The chapter deals with Indus Water Treaty and its relationship with international transboundary water management principles. In addition, the chapter discusses contemporary issues and challenges to the Treaty.

7.1. Introduction

There are almost 263 transboundary river basins and lakes in the world, covering nearly half of the land surface, shared by two or more states. The increasing demand and differences over the water utilization of these shared river basins have made them a critical issue among users and have become the source of conflicts and rivalries. To conciliate some of the grave conflicts, a need for laws and principles was felt. Subsequently, some international organizations and scholarly institutions have made tremendous efforts to resolve the water conflicts through legal processes. The Two scholarly non-governmental organizations, the International Law Association (ILA) and the International Law Commission (ILC), have made major contributions to the laws of international watercourses through adoption of a number of resolutions and rules. Also the International Court of Justice (ICJ) can be regarded as an extensive body of sorts. The major works of the ILA include the famous Helsinki Rules (1966), which in the 1997 UN International Watercourses Convention (UNICW) was adopted and the Berlin Rules were issued in 2004.

As per Helsinki Rules (1966) each Basin State is entitled to utilize the waters of an international drainage basin within its territory to a reasonable and equitable

2 International Law Association (ILA) is a body of voluntary body of scholars founded in 1873 which has prepared principles on shared waters.
3 International Law Committee (ILC) is an official United Nations Organization whose job is to codify and development of international laws and draft new treaties.
4 The 1966 Helsinki Rules define an “international drainage basin” as “a geographic area extending over two or more States determined by the watershed limits of the water systems, including surface and underground waters, flowing into a common terminus.”
5 The United Nations Convention UNICW on non-navigational uses of international watercourses was adopted by UN General Assembly on 21 May 1997. A total 103 countries voted in favor of the convention with 3 against (China, Burundi, and Turkey). It is notable that in South Asia, Nepal, and Bangladesh voted in favor of the convention while India and Pakistan abstained.
6 The Berlin Rules are quite comprehensive and detailed, consisting of 73 articles and 14 chapters.
The UNICW (1997) is based largely on the ILA work, particularly the Helsinki Rules (1966). It aims at ensuring the utilization, development, conservation, management and protection of international water courses (surface and ground waters).

The Berlin Rules (2004) are applicable to the management of both national and international waters. Therefore, it addresses various issues related to the management of all waters in a unified, comprehensive and integrated manner. The major distinction between Helsinki Rules (1966), UNICW (1997) and the Berlin rules is that: the former two explain the right of each basin state to a reasonable and equitable share while the later obliges each basin state to manage the waters of national and international basins in an equitable and reasonable manner. The Berlin Rules (2004) cover more issue than the Helsinki Rules (1966) and the UNICW (1997).

Apart from the ILA and ILC the basin communities and organizations have also made remarkable efforts for the development and management of internationally shared river basins. On the basis of mutual brotherhood, these basin communities have documented a rich history of cooperation on their mutually signed treaties. Among all the mutually signed treaties, the Indus Water Treaty is one of the exceptional ones, signed between India and Pakistan with the active role of World Bank. Indeed, the World Bank is a signatory to the Indus Water Treaty and makes commitments of its own for tasks specified in Article V\textsuperscript{7} and X\textsuperscript{8} as well as Annexure F, G and H.\textsuperscript{9}

7.2. Indus Water Treaty and its relevance to other internationally recognised rules, conventions and treaties/agreements

The Indus Water Treaty is unusual in three dimensions: its origin, the water allocation mechanism and its integration of previously established norms in customary international water law.\textsuperscript{10} In addition, the Indus Water Treaty is involved in various

\textsuperscript{7} Indus Water Treaty 1960, Article V, Financial Provisions.
\textsuperscript{8} Indus Water Treaty 1960, Article X, Emergency Provision.
\textsuperscript{9} Annexure F- Neutral Expert, Annexure G- Court of Arbitration and Annexure H- Transitional Arrangements (for full detail see Indus Water Treaty draft).
legal processes and has adopted various rules and principles of water management in its mechanism. Its successful mechanism has guided the water laws, conventions and treaties. In the present work, an attempt has been made to analyze the relationship of Indus Water Treaty with other international laws, conventions and treaties. The following table summarizes the relevance of Indus Water Treaty principles with internationally recognized water management principles.

