



## Indus Water Treaty: Past Present and Future

Shahnawaz Mantoo<sup>1</sup>

### Introduction

Water is a basic human right<sup>2</sup> because it is essential for human survival. Fresh water resources are extremely limited in supply—only 2.79 per cent of the global water resources on the earth, of which 0.03 per cent are available for human use.<sup>3</sup> The fast-growing world population — by about 80 million a year is increasing pressure on freshwater demands of about 64 billion cubic meters a year.<sup>4</sup> Besides, overpopulation, hyper-urbanization and climatic issues are compounding the problem of water scarcity. Since water security directly impacts human security, it is a potential source of conflict. There are more than 263 trans-boundary river basins around the world and hundreds of trans-boundary aquifers on which over 3 billion people are dependent.<sup>5</sup>

The relationship between water and security is quite visible and acknowledged by all from international political leaders to hydrologists to climatologists. In 1991, UN secretary general Boutros Boutros-Ghali observed that the “next war will be fought over water, not politics”.<sup>6</sup> In 1995, Ismail Serageldin, the first chairperson of the Global Water Partnership warned, “If wars of this century were fought over oil, the wars of the

---

<sup>1</sup> Assistant Professor, Centre for International Relations, Islamic University of Science and Technology, Awantipora, Pulwama, India. Email: shahnawazmantoo@gmail.com

<sup>2</sup> Amanda Cahil Ripley, *The Human Right to Water and its Application in the Occupied Palestinian Territories*, 14, Taylor & Francis, 2011

<sup>3</sup> Almost all of the water on the planet — over 97 per cent — is saline ocean water, unusable by most terrestrial organisms. Of the 2.79 per cent of fresh water, 0.62 per cent is aquifer and 2.14 per cent glacial, leaving 0.03 per cent for human consumption. J.C. Padowski&JWJawitz, “The future of global water scarcity: Policy and management challenges and opportunities,” *The Whitehead Journal of Diplomacy and international Relations*, Summer/Fall 2009

<sup>4</sup> “World Water Assessment Programme,” *The United Nations World Water Development Report 3: Water in a Changing World*, Paris: UNESCO, and London, *Earth scan*, 2009, p.29

<sup>5</sup> “Water at a crossroads”, *Dialogue and Debate at the 5<sup>th</sup> World Water Forum*, Istanbul 2009, *World Water Council*, p.50

<sup>6</sup> Boutros Boutros-Ghali, “I Support the Algerian Government,” *Middle East Quarterly*, September 2007.

next century will be fought over water — unless we change our approach to managing this precious and scarce resource”. Kofi Aanan highlighted this concern in 2001 and Ban Ki-moon reinforced the concern as well. In January 2008, addressing the World Economic Forum at Davos, Ban Ki-moon cautioned, “a shortage of water resources could spell increased conflicts in the future. Population growth will make the problem worse. So will climate change? As the global economy grows so will its thirst. Many more conflicts lie just over the horizon”.<sup>1</sup> Ban Ki-moon also forcefully pointed out that the ongoing Darfur crisis “grew at least in part from desertification, ecological degradation, and a scarcity of resources, foremost among them water”.<sup>2</sup>

With rising global water scarcity, a fierce competition over access and control of water resources characterizes the debate on relationship between freshwater resources and international cooperation and conflict. Evan Vlachos views water conflicts as a “part of a continuum that begins from concerns exemplifying generalized unrest and general debates about water systems; over confrontations reflecting noticeable controversies, cleavages in public opinion and attitudes; to conflicts representing extreme confrontations, clearly defined parties-at-interest, and noticeable constellations of stakeholders; to finally crises involving open defiance of civil authority, protests, counter-movements, resistance to proposed water structures, even violence and social upheavals”. Such a typology of severity of controversies and conflicts is also exemplified in river basins as flashpoints in the case of rivers forming a shared boundary; when human action triggers disruption (such as dams); in the case of power asymmetries (water hegemony) ; or, in the case of extreme hydrological events (such as droughts or floods). Significantly, the future sources of conflict will be more diverse stemming from combinations of internal and external considerations and of broader conditions of environmental change.<sup>3</sup>

The waters of the Indus basin begin in the Himalayan Mountains of the Indian side. They flow from the hills through the arid states of Punjab and Sind, converging in Pakistan and emptying into the Arabian Sea south of Karachi. Where once there was only a narrow strip of irrigated land along these rivers, developments over the last century have created a large network of canals and storage facilities that provide water for more than 26 million acres - the largest irrigated area of any one river system in the world.

The partition of the Indian subcontinent set Pakistan and India at odds regarding rights over the shared waters of the Indus, especially given that the headworks of the two major canals irrigating Pakistan land (Central Bari Doab and Dipalpur) were within India’s territorial borders. The newly formed states were at odds over how to share

---

<sup>1</sup> T. Deen, "Climate change deepening world water crisis", March 19, 2008,

<sup>2</sup> M. Zeitoun and N. Mirumachi, "Transboundary Water Interaction I: Reconsidering Conflict and Cooperation", *International Environmental Agreements: Politics Law and Economics*, 8: 4, 2008, p. 298

<sup>3</sup> Vlachos Evan, “Water Conflict and Cooperation: The Transition to a Purposeful Future”

and manage what was essentially a cohesive and unitary network of irrigation. Furthermore, the geography of partition was such that the Source Rivers of the Indus basin were in India. Pakistan felt its livelihood threatened by the prospect of Indian control over the tributaries that fed water into the Pakistani portion of the basin. Though during the first years of partition the waters of the Indus were apportioned by the Inter-Dominion Accord of May 4, 1948, however, the uncompromising and rigidity from both sides soon necessitated third party mediation. The Inter-Dominion Accord of 1948 was a temporary agreement that required India to release sufficient waters to Pakistani regions in return for annual payments from the Pakistani government to India. Through the good offices of the World Bank Pakistan and India finally agreed on the IWT.

### **Objectives of the Study**

- a. To study historical background and emergence of Indus-Water Treaty
- b. To analyse and understand the working of Indus-Water Treaty and also to highlight the practical issues related to implementation.
- c. To understand the Jammu and Kashmir state perspective on the Indus water treaty

### **Literature Review**

There is a plenty of material available on the treaty. The book written by Ijaz Hussain entitled *Indus Waters Treaty: Political and Legal Dimensions*, deals with the genesis of the dispute, the World Bank's role in the settlement, the Wullar Barrage, Salal, Baglihar and Kishenganga Dams disputes, the impact of climate change on the Treaty, India's current discontentment with the Treaty, and its treatment of Nepal and Bangladesh on the water issue.

*Indus Water Treaty: Contemporary Implications for the India-Pakistan Relations*, written by Nilanjana Ghorai draws our attention towards the fact that India Pakistan relations should move beyond certain bilateral concerns and water should be the focal point between the two nations. Therefore, it is impossible to simplify the Indo-Pak peace process as the solution of the Kashmir problem. The Researcher has pointed out the workings and failures of the Indo-Pak political machinery around the Baglihar Hydro-electric Project.

Another important book *Indus Waters Treaty: An Exercise in International Mediation*, authored by Niranjana Das Gulhati, have made an important attempt to understand the treaty and also to analyze the mediation of World Bank. The book further tries to analyze how far these mediations have worked and how this mediation can be applied to other disputes in the world.

*Water Politics in South Asia: A Critique of Indus Waters Treaty, 1960*, written by Abdul Waheed provides a detailed understanding on the about the treaty, role of World Bank and also has provided a critical understanding on the treaty.

