



## **Module 5**

# **Water Cooperation in Himalayan River Systems: Legal and Institutional Response**

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## Introduction

In South Asia, civilizations were born and nourished around the great Himalayan River Systems. People lived along the banks of rivers and used their waters for growing food and performing rituals of life and death for millennia. Gradually, banks of these rivers became centres of trade and commerce which transformed community living into cities and later cities grew and were absorbed into what are now nation states. The division of the sub-continent and creation of new nation states and notions of sovereignty over fresh water resources have complicated the integrated management and use of what were once free flowing river systems as entities that are vital for sustenance of all forms of life but also have life of their own. Thus sharing the waters and development of water resources of the major trans-boundary rivers, the Indus and the Ganges-Brahmaputra-Meghna (GBM), that covers the countries of the sub-continent India, Pakistan, Nepal, Bhutan and Bangladesh as well as China, has been a cause of tension, apprehension and disproportionate political anxiety since more than six decades.

Since the three larger basins (Indus, Ganges and the Brahmaputra) comprise of many significantly large basins with nearly twenty major rivers running through them, South Asia is faced with most unique riparian challenges at national, bilateral and regional level. Himalayan Rivers flow in or out of one or more countries in South Asia. These Rivers at times also form the boundary between the countries, thus making them international rivers<sup>1</sup>. These international rivers are inherently linked to potential international water rights issues with upstream and downstream neighbours. Rapid population growth, expanding urbanisation, and fast-growing needs for irrigation and power generation are putting ever-increasing strains on the waters of these rivers and are becoming the cause of potential trans-boundary conflicts. Therefore the task of examining complex trans-boundary water cooperation challenges in South Asia is a complex one.

One aspect that deserves more attention and needs to be understood in greater details is the formal water cooperation and the evolution of various legal

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<sup>1</sup> An international river is one either flowing through the territory of two or more states (also referred to as a successive river), or one separating the territory of two states from one another (also referred to as a boundary river or a contiguous river). See, A. H. Garretson, et al., eds., *The Law of International Drainage Basins* (Dobbs Ferry, New York: Oceana Publications, 1967), at 16-17.

arrangements in the region that continue to dictate water relations among the riparians. The implementation experience of water cooperation instruments in South Asia has useful lessons to offer. There are also a few recent developments on enhancing connectivity through rivers in the GBM basin which is an important area of enquiry to understand emerging patterns of water relations. Finally a few notable trends are seen in the villages where grassroots hydrodiplomacy seems to play a catalytic role in advancing the need for participatory and inclusive trans-boundary water governance.

## Context of the Module

### **Static Bilateralism and dynamic basin wide changes**

In South Asia, countries have entered into bilateral legal arrangements that suit their interests and priorities and have therefore defined what would be equitable and reasonable in their own contexts. Many of these legal agreements, treaties, MOUs, Interim Agreements, and Partial Accords were negotiated decades ago<sup>2</sup>. A wider and in-depth comprehension of the facts and circumstances that enabled South Asian countries to negotiate Himalayan Rivers will be discernible if various aspects of the cooperation and conflicts on international rivers in South Asia are studied and understood in details. However, the socio-economic changes have completely altered the basin wide water needs, demands and uses and this calls for revisiting the existing legal arrangements in the light of changed circumstances, a task which can only be accomplished if South Asian countries work together to ensure 'cooperation' in all spheres, water being fundamental and essential component of this cooperation. It is this within this context that this Module has been conceptualised.

### **Contextual interpretation and application of principle of International Water Law**

The second important and specific aspect in the context of new international legal regime on non-navigational uses of watercourses is that the formal water cooperation regimes over Himalayan Rivers demonstrate elements of the principles

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<sup>2</sup> The more recent examples of treaties concluded between Ganges riparian are the Ganges Treaty 1996 between India and Bangladesh and the Mahakali Treaty, 1996 between India and Nepal.

of absolute territorial sovereignty and absolute riverian integrity that were raised in the claims and counter claims by countries based on the political circumstances and dependent on the most pressing issue at the time when these instruments were negotiated. Interestingly, the modern principles and theories of international water law as codified under the Watercourses Convention, 1997 have also been interpreted differently. The reasons for variations in the understanding and comprehension of the principles of international water law and the ability of South Asian countries to use and apply these principles suited their needs and requirements is an important area of enquiry.

### **Need to learn from implementation experience of treaties in South Asia**

The implementation experience of the treaties in South Asia has many lessons to offer. Each basin, composed of many large sub-basins in region is characterised by its own peculiar problems of water resource management. Not all legal and institutional arrangements are considered to have worked successfully in the interest of people and ecology. For example, the Indus Water Treaty, 1960 between India and Pakistan on dividing waters of Indus River System is regarded to have worked well as compared to other treaties such as the Revised Kosi Agreement, 1966 between India and Nepal or the Ganges Treaty of 1996 between India and Bangladesh.

### **Emerging challenges call for revisiting the existing regimes**

Further, emerging challenges due to ever increasing population and competing water demands among various sectors within countries are a great cause of concern for the overall water availability in Trans-boundary rivers. Climate variability has invariable effects on overall water availability and water security in the region. This water stress is likely to impact existing water allocation and water sharing arrangements in future where all riparian would tend to negotiate more water for meeting their socio-economic needs. Apart from consumptive uses, voices on water for ecology and environmental flows are also being raised by various stakeholders in several civil society platforms. Judicial forums in riparian countries have expressed their opinion on minimum environmental flows<sup>3</sup>. However, there is no uniform

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<sup>3</sup> See the Order of the National Green Tribunal, India in the Original Application No. 498 of 2015 (M.A. No. 628/2016) Pushp Saini Vs. Ministry of Environment, Forest & Climate Change & Ors.

definition of environmental flows that has been formally accepted by the implementing agencies.

### **Emerging Opportunities:**

There are a few opportunities too that could influence the trans-boundary water cooperation in the GBM basin in a completely different way. For example cooperation on navigation between India and Bangladesh on Ganges and Brahmaputra river and signing of new protocol routes under the India Bangladesh Trade Agreement, 1972 marks a new beginning where both countries would be mutually benefitted by connectivity that would enhance trade and commerce and boost tourism. India-Bangladesh Joint initiative on Sundarbans is another opportunity from joint ecosystems management perspective where health of Ganges river and its flow up till the largest mangrove forest delta in world is the focal point of cooperation and the joint platform established by India and Bangladesh is hopeful to find ways to use the platform for larger cooperation on the sharing of Ganges waters<sup>4</sup>. The recent hydropower cooperation between India and Nepal over the development of Panchweshwar Multipurpose Project also demonstrates a fresh beginning where the two countries are moving ahead with the joint development of water resources of the Mahakali River<sup>5</sup>. The hydropower cooperation between India and Bhutan is regarded as extremely successful example of trans-boundary development of water resources but little is known about the success elements. Cooperation in Disaster Risk Reduction also offers opportunities for cooperation on international rivers in South Asia. These need to be studied in detail so as to learn lessons that could help in similar engagements.

### **Community centric river management and water resource development:**

Lastly, the formal water cooperation regimes ensuing management and development of water resources of trans-boundary rivers had impacted river dependent communities in the worst possible way. The traditional farming and fishing activities have been severely impacted leading to low yield, loss of productive land and drastically reduced fish catch due to habitat loss. These communities have been

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<sup>4</sup>MOU between India and Bangladesh on Conservation of the Sundarban Dated September 6, 2011  
[http://mea.gov.in/bilateral\\_documents.htm?dtl/5141/MOU+between+India+and+Bangladesh+on+Conservation+of+the+Sundarban](http://mea.gov.in/bilateral_documents.htm?dtl/5141/MOU+between+India+and+Bangladesh+on+Conservation+of+the+Sundarban)

<sup>5</sup> <http://www.pmp.gov.np/treaty.php>

demanding justice and on occasions compensation for the damages caused by the water resource development projects on trans-boundary rivers. These conflicts and voices from the grassroots needs to be understood in the context of existing institutions and forums that do not have any community representations and the legal frameworks that do not provide any space for addressing concerns of communities.

### Learning objectives of this module

The overall objective of this Module is to facilitate the discussion on water cooperation in South Asia from the legal, institutional and governance perspective in the context of recent trends, emerging opportunities and challenges. It also brings a unique perspective of community response to hydrodiplomacy in the GBM Basin.