It was not an easy task for India and Pakistan to maintain a cordial and friendly relationship because of the Indus Basin dispute. However, Indus Water Treaty has created the mechanism for development through transparency in exchange of information and simple water distribution system. Consequently, Indus Water Treaty has opened the ways of development between two countries. Indeed, it is a unique one and successful instance of peace. However, both India and Pakistan insisted in the Indus Water Treaty text that “nothing contained in this treaty shall be construed by the Parties as in any way establishing a general principle of law or any precedent.”11 The International Water Law Association adopted the Indus Water Treaty as context for its Helsinki Rules (1966)12 in the use of water of International Rivers.13 As the Indus Water Treaty had been concluded six years earlier to the Helsinki Rules (1966), the findings of the International Law Association could have little effect on the course of the negotiations leading to this treaty or on the terms of the settlement.14

The Indus river basin is sprawled over four sovereign countries, even including the disputed state of Jammu and Kashmir. Unlike the International Water Law15 Convention16 and principles, the Indus Water Treaty refused to take account of

11 Indus Water Treaty 1960, Article XI, (2).
15 Article II, of Helsinki Rules (1966) describes A “basin state” is a state the territory of which includes a portion of an international drainage basin
16 Article 2(C) of the UNICW (1997) articulates that “Watercourse State” means a state party to the present convention in whose territory part of an international watercourse is situated, or a party that is a regional economic integration organization, in the territory of one or more of whose member states part of an international watercourse is situated.
the ‘drainage basin’ or ‘watercourse’ concept that considered the whole Indus Basin as a unit. The World Bank put forward the idea of integrated management and the river basin approach during the negotiations. The rivers were divided between two states as eastern group and western group of rivers.

The principles of water distribution utilization were adopted in the Indus Water Treaty to settle the grave dispute i.e. “reasonable and equitable” utilization of the water by both the countries. In fact, this mechanism has played a significant role in the water development and maintaining peace and security in the region. However, actual allocation of the water was not “equal” i.e. an 80:20 percentage by Pakistan and India respectively and was severely criticized in India on the ground of inequality. This kind of division explains the predominantly political and economic, but not legal, reasoning behind the treaty.\(^\text{17}\) The distribution is equitable based on needs, prior use, and other considerations as spelled out in Article 5 of the UNICW (1997).\(^\text{18}\) Indian water resource expert Ramaswamy Iyer has referred to the partitioning of water rights as a “coda to the partitioning of the land” [in 1947] and some others have called it the “unfinished business” of the sub-continent’s partition.\(^\text{19}\)

\(\text{\(^{17}\) Salman M. A Salman and Kishor Upreti, Conflict and Cooperation on South Asia’s International Rivers: A legal Perspectives (Washington D.C: The World Bank, 2003), 61.}
\(\text{\(^{19}\) Ramaswamy Iyer “Indus Water Treaty: A Different View,” Journal of Economic and Political Weekly Vol. 40, no. 29 (July 2005)\)
Table 1: Indus Water Treaty and its relevance with internationally recognized water management principles