*Hydro-diplomacy: Preventing Water War Between Nuclear-armed Pakistan and India*, authored by Ashfaq Mahmood, gives a detailed view point on Hydro diplomacy and its role in the conflict resolution. The resolution through hydro-diplomacy had prevented a larger clash between the two states.

*South Asian Rivers: A Framework for Cooperation*, (2017) written by edited by Imtiyaz Ahmad. This volume identifies existing statist approaches and political economies of river management in South Asia. The contributors of this book from India, Nepal and Pakistan are leading readers on a journey through the Transboundary Rivers of South Asia where rivers are vital for the life and living. The book explains why the region needs a framework for cooperation on the wellbeing of these rivers. River management is the key to sustaining healthy river systems. The author's stress that right of the rivers must be codified and guaranteed by the state and the people in South Asia.

*Blood and Water: The Indus River Basin in Modern History*, (2015) book written by David Gilmartin. In this first large-scale environmental history of the region, David Gilmartin focuses on the changes that occurred in the basin as a result of the implementation of the world's largest modern integrated irrigation system. This masterful work of scholarship explores how environmental transformation is tied to the creation of communities and nations, focusing on the intersection of politics, statecraft, and the environment.

Ramaswamy R Iyer (2003) has written an important work entitled *Water Perspectives, Issues, Concerns*. This is an unusual, intriguing and insightful book. 'This book will be of interest to the general reader as also to students and academics on the fields of water resources, hydrology, environmental studies and public administration.

## **Background**

The colonial government had successfully built an extensive network of canals but the partition plan created its own issues for both the states. At Partition in 1947, the boundaries between the two countries, in disregard of hydrology, placed the headworks of the canals in India, although 80 per cent of the areas irrigated by them were in Pakistan. Engineers from the two halves of Punjab, having failed to work out a durable water sharing deal, signed a 'Standstill Agreement' to maintain the status quo and referring outstanding differences to the Arbitral Commission which was mandated to address disputes over resources.

## **Indus water Treaty Negotiations and Agreement**

A series of bilateral agreements between 1948 and 1958 provided an ad-hoc institutional basis for the sharing of water against the background of ongoing conflict over Kashmir. Yet, the fear of being cut-off from this lifeline persisted in Pakistan ever

since India, after the so-called Standstill Agreement of 1948 expired, closed the canals the very next day.<sup>1</sup>

Negotiations having failed, Pakistan suggested adjudication. In his letter of February 14, 1950, to Pandit Nehru, arguing for a reference to the International Court, Liaquat Ali Khan wrote “What is most urgently needed is to set at rest the fear operating in the minds of people likely to be affected that the dispute may drag on indefinitely, while their welfare and prosperity are progressively put in jeopardy. They must be assured that, in the event of the dispute not being resolved by the method now being pursued, it will be settled by adjudication of the tribunal best fitted to resolve it. Since you are prepared to accept arbitration, there should be no objection to designating the International Court of Justice as the arbitral authority.”<sup>2</sup>

In 1951, an article written by David Lilienthal (former Chairman of the Tennessee Valley Authority) appeared in a popular American *Collier's* magazine.<sup>3</sup> This article suggested that a solution of the dispute might possibly be found if Indian and Pakistan technicians would together work out a comprehensive engineering plan for the development of the waters of the system, on a joint basis, and if the World Bank would undertake to assist in financing the necessary works. Inspired by this idea, Eugene R. Black, the President of the World Bank, proposed to the Governments of the two countries that, with the good offices of the Bank, they might be able to resolve their differences on the use of the Indus waters. His suggestion was accepted in March 1952. There followed two years of study by a technical group consisting of Indian, Pakistan and World Bank engineers, under the direction of General Raymond A. Wheeler.<sup>4</sup>

The Indus Mediations started in May 1952 at the Bank's headquarters in Washington DC. In October 1953, after field trips for data collection, the Indian and Pakistani delegations submitted their plans for the comprehensive development of the Indus basin. To address the gap between these plans, the World Bank presented its own plan in February 1954. The Bank's 1954 plan proposed to divide the Indus basin. India would receive the three eastern rivers (the Sutlej, Beas and Ravi) or approximately 20% of the Indus waters, and Pakistan would receive the three western rivers (the Chenab, Jhelum and the Indus) and approximately 80% of the total surface waters.<sup>5</sup> On the initiative of Eugene Black, President of the International Bank for Reconstruction and

---

<sup>1</sup> Tapan R Mohanty, and Adil Hasan Khan, “Dam of Division: Understanding the Baglihar Dispute”, *Economic and Political Weekly*, Vol. 40, No. 29 (Jul. 16-22), p. 3155

<sup>2</sup> Hafeez-ur-Rahman Khan, “Indo-Pakistan Waters Dispute”, *Pakistan Horizon*, Vol. 12, No. 4 (December, 1959), p. 324

<sup>3</sup> Patricia Bauer, “Indus Waters Treaty India-Pakistan [1960]”, *The Information Architects of Encyclopaedia Britannica*, september 12, 2020

<sup>4</sup> The World Bank (1960), Indus Water Treaty, *World Affairs*, Vol. 123, No. 4 (Winter), p.99

<sup>5</sup> Undala Z Alam, “Questioning the Water Wars Rationale: A Case Study of the Indus Waters Treaty” *The Geographical Journal*, Vol. 168, No. 4, Water Wars? Geographical Perspectives (Dec.), 2002, p. 329

Development, negotiations started which resulted in the agreement of March 13, 1952, that —so long as the cooperative work continues with the participation of the Bank; neither side will take any action to diminish the supplies available to the other side for existing uses.<sup>1</sup>

In October 1953, the representatives of India and Pakistan submitted their respective plans to the Working Party for discussion. The propositions put forward by the engineers of the two countries were different not only in conception but also in their respective approaches towards a solution. The Working Party agreed on the fact that the annual flow of rivers was not sufficient to serve as the basis for planning and that more modest figures should be taken. For practical purposes, they agreed that the volume of water may be increased by the construction of reservoirs.<sup>2</sup> In February 1954, General Wheeler was authorized by the Bank Management to make a Bank Proposal for consideration by the two Governments.

### **Features of the World Bank Proposal**

- i. The waters of the three Eastern Rivers (Ravi, Beas and Sutlej) should be for the use of India;
- ii. The waters of the three Western Rivers (Indus, Jhelum and Chenab) should be for the use of Pakistan;
- iii. There should be a transition Period, during which Pakistan would construct a system of link canals to transfer water from the Western Rivers to replace the irrigation uses in Pakistan hitherto met from the Eastern Rivers
- iv. India should pay the cost of constructing these replacement link canals.

The Bank Proposal was accepted by India, with some reservations, as the basis of a settlement. Pakistan, however, felt unable to accept the Proposal unless it underwent substantial amendment, mainly related to the inclusion of some reservoir storage in the replacement plan to meet irrigation uses in Pakistan during the critical periods of short flow supplies.