More specific objectives include:

- To sensitise participants on the context and key features of bilateral water cooperation agreement/treaties concluded over the major river systems in South Asia and the key contentions of the parties that continue to cast shadow on the future cooperation
- To sensitise participants on the implementation experience of the treaties concluded over South Asia's international rivers and highlight practical difficulties faced by the countries in managing their water resources in equitable and reasonable manner.
- To discuss emerging challenges and opportunities in the wake of unprecedented water stress faced in the region and new cooperation opportunities through navigation, trade and transit that also offer spaces for institutions involved in managing transboundary rivers systems to evolve with time.
- To share community perspectives, expectations on the current and future management of trans-boundary water resources in the Ganges sub-basins

### Topics and the content summary covered under the Module

#### **Topic 1: Bilateral Water Cooperation in South Asia: Context and key elements**

- Water Cooperation over the Indus River System (India-Pakistan): The context of the dispute over the Indus system of rivers, the general layout of Indus Waters Treaty regime has been discussed in some detail.
- Water cooperation in the Ganges Sub-basins (India-Nepal): This topic highlights the context of Agreements and Treaties between India and Nepal and the key contentions around them till date. This is a comprehensive section on three key water treaties being implemented between India and Nepal
- Water Cooperation over the Ganges (India-Bangladesh): The context of the dispute over Farraka between India and Bangladesh and general aspects of the Ganges Treaty 1997 is being captured. A brief discussion on the Teesta river dispute is also attempted.
- Water cooperation between India and Bhutan: Three main hydropower development agreements since 2006 have been discussed.
- Brahmaputra Regime and the absence of any legal instrument over the river system shared by riparian countries including China has been discussed very briefly

**Topic 2: The implementation experience of the water treaties:** Discussion on dispute settlement under the IWT, 1960, the implementation experience of the Kosi Agreement, 1966 and the Gandak Agreement of 1959 and the Mahakali Treaty of 1996 and the Ganges Treaty of 1996

**Topic 3: Emerging opportunities and challenges:** Navigation and connectivity as entry points to enhance water cooperation on the Ganges and Brahmaputra Rivers

**Topic 4: Trends on Grassroots Hydro-diplomacy from the Ganges sub-basins shared between India and Nepal**

## **Module 5: Water Cooperation In Himalayan River Systems: Legal And Institutional Response**

### **Topic 1: Bilateral Water Cooperation in South Asia - Context and key elements**

#### **1. Water Conflict and Cooperation over the Indus River System (India-Pakistan)**

##### **The Indus River System: Ecological context**

Indus River originates from the Himalayan Mountains of Tibetan Plateau in China, in the vicinity of Lake Mansarovar, the highest freshwater lake in the world at 15000 feet<sup>6</sup>. The Indus system comprises the main river Indus and its major tributaries: the Kabul, the Swat and the Kurram from the West; and the Jhelum, the Chenab, the Ravi, the Beas and the Sutlej from the East. Originating near Lake Mansarovar, the Indus flows through Tibetan Plateau in China for about 200 miles before it enters the south eastern corner of Kashmir at about 14,000 feet. Skirting Leh in Ladakh (India), the river flows on towards Gilgit and after 35 miles toward the southwest enters Pakistan. It then flows through Pakistan before emptying into the Arabian Sea, southeast of Karachi, Pakistan. From their origin in the Himalayan Snow Belt to their end into the Arabian Sea, the Indus Rivers carry 90 x 10<sup>6</sup> acre-feet of water and cover a drainage area of 450,000 square miles making it one of the most important River in the world<sup>7</sup>. The River had been used for irrigation since civilization began in the area<sup>8</sup>. Most of the Indus Basin lies in Pakistan and India, with about 13 percent of the total catchment area of the basin situated in Afghanistan and Tibetan Plateau in China<sup>9</sup>. The main stem Indus and five major tributaries flow partially or entirely through India before entering into Pakistan. India is therefore, the upper riparian on virtually every tributary of significance in the Indus Basin, except for the Kabul River.

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<sup>6</sup> *Encyclopedia of International Rivers*, 2002

<sup>7</sup> Uprety and Salman 2011, Legal aspects of sharing and management of transboundary waters in South Asia: preventing conflicts and promoting cooperation  
<http://www.tandfonline.com/doi/abs/10.1080/02626667.2011.576252>

<sup>8</sup> The Indus is one of the largest sediment-producing rivers in the world. Its flows are highly variable and depend on melting snow from the Himalayan glaciers and on monsoons. About 70% of the total annual runoff occurs between June and September.

<sup>9</sup> <http://www.tandfonline.com/doi/abs/10.1080/02626667.2011.576252>

## **The Legal Regime over the Indus system of Rivers: the Indus Water Treaty, 1960**

The Indus Water Treaty (IWT), 1960 is a comprehensive as well as complex water cooperation instrument whose basic approach is to apportion the waters of the Indus system equitably between the Parties. Through this Treaty, India and Pakistan desired most complete and satisfactory utilisation of the waters of the Indus system of rivers<sup>10</sup>. With its preamble followed by 12 articles and eight annexures (including appendices), the Indus Water Treaty attempts to comprehensively deal with the issues of water allocation and the flow of water in the Indus system.

The salient features of the Indus Treaty include<sup>11</sup>:

- **Allocation of the Indus River System:** the unique Principle of Eastern and Western Rivers: The IWT is a unique example of 'river allocation' agreement between India and Pakistan. The Treaty divides the Indus River System shared between the two countries on the basis of territorial sovereignty of each country on different tributaries including on the main Indus river. It establishes the principle of dividing the rivers of the Indus system into eastern and western rivers wherein (i) three Eastern Rivers (Ravi, Sutlej and Beas) are allocated to India; (ii) three Western Rivers (Indus, Jhelum and Chenab) are allocated to Pakistan. Thus essentially, the Indus Treaty divides the Indus River system into three Eastern Rivers, to which India has "unrestricted use", and three Western Rivers, to which Pakistan has "unrestricted use". However, these allocations were both subject to certain exceptions. Pakistan agreed not to interfere with the waters of the Eastern Rivers where they formed boundaries between the two countries, and India retained the right to build upstream, non-storage dams on the Western Rivers. The Treaty also provides safeguards to ensure that the western and eastern rivers allocated to Pakistan and India respectively, are allowed to flow unrestricted, subject to the exceptions provided within the IWT. There is a provision for regular exchange of flow-data of rivers, canals and streams. Other salient features of the treaty are: it provides well thought out and stable institutional mechanisms to

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<sup>10</sup> Preamble to the Indus Water Treaty, 1960

<sup>11</sup> Article II and III of the IWT, 1960

oversee the implementation of the Treaty in the form of Permanent Indus Commission and the provision for a Indus Basin Development Fund<sup>12</sup>.

- **The Dispute Settlement under the Indus Treaty:** Article IX of the IWT, 1960 sets out a stepwise procedure for settlement of differences and disputes, including through a Court of Arbitration. It provides for a two-member Permanent Indus Commission, with one commissioner from India and one from Pakistan, vested with the authority to resolve disputes arising out of the Treaty. Thus, if either of the countries has a question regarding Treaty interpretation, the matter can be referred to the Permanent Indus Commission. If the Commission is unable to resolve the question, then the question becomes a “difference” and can be referred to a “Neutral Expert”, to be appointed by the two parties, or by a third party agreed by them. Failing that, the appointment would be carried out by the World Bank. The Neutral Expert's determination is final. If the question is not within the Expert's mandate, or if the Expert concludes that the matter is a “dispute” (as opposed to a “difference”), then the parties may refer the matter to a court of arbitration, composed of seven members. Two members would be appointed by each party, while the remaining three would be appointed through a complex process involving, among others, the World Bank and the United Nations (UN)<sup>13</sup>.

Thus the IWT seeks to establish an institutional mechanism for overseeing the implementation of the Treaty, and putting in place a comprehensive process for prevention and resolution of differences and disputes.

(Kindly refer to Module-4 for the discussion on the historical background and the IWT mechanism)

## **2. Water conflicts and cooperation and in the Upper Ganges Sub-Basins (Nepal-India)**

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<sup>12</sup> Biswas, A. K. (2011) Cooperation or conflict in transboundary water management: case study of South Asia. Hydrol. Sci. J. 56(4), 662–670;

<sup>13</sup> Article IX, Indus Water Treaty, 1960, <http://mea.gov.in/bilateral-documents.htm?dtl/6439/Indus>

Introduction: The ecological context of the Upper Ganges River Systems Generally speaking, the waters from more than 6,000 rivers and rivulets in Nepal ultimately flow toward the Ganges. However, more specifically, the Indo-Nepal river system can be classified into seven river systems that range from east to west: Mahananda, Kosi, Kamla Balan, Bagmati, Burhi Gandaki, Gandak and Ghaghra. All these rivers and their major tributaries originate in Nepal and after traversing various distances in Nepal, enter Indian Territory and join the Ganges<sup>14</sup>.