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reasonable and equitable utilization:</strong></td>
<td>Water utilization is “equitable” 80: 20% on the basis of population and demand of both countries.</td>
<td>Articles IV, V, VII, X, XXIX (4)</td>
<td>Articles 5, 6, 7, 15, 16, 17, 19</td>
<td>1995 SADC Protocol on Shared Watercourse Systems (Article 2), 2002 Sava River Basin Agreement (Articles 7–9), 1995 Mekong Agreement (Articles 4–6, 26)</td>
</tr>
<tr>
<td><strong>not to cause significant harm:</strong></td>
<td>Article IV, (2)</td>
<td>Articles V, X, XI, XXIX (2)</td>
<td>Articles 7, 10, 12, 15, 16, 17, 19, 20, 21(2), 22, 26(2), 27, 28(1), 28(3)</td>
<td>Consistent with Trail Smelter and Corfu Channel Cases</td>
</tr>
<tr>
<td><strong>cooperation and information exchange:</strong></td>
<td>Articles VI- VII- VIII)</td>
<td>Articles XXIX (1), XXIX (2), XXXI</td>
<td>Articles 5(2), 8, 9, 11, 12, 24(1), 25(1), 27, 28(3), 30</td>
<td>Mexico-US 1946, Treaty , the ILA’s 1982 Montreal rules on water pollution in an international drainage basin, the 1992 E.C.E, 1995 SADC Protocol on Shared Watercourse Systems (Articles 2-5), 2002 Sava River Basin Agreement (Articles 3–4, Articles 14–21), 1995 Mekong Agreement (Preamble, Articles 1, 2, 6, 9, 11, 15, 18, 24, 30)</td>
</tr>
<tr>
<td><strong>peaceful settlement of disputes:</strong></td>
<td>Article IX, Annexure F, G,</td>
<td>Articles XXVI, XXXVII, XXIX, XXXI, XXXIV.</td>
<td>Paragraph 1, Article 33.</td>
<td>1995 SADC Protocol on Shared Watercourse Systems (Article 7), 1995 Mekong the 1995 Mekong River basin agreement (Articles 34 and 35), 2002 Sava River Basin Agreement (Articles 1, 22-24, Annex II), and the 2002 agreement of the Sava River basin (Articles 22–24).</td>
</tr>
</tbody>
</table>

Sources: After Rehman 2009 and Mary Miner 2009.
Utilization of an international watercourse in an equitable and reasonable manner within the meaning of Article 5 of the Helsinki Rules (1966) (see Rules) and Article 5 of the UNICW (1997) requires taking into account all relevant factors and circumstances, including:

- The population dependent on the watercourse in each watercourse state.
- The effects of the use or uses of the watercourses in one watercourse state on other watercourse states;
- Existing and potential uses of the watercourse;
- Conservation, protection, development and economy of use of the water resources and the costs of measures taken to that effect; and
- The availability of alternatives, of comparable value, to a particular planned or existing use.

The Article II and III of the Indus Water Treaty stipulate the distribution of water between India and Pakistan and facilitate both countries to some sort of territorial type of division, which was later adopted and defined in detail by the UNICW (1997). Apart from the water distribution mechanism, the utilization of water of Indus Basin was another difficult task for the two countries. But it was properly managed by the division of the basin into two. The Indus Water Treaty has refused to take account of the ‘drainage basin’ or ‘watercourse’ concept considering the whole Indus a unit. Rather, the rivers were divided between the two states with specified consumptive and non-consumptive utilization of water from two wings. The concept of consumptive and non-consumptive use of water from eastern and western rivers for India and Pakistan is consistent with the Lake Lanoux decision. In South Asia, other treaties like Mahakali between India and Nepal, the Ganges between India

---


and Bangladesh specified the actualization of water share. In contrast, the Indus Water Treaty does not provide the idea of sharing the water from a common river.  

On the international basins, it is a legal, political and moral responsibility of every riparian state in an internationally shared basin to inform about the development of basin either by building dams or by using the water for irrigation, which may cause serious harm to other states’ interests and transboundary damages. The rule not to do significant harm (sic utere) has been derived from the Roman law, which is generally accepted by all basin communities as legal document. But generally these principles are opposed by upper riparian states. However, these principles accepted by both the countries and applied to ensure the rights of two countries. The Indus Water Treaty Article IV, Section 2 admonition to avoid material damage to the other party and it is consistent with the Trail Smelter and Corfu Channel cases. As Trail Smelter arbitration depicts, under the principles of International Law, none of the states has the right or permission to use its terrain in a way as to cause injury by the fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the damage is recognized by clear and convincing evidence.