There then followed more than four years of discussion and negotiation in Washington between an Indian Delegation, led by N. D. Gulhati (Additional Secretary to the Government of India, Ministry of Irrigation and Power) and a Pakistan Delegation led by G. Mueenuddin (Secretary to the Government of Pakistan, Ministry of Fuel,

---

<sup>1</sup> Ibid. p. 343

<sup>2</sup> Tufail Jawed, The World Bank and the Indus Basin Dispute: Background, *Pakistan Horizon*, Vol. 18, No. 3 Third Quarter, 1965, P. 36

Power and National Resources). The Bank was represented by Vice President Sir William *Iliff*, assisted by a small group of technical experts led by General Wheeler.<sup>1</sup>

Pakistan felt the 1954 Plan left it insufficient water to meet its needs. Pakistan succeeded in persuading the World Bank that it needed storage facilities to meet its needs, and having the 1954 Plan amended with the 1956 Aide-Memoire which envisaged storage facilities on the western rivers for Pakistan. Whereas India had accepted the 1954 Plan, it objected to the Aide-Memoire because it was concerned about incurring additional financial obligations to Pakistan. Further negotiations separated discussions on the technical need for infrastructure from their funding.

On August 21, 1957, India complained to the United Nations against Pakistan's plans for building a dam at Mangla, Pakistan Occupied Kashmir. Pakistan's Permanent Representative replied that it was to be constructed with the cooperation of the Pakistan Occupied Kashmir and would in no way adversely effect any existing interest. It was for developing parts of that disputed region and was similar to the developments on the Indian side of the cease-fire line.

In 1958, tripartite negotiations in Rome and subsequent talks in London and Washington failed, due to India's refusal to agree to pay the needed money for construction works in Pakistan. India wanted to pay only a fraction of the calculated cost. The Bank plan of May 1958, keeping in mind the growing needs of water in the two countries and their financial difficulties reportedly envisaged

- i. construction of link canals and dams in India to divert the waters of the eastern rivers in a manner that would not cause harm to the West Pakistan irrigation system;
- ii. new irrigation systems in both the countries for further development purposes; and
- iii. a financing scheme for the proposed works.

The U. S., Britain, Canada and Australia reportedly were agreeable to provide the financial and other assistance and the World Bank was to provide loans to the disputants to fill up the gap. The plan was reported to cost 1,000 million dollars. It was stated that Pakistan's major demand of locating all replacement works in its territory had been accepted. Pandit Nehru's comment on the plan was that the interim period during which India was to supply water to Pakistan was —rather long and the expenditure on the Pakistani replacement scheme very big rather overwhelming. Then there was the Mangla Dam—the King pin of the Pakistani plan. Pandit Nehru was not ready to accept a settlement \_ which affected India's rights in the matter. Moreover, it was reported that

---

<sup>1</sup> Ibid. p. 38

India was standing firm by the Mahru tunnel scheme, which was not acceptable to Pakistan, since it would have left India in control of water supplies to Pakistan.<sup>1</sup>

Tensions between the two countries were further heightened by Pakistan's decision to construct the Diamar-Bhasha dam. Just like the Kalabagh dam, this dam is feared by India, which is concerned it will inundate substantial portions of Jammu and Kashmir. India has formally protested against the Diamar-Bhashadam, although Pakistan argues that because the area is recognized by the United Nations as disputed territory it is not in violation the terms of the IWT. These developments suggest that the recent rapprochement on other issues will not prevent the politics of water continuing to be an important component of an uneasy relationship between the two countries.<sup>2</sup>

The Bank representatives however were very unsympathetic towards India Pakistan inflexibility and uncompromising positions regarding water sharing and other related concerns. As late as March 1960, India and Pakistan had to be reminded that the negotiations 'purpose was to find a solution acceptable to both India and Pakistan'. But mistrust continued. Pakistan had agreed to Indian withdrawals from the western rivers for use in India part of Kashmir but demanded an inspection system to ensure India did not withdraw more water than it was entitled. India refused, "we're not going to have any action of the Government of India policed by Pakistan".

By May 1959 the main issues standing in the way of a settlement had crystallized, and Black and Mr. Iliff visited New Delhi and Karachi to hold conversations with the Prime Minister of India and President of Pakistan. In the course of this visit, agreement was reached on the general principles on which a water treaty should be based including the system of works to be constructed as part of the settlement arrangements, and the financial contribution to be made by India. The drafting of the Treaty began in August 1959. The texts of the Indus Waters Treaty and of the Indus Basin Development Fund Agreement were finally agreed on late in August 1960.<sup>3</sup>

The following method was adopted to resolve the dispute:

i. The Bank and Pakistan agreed on the system of replacement works to be constructed in Pakistan, one of the purposes of this system to be the feeding of the canals which were dependent on the eastern rivers with waters of the western rivers. India would have no part in the conception, construction or the administration of the replacement works in Pakistan.

---

<sup>1</sup> Hafeez-ur-Rahman Khan, op.cit, pp.334-35

<sup>2</sup> Hill, Douglas, "The Politics of Water Sharing: Contemporary Issues in South Asia" in Lahir Dutt, Kuntala and Robert J. Wasson (ed.) *Water First: Issues and Challenges for Nations and Communities in South Asia*. New Delhi, Sage, 2008, pp. 69-70

<sup>3</sup> The World Bank, op.cit, p. 100

ii. The Bank and India agreed on the financial participation of India in the works to be constructed in Pakistan

iii. The transition period was set at ten years. The Indian Union accepted this on the condition that she would progressively withdraw the waters of the eastern rivers for use in India. The Bank also agreed to provide foreign exchange to India for the construction of the reservoir to be constructed on the Beas

iv. The transition period could be extended at the request of Pakistan by one to three years. The annual financial contribution by India was to be reduced in proportion to the period thus extended.

v. Pakistan accepted certain uses by India in the upper reaches of the western rivers before they entered into Pakistan.

On the basis of these principles, which were accepted by both the parties, discussions took place in London and Washington for the preparation of a treaty. This treaty was signed on 19 September 1960.<sup>1</sup>

A Treaty governing the use of the waters of the Indus system of rivers, entitled —The Indus Water Treaty 1960, was signed in Karachi, by Shri Jawaharlal Nehru (Prime Minister of India) on behalf of India and by Field Marshal Mohammad Ayub Khan (President of Pakistan) on behalf of Pakistan. The Treaty was signed on behalf of the World Bank by Mr. W. A. B. Iliff (Vice President of the Bank) in the absence of the President of the Bank, Mr. Eugene R. Black, due to the illness.

Simultaneously with the signing of the Indus Waters Treaty, an international financial Agreement was also executed in Karachi by representatives of the Governments of Australia, Canada, Germany, New Zealand, Pakistan, the United Kingdom and the United States, and of the World Bank. This Agreement creates an Indus Basin Development Fund of almost \$900 million to finance the construction of irrigation and other works in Pakistan consequential on the Treaty settlement. It was decided that the fund would be financed with the equivalent of about \$640 million to be provided by the participating governments, with a contribution of approximately \$174 million payable by India under the Water Treaty, and with \$80 million out of the proceeds of a World Bank loan to Pakistan.<sup>2</sup> President Muhammad Ayub Khan stated (in a radio broadcast on 3 September 1960), an —ideal solution when negotiated can seldom be obtained, but this is the best that we could get under the circumstances many of which, irrespective of merits and legality of the case, are against us.<sup>3</sup>

---

<sup>1</sup> Tufail Jawed, “The World Bank and the Indus Basin Dispute: Background- I” *Pakistan Horizon*, Vol. 18, No. 3 (Third Quarter), 1965, pp. 226-237

<sup>2</sup> The World Bank (1960). op.cit. p. 99

<sup>3</sup> Tufail Jawed, op.cit. p. 44

### **The Indus Waters Treaty: Key Features**

i. Article I of the treaty states about the definition of term used in the treaty. For example- “The Indus”, “The Jhelum”, “The Chenab”, “The Ravi”, “The Beas” or “The Sutlej”, means the named river (including Connecting Lakes, if any) and all its Tributaries.