### **Water cooperation in the Upper Ganges Basin: A brief background**

The genesis of formal water cooperation on the tributaries in the upper Ganges sub-basins dates back to the time when British ruled independent India<sup>15</sup>. For example the idea of harnessing water resources of Kosi River was discussed in India as early as in 1897<sup>16</sup>, but the decision for execution could not be made due to lack of scientific feasibility studies. Similarly, efforts toward exploitation of the Mahakali River waters began before India's independence from Britain. The British Government in India formalised with its Nepalese counterpart in 1920, the negotiations of the Sarada Treaty in the form of an Exchange of Letters<sup>17</sup>. However, it is only after 96 years that some ground level action seen on the development of Sarada/Mahakali River after the 1920 regime was replaced by the Mahakali Treaty in 1996. Other similar proposals and ideas were floated but owing to scientific and political uncertainties the cooperation could not move ahead.

### **Legal Regimes on Water Cooperation between India and Nepal**

Independent India and the post 1950 regime in Nepal have concluded agreements over three major river systems, the Kosi Agreement of 1954, revised in 1966, the Gandak Agreement, 1959, revised in 1964 and the Mahakali Treaty, 1996. Each of these legal arrangements is summarised briefly.

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<sup>14</sup> A. R. Rao and T. Prasad, "Water Resources Development of the Indo-Nepal Region," *Water Resources Development* 10, (1994), at 160-161. As quoted in the Salman and Uprety (2003)

<sup>15</sup> The Sarada Canal Project for the irrigation of about a million acres in Uttar Pradesh was started in 1915 and completed in 1926.

<sup>16</sup> p. C. Rawat, *Indo-Nepal Economic Relations* (New Delhi: National Publishing House, 1974), at 205.

<sup>17</sup> The Letter of Exchange dated August 23, 1920 and October 12, 1920 (the Sarada Treaty) is located in the Nepal National Archives; B. C. Upreti, *Politics of Himalayan River Waters: An Analysis of the River Water Issues of Nepal, India and Bangladesh* (Delhi: Nirala Publication, 1993),

- The Legal and Institutional Regime over the Kosi River: The Kosi is Nepal's largest river, and the most important tributary of the Ganges. Draining the area east of Kathmandu, The Kosi flows through a narrow gorge for 10 km before entering the plains at Chatra. After another 25 km, it enters India near Hanumangarh, and 20 km further downstream it joins the Ganges near Khursela in the State of Bihar. In post-1950 Nepal, the Kosi Project became the first development Project in an international river presented as mutually benefiting both India and Nepal. It is a multipurpose scheme that includes flood control, hydropower generation and irrigation. Despite its so-called multipurpose ambit, the Kosi Project was conceived essentially to yield flood control benefits, and to reduce the recurrent flood devastation in the two countries<sup>18</sup>.

#### **The Kosi Project/Scheme**

The Design of the *Kosi* Project consists of 1,150 meter Kosi Barrage, intended to serve as a gradient control measure for containing the meandering behaviour of Kosi, was built in Bhimnagar, (8 km inside Nepal). Two canals take off from either side of the barrage. The Eastern Main Canal, which is entirely in the Indian Territory, provides irrigation to 612,500 hectares of agricultural land in India." A power house with an installed capacity of four units of 5,000 kW each is located along the canal at a distance of 11 km from the barrage and generates power by making use of the head drop of the canal. The Western Main Canal traverses a distance of 35 km in Nepal before entering the Indian Territory, and provides irrigation water to 11,300 hectares of agricultural land in Nepal and 356,610 hectares of agricultural land in India. Flood control works in Nepal consist of a western afflux bund about 2 km long and a 40-km embankment along the eastern bank of the river. Extensive embankments, about 220 km long, were built on either side of the river in the Indian territory to confine the river flow and protect the land beyond from flooding. (Source: Salman M A and Uprety Kishore, 2003), also see Uprety, BC, *Politics of Himalayan River Waters*

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<sup>18</sup> Salman and Uprety (2003)

### **From the Kosi Agreement, 1954 to the Revised Kosi Agreement, 1966:**

In order to commission the Kosi Project, India and Nepal had signed the Kosi Agreement, 1954. However, the work commissioned under the Agreement and the Agreement itself attracted sharp criticism from within various political factions in Nepal, majorly on grounds of sovereignty and inadequate compensation for the productive lands to be submerged under the Project. Consequently, the Agreement was revised on the request of Nepal in 1966.

### **The Key features of the Revised Kosi Agreement, 1966**

The present rights and obligations of the Parties, India and Nepal, emanate from the Revised Kosi Agreement, 1966 which is being discussed below in some detail

**Preamble: 'Changed Circumstances' as the basis for revision:** The 1966 Agreement asserted that 'Nepal had suggested revision of the said Agreement in order to meet the requirements of the changed circumstances,' and India, "with a view to maintaining friendship and good relation subsisting between Nepal and India," had agreed to the revision of the 1954 Agreement<sup>19</sup> What is noteworthy here is that the revision did not acknowledge the contentions raised by Nepal on disproportionate benefits that would accrue to Nepal, during the first 10 years of subsisting of the Kosi Agreement, 1954.

**Land for the Kosi Project:** With respect to use of land and other property the 1966 Agreement provides that when any major work which is not part of the amended plan is to be undertaken, the approval is to be given by the Government of Nepal as when the work receives the sanction of the Indian Government and notice has been given by India to Nepal<sup>20</sup>. The land required for this purposes shall be acquired by the Government of Nepal and the Government of India shall pay compensation, to be decided mutually, for the land so acquired for project purposes.

**The Lease of Land for 199 years:** The Project Area which includes all the area required for the project and additional works that may arise from time to time within the meaning of clause Article 2(i) and Article 3 for all practical purposes was to be acquired by the Government of Nepal and leased to the Government of India for a

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<sup>19</sup> Preamble, the Revised Kosi Agreement, 1966

<sup>20</sup> Article 3 (i), the Revised Kosi Agreement, 1966

period of 199 years from the date of the signing of these agreements at a nominal rate to be mutually agreed by both countries. There is also a provision for the renewal of leases on a mutually agreed basis<sup>21</sup>. The lands leased as Project Area shall continue to be under the sovereign jurisdiction of Government of Nepal, and law of Nepal shall continue to be applied unimpaired on such leased lands.

The Compensation for land: The compensation for land and other property was to be provided for the loss of land revenue and for the land and other properties that would be submerged. For the compensation to be paid in cash, parties agreed, was to be determined as per the methodology provided in the revised Agreement. The 1966 Agreement provides that for the purpose of assessing the cash compensation, lands required for the execution of various works and submerged lands will be divided into four classes to include: (i) cultivated lands, (ii) forest lands, (iii) village lands and houses and other immovable property standing on them, and (iv) waste lands<sup>22</sup>. It is further provided that all lands registered in the cadastre in the territory of Nepal actually cultivated were deemed to be cultivated lands<sup>23</sup>. What emerges from this methodology is that Nepal was to be compensated for loss of revenue directly by way of cash and individual owners of land and other immovable property were to be compensated through the Government of Nepal. The assessment and manner of payment of compensation was to be done by mutual agreement of both the governments and the assessment of land was also to be carried out by duly authorised officials of Nepalese and Indian Governments<sup>24</sup>.

The Revised Agreement does not contain explicit provision on the rate of compensation of loss of land and other property. This was agreed by exchange of letters. For land that was already acquired for the Kosi Project, India would pay compensation at the rate of five Nepali Rupees per Nepali Bigha<sup>25</sup>. For lands to be acquired in the future, and especially for the Western Kosi Canal, the existing provision would be applicable, under which loss of land revenue is to be determined on the basis of the land revenue payable as at the time of acquisition of the land.