Trail Smelter arbitration was appreciated and applied in various international water laws, environment laws and agreements to protect the basin states from material injury and significant harm, including human health. It is now considered as the part of customary international laws. On the basis of its successful result, the World Bank applied its mechanism in the Indus Water Treaty. The Indus Water Treaty Article IV (2) states “each party agrees that any non-consumptive use made by it shall be so made as not to materially change, on account of such use, the flow in any channel to the prejudice of the uses on that channel by the other party under the provision of this treaty. In executing any scheme of flood protection or flood control each party will

---

23 The principle, no to do significant harm is identified with Roman law, sic utere tuo ut alienum non ladeas (so use your property as not to harm another).
avoid, as far as practicable, any material damage to the other party, and any such scheme carried out by India on the western rivers shall not involve any use of water or any storage in addition to that provided under Article III” (see Article III of the Indus Water Treaty)

Both India and Pakistan have accepted the principle of no significant harms to protect their rights as the cause of material damage from any party.\textsuperscript{26} The Indus Water Treaty states in Article IV (10) that “each party declares its intention to prevent, as far as practicable, undue pollution of the rivers which might affect adverse uses similar in nature to those to which the waters were put on the effective Date, and agrees to take all reasonable measures to ensure that, before any sewage or industrial waste is allowed to flow into the rivers, it will be treated, where necessary, in such manner as not materially to affect those uses: provided that criterion of reasonableness shall be customary practice in similar situations on the rivers”. Afterwards the ILA has applied this Article in the Helsinki Rules (1966) of Chapter (3)\textsuperscript{27} on pollution prevention that draws upon Indus Water Treaty. According to the Indus Water Treaty Article IV (11), “the parties agree to adopt, as far as feasible, appropriate measures for the recovery, and restoration to owners, timbers and other property floated or floating down the rivers, subject to appropriate charges being paid by owners”. Allowance of non-consumptive use for all parties on an international river provides a precedent for the Helsinki Rules (1966) navigation and timber-floating proviso of chapter 5.

Restoration of peace and brotherhood is important and to achieve this there is a need to develop some institutions which can keep societies closer and eager for development. Therefore, to realize the importance of development, peace and cooperation, the Indus Water Treaty provides some institutional mechanisms as well. Both countries, in agreement, have established the institution of Permanent Indus Commission (PIC) under the Article VIII, Article VI and Article VII of the Indus Water Treaty. The commissioner has to be a high ranking engineer, especially competent in the field of hydrology and water use. The responsibilities of PICs include cooperative arrangements, management of the basin and information-sharing

\textsuperscript{26} In the draft of Indus Water Treaty, the word party was used for two countries India and Pakistan.
\textsuperscript{27} As used in this chapter, the term “water pollution” refers to any detrimental change resulting from human conduct in the natural composition, content, or quality of the waters of an international drainage basin.
and regularly data exchange on Indus Basin. The PICs have to meet regularly once a year in India or Pakistan and submit reports to respective governments before 1st June every year. The post of PIC was inspired by the International Court of Joint Commission (IJC) under the boundary water treaty between the US and Canada.  

The PICs have been instrumental in preventing the countries from engaging in water war. The future cooperation and data exchange system on Indus Basin was developed after the pattern of various agreements and treaties like the Mexico-US 1946 treaty relating to the utilization of the waters of Colorado and Tijuana rivers and of the Rio Grande Rivers. These agreements have significant impact on the evolution of the norms incorporated in the Indus Water Treaty, in particular the procedure relating to dispute settlement process. The Indus Water Treaty Article VI on data exchange, Article VIII (PIC) and Article IX (dispute settlement) provide precedents for Helsinki Rules (1966) chapter 6 (International Law Association 1967). In addition to this, the obligation of data exchange and future cooperation has been recognised in a variety of instruments like UNCIW (1997), the E.C.E (1992), the Mekong Agreement (1995) and the Ganges Water Treaty (1996), establishing joint bodies for the collection of data and exchange of notes. 

There is a hierarchy of jury which settles the “questions” “differences” and “disputes” if any over water between two countries. The process has been addressed in the Indus Water Treaty which is quite complex and time consuming. Firstly, the case is tried in the institution of PIC; if the commissioners fail to settle, the case will be extradited to a neutral expert and if the case still remains unresolved, it will be solved in the international court of arbitration.

The principle of cooperation advocates that all states in an international watercourse should seek a settlement of the disputes by peaceful means in case states concerned cannot reach agreement by negotiation. The 1960 Indus Waters Treaty (Article IX, Annexure F and Annexure G), articulates the mechanism for dispute resolution. The “questions” to be decided by the PIC, “differences” to be settled by Neutral Experts (NE) and “disputes” to be settled by Court of Arbitration (CoA).  