- a) None of the rivers named above shall be deemed to be a Tributary
- b) The Chenab shall be deemed to include the river Panjnad and
- c) The river Chandra and the river Bhaga shall be deemed to be Tributaries of The Chenab.

ii. The two Commissioners shall constitute the Permanent INDUA Commission which will meet at least once a year alternatively in India and Pakistan. Among the purposes and functions of the commission are

- a) Establish and promote cooperative arrangements for the treaty arrangements
- b) Promote the cooperation between the two parties in the development of the waters of the Indus system
- c) Examine and resolve by agreement any question that may arise between the parties concerning interpretation and implementation of the treaty
- d) Submit an annual report before the first of June every year to the two governments

iii. All the waters of the Eastern Rivers shall be available for the unrestricted use of India, except for Domestic Use and Non-Consumptive Use, Pakistan shall be under an obligation to let flow, and shall not permit any interference with, the waters of the Sutlej Main and the Ravi Main in the reaches where these rivers flow in Pakistan and have not yet finally crossed into Pakistan.

iv. Under Article VI specific provisions were made for regular exchange of river and canal data between the two countries and Article VII referred to future cooperation.

v. The term "Main" added after Indus, Jhelum, Chenab, Sutlej, Beas or Ravi means the main stem of the named river excluding its Tributaries, but including all channels and creeks of the main stem of that river and such Connecting Lakes as form part of the main stem itself. The Jhelum Main shall be deemed to extend up to Verinag, and the Chenab Main up to the confluence of the river Chandra and the river Bhaga.

vi. The term “Non-Consumptive Use” means any control or use of water for navigation, floating of timber or other property, flood protection or flood control, fishing or fish culture, wild life or other like beneficial purposes, provided that, exclusive of seepage and evaporation of water incidental to the control or use, the water (undiminished in volume within the practical range of measurement) remains in, or is returned to, the same river or its Tributaries ; but the term does not include Agricultural Use or use for the generation of hydro-electric power

vii. India is under obligation to let flow the waters of the Western Rivers except for the following uses:

- a. Domestic Use,
- b. Non-consumptive use,
- c. Agricultural use as specified,
- d. Generation of hydro-electric power as specified

viii. India has been permitted to construct storage of water on Western Rivers upto 3.6 MAF for various purposes.

ix. India has been permitted Agricultural Use of 7, 01,000 acres over and above the Irrigated Cropped Area (ICA) as on 1.4.60. Out of this additional ICA of 7, 01,000 acres, only 2, 70,000 can be developed (i.e. a total ICA of 9, 12,477 acres including that on 1.4.1960) till storages are constructed and 0.5 MAF of water is released there from every year. ICA during 2011-12 was 7, 84,955 Acres.

x. Under the Treaty, India and Pakistan have each created a permanent post of Commissioner for Indus Waters. They together constitute the Permanent Indus Commission (PIC), which is entrusted with the implementation of the Treaty. The PIC is required to hold meetings and tours and submit report on its work to the two Governments every year. It has held 117 tours and 110 meetings so far.

xi. Both sides are required to exchange information related to river flows observed by them, not later than three months of their observation and to exchange specified information on Agricultural Use every year.

xii. India is under obligation to supply information of its storage and hydroelectric projects as specified.

xiii. India communicates as a gesture of goodwill, flood data to Pakistan from 1<sup>st</sup> July to 10<sup>th</sup> October every year, to enable them to undertake advance flood relief measures. The arrangement is reviewed every year.

xiv. The Commissioners may discuss the questions arising under the Treaty related to Settlement of Differences and Disputes and in the case of non-resolution, take further action for resolution through a Neutral Expert, negotiators or Court of Arbitration.

xv. Neither Party will take any action which would have the effect of diverting the Ravi Main between Madhopur and Lahore, or the Sutlej Main between Harike and Suleimanke, from its natural channel between high banks.<sup>1</sup>

### **Implementation of the Indus Waters Treaty**

The first issue over the implementation of the IWT arose in the 1970s when India planned the building of a hydropower project on the Chenab for producing 690 MW electricity and irrigating large areas in East Punjab. In 1974, Pakistan formally objected to the design of the dam and the storage on the ground that it was in violation of the Treaty. After the Permanent Indus Commission failed to resolve the issue, India and Pakistan held a series of talks in 1976, leading to an agreement by India to change the design of the dam in order to allay Pakistan's concern. In April 1978, an agreement was signed, enabling the unhindered completion of the project. This is the only dispute which was settled without recourse to arbitration.

The second dispute relates to the construction of a barrage on the Jhelum River at the mouth of the Wullar Lake, some 30 kilometres north of Srinagar. The original design provided for the construction of a 134 metre long and 12 metre wide barrage, with a storage capacity of 300.000 acre feet of water. India started the construction of the barrage in 1984. Pakistan received information about the project in 1985 and submitted a complaint to the Indus Commission in 1986-87, saying the project would create storage exceeding the limit set in the IWT and called on India to stop construction activity. India suspended the construction. More than a dozen rounds of official talks held during the late 1980s and 1990-91 failed to resolve the issue, although some headway was made on certain technical aspects. India claimed that its project was not only meant to generate electricity (around 450 MW) but also to regulate water release from the lake to the river, in order to ensure year-round navigation for transporting people and goods between Anantnag and Srinagar and Baramulla; they called it the Tulbul Navigation Project.

The political disturbance in Kashmir in early 1990s seems to have impeded the construction work. In August 2007, it was agreed to convene meetings between technical experts to work out a solution. In May 2011, in the first round of talks in Islamabad, the Water Secretaries of the two countries discussed the Wullar Barrage/Tulbul Navigation project. India agreed to provide additional data and information. However, at the next meeting of the Water Secretaries held in end March

---

<sup>1</sup> The Indus Water Treaty 1960, Karachi September 19, 1960, India Pakistan and International Bank for Reconstruction and Development, United Nations Treaty Series 1962

2012, Pakistan stated that the data shared by the Indian side was incomplete. The Pakistan Indus Commissioner visited the project site in May 2013. There are indications that some adjustments to the design of the barrage would facilitate an agreement on the project.

The third Indian project is the 450 MW hydroelectric project on the Chenab at Baglihar, upstream from the Salal dam. Construction work on the project began in 1999. Pakistan claimed that the project design violated the IWT because the dam included low-gated spillways which would increase the manipulable storage beyond the limit permissible under the Treaty. India explained that the gated spillways were needed to prevent the filling of the reservoir with silt, as had happened in the case of the Salal dam. Discussions between the Indus Commissioners and water resources Secretaries from 2001-4 having failed to reach an agreement, in January 2005 it was agreed to seek arbitration by a Neutral Expert (NE) in accordance with the IWT.

The neutral expert's verdict, issued in 2007, rejected Pakistan's objections and upheld the necessity of the gated spillways and the placement of the spillways below the dead storage level, arguing that such placement of the spillways was a global best practice for sediment control. The verdict allowed India to draw water out of the dam at levels lower than those specified in the Treaty. The verdict disregarded Pakistan's concern regarding India acquiring the capacity to manipulate the timing and flows into Pakistan. The NE's decision caused 'a great deal of dissatisfaction in Pakistan'. The verdict was a 'blow' for Pakistan because it 'reinterpreted' the IWT. The verdict proclaimed that the Treaty 'did not bind India to 1960 technology and that India could use state-of-the-art technology'. In Pakistan's view, the NE's verdict 'seemed to weaken the protection against possible flooding'.