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<sup>21</sup> Article 5 (iv), the Revised Kosi Agreement, 1966

<sup>22</sup> Article 8 (i) (a), the Revised Kosi Agreement, 1966

<sup>23</sup> Article 8 (i) (b), the Revised Kosi Agreement, 1966

<sup>24</sup> Article 8 (iii)

<sup>25</sup> Exchange of letters on December 29, 1966

Water Rights in the Kosi River: Right to use water in the Kosi Basin is spelled out very clearly in the Revised Agreement. Nepal has the right to withdraw water from the Kosi River for irrigation or for any other purposes and from the Sunkosi River or within the Kosi Basin from any of the Kosi tributaries<sup>26</sup>. This is an important provision as it is only here that 'Kosi Basin' as a reference unit finds mention. The import of this provision is very critical for Nepal as the provision assures that Nepal's sovereign claim over Kosi Waters for 'any other purposes within the Kosi Basin' remains unimpaired. Government of India has the right to regulate balance of supplies at the barrage site as available from time to time and to generate power in the Eastern Canal. This also means that the Kosi Agreement is not typically a water allocation agreement as the quantum of water to be shared or allocated or quantum of water to be released in canals for particular period in the year for irrigation benefits to both countries does not find mention very explicitly.

Hydro-power generated is an entitlement: Use of power generated from the Kosi Project is an entitlement under the 1966 Agreement. Nepal is entitled to obtain for use in Nepal 'up to 50%' of the total hydropower generated by any power house situated within a 10 mile radius from the barrage site constructed by Government of India. This entitlement is subject to the communication of power demands, increase or decrease in required power supply as communicated from time to time by government of Nepal. This communication has to be sent at least three months in advance if the required power supply exceeds 6,800 Kw<sup>27</sup>. If the hydropower is generated within the Indian Territory, India is required to construct transmission lines up to a point on the India-Nepal border as may be mutually agreed. The tariff rate for the electricity generated and supplied to Nepal would also be mutually agreed. The power and other materials used for the purpose of the Project are not provided for free. They yield royalties for Nepal. In respect to power generated and utilised in the Indian-Union, according to the 1966 Agreement, the Government of Nepal is entitled to receive royalty at rates to be settled by agreement. No royalty is to be paid on the

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<sup>26</sup> Article 4 (i) "HMG [His Majesty's Government] shall have every right to withdraw for irrigation and for any other purpose in Nepal water from the Kosi River and from the Sunkosi River or within the Kosi Basin from any other tributaries of the Kosi River as may be required from time to time. The Union shall have the right to regulate all the balance of supplies in the Kosi River at the barrage site thus available from time to time and to generate power in the Eastern Canal."

<sup>27</sup> Article 4 (ii)

power sold to Nepal<sup>28</sup>. Important to note here is that the Revised Agreement provides a space for having another agreement on fixing tariff for the electricity generated in India and supplied to Nepal. While electricity tariff is to be negotiated by both countries, Nepal is entitled to receive royalty from the power generation.

Navigation and Fishing: All the navigational and fishing rights in the Kosi River in Nepal rest with Nepal. Navigation and fishing within two miles of the barrage is regulated by way of special permits that can be issued by Nepalese authorities after consultation with the Executive Engineer of the Barrage<sup>29</sup>.

Other resources and ecosystem services: On the use of other resources required for construction or maintenance of the Kosi Project, the Agreement provides that the Indian Government can use and remove clay, sand and soil without let or hindrance from land leased by Nepal to India. Besides, Nepal would not levy customs or any duty during construction and subsequent maintenance on any articles and materials required for the purpose of the Project or the work connected to it<sup>30</sup>. The use of timber from the Nepalese forests required for construction work is also permitted on payment of compensation. Compensation is not payable for quantities of timber necessary for the use in the spurs and other river training works required for the prevention of caving and erosion on the right bank in Nepal. Similarly, no compensation is payable for timber obtained from the forestlands leased by Nepal to India<sup>31</sup>. No compensation is to be paid for the timber on the land leased to India for the Kosi Project.

Connectivity and communication: There are other provisions relating to connectivity and communication infrastructure within the Project area or as may be required for the construction or maintenance of the Kosi Project. The parties agreed to do away with all logistical hurdles they may come up for the access or maintenance of barrage sites and related works. Therefore unrestricted access to roads and other means of communication has been provided<sup>32</sup>.

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<sup>28</sup> Article 6(i)

<sup>29</sup> Article 10 and Article 11

<sup>30</sup> Article 6 (iii)

<sup>31</sup> Article 6(iv)

<sup>32</sup> Article 9 (iii)

Dispute Settlement Mechanism: In the event of dispute arising out of construction, effect or meaning of this Agreement, or with respect to rights and liabilities of the parties hereunder, has to be first settled by discussion and then arbitration, if the parties fail to settle the dispute by discussion<sup>33</sup>.

Arbitration: The Agreement further provides the manner in which arbitration is to be carried out. When the dispute arises, any of the parties may by notice in writing inform the other party of its intention to refer to arbitration any such dispute or difference. The intention is to be conveyed by way of a written notice and upon the delivery of such notice, within 90 days the two parties shall nominate an arbitrator for jointly determining such dispute or difference and the award of the joint arbitrators shall be binding upon the parties. The dispute mechanism has another step, post arbitration. There is a provision of an Umpire to be appointed by optional mutual consultation whose decision shall be final and binding<sup>34</sup>. The mechanism appears to be three tiered, however there are inherent weaknesses. Firstly, there is no obligation upon the parties to inform each other of their intention to go to arbitration. Secondly, the dispute is to be 'determined' not resolved. If the parties fail to appoint arbitrators, then there is no obligation on them to settle the dispute by any other means. The 90 days time is too long of an issue that requires urgent attention in the fragile context of Kosi. Failure of arbitration can lead to a total failure of dispute mechanism as the provision of Umpire can be completely defeated if the two parties do not agree on appointing an Umpire as they are only required to consult each other and not obligated to arrive at a consensus on the decision. Parties may not choose to consult each other at all.

Indo-Nepal Project Commission: The Revised Agreement provides for continuing with the joint institutional mechanism with a changed name. Under the 1954 Agreement, the Indo-Nepal Project Committee was established. The Revised Agreement of 1966, instead of Committee establishes the Indo-Nepal Kosi Project Commission. The Commission is vested with the responsibility of facilitating coordination between the governments with regard to the matters covered under the Agreement<sup>35</sup>. The monitoring role of the Commission, is thus restricted to the time

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<sup>33</sup> Article 14 (i)

<sup>34</sup> Article 14 (ii)

<sup>35</sup> Article 15, the Revised Kosi Agreement, 1966

period of construction of the Project and rehabilitation and resettlement. For all practical purposes, after the Kosi Project has been commissioned, the Commission has no role to play under the Revised Agreement.

### ***The Legal Regime over the Gandak River***

Gandak River: Ecological Context: The Gandak River in India is known as Narayani in Nepal is one of the major rivers of Nepal and a left bank tributary of the Ganges in India. The entry point of the river at the Indo--Nepal border is also the confluence called Triveni with rivers Pachnad and Sonha descending from Nepal. The Gandak River flows southeast 300 kilometres across the Gangetic plain of Bihar state through West Champaran, Gopalganj, Saran and Muzaffarpur districts. It joins the Ganges near Patna just downstream of Hajipur at Sonapur (also known as Harihar Kshetra)<sup>36</sup>. The relations between the riverine communities of India and Nepal in the Gandak area have been traditionally close on account of common religious, linguistic and cultural identities.

Water cooperation over the Gandak River: A brief background The idea of harnessing waters of Gandak River for irrigation purposes germinated as early as in 1871, however no formal efforts were made to pursue those ideas<sup>37</sup>. Formally, it started with the construction of the Tribeni Canal in 1914<sup>38</sup>. The Gandak River caused recurrent floods in North Bihar resulting in damage to crops, life and property. An engineering solution was mooted to develop a multipurpose water project having flood control as one of its functions which would be beneficial to both India and Nepal. The first discussion on developing extensive canal system for purpose of irrigation utilising Gandak. waters was initiated in 1947 by Dr Rajendra Prasad, the then Minister-in-charge, Food and Agriculture , Government of India writing to Government of Bihar to examine its feasibility. This was also in the backdrop of the conclusion of Second World War and Partition of the country and a need for increased agricultural production. The first Project Report was formulated in the year 1951. A committee under the Chairman ship of Dr. A.N. Khosla, CWPC, New Delhi was formed for negotiation with the Government of Bihar, Uttar Pradesh

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<sup>36</sup> History of Irrigation in Bihar, Gagan Prasad, 2<sup>nd</sup> edition, (March 1997) WALMI, Patna

<sup>37</sup> P. C. Rawat, *Indo Nepal Economic Relations* (New Delhi: National Publishing House, 1974), at 213.

