indus Treaty: Minister." *The Times of India*, 30 May 2002.

Warikoo, Kulbushan. "Indus Waters Treaty: View from Kashmir." *Jammu and Kashmir insights* (2006). Published electronically 1 June. http://www.jammu-kashmir.com/insights/insight20060601a.html.

Warikoo, Kulbushan. "Indus Waters Treaty: View From Kashmir." *Journal of Himalayan Research and Cultural Foundation* 6 (2002): 16.

Waslekar, Sundeep. *The final settlement: restructuring India-Pakistan relations*. Mumbai: Strategic Foresight Group, 2005.

"Water crisis may lead to Indo-Pak war: Shujaat." *Daily Times*, 3 November 2008.

"Water or war, roars Hafiz Saeed at JuD rally." *The Indian Express*, 8 March 2010.

"Water row threatens peace: Pak politician." *Hindustan Times*, 21 August 2005.

Wirsing, Robert G., and Christopher Jasparro. "River rivalry: water disputes, resource insecurity and diplomatic deadlock in South Asia." *Water Policy* 9, no. 3 (2007): 231-51.

Wirsing, Robert G., and Christopher Jasparro. "Spotlight on Indus River Diplomacy: India, Pakistan, and the Baglihar Dam Dispute." Honolulu: Asia-Pacific Center for Security Studies, 2006.

Wolf, Aaron T. "Conflict and cooperation along international waterways." *Water Policy* 1, no. 2 (1998): 251-65.

Wolf, Aaron T., Alexander Carius, and Geoffrey D. Dabelko. "Water, Conflict and Cooperation." In *ECSP-report 10*: Woodrow Wilson International Center for Scholars, Environmental Change and Security Program, 2004.

Wolf, Aaron T., Annika Kramer, Alexander Carius, and Geoffrey D. Dabelko. "Managing Water Conflict and Cooperation." *State of the World 2005: Redefining Global Security* (2005): 80-95.

Wolpert, Stanley. *India and Pakistan: Continued conflict or cooperation?* Berkeley: University of California Press, 2010.

"The World Factbook." Central Intelligence Agency, https://www.cia.gov/library/publications/the-world-factbook/geos/in.html.

Yoffe, S., A. T. Wolf, and M. Giordano. "Conflict and cooperation over international freshwater resources: Indicators of basins at risk." *Journal of the American Water Resources Association* 39, no. 5 (Oct 2003): 1109-26.

Zawahri, Neda A. "Capturing the nature of cooperation, unstable cooperation and conflict over international rivers: the story of the Indus, Yarmouk, Euphrates and Tigris rivers." *International Journal of Global Environmental Issues* 8, no. 3 (2008): 286-310.

Zawahri, Neda A. "Designing river commissions to implement treaties and manage water disputes: the story of the Joint Water Committee and Permanent Indus Commission." *Water International* 33, no. 4 (Dec 2008): 464-74.

Zawahri, Neda A. "India, Pakistan and cooperation along the Indus River system." *Water Policy* 11, no. 1 (2009): 1-20.

Zawahri, Neda A. "International rivers and national security: The Euphrates, Ganges–Brahmaputra, Indus, Tigris, and Yarmouk rivers." *Natural Resources Forum* 32, no. 4 (2008): 280-89.

Zawahri, Neda A. "Third Party Mediation of International River Disputes: Lessons from the Indus River." *International Negotiation* 14, no. 2 (2009): 281-310.