Pakistani media and experts welcomed the comments of noted expert, Professor John Briscoe, that the NE had indeed argued that 'the IWT had a provision for updating the implementation of the Treaty as new knowledge accumulated ...' and proceeded to allow India to 'draw water out of the dam at lower levels than those specified in the treaty'. Briscoe had also referred to the new meanings given by the NE to 'live storage' and 'dead storage', which were central to Pakistan's historic and persistent concerns regarding India's capability to manipulate water flows into Pakistan. The Baglihar project was officially commissioned on 10 October 2008 after India carried out the changes suggested by the NE in the design of the project.

The filling of the Baglihar reservoir in August 2008 provoked a new controversy. Under the IWT, such filling of reservoirs on the Chenab has to be carried out on mutually agreed dates during the period 21 June–31 August when the monsoon is at its peak, so that the stoppage of water flow does not hurt Pakistan's crops. Pakistan alleged that the filling had continued beyond 31 August in violation of the IWT, causing a loss of 2,000,000-acre feet of water needed for its rice and wheat crops and demanded compensation. India rejected Pakistan's claims pertaining to timing and compensation. The subject was reportedly raised by the President and Prime Ministers of Pakistan with

the Indian Prime Ministers and the two sides had agreed to settle the issue through talks in the framework of the IWT. In the event, the differences were resolved in June 2010 at a meeting of the PIC at which 'India gave the assurance that it will be careful in future', which Pakistan 'accepted ...in a spirit of co-operation and goodwill'.

The 900MW Kishenganga Hydro-Electric Project (KHEP) is thus far the most complex contentious project built by India on a western river (Jhelum), which was contested by Pakistan in view of its alleged violation of the IWT, and was resolved by the decision of a Court of Arbitration on 20 December 2013. The project for utilizing the water of the Kishenganga River, a tributary of the Jhelum, which is called the Neelum when it enters Pakistan-occupied Jammu and Kashmir, envisages the construction of a 180.05 metre long and 35.48 metre high concrete dam. The water of the Kishenganga River is to be diverted through a 24 kilometre long tunnel to a tributary of the river called BunarMadumatiNulla, which will be re-routed to the Jhelum through the Wullar Lake. The initial design of the project prepared in 2004 was that of storage-cum-hydro-electric project (under Annex E of the IWT). In June 2004 Pakistan raised objections to the design of the project, claiming that the inter-tributary transfer of water constituted violation of the IWT, and that the project would adversely affect agriculture and a 900MW hydro-electric project being built Pakistan Occupied Kashmir called the Neelum-Jhelum Hydro- Electric Project (NJHP). Differences could not be resolved during half a dozen meetings of the PIC held in 2004-5. In April 2006, India re-configured the design for a run-of-the-river plant under Annex D of the IWT. In June 2006, Pakistan again objected to the design and sent its views in August 2006. After three inconclusive meetings of the Indus Commission from May 2007 to July 2008, in May 2010 the dispute was referred to the Permanent Court of Arbitration (PCA) in accordance with Annexure G of the Treaty.

Pakistan sought decisions by the PCA on two questions: whether the inter-tributary diversion of water was in keeping with the IWT, and whether India could build a dam reservoir below the Dead Storage Level (DSL)—,which the IWT treaty had forbidden except in the case of an unforeseen emergency. Clearly, Pakistan was trying to get a reversal of the decision of the NE which had upheld such depletion with a view to preventing the disruption of water supplies during the months-long filling of the reservoir. The PCA decided that KHEP being a run-of-the-river project was allowed by the IWT, which also permitted inter-tributary diversion, so long as the water—after use for the hydropower plant—is restored to the river flowing into Pakistan. The Court 'explicitly stated that the Baglihar ruling (allowing the placement of low spillway gates below the DSL) did not constitute a precedent, and implied that the Baglihar Neutral Expert had erred by not balancing engineering concerns with the diplomatic and security factors which were the heart of the IWT'. However, it did not accept Pakistan's claim that the KHEP would adversely affect existing agricultural and hydropower uses in Pakistan because, in its view, during the critical years (2004-6), India had demonstrated a serious intent to build the KHEP but Pakistan had not done so. The Court upheld the need for adequate environmental flows which had not been addressed by the IWT. After

taking into account the divergent estimates of minimum flow of water proposed by India and Pakistan below the KHEP, the Court decided on a flow of 9 cubic meters or CUMECS.

The PCA Award, which an eminent expert has hoped 'should mean a new dawn for water management in the Indus', addresses the main concerns of both India and Pakistan, which explains the muted reaction to it in both countries. India can proceed to build and operate the KHEP. However, it cannot deplete the water of the reservoir of any future hydropower plant below the DSL. The power generation capacities of both the KHEP and the NJHP plants would reportedly suffer losses of around 10 per cent. The recognition of the concept of environmental flows in rivers by the PCA to ensure that hydropower projects are operated in an environmentally sustainable manner will strengthen Pakistan's case for environmental flows in the eastern rivers for alleviating the environmental damage caused by India's diversion of all their flows to the east.

Pakistan has reportedly raised objections to the designs of a large number of Indian hydropower projects, including the 850 MW Ratle Hydro-Electric Project; the 48 MW Lower Kalnai Hydro-Electric Project, the 120 MW Miyar hydropower project on the Chenab, as well as the 1000MW PakalDul plant being built on the Marusadar river, a tributary of the Jhelum. Pakistani media frequently reports news about Indian hydropower projects, highlighting India's enhanced capability to use the cumulative storage to turn off supplies to Pakistan during the planting season, which would threaten its economy. Unless India and Pakistan agree on measures that would help in resolving them through the PIC or higher level dialogue, the disputes over Indian projects on the western rivers would have to be submitted to arbitration.

### **Indus Water Treaty and J&K State Perspective**

The conflict over Jammu and Kashmir State has given rise to many other disputes including the sharing of water resources. Many scholars from India and Pakistan are of the view that its water resource has become one of the reasons behind the dispute. Geographically the State is a land-lock and has no significant renewable resources other than water and forest. In fact, nature has endowed unending supply of water resources, which is the backbone of the State's economy. The water bodies of the State have an enormous economic potential in hydro power generation, irrigation to enhance the agriculture, and lakes and ponds for healthy growth of tourism.