<sup>38</sup> History of Irrigation in Bihar, Gagan Prasad, 2<sup>nd</sup> edition, (March 1997) WALMI, Patna

and Nepal, the present Gandak Project Scheme came to be conceived. As a result Gandak Irrigation and Power Project Agreement ("Gandak Agreement") was signed on 4th December 1959 between the Government of India (GOI) and His Majesty's Government of Nepal (HMG). The signing of this agreement caused political uproar in Nepal as construction of barrage by India on Nepalese territory was viewed as encroachment on Nepalese sovereignty and Nepal being disadvantaged on account of some provisions in the Gandak agreement<sup>39</sup>. The political upheaval led to amendments being carried out in the Gandak. Agreement in 1964.

#### The Gandak Project

The Gandak Project consists of construction of a barrage, canal head regulators and other appurtenant works about 1,000 feet below the existing Tribeni canal head regulator. The Project also involves taking out canal systems for purposes of irrigation and development of power for India and Nepal. While the Gandak Agreement mainly highlighted the common interests and benefits of both Nepal and India, it also specified that the Project was being built by and at the cost of the Government of India. Actually, the Gandak Project irrigates approximately 143 000 acres (223.4375 sq. mi.) in Nepal and 4.6 million acres (7187.5 sq. mi.) in India.

#### **Key features of the Revised Gandak Agreement, 1959:**

The rights and obligations of India and Nepal are laid out under the revised Gandak Agreement.

Land Acquisition and Compensation: Nepal was to acquire or requisition all "such lands" required for execution and operation of the project and its maintenance after its completion. HMG was to transfer to GOI all such lands required for the

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<sup>39</sup> See Upreti, *supra* note 4, at 104-106; see also Aditya Man Shrestha, *Bleeding Mountains of Nepal* (Kathmandu: Ekta Books, 1999), at 168.

project on "payment of reasonable compensation" by GOI<sup>40</sup>. In case of "apprehended danger of accident" to any of the structures associated with the project, GOI will carry out works to repair existing structures and prevent the accident affecting the structures. In case additional lands are required for the said purpose then HMG will acquire additional lands on payment of reasonable compensation. In the process of execution of such works any damage caused would be compensated by GOI<sup>41</sup>. India was permitted to quarry materials such as block stones, boulders, shingles and sand required for the project on payment of royalty. India was granted the ownership of the land and works associated with the Project Development of irrigation facilities for Nepal. India as per mandate of the Gandak agreement, agreed to construct at its own cost two canals for Nepal. The first, being Western Nepal Canal including the distributary system down to a minimum providing discharge of 20 cusecs for providing flow irrigation in the gross command area estimated to be about 40,000 acres. Second, being Eastern Nepal canal from the tail- end of the Don branch up to the river Bagmati including the distributary system down to a minimum discharge of 20 cusecs for providing flow irrigation to Nepal for the gross command area estimated to be 1,03,500 cusecs subject to some river training works to be undertaken for the river Bagmati. HMG was responsible for construction of channels below 20 cusecs capacity for irrigation in Nepal with India contributing the cost of construction of the channels<sup>42</sup>.

Dispute Resolution Mechanism under the Gandak Agreement, 1959:

The Gandak agreement provided for resolution of dispute or difference concerning the construction, effect or meaning of the agreement or respective rights or obligations at the first instance through discussion. In case dispute is not resolved, then either of the parties can inform the other in writing of its intention to refer to arbitration the dispute or difference. On receipt of the notice each of the parties has to nominate its arbitrator and the award rendered by the arbitrators would be final and binding. In case the arbitrators are unable to agree, then the parties after due consultation would appoint an Umpire, whose award would be final and binding.

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<sup>40</sup> Article ii, the Gandak Agreement, 1959

<sup>41</sup> Article iii, *ibid*

<sup>42</sup> See Chohan Shilpa, Siddiqui, Shawahiq et al. Legal Brief, Stop Water Campaign: Renegotiating Stakes in the Gandak Basin, The Asia Foundation, 2017

### Institutional Mechanism: Gandak Coordination Committee

At the time of signing the Gandak agreement two letters were signed (on the same day) by the countries elucidating operational details of the Gandak agreement and setting up of Coordination Committee consisting of three representatives of each of the government. India was to bear all the costs associated with the working of the committee. The HMG would be the chairman and Chief Administrator, Gandak project was the secretary of the coordination committee. The committee was to meet and discuss matters impacting the progress and development of the project. The committee met for six times to deliberate over issues such as payment of royalty and compensation, location of Nepal power house, alignment of main western canal and western guide bund in Nepalese territory, water management in the project area, construction of channels below 20 cusec etc. The last meeting of the committee was in 1980.

### Bi-lateral Cooperation on transboundary waters: Joint Committee on Kosi and Gandak Projects (JCKGP)

In order to enhance bi-lateral cooperation on transboundary waters between India and Nepal a three-tier bilateral mechanism was established. The Joint Ministerial Commission for Water Resources (JMCWR) was initially headed by Minister of Water Resources of India and Nepal to address bilateral cooperation issues on water resources. The Indo-Nepal Joint Commission on Water Resources (JCWR) was set up in 2000 headed by the secretaries from the Ministry of Energy from Nepal and Ministry of Water Resources from India. The mandate of the JCWR is to ensure the implementation of existing water cooperation agreements and enhancing understanding between both countries. The Joint Standing Technical Committee (JSTC) was constituted to coordinate all technical committees and sub-committees under JCWR. Other bilateral committees that are functional between the India and Nepal include the Joint Committee on Inundation and Flood Management (JCFIM:), Power Exchange Committee (PEC), Joint Committee on Kosi and Gandak. Projects (JCKGP), Joint Team of Experts (JTE) and the Kosi High Level Committee (KHLC). The Joint Committee on Kosi and Gandak. Projects (JCKGP) has been meeting since 2000 and is headed by Principal secretary, Water Resources Department, Government of Bihar, India and Director General, department of Irrigation,

Government of Nepal. The implementation issues arising from Gandak agreement are now deliberated upon by the Joint Committee on Kosi and Gandak Projects (JCKGP). The issues deliberated upon by JCKGP inter alia includes unauthorised occupation of acquired project lands by villagers, drainage problem on Main Western Canal, water supplied to Eastern Nepal Canal, maintenance of service road etc."

### **The Legal and Institutional Regime over the Mahakali River**

Introduction: The ecological context. The Mahakali River begins where two rivers, the Kali River originating in the Taklakot area in the east, and the Kuthi-Yankti River originating in the Zanskar range of the Himalayas, meet at Kawa Malla in the Darchula District in Nepal. The merging of the Kali and Kuthi-Yankti Rivers is known as the Mahakali River. The Mahakali River flows southwest, where it makes numerous oxbow lakes and is joined by many tributaries, the largest of which are the Chamlia River and the Chavandigad River. The Mahakali River drains an area of 188 sq. km. in Nepal<sup>43</sup>.

The Treaty Regime. Principles of International Water Law: The Treaty endorses the principles of equitable and reasonable utilisation, the equitable distribution of benefits, and an obligation not to cause significant harm. This is also supported by the provision which, acknowledging an obligation not to cause harm, reads: "In order to maintain the flow and level of the waters of the Mahakali River, each Party undertakes not to use or obstruct or divert the waters of the Mahakali River adversely affecting its natural flow and level except by an agreement between the parties."

Environmental Flows under the Mahakali Treaty. Each Party has an obligation to maintain the natural flow of the river. However, this obligation does not preclude the use of the waters by the local communities living on both sides of the Mahakali River, not exceeding 5% of the average annual flow at Pancheshwar. The Treaty acknowledges the right of both Parties to independently plan, survey, develop and operate any work on the tributaries of the Mahakali River as long as such use does not affect the rights of the other Party. Thus the Treaty allows each Party to use the

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<sup>43</sup> N. B. Thapa, *Geography of Nepal: Physical, Economic, Cultural and Regional* (Bombay: Orient Longmans, 1969), at 24.

water as long as it does not preclude the rights and interests of the co-riparian or cause harm or adverse effect to the other riparian. However, the terms “no harm” and “adverse effect”, not being defined in the Treaty, leave room for controversy.