It is pertinent to note that any possible arbitration has to remain within the framework of Indus Water Treaty. The principle of dispute settlements of Indus Water Treaty has been recognised by most of the modern international conventions, agreements and treaties, e.g. the Helsinki Rules (1966) (Article XXVII) and UNICW (1997) (Paragraph 1, Article 33). It has also been incorporated in major treaties in recent years; for instance, the Shared Watercourse Systems in the South African Community Protocol (Article 7), the Mekong River Basin Agreement (1995),

---

33 The court of arbitration (CoA) is to consist of seven members, two arbitrators to be designated by each of the parties, and the other three to be selected by agreement of the parties or, failing that, by designated individuals. The three neutral umpires are to be respectively a person qualified to be chairman of CoA, an engineer and an international lawyer. (Annexure G (4) of the Indus Water Treaty 1960)

34 *Indus Water Treaty 1960, Annexure G (2).*
(Articles 34 and 35), and the framework agreement of the Sava River Basin (2002) (Articles 22-24).

Conclusion

A recapitulation of the foregoing discussion on the nature, history, implementation and subsequent management procedures, allude to the efficacy of the Indus Water Treaty. It involves various laws, agreements and treaties, as some of its principles have been incorporated from previous agreements and some of Indus Water Treaty principles have guided various laws made later, convention treaties and i.e. In implementation, the Indus Water Treaty survived many ups and downs even though bitter relations between India-Pakistan resulted in three major wars in 1965, 1971 and 1999. Its principles, friendly cooperation between two PICs and maintaining the rules and regulations are also the result of two countries’ implementation on Indus Water Treaty. It has faithfully served both the countries as a means of prevention of water-related disputes. Nevertheless, some water experts have discussed the advantages and disadvantages in Indus Water Treaty. For instance, it allows both countries to pursue their individual interests, whilst ignoring the needs for cooperation in the field of water development. On the other hand, it restricts cooperation on joint water management measures. Therefore, too many issues related to water remain unresolved.
7.3. Contemporary Issues and Challenges to the Treaty

The Indus Water Treaty has been largely considered as one of the satisfactory agreements at its best endeavours to prevent water conflict between India and Pakistan. However, despite its success, some contemporary challenges have weakened the position of Indus Water Treaty and are also posing questions to its survival which are:

7.3.1. Decreasing quantity of water and the issue of climate change

The decreasing quantity of water is posing a serious threat to India-Pakistan development and also originating new areas of conflicts. In India, per capita water availability has declined from 5000 cubic meters per capita per person in 1950 to 1800 cubic meters in 2005, and it has been expected that per capita per person water availability will decrease below 1000 cubic metres by 2025.\(^{35}\) Similarly, water availability in Pakistan per capita per person has been declining at an alarming rate from 5000 cubic meters per capita per person in 1951 to about 1100 cubic metres currently and it has been projected to less than 700 cubic metres by 2025.\(^{36}\)

When we compare the availability of water in the countries concerned and the increasing demand it looks certain that the countries are approaching to the status of \textbf{water scarce countries}. And this situation is surely going to create serious socio-economic tension, which if not handled with care and eye on future may translate in to political crisis between the two countries. In addition to this, in March 2009, a working group of United Nations (UN) has warned that the decreasing quantity of water in India and Pakistan is fast emerging as a grave issue, and it may issue forth in a serious political conflict.\(^{37}\) Hence, the Indus Water Treaty is also expected to face intense pressure in near future.

Decreasing quantity of water, coupled with climate variability, contribute to the cause of water scarcity. As a result of climate change, glaciers are melting at an accelerating rate, rainfall pattern has totally changed and climate often pranks and as a

\(^{35}\) S. Waslekar, \textit{The Final Settlement: Reconstructing India-Pakistan Relations} (Mumbai: Strategic Foresight Group, 2005)


\(^{37}\) Ibid.
result region faces either heavy rains or drought situation. Uncertain changes in climate have become the cause of water stress in the South Asian river basins, especially in the Indus Basin, heavily dependent upon Himalayan glaciers. Recent studies on the Himalayan glaciers indicate the Himalayan glaciers will continue to retreat over the next 50 years as a result of climate change. This will cause a shrinking of glaciers, erratic snow patterns, erratic rainfall patterns, natural disasters and will affect the flow patterns of the Himalayan Rivers, particularly affected will be in the Indus river basin. There are some other causes of retreating glaciers, e.g. urbanization, deforestation, pollution, heavy growth rate of population, etc. Further, the Himalayan glaciers are threatened by the heavy militarization along the borders of the two countries, burning fuels and transportation.