The Indus Water Treaty was the first bilateral approach to initiate the cordial relations between the two countries, and it was well-received in both the countries. As per the rule and spirit of the treaty, India and Pakistan have constructed various dams and barrages on Eastern and Western rivers respectively. It is admirable that both countries have protected their water rights through a bilaterally signed treaty. But unfortunately, Srinagar, Muzaffarabad and Gilgit governments have failed to safeguard the water rights of their respective divisionsthe manner and extent to which the people of Jammu and Kashmir are entitled to have a role in the use of their water resources at

Mangla (Pakistan occupied Kashmir), Salal, Dulhasti, Uri, and Diamir Basha Dam in Gilgit. Yet, India and Pakistan are not acceding to the water and electricity requirements in both sides of Kashmir. Also both countries have largely undermined the legitimate water rights of the people of JK state from their own rivers.<sup>1</sup> The three major rivers of the Indus Basin—Jhelum, Chenab and Indus—flow through Jammu and Kashmir Union Territory. But under the provision of Indus Water Treaty, the Union Territory of Jammu and Kashmir has to seek permission from the Indus Water Commission before any water development program is initiated regarding these rivers.<sup>2</sup>

This implies that the treaty which was carried out in the best interests of both the nations has, however, limited the State in its use of water resources affecting the developmental process of the State. Conforming to the criteria of the treaty, the State cannot fully exploit the water potentialities of the Indus, Jhelum and Chenab rivers.<sup>3</sup>

The average annual flow of the rivers of Indus system is presented in below table. The table shows that three western rivers flowing through J&K contribute a huge volume to the Indus river system, which is estimated at approximately 135 MAF (80%) of the total water flow. But, the State has been restricted to utilize its own water resources for fulfilling its requirements. Only a limited utilization of water is permitted for any development purposes.

Three Western Rivers of the Indus Basin make the State of Jammu and Kashmir an upper riparian. The modus-operandi of the treaty defines the utilization of water in J&K as: the State can use only a small quantum of water from the Indus, Chenab and Jhelum for power generation and irrigation purposes. It cannot build reservoirs or dams on these rivers to store water for irrigation and hydroelectric power (except “run-of-the-river projects”) without the prior approval of the Indus Commission.<sup>4</sup>

Average annual flow of the Indus river system

Eastern Rivers	Western Rivers	Total
41 BCM (33 MAF) 20%	166 BCM (135 MAF) 80%	207 BCM (168 MAF)

Source: IWT 1960 draft

<sup>1</sup> The perennial power crisis Kashmiris have a right to be compensated for the exploitation of their Rivers by both the neighbouring countries, Concern, (2012):209

<sup>2</sup> R Sinha. “Transboundary Disputes: Two Neighbours and a Treaty,” *Journal of Economic & Political Weekly*, (2006), (accessed 20 January, 2019).

<sup>3</sup> Wajahat Habibullah, “The Political Economy of the Kashmir Conflict Opportunities for Economic Peace Building and for U.S. Policy” Special Report, no, 121 (June 2004), *United States Institute of Peace*, (accessed 27 January, 2019)

<sup>4</sup> Sinha, R, “Transboundary Disputes: Two Neighbours and a Treaty,” *Journal of Economic and Political Weekly*, (2006), (accessed January 26, 2019).

The treaty places restrictions on the storage capacity of the State on the western rivers. J&K can store only 0.40 million acre feet (MAF) water from the Indus River in Ladakh, 1.50 MAF from the Jhelum River in Kashmir Valley and 1.70 MAF from the Chenab River in Jammu. Taking into consideration the currently assessed and harnessed hydro-potential, the treaty does not allow J&K to generate more than 10 percent of its hydropower and irrigate more than 40 percent land from western rivers.<sup>1</sup> As a result, the J&K State annually bears a loss of 60 billion Indian rupees (US\$1.3 billion) due to the restrictions of the treaty.<sup>2</sup>

Notably, a report prepared by International Water Management Institute (IWMI), Colombo in collaboration with Sir Ratan Tata Trust, Mumbai, in March 2005 had said that Indus Water Treaty signed by India and Pakistan in 1960 has put Jammu and Kashmir behind by an estimated Rs 6,500 crore annually. The treaty has also badly hit the power generation and agriculture potential in the state, the report has added.

*“The treaty which was carried out in the best interests of the nation has, however, deprived J&K of using its own water resources and thereby severely affected development in the state. The treaty made Punjab prosperous by using the water of the eastern rivers for agriculture and power generation. This, however, put J&K behind by an estimated Rs 6,500 crore. The losses are not there in the agriculture sector alone but on a much higher scale in the generation of hydropower which has an otherwise estimated potential of 20,000 MW,” reads the 2005, IWMI-Tata report.*

With the rapid growth of population, urbanization and industrial growth, electricity demand has increased in J&K. The hydropower resource is a crucial means to meet the increasing demands and support economic growth. In fact, the requirements of power and its availability have been recognized as the surest index for the State’s overall development. Compared to hydropower generation, thermal generation cannot be a solution to meet the increasing energy needs of the State, as it is mountainous and land-locked and at the same time is located away from the pitheads.<sup>3</sup> On the other hand, the J&K State is not rich in the non-renewable sources of fossil fuels, which could be used for energy generation, but there are huge renewable sources of energy, especially water resources which can meet the demand. The three main rivers flowing through J&K State—the Indus and its tributaries, the Jhelum and its tributaries and the Chenab and

---

<sup>1</sup> Athar Parvaiz, *India/Pakistan: Indus Water Treaty Agitates Kashmiris* (2008) (accessed Jan 16, 2019)

<sup>2</sup> Haroon Mirani, “Race to the death over Kashmir waters”, *Asia Times*, (2009), c.f. Shakil A. Romshoo, *Indus River Basin Common Concerns and the Roadmap to Resolution*, (New Delhi: Centre for Dialogue and Reconciliation, 2012): 22.

<sup>3</sup> S.C. Sud, “Optimising Hydel Development in Chenab Basin” *Journal of Himalayan and Central Asian Studies*, New Delhi Vol. 9, no. 3 (2005): 27

its tributaries—offer a tremendous scope for generation of power through hydroelectric plants, which could be a defining factor in the developmental process of the State.

The State has managed to generate around 2500 MW of hydro-power that comes out about 12 percent of the estimated power potential. The treaty does not allow the State to construct storage reservoirs on the three western rivers except run-of-river projects. The total harnessed power potential is on the basis of “run-of-river”<sup>1</sup> schemes with some small “live storage”<sup>2</sup> capacity on three Western Rivers. These types of projects not only increase the construction cost but also adversely affects the cost-effectiveness of power generation from these projects and generation capacity. Comparatively, the run-of-the-river projects using small head-falls are reported to be about 75 percent higher in cost than those hydel projects using high head-falls.<sup>3</sup> These high cost projects generate electricity much below their installed capacity. For instance, run-of-the-river Uri Hydel Project, which was built at the cost of more than US \$ 800 million, is producing only 200 MW in winter as against the 480 MW installed capacity. Commenting on these situations, the former Managing Director for J&K Power Development Corporation (JKPDC), Javid Shahmiri, stated that “considering that the hydro potential of the State is about 20,000 MW, annual energy loss works out to 60,000 million units valuing Rs. 12,000 Crores.”<sup>4</sup>

Flowing through the Union territory of J&K, the Chenab River has more power potential than others, but there is no effective storage on the Chenab main up to Kishtwar. Three major projects Salal, Dulhasti and Baglihar along with some other small projects are in operation. But the storage capacity of the Salal hydro-power project on the Chenab River has got reduced due to sedimentation. The other projects, such as Baglihar with storage of 0.3MAF, Dulhasti 0.007 MAF on the Chenab rivers have also limited storage capacities. To meet the criteria of the treaty, projects constructed on the western rivers cannot retain the stored water for more than a week.<sup>5</sup>

In such a situation, the State has been able to harness only about 2500 MW, consisting of 758.70 MW, from 20 power projects and 1680 MW of the 4 power projects under Central Sector (NHPC), i.e. 690 MW from Salal Hydel Electric Project, 480 MW

---

<sup>1</sup> “Run-of-River Plant” means a hydro-electric plant that develops power without live Storage as an integral part of the plant, except for poundage and surcharge Storage. (Indus Water Treaty 1960) [article III(2) g]

<sup>2</sup> “Live Storage” means all Storage above Dead Storage level. (Indus Water Treaty 1960), [article III(2) b]

<sup>3</sup> Dost Mohammad and A .S. Bhat, *Problems of Power Sector Development*, New Delhi: Gayan Publishing House, 2002), 175.