Regulation on planning and development of unilateral projects. The Treaty restricts unilateral projects along the Mahakali River. It states that any project to be developed on the Mahakali River, where it is a boundary river, should be designed and implemented by an agreement between the Parties on the principles established by the Treaty. Hence, it is an obligation for either Party to reach an agreement before commencing any project on the Mahakali River. It makes it binding to both Parties to abide by the principles of the Mahakali Treaty (inter alia, the principles of equality, benefit sharing and no harm). Ultimately, it discourages the unilateral development of the river and approves the principles of cooperation, consultation and notification.

The Pancheshwar Multi-purpose Project (PMP). Setting forth the general principles, the Treaty states that the PMP shall be designed to produce the maximum total net benefit. All benefits accruing to the Parties with the development of the Project in the forms of power, irrigation, flood control and so forth, shall be assessed, and the costs of the Project shall be borne in proportion to the benefits accruing to each. Thus, assessing the benefits accruing to both Parties from the PMP and sharing the cost in proportion to the benefits, in turn, emphasises the notion of sharing of benefits from water uses rather than sharing of water. The principles of maximum benefit and benefit sharing, together with the principle of mutual benefit, acknowledge the principle of equitable utilisation of benefits. Meanwhile, the Treaty states that both Parties may form joint entities for the development, execution and operation of new projects<sup>44</sup>.

Institutional Mechanism. The Mahakali River Commission- To facilitate information exchange, cooperation and implementation, the Treaty provides for a Mahakali River Commission. In defining the jurisdiction of the Commission, Article 9(1) states: “the Commission shall be guided by the principles of equality, mutual benefit and no harm to either Party”. Paragraphs 2 to 4 of Article 9 set out clear guidelines for the

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<sup>44</sup> Salman, S. M. A. and Uprety, K.1999. Hydro-politics in South Asia: a comparative analysis of the Mahakali and Ganges treaties. *Natural Resources Journal*, 295: 39

formation of the Commission, as well as its jurisdiction. According to Articles 9(2) and 9(4), the Commission is to be composed of equal numbers of representatives from both Parties and its expenses borne equally by both. According to Article 9(3), its functions include exchanging information and inspecting all structures included in the Treaty, making recommendations for the implementation of the Treaty provisions, evaluating the projects, monitoring and coordinating plans of actions, and examining any differences arising between the Parties concerning its interpretation and application.

Dispute Resolution. The Mahakali Treaty provides a detailed dispute resolution and arbitration mechanism if any dispute is not resolvable by the Mahakali Commission. According to Article 11(2), an arbitration tribunal, composed of three members, conducts all arbitration. One arbitrator must be nominated by Nepal, one by India, with neither country able to nominate its own national, and the third arbitrator is to be appointed jointly, who shall preside over such tribunal. In the event that the Parties are unable to agree upon the third arbitrator within 90 days after receipt of a proposal, either Party may request that the Secretary-General of the Permanent Court of Arbitration at The Hague appoint an arbitrator, who shall not be a national of either country.

The inclusion of the Permanent Court of Arbitration in this Article certainly gives a high profile to the Treaty's dispute-resolution mechanism, which is further strengthened by Article 11(3), according to which the decision of the arbitration tribunal is final, definitive and binding. The Mahakali Treaty, however, is silent regarding the venue of arbitration, the administrative support of the arbitration tribunal, and the remuneration and expenses of its arbitrators. These issues are to be agreed upon by an exchange of notes between the Parties. By providing a relatively elaborate and advanced mechanism, the Mahakali Treaty offers a good example for dispute settlement in international rivers.

### **3. The Legal Regime on cooperation on the Ganges River (India-Bangladesh)**

The Key aspects of India-Bangladesh Ganges Treaty, 1996

The 1996 Ganges Treaty, which expires in 2026, establishes a formula for sharing water. Moreover, the Treaty also calls on both governments to attempt to reach water-sharing agreements on another 53 “common rivers”. That the Treaty calls for future cooperation over the common rivers shared by Bangladesh and India, from a political angle, is significant<sup>45</sup>.

**The Preamble:** The preamble of the Treaty notes that both countries wish to share, and optimally utilise, the water resources of the region in the field of flood management, irrigation, river basin development and hydropower generation for the mutual benefit of their people. Moreover, guided by the principles of equity, fairness and no harm to either Party, both agree to conclude water sharing treaties/agreements with regard to 53 other common rivers. The Treaty discourages unilateral development, and calls for conclusion of water-sharing agreements on the basis of the principles of equity, fairness and no harm, in turn, acknowledging the necessity of coordinated management of the watercourses. The Treaty further states that its sharing arrangements will be reviewed at five years interval or earlier, as required by either Party, and needed adjustments thereto. Both these provisions are important, as they endorsed the principles of “equitable and reasonable utilisation” and “no harm, or theory of limited territorial sovereignty”.

After a number of short-term legal instruments, India and Bangladesh have been able to resolve their long and bitter dispute over the Ganges through a 30-year Treaty. However, more than twenty years of the 30 years during which the Treaty is to remain in force have elapsed. Yet, no agreement has been reached between the two parties on how to augment the flow of the Ganges during the dry season and provide sufficient amounts of water for both parties, which is the crux of the dispute on the Ganges River. It should also be added that no agreement on any of the other 53 shared rivers between India and Bangladesh has thus far been concluded.

**The Institutional Mechanism and the augmentation of flows:** The Ganges Treaty establishes a Joint Committee and defines its jurisdiction for monitoring

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<sup>45</sup> For a detailed discussion on the Ganges Treaty, 1996, please refer to Module 4

implementation of the Treaty and exchanging data and information. The Joint Committee, consisting of an equal number of representatives nominated by the Parties, is entrusted to observe and record the daily flows below the Farakka Barrage as well as at Hardinge Bridge. The Joint Committee is required to submit all data collected by it, along with an annual report, to both governments, and is responsible for examining any difficulty arising out of the Treaty implementation as well as the operation of the Farakka Barrage. The Treaty recognises the need to cooperate and to find a solution to the long-term problem of augmenting the flow of the Ganges during the dry season.

Dispute Resolution Mechanism: The Ganges Treaty does not include a clear and specific dispute resolution and arbitration provision. The preamble of the Treaty mentions that both Parties wish to find a fair and just solution without affecting the rights and entitlements of either country. Article VII states that if the Joint Committee fails to resolve a dispute arising out of the implementation of the Treaty, it should be referred to the Indo-Bangladesh Joint River Commission, an entity established in 1972. The Commission, which has met annually to discuss problems and undertake joint investigations on the lower part of the Ganges River, does not, however, have the power to allocate water. If the dispute still remains unresolved, it should be referred to the two governments, which would meet urgently at an appropriate level to resolve it by mutual discussion. The Treaty, however, fails to specify the level of government involved and the timeframe for the settlement of the dispute, nor does it bind the Parties to seek resolution of the dispute. Hence, the Treaty, it appears, chose political means, not legal, to resolve any dispute arising from its implementation. Undoubtedly, the absence of arbitration mechanisms makes this legal instrument less effective.

#### ***4. Water Cooperation between India and Bhutan***

Introduction: the ecological context:

Bhutan has four major river systems: the Drangme Chhu; the Puna Tsang Chhu, also called the Sankosh; the Wang Chhu; and the Amo Chhu. Each flows swiftly out of the Himalayas, southerly through the Duars to join the Brahmaputra River in India, and thence through Bangladesh where the Brahmaputra (or Jamuna in Bangladesh)

joins the mighty Ganges (or Padma in Bangladesh) to flow into the Bay of Bengal. The largest river system, the Drangme Chhu, flows southwesterly from India's state of Arunachal Pradesh<sup>46</sup>. Thus, Manav and Sankosh river systems together flow into India and Bangladesh, making all the rivers flowing out of Bhutan trans-boundary in nature.

It was in the decade of 1980 that the formal cooperation between Bhutan and India was formalised with India agreeing to construct the first joint venture project, 336 MW run of the river project at Chukha on the basis of 60% grant and 40% loan. The Project was commissioned in 1988 under various stages. The project was so successful that it had covered its costs by 1993. The generating capacity was later increased to 370 MW<sup>47</sup>.

The agreement between the two countries is that the electricity generated will be first used to satisfy Bhutan's own internal needs and the excess would be sold to India at an agreeable rate. The electricity produced in excess of the requirement of Bhutan is purchased and used by India as peak power through its eastern electricity grid. Initially, the two countries agreed to have two different pricing patterns for firm and secondary power. Later, the two tariffs were amalgamated into one, and, subsequently, the tariff that was initially paid by India was revised upwards four times. Since the construction of the Chukha project has proved to be beneficial to both the countries, they have agreed to expand their collaborative efforts to other new hydropower projects.