The Indus Water Treaty provisions do not take into account the effects of climate changes in its mechanism. The provisions of the Treaty simply say that India and Pakistan are obliged to let of rivers flow without any undue interference. The contemporary water laws and conventions oblige to conserve, manage and protect international water courses. But Indus Water Treaty does not speak on the issue of handling water scarcity. Climate change and its impacts over water is a serious concern, and it is imperative for the two countries to work together. If the issues related to environment were not handled with institutional or technical mechanism, it has the potential to aggravate the tension between the two countries and may create further tensions for the Indus Water Treaty.

7.3.2. Differences over Water Utilisation

The Indus Water Treaty allows India to tape water for run-of-the river projects, on the western rivers Chenab, Jhelum and Indus before entering into Pakistan. Therefore, India has started construction of several run-of-the river projects on western rivers: the Salal project, Baglihar project on the Chenab River, Kishanganga project and Wullar barrage/Tulbul navigation project on Jhelum River and Nemo-bazgo project on the Indus River. These projects are regarded as “core issues” between two countries and are regarded by Pakistan as violation of the Treaty.

Pakistan feels that India’s construction of dams on western rivers is a permanent threat to its economic security and sovereignty. The damming of western
rivers will be used for something other than power generation and India will use the dams in an offensive manner by flooding key Pakistani terrains. However, India maintains that the construction of projects is endorsed by the treaty and all projects are within the limits and criteria of treaty and all these projects will operate as run-of-river projects. However, differences over utilization and complex technicalities involving the treaty are critical and complicate issues at many levels and it has heightened the political and military tension between the two countries.

7.3.3. Claims from Jammu and Kashmir

As discussed earlier in detail, the people of J&K state, too, have their voice of descent on the treaty. Their opinion is that the state is a rightful riparian of three western rivers and by the signing of the treaty India and Pakistan have overlooked their inherent water rights. Therefore, at present J&K state is pleading instant review of the treaty.

7.3.4. Pressures from Outside

7.3.4.1. Kabul River Problem: Quite apart from India and Pakistan water dispute, another geopolitical game has started in the Indus Basin that may hamper the relations of the two countries, which, in near future, is likely to create problem for Indus Water Treaty. The Kabul River is a tributary of Indus River system, which contributes almost 15 percent of total water availability of Pakistan. Afghanistan is asking for its rights and it has planned to build dams on Kabul River and its tributaries. Therefore, the water experts predict that the dams across Kabul basin will reduce a good percentage of water in Pakistan, which, as a result, will face acute water shortage for its irrigation and power generation in North West Frontier Province (NWFP), and Pakistan will have no water for the proposed Kalabagh Dam. India is financially and technically supporting Afghanistan in water development on Kabul River. India’s support to Afghanistan may cause a bad water relationship between the three countries. Its support to Afghanistan is viewed critically and is seen as a water weapon against Pakistan. In such a situation, if India helps Afghanistan to alter the flow of Kabul River, perhaps Pakistan will try to persuade China to build projects on India’s Rivers in Tibet. Therefore, this action will not only create an environment of

water-war in the region but also pose a serious threat to India-Pakistan water agreement.