<sup>4</sup> Javid Shahmiri, *Indus Water Treaty J&K Perspective*, (2010): 7, article presented in New Delhi on India-Pakistan Water Dialogue, (accessed Jan 20, 2019).

<sup>5</sup> Ibid

from Uri-I Hydel Electric Project, from Dulhasti 390 MW and 120 MW from the Sewa II.<sup>1</sup>

JKPDC and NHPC collectively generate a total of 2456.20 MW of hydroelectricity, mainly from the three Western Rivers. the actual power potential of the Jhelum, Chenab, Indus and Ravi rivers are 3560 MW, 10360, 2060 and 500 MW respectively, whereas, the potential exploited from these river basins is 750.1MW, 1563.8MW, 13.3MW, and 129 MW respectively. To the pertaining question, namely why this huge potential has remained unexploited, the common opinions shared by some experts hint at the restrictions placed by the treaty. The Union territory, for any water development on these rivers, needs prior approval of the Indus Commission, due to which development processes are being affected.<sup>2</sup> Moreover, some are of the view that as the permitted storage capacity on the Western Rivers for generating 3500 MW electricity is uncertain, the question of 20,000 MW potential appears impossible. Even the much-anticipated 3,500 MW potential looks impossible sometimes, because Pakistan has serious objections to all big projects in J&K, considering them as a violation of the treaty.<sup>3</sup>

There is a growing resentment in J&K and people are vehemently demanding for the modification of the treaty.<sup>4</sup> If, in any case, India and Pakistan agree to modify the treaty as per the demands and interests of J&K, it would probably ensure greater benefits and open up several avenues for unrestrained development in the State of Jammu & Kashmir.<sup>4</sup>

The State Government and other sections of society have raised objections to projects executed by the NHPC. According to them thus, projects are neither benefiting the State in power supply nor in terms of employment opportunities to an expected extent. It is quite undesirable that projects, such as Salal, Dulhasti and Uri have been built in Kashmir but electricity generated from these projects is utilized elsewhere in India. Still 25 percent population of J&K has no access to electricity and the remaining proportion of the population relying on episodic electricity, which is often cut off for hours in winters.<sup>5</sup>

Irrigation is one of the significant inputs accomplishing sustained agricultural growth and reducing inequality and poverty. The irrigation network has a potential to sustain industrial growth through agricultural productivity, employment and income

---

<sup>1</sup> Economic Survey of J&K State (2011): 380.

<sup>2</sup> F.AShaheen et al., "Sustaining Energy and Food Security in Trans boundary River System: Case of Indus Basin," Sher-e-Kashmir University of Agricultural Science and Technology, Srinagar, Jammu and Kashmir (2005).

<sup>3</sup> Iftikhar Hakim, *The Indus Water Treaty: An Institutional Mechanism for Addressing Regional Disparity*, United Kingdom: VDM Verlag Dr. Muller Publishing House, 2010, 23.

<sup>4</sup> S. Chandran, *Harnessing The Indus Waters: Perspectives From India*, *Institute of Peace and Conflict Studies*, New Delhi, Issue Brief, 122 (September 2009). (accessed jan 24, 2019)

<sup>5</sup> Athar Parvaiz, "Water Wager: India and Pakistan are locking Horns over dam projects in a race to secure priority water rights on the Indus River" (2011), (accessed january 20, 2019)

generation through command area and watershed management. Irrigation is the lifeline for an economy and its people, as the major chunk of population of J&K State lives in rural areas and is dependent on agriculture for their livelihood. If we look into the annals of Kashmir, irrigation development started long ago during the reign of Lalitaditya, the great ruler of Kashmir, when a remarkable irrigation system was developed which survived for centuries. Although, presently, the Government of J&K has a well-established department of irrigation which looks after the irrigation system, the utilization of water for irrigation purposes is guided by the Indus Water Treaty. The irrigation department is not free to utilize the water for required irrigation. In fact, the Indus Water Treaty has imposed some restrictions on State's water utilization. The State cannot fully exploit the irrigation potential of the Indus, Jhelum and Chenab rivers. Nonetheless, the official commentator of irrigation department of J&K said that the treaty has offered a great scope for irrigation development in the State, but the State has not been able to harness even a bit of that and opined if the State irrigation department would utilize permissible water for irrigation purposes, the agriculture produce would increase to more than its double, and the State would become self-sufficient in food grains production.<sup>1</sup>

At present, in J&K, there are 22 major, 534 medium and 235 minor irrigation schemes in operation which provides irrigation to the State through the Indus, Jhelum, Chenab and the Ravi Rivers.<sup>2</sup> Besides these projects, 14 medium and 13 renovation projects are also under construction. There are some proposed projects pending in J&K which needs permission from the Indus Water Treaty commission, as F.A Shaheen (2010) in his research paper stated that the State of J&K has 12 new irrigation projects which are pending for want of permission from the Indus Water Treaty commission. But the department of irrigation and flood control counter claims that the entire scheme has been completed and three new proposed schemes are now pending with the Commission.<sup>3</sup>

### **Indus Water Treaty under Stress**

The fate of the Indus Waters Treaty (IWT) was once again on public trial because of terrorist attack on an Indian army camp in Uri (Union Territory Jammu & Kashmir). Post-Uri, several knee-jerk strategies have been projected to the BJP-led NDA government to punish perpetrator state Pakistan for its perpetual abetting of terrorism

---

<sup>1</sup> Greater Kashmir, (May 13, 2012), (accessed January 13, 2019)

<sup>2</sup> Economic Survey of J&K, (2011).11

<sup>3</sup> F.A Shaheen et al., Sustaining Energy and Food Security in Transboundary River System: Case of Indus Basin, Sher-e-Kashmir University of Agricultural Science and Technology, Srinagar, India.

against India. One of them is abrogating or revoking the IWT signed on September 19, 1960, between India and Pakistan. It is déjà vu. This is exactly what happened during BJP-led NDA-I, after terrorists attacked the J&K Assembly, followed by an attack on Parliament on December 13, 2001.

On both occasions, a handful of strategic interlocutors in India strongly recommended revoking the IWT as part of coercive diplomacy. At that time, the Vajpayee government never revoked or abrogated the IWT. Water from the Indus river has been flowing from its origin in the Tibetan Plateau (China) through India and Pakistan till it merges with the Arabian Sea, with occasional hiccups in terms of Tulbul Navigation Project, Baglihar, Kishenganga, Ratle, Miyar, Pakuldul, and Lower Kalnai Hydroelectric Projects (HEPs), river training work on the Ravi river, and so on. In a distinct departure from NDA-I, however, Prime Minister Narendra Modi has succumbed to the pressure of media-hype and formed an inter-ministerial panel for reviewing the IWT, not abrogating or revoking it. Meanwhile, the purpose behind setting up the panel has been served - which was to address post-Uri public sentiment in India and send a message to Pakistan. The suggestions on IWT, as they cropped up soon after a signal from the ministry of external affairs, deal with the irrational nationalistic fervour of "abrogating or revoking" the IWT through the limited military-strategic perspective of "water as weapon".