The formal water cooperation regime: India and Bhutan have signed a number of Agreements on hydropower development. The following agreements are considered to provide the basic framework of cooperation between the two countries

Inter-Governmental Agreement signed on 5th March, 1996 on the setting up of the Tala Hydroelectric Project and the - Protocol to the Inter-Governmental Agreement signed in 2006. The Protocol lays down the commercial arrangements for the purchase of Tala power by India. The Tala Hydroelectric Project (1020 MW) is the

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<sup>46</sup> <http://countrystudies.us/bhutan/16.htm>

<sup>47</sup> Asit K. Biswas (2011) Cooperation or conflict in transboundary water management: case study of South Asia, Hydrological Sciences Journal, 56:4, 662-670, DOI: 10.1080/02626667.2011.572886

largest bilateral cooperation project undertaken by India in the field of hydropower in a foreign country.

Agreement between the Government of India and The Royal Government of Bhutan concerning cooperation in the field of Hydroelectric power between India and Bhutan, 2006. The Agreement lays down the framework for future bilateral cooperation between India and Bhutan in the field of hydroelectric power by building upon the strengths of the two countries and their existing mutually beneficial cooperation in the field of hydropower development.

Agreement on Trade, Commerce and Transit, 2006- The Agreement, which will remain valid for ten years, provides for continued free trade arrangements between India and Bhutan with simplified procedures, and additional facilities and routes for Bhutan's transit trade with third countries.

The Framework Inter-Governmental Agreement between Bhutan and India on development of Joint Venture Hydropower Projects, 2014: The framework "Inter Governmental Agreement between the Royal Government of Bhutan and the Government of the Republic of India concerning development of Joint Venture Hydropower Projects through the Public Sector Undertakings of the two Governments" was signed on 22 April 2014 in Thimphu.

The above Inter-Governmental agreement provides the framework for implementing four HEPs totalling 2120 MW, subject to completion of the due process of appraisal of their DPRs including techno-economic viability, on a Joint Venture-model between Public Sector Undertakings of the two countries.

Water cooperation between India and Bhutan, since more than three decades is regarded as a constructive collaboration on trans-boundary water management which has brought significant benefits to both the countries. In the words of Indian Government 'Hydropower cooperation with Bhutan is a classic example of win-win cooperation, providing clean electricity to India, generating export revenues for Bhutan, and further strengthening our bilateral economic linkages'<sup>48</sup>. However, little is known about India-Bhutan water cooperation in South Asia or elsewhere. While

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<sup>48</sup> [http://www.mea.gov.in/press\\_releases.htm?dtl/23230/InterGovernmental+Agreement+between+Bhutan+and+India+on+development+of+Joint+Venture+Hydropower+Projects](http://www.mea.gov.in/press_releases.htm?dtl/23230/InterGovernmental+Agreement+between+Bhutan+and+India+on+development+of+Joint+Venture+Hydropower+Projects)

both the countries gained from water cooperation, it is viewed that for Bhutan this has been a game changer due to the small population of the country<sup>49</sup>.

### **5. The Brahmaputra Regime**

To date, no multilateral or basin-wide international treaty has been concluded for the Brahmaputra. The arrangements that exist are all narrow in scope, bilateral, contentious, and mostly fail to deal with water holistically. For example the MoU between India and China deals with sharing of flood season data alone. The recently concluded trade and transit related protocols between India and Bangladesh involves agreement on opening specific protocol routes between both the countries for enhancing inland navigation. The earliest legal instrument affecting the Brahmaputra is the 1914 Simla Convention, in which Great Britain, Tibet and China met to negotiate boundaries between India and Tibet. This resulted in the “McMahon Line”, a line from Bhutan to the Great Bend which substantially moved the border north, making India one of the riparians of the Brahmaputra basin.

In 1949, India and Bhutan signed a Treaty of Friendship, which exchanges Indian non-interference in the internal administration of Bhutan for Bhutanese agreement to seek India's advice on foreign relations. The Treaty, in fact, is the basis for present-day joint hydropower plants on Brahmaputra tributaries in Bhutan exporting electricity to India, an early example of inter-basin cooperation in the region.

In 1954, China and India signed a Memorandum of Understanding (MOU) for sharing Brahmaputra hydrological data for flood protection purposes, which, however, ended with the 1962 Sino-Indian War. More recently, the two countries have made a number of cooperative arrangements, including a 2002 MOU to provide hydrological data to manage flood control, and a comparable 2005 MOU on the Langquen Zangbo, a tributary of the Brahmaputra. China, on the other hand, has also entered into a comparable MOU in 2006 with Bangladesh in connection with the Brahmaputra. India and Bangladesh continue to share hydrological data as per the understanding reached between the countries through joint mechanisms established between them. India and Bhutan have very special arrangements where the

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<sup>49</sup> Asit K. Biswas (2011) Cooperation or conflict in transboundary water management: case study of South Asia, *Hydrological Sciences Journal*, 56:4, 662-670, DOI: 10.1080/02626667.2011.572886

countries regularly share hydrological data for all practical purposes related to hydropower development and DRR.

## Topic 2: The Implementation Experience of Water Cooperation Regimes in South Asia

### **Implementation Experience of the Indus Water Treaty, 1960**

From an implementation standpoint, the Indus Treaty is regarded as a success story, especially by the World Bank (Wheeler 2009). The fact that it has survived continued regional hostility, including two wars between India and Pakistan, its efficacy in resolving a bitter and long dispute by dividing the rivers of the Indus River System, establishing an institutional mechanism for overseeing implementation of the Treaty, and putting in place a comprehensive process for prevention and resolution of differences and disputes is widely acclaimed. In practice, the differences and disputes that arose so far have been resolved by invoking the process provided within the IWT. The following cases demonstrate the implementation experience.

#### **The Wullar Barrage Case**

In 1985, Pakistan learnt through a tender notice in the press about the development of a barrage by India, under the name Tulbul Navigation Project (Pakistan referred to it as the Wullar Barrage). Please note that the IWT is silent on navigation<sup>50</sup>. The barrage was to be constructed on the River Jhelum, below Lake Wullar located near Sopore, 25 km north of Srinagar, where the River Jhelum flows into the Lake in the south and flows out of it from the west. For Pakistan, the geo-strategic importance of the site lay in the fact that its possession and control provided India with the means to control water flow to Pakistan. It claimed that a dam on that site had the potential to adversely affect the entire system of the triple canal project within Pakistan, namely: the upper Jhelum Canal, upper Chenab Canal and the lower Bari Doab Canal.

According to the Indian Government, however, the purpose of the Wullar Barrage was to construct a control structure, with a view to improving the navigation in the River Jhelum during winters, in order to connect Srinagar with Baramula for transportation of fruits and timber. It viewed the barrage not as an effort to divert water flowing into Pakistan, but to ensure the navigability of the river during

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<sup>50</sup> See Stephen C. McCaffrey, "Water, Politics and International Law," *supra* note 17, at 95; It is also worth noting that one interesting aspect of the Treaty is that it only refers to distribution of waters, but remains silent on the issue of navigation.

summer<sup>51</sup>. India claimed that 90% of the Tulbul project would be beneficial to Pakistan, as it would regulate the supply to Mangla Dam. This would further increase Pakistan's capacity to generate power at Mangla, as well as the irrigation network in the Pakistani Punjab through the triple canal system. It would also be especially effective in reducing the flow of water during the flood season. India even suggested that Pakistan should actually bear a share of constructing the Barrage.

But Pakistan argued that India had violated Article I (11) of the Indus Treaty, which prohibits both parties from undertaking any “man-made obstruction” that may cause “change in the volume of the daily flow of waters”. Pakistan further argued that Article III (4) specifically barred India from “storing any water of, or constructing any storage works on, the Western Rivers”. According to sub-paragraph 8(h) of the Indus Treaty, India is entitled to construct an “incidental storage work” on Western Rivers on its side: (1) only after the design has been approved by Pakistan; and (2) only if its storage capacity does not exceed 10 000 acre feet (12 334 818.4 m<sup>3</sup>). Pakistan further alleged that the Wullar Barrage's capacity is 300 000 acre feet (370 044 551 m<sup>3</sup>), which is 30 times the permitted capacity. Moreover, regarding the building of a hydro-electric plant, Pakistan alleged that, according to the Treaty, India is only allowed to construct a small runoff water plant with a maximum discharge of 300 cusecs (8.495 054 m<sup>3</sup>/s) through the turbines, which is insufficient to generate 960 MW of electricity as planned by India under the Wullar Project.