7.3.4.2. Chinese Question: The Indus Treaty does not include all basin states of Indus Basin—even the main source of the Indus River system is in China (Tibet). However, at present China is asserting its water rights over Indus River. There are some evidences that China has started construction of water projects in its territory. One British writer ‘Albinia’\(^{39}\) has pointed out that China’s construction of dam at Demchok on Indus River is in progress. The project has the capacity to generate 11 MWs hydroelectricity and it has also capacity to stop the flow of the Indus River to a considerable extent.\(^{40}\) It is obvious that the development of such projects will reduce the flow of Indus River and will destabilize the inhabitation in Punjab and Sindh areas, which are heavily dependent on the river for irrigation and energy generation. It needs to be remembered that out of about 190 million people, 72 percent Pakistani and 23 percent Indian live in Indus Basin.\(^{41}\)

For India, the dam would affect the Tibetan rivers, which provide energy and irrigation for its large agrarian population and also that Gilgit-Baltistan will face a water shortage and reduced power generation resource. For Pakistan, experts are of the view that the construction of the project might cause serious damage to Pakistan’s proposed Diamer and Bunji dams in Gilgit.\(^{42}\) However, it will certainly ensure that India and Pakistan will speak in a single voice in future against Chinese projects in this region. It is a matter of serious concern and the Chinese action will become a conceivable challenge to Water Treaty. China’s claim is mainly on the basis of geography of Indus River, not on the basis of dependency on River Indus. If it disrupts the flow of Indus, probably a political conflict will start between China and its lower riparian India and Pakistan. Consequently, Indus water will become the bone of contention not only between India and Pakistan, which are already engaged in water dispute, but will involve the whole region.

---

39 The author has written a book entitled “The Empire of Indus: The Story of a River”
The foregoing discussion reveals that certain issues are endangering not only to Indus Water Treaty but also Indo-Pak relations. Though the political climate between Indo-Pak is not too good, but the above discussed issues are common to both. Since water is an important determinant in boosting the economy of both the countries, there is an intense need to maintain the Indus Basin to prevent future disasters of water shortage and conflicts before the issue may get any graver.

7.4. Way Forward

The following section suggests some vistas of cooperation, so that any confrontation may be sorted out by mutual understanding. Constructive measures such as Joint endeavours in environmental studies, internal water management, Indus Basin development organization, peacemaking initiatives over Indus Basin through Track II diplomacy and joint management of the Indus Basin could be put into practice to address the water related issue in the Indus Basin.

7.4.1. Joint endeavours in environmental studies

Environmental threats do not have any regard for political and regional boundaries. During the last three decades the watersheds of the Indus Basin is badly degraded. To rehabilitate the water resources of the basin it is necessary to work together on issues, such as climate change, water quality, shrinking of glaciers and ground water usage. These issues are common to both the countries. Presently both are on the brink of water scarcity issue as a result of climate change and rapidly shrinking of glaciers. These issues are interrelated with population growth, urbanization and industrialization. Both the countries can neither afford to ignore or disclaim their responsibilities towards the environmental degradation in their territory and vicinity they share the water and other natural gifts and have to share any environmental damages if not attended in earnest. Even though the Treaty does not take into the account these changes, the current situation underlines that the joint studies from New Delhi and Islamabad should be carried out and some institutions should be established to monitor these problems.

7.4.2. Internal Water Management

In both the countries water resources are mismanaged or ill governed due to inter-state and regional politics. Especially in Pakistan due to its regional politics various projects are pending and therefore the river water is mainly going unutilized and unharnessed. It is a man-made disaster which baffles the politicians and begs for immediate remedial course. The experts are apprehensive of a water war but regional cooperation and associations on water and natural resource sharing could be a counter for future military misadventure and would forge a unity more meaningful and durable. If both the countries come together to manage the available resources properly, they can avoid the issue of water scarcity and inter-state as well as intra-state conflicts. In this regard, a paradigm shift can be made from ‘technocratic’ to ‘socio-economic’ point of view.

7.4.3. Indus Basin Development Organization

The Indus Water Treaty set up a permanent Post of Indus Commission, which has been doing well within its parameters. But as of now, the situation has changed and demands an expansion of its jurisdiction. The Indus Treaty and Indus Commission deal only with the engineering problems, but certain projects have political, economic and strategic leverage. Even if the Commission tries to resolve the disputes, pressures from different sides hinder resolution. Hence, some disputes remained unresolved and marked as failure of Indus Water Commission.