However, the government must carefully and comprehensively weigh in all suggestions on the matter for possible implications. The geophysical violence (plate tectonics) in the subcontinent has made India's role more complex as an upper, middle and lower riparian country with respect to trans-boundary Rivers. As members of the government have questioned often earlier - "if Pakistan cannot honour the Shimla Agreement and the Lahore Declaration, then why India should honour the IWT?"

The scrapping of IWT unilaterally has never been, and neither is right now, an option for either India or Pakistan. During Parliament's session in July 2014, the NDA-II government refuted any drawbacks in the treaty by saying that "the IWT is a time-tested framework for the sharing of waters of the Indus river system between India and Pakistan. India has always strictly adhered to both the letter and the spirit of the treaty". Articles 9-12 of the IWT clearly provide for settlement of differences and disputes and emergency situations among others, with the clear provision that both countries can't revoke this treaty unilaterally. If India wants to withdraw from the IWT, apart from a nod from the World Bank, it has to pass through three phases - Permanent Indus Commission (PIC), Neutral Expert and Court of Arbitration. In addition, international opinion at least from the governments of Australia, Canada, Germany, UK and US, who contributed to the Indus Basin Development Fund, is to be taken too. Besides, withdrawing from IWT would definitely send a wrong message in respect of existing water development treaties with neighbouring countries such as Bangladesh and Nepal and any such future bilateral or trilateral agreements on developing water-related projects on shared rivers. The spillover effect will be detrimental to India.

Interestingly, the Chinese intervention in the Indus river and other rivers is potentially high but may not create a problem immediately. It is to be noted that India and China are not part of any international water treaties. The water development treaties with Nepal and Bangladesh, existing and future perspectives, are not watertight success stories. India's moral strength on sharing water resources is limited. From Nepal to Bangladesh, popular voices are against India on shared water. There is also a high probability- considering massive Chinese investment in the China Pakistan Economic Corridor (CPEC) - that Pakistan would suggest inclusion of China in future talks on Indus waters if India puts hurdles in the IWT. Those who are considering or suggesting a truncated irrational military-strategic perspective of "water as weapon" - it will be squashed instantly under well-accepted international norms and international public opinions.

For now, the PIC meeting has been postponed for an indefinite period, which is a rational step. The next step the government (Indus wing of the ministry of water resources) can take is: withhold all information from Pakistan related to flood warnings on the rivers Jhelum, Chenab, Jammu Tawi, Ravi and Sutlej till October 10, which is a routine procedure under way since 2014. These steps within the parameters of political and ethical discourse would pressure Pakistan. As written in the treaty, the IWT can be reviewed from time to time with consent from both parties. Technically, the only option India has is to press for review in PIC. The IWT survived 1965, 1971, 1999, 2001 and hopefully it will survive 2016 too.

## References

- Amanda Cahil Ripley, *The Human Right to Water and its Application in the Occupied Palestinian Territories*, 14, Taylor & Francis, 2011
- Athar Parvaiz, "Water Wager: India and Pakistan are locking Horns over dam projects in a race to secure priority water rights on the Indus River" (2011), (accessed January 20, 2019)
- Athar Parvaiz, *India/Pakistan: Indus Water Treaty Agitates Kashmiris* (2088) (accessed Jan 16, 2019)
- Boutros Boutros-Ghali, "I Support the Algerian Government," *Middle East Quarterly*, September 2007.
- Dost Mohammad and A .S. Bhat, *Problems of Power Sector Development*, New Delhi: Gayan Publishing House, 2002), 175.
- Economic Survey of J&K State (2011): 380.
- F.AShaheen et al., "Sustaining Energy and Food Security in Trans boundary River System: Case of Indus Basin," *Sher-e-Kashmir University of Agricultural Science and Technology, Srinagar, Jammu and Kashmir* (2005).
- F.AShaheen et al., *Sustaining Energy and Food Security in Transboundary River System: Case of Indus Basin*, *Sher-e-Kashmir University of Agricultural Science and Technology, Srinagar, India*.

- Hafeez-ur-Rahman Khan, "Indo-Pakistan Waters Dispute", *Pakistan Horizon*, Vol. 12, No. 4 (December, 1959), p. 324
- Haroon Mirani, "Race to the death over Kashmir waters", *Asia Times*, (2009), c.f. Shakil A. Romshoo, *Indus River Basin Common Concerns and the Roadmap to Resolution*, (New Delhi: Centre for Dialogue and Reconciliation, 2012): 22.
- Hill, Douglas, "The Politics of Water Sharing: Contemporary Issues in South Asia" in Lahir Dutt, Kuntala and Robert J. Wasson (ed.) *Water First: Issues and Challenges for Nations and Communities in South Asia*. New Delhi, Sage, 2008, pp. 69-70
- Iftikhar Hakim, *The Indus Water Treaty: An Institutional Mechanism for Addressing Regional Disparity*, United Kingdom: VDM Verlag Dr. Muller Publishing House, 2010, 23.
- Javid Shahmiri, *Indus Water Treaty J&K Perspective*, (2010): 7, article presented in New Delhi on India-Pakistan Water Dialogue, (accessed Jan 20, 2019).
- M. Zeitoun and N. Mirumachi, "Transboundary Water Interaction I: Reconsidering Conflict and Cooperation", *International Environmental Agreements: Politics Law and Economics*, 8: 4, 2008, p. 298
- Patricia Bauer, "Indus Waters Treaty India-Pakistan [1960]", *The Information Architects of Encyclopaedia Britannica*, september 12, 2020
- R Sinha. "Transboundary Disputes: Two Neighbours and a Treaty," *Journal of Economic & Political Weekly*, (2006), (accessed 20 January, 2019).
- S. Chandran, *Harnessing The Indus Waters: Perspectives From India*, Institute of Peace and Conflict Studies, New Delhi, Issue Brief, 122 (September 2009). (accessed jan 24, 2019)
- S.C. Sud, "Optimising Hydel Development in Chenab Basin" *Journal of Himalayan and Central Asian Studies*, New Delhi Vol. 9, no. 3 (2005): 27
- Sinha, R, "Transboundary Disputes: Two Neighbours and a Treaty," *Journal of Economic and Political Weekly*, (2006), (accessed January 26, 2019).
- T. Deen, "Climate change deepening world water crisis", March 19, 2008,
- Tapan R Mohanty, and Adil Hasan Khan, "Dam of Division: Understanding the Baglihar Dispute", *Economic and Political Weekly*, Vol. 40, No. 29 (Jul. 16-22), p. 3155
- Tufail Jawed, "The World Bank and the Indus Basin Dispute: Background- I" *Pakistan Horizon*, Vol. 18, No. 3 (Third Quarter), 1965, pp. 226-237
- Tufail Jawed, *The World Bank and the Indus Basin Dispute: Background*, *Pakistan Horizon*, Vol. 18, No. 3 Third Quarter, 1965, P. 36
- Undala Z Alam, "Questioning the Water Wars Rationale: A Case Study of the Indus Waters Treaty" *The Geographical Journal*, Vol. 168, No. 4, *Water Wars? Geographical Perspectives* (Dec.), 2002, p. 329
- Vlachos Evan, "Water Conflict and Cooperation: The Transition to a Purposeful Future"
- Wajahat Habibullah, "The Political Economy of the Kashmir Conflict Opportunities for Economic Peace Building and for U.S. Policy" *Special Report*, no, 121 (June 2004), United States Institute of Peace, (accessed 27 January, 2019)