Some water resource experts from India and Pakistan are of the opinion that another failure of Indus Commission is due to the division of the basin into two, which reduced the level of cooperation between Indus commissioners, since both the countries are highly inter-dependent on each other, but this division has limited the scope for cooperation. Instead of PIC, there is a need to set up an independent Indus Basin Development Organization, comprising by water resource experts, political scientists, economists, and lawyers and specialists of sociological backgrounds. This may also include experts from some renowned organizations, such as the World Bank, Asian Development Bank (ADB) and United Nations Environment Programme (UNEP).
The organizational functions would entail identifying short term and long term supply capacity of the basin and its integrated development, creating techniques to mitigate and adapt to the effects of climate change, setting up infrastructure and coordinating the different technical agencies of both governments. This plan would involve a creative solution to engage in issues concerning disputed state of Jammu and Kashmir. Apart from India and Pakistan, both the countries should take representatives from both sides of the divided state of Kashmir to address Kashmir apprehensions and needs. This approach will not only bring societies closer but also help to eradicate emerging disputes over water. Cooperation on water will gear the wheels to a larger Indo-Pak peace process without burdening it with an overtly political dimension.

7.4.4. Peacemaking Initiatives over Indus through Track II diplomacy

There is another positive factor that must be mentioned here: non-official or Track II initiatives. In South Asian sub-continent as well as outside of the continent, this process has generated much goodwill and helped to remove or mitigate misunderstandings between riparian states. A similar approach can be applied in Indus Basin to address the dispute through Track II initiatives.

Transboundary water development depends on the political, geographic, economic and cultural cooperation. Indus Water Treaty has not only divided the basin but also drew a historical, social and political curtain between the communities of Indus basin. If both the countries work together to remove this curtain, the results will be different and Indus will become a family.

In 1960, the Treaty was signed in a totally different set of political, economic, demographic and ecological conditions. Now, there has been a phenomenal change in all of these areas. Today both the countries politically more conscious and understanding though still not, for warmly friendly as they were not in 1960. The improvement in the political climate and the resumption of talks offer great hopes for Track II initiatives. Through this initiative, historians, social scientists, water experts, economists and agricultural scientists from both sides can contribute much more to peace and better understanding.
7.4.5. **Joint Management of the Indus Basin**

The Indus Treaty carried out a division of the river system and it has divided the rivers into two segments. The division of the rivers offers little scope for cooperation. It also has divided the common interests of the two parties and affected the ecosystem of Indus Basin as well, as they are pursuing individual interests without caring for the degradation of watershed. Moreover, by this division, a large amount of hydro-potential in the Indus Basin remains unexploited, because it is in disputed state, where every project becomes a brunt of dispute between two countries.

Given the scenario of industrialization, it seems that this division of rivers into two segments is not the best settlement for two countries for future development. Instead of this division, both countries should jointly manage the entire basin in an integrated and holistic manner. A holistic approach to water resource recognizes the interaction and economic linkages between water, land, the users, the environment and infrastructure, and it is necessary to avoid the impending water crisis within the basin.

Under the present circumstances, changing dynamics of the Indus River system, high growth rate of population and growing needs for water, it seems unlikely that the treaty will cater to the meal in near future by its mechanism. Experts in India and Pakistan are already representing opposite points on the political compass, and complain that the Treaty is out of date, that it obstructs rational exploitation of the Indus Basin Rivers and that it ought at least to be revised if not entirely scrapped. To simplify this, the Article XII (4) of the Indus Water Treaty states that the Treaty can be terminated only by another Treaty.

Further The Article VII (I) of the Treaty states that the two parties recognize that they have *a common interest in the optimum development of the Rivers and calls upon both sides to cooperate, by mutual accord, to the fullest possible extent, in undertaking engineering works in the Rivers.*" To prevent future upheaval, it is high time for New Delhi and Islamabad to adopt a collaborative approach by initiating a joint management of basin as one unit by revision of the treaty. By Joint management the Indus Basin can better serve for economic development and prosperity of the region. It has been proved in several parts of the world that joint development of
water resources could provide immense benefits to all riparian nations/states, e.g. the Tennessee Valley Authority (USA), the Amazon (Latin America), the Columbia (USA-Canada), the Mekong (four states of southeast Asia) are some examples of joint management.