Pakistan referred the Wullar Barrage case to the Indus Commission in 1986, but the Commission failed to resolve it. Pakistan then decided to take the case to a Court of Arbitration under the Treaty, but India had suspended the construction work. While several round of talks were held between the two countries to discuss the technical feasibility of the Project, however, Pakistan raised objection to India's plan to construct the Kishanganga, (390 MW) hydropower-generating unit on the Neelum River which is discussed subsequently.

### **The Baglihar Difference**

The Baglihar Dam and Hydropower project is another example of issues arising out of different interpretations of the IWT. India planned to construct a dam 60 miles (96

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<sup>51</sup> (*Daily Times*, 29 June 2005. Dellapenna, J. and Gupta, J. 2008. Toward global law on water. *Global Governance*, 14: 437–454. [[Web of Science](#)], [[Google Scholar](#)])

km) upstream from the Pakistani border, on the Chenab River, one of the Western Rivers allocated under the Treaty to Pakistan, claiming India's right to build upstream non-storage facilities under the Indus Treaty. In protest, Pakistan invoked the Indus Treaty's dispute-resolution mechanism, as in its view, the water storing capacity of the Baglihar Dam was at a level prohibited by the Treaty, and the design of the hydropower plant violated a number of conditions spelled out therein. In India's view it was not a storage but merely a run of the river project designed to generate power, allowed by the Treaty. . Following failure to resolve the question through the Permanent Indus Commission, Pakistan, on 15 January 2005, approached the World Bank requesting it to appoint, as per the Indus Waters Treaty, a Neutral Expert to resolve the difference over Baglihar<sup>52</sup>

The Report of the Neutral Expert highlighted that the Indus Treaty had to be read in the light of new technical norms and standards and the fulfilment of the treaty needs to be done in a “spirit of goodwill and friendship” taking into account the best practices in the field of hydro-electric plants. Both India and Pakistan accepted the decision.

#### Kishanganga Awards<sup>53</sup>

The title, one may note, uses the term "Awards" instead of "Award" as there are a total of three awards in the matter. The three are the Partial Award (Feb 2013), Interpretation Award (Dec 2013) and the Final Award (Dec 2013). The summary of these three awards are given below:

- Since the Kishanganga project is a Run-of-River Plant, India is entitled under the Indus Water Treaty to divert the water from the river for the purpose of generation of electricity. (Partial Award)
- The Treaty does not permit India to reduce the level of the water stored in the Kishanganga dam below the Dead Storage Level of the water level, except in case of Unforeseen Emergency. However, this prohibition is

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<sup>52</sup> Salman [2008](#) Salman, S. M. A. 2008. The Baglihar difference and its resolution process – a triumph for the Indus Waters Treaty?. *Water Policy*, 10: 105–117. [[Web of Science](#)®], [[Google Scholar](#)].

<sup>53</sup> Please see Module IV for the background and detailed discussion on the Kishanganga Project.

applicable in Run-of-River plants which are either in existence on the date of the Partial Award or are under construction after exchange of designs of such projects to Pakistan and Pakistan has not objected to it. (Partial Award)

- Desilting using the drawdown flushing method does not constitute Unforeseen Emergency for the purposes of the Treaty. (Partial Award)
- While India's right to divert the waters under the Treaty is available, such a right is not absolute. India is obligated to take into consideration the existing uses by Pakistan of the river for hydroelectric and agricultural uses. (Partial Award)
- Pakistan's uses as provided above are to be considered from two relevant points of time- (1) at the time the Kishanganga project crystallised, and (2) on an ongoing basis throughout the operation of the Kishanganga plant. (Partial Award)
- Consequently, India has the obligation to maintain a minimum flow of water downstream the Kishanganga project. (Partial Award)
- India's obligation is to maintain a minimum flow of 9 cubic metres per second of water below the plant at all times at which the upstream flow is 9 cubic metres per second or above. (Final Award)
- Either party may seek reconsideration of the minimum flow of 9 cubic metres per second as provided above seven years after the diversion of the waters from the Kishanganga river for the purposes of power generation. (Final Award)
- Such reconsideration may either be through the Permanent Indus Commission or under the mechanisms built in into the Treaty. (Final Award)
- The prohibition on the reduction of level of water in the Run-of-River Plant below the Dead Storage Level is of general applicability under the Treaty and is not restricted merely to the Kishanganga plant. (Interpretation Award).

The prima facie view on the award is that it seems to balance interests of both parties by protecting India's right to harness the river water system and at the same time protect the interests of the riparian Pakistan.

As can be concluded from the foregoing discussion, implementing the Indus regime has been a difficult exercise for both parties. However, due largely to the Treaty's in-built mechanisms to address questions, differences and disputes, the parties have been able to manage conflicts and, in spite of the frequent upheavals in bilateral relations between them, the Treaty, so far, has had a relatively smooth sailing.

### **Implementation of the Kosi Agreement, 1966 and Key Contentions: Mapping elements of change and continuity**

Almost all the provisions of the 1954 Agreement were strongly contented by Nepal's opposition parties. The Revised 1966 Agreement tried to improve the situation on sovereignty, territorial integrity and future water rights of Nepal for the utilisation of Kosi River. However, the contentions around land leased to India, the submergence of productive land in Nepal and the proportionate benefits that would accrue to Nepal as compared to India continued to remain contended and commentators from both countries have held their positions based on their perception and interpretation of facts.

Preambular Ambiguities: The 1966 Agreement<sup>54</sup> asserted that 'Nepal had suggested revision of the said Agreement in order to meet the requirements of the changed circumstances,' and India, "with a view to maintaining friendship and good relation subsisting between Nepal and India," had agreed to the revision of the 1954 Agreement<sup>55</sup>. What is noteworthy here is that the revision did not acknowledge the contentions raised by Nepal on disproportionate benefits that would accrue to Nepal, during the first 10 years of subsisting of the Kosi Agreement, 1954. The revision merely notes, 'changed circumstances' as the basis for revising the agreement<sup>56</sup>.

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<sup>54</sup> Revised Agreement on The Kosi Project, Kathmandu, December 19, 1966, signed by Shriman Narayan (India) and Y. P. Pant (Nepal) (hereinafter referred to as the 1966 Agreement or the revised Agreement). For the text of the Agreement, see <http://mea.gov.in/bilateraldocuments.htm?dtl/6156/Revised+Agreement+on+Chose+Project+Annexure+Agreement+25+April+1954> as accessed on 7.11.2017 at 21.23 IST also available on <http://www.moir.gov.np/uploaded/Revised-Agreement-on-Nepal-and-india-Koshi-river-1966.pdf>

<sup>55</sup> See Preamble to the 1966 Revised Agreement. Available at <http://www.moir.gov.np/uploaded/Revised-Agreement-on-Nepal-and-india-Koshi-river-1966.pdf>

<sup>56</sup> Please note that changed circumstances could be interpreted to mean change in the political, economic, ecological, social or any other circumstances that the decision making regimes were concerned with

Post Facto Regularisation of the works already completed: By the time Kosi Agreement was revised, various works in respect of the Project were already carried out by project execution agencies. For works that were at various stages of completion, Nepalese Government 'agreed to afford necessary facilities', an important clause from the negotiating stance, contained in the 1966 Agreement. However, the general layout of the Kosi Project was slightly modified and details in the form an Annex were made part of the revised agreement<sup>57</sup>. The issues regarding work to be carried out in Nepal by Indian agencies, a twofold mechanism was inserted. For undertakings and other works connected with the Kosi Project, needed to be planned and carried out in consultation with the Government of Nepal; and works and undertakings that required prior approval of the Nepalese Government would be implemented only after such approval has been secured<sup>58</sup>. There are two elements worth noting here. First, that even planning was to be jointly carried out by the designated agencies of the two governments. Second, the sub-proviso to the main provision provides that in the events where consultation with the Government of Nepal or his prior approval is required and for the matter related land submergence and compensation, intimation to HMG shall be sufficient<sup>59</sup>.

De-linked and dysfunctional institutional arrangements: As per the 1966 Agreement the execution of the Kosi Project is the responsibility of the state government of Bihar which is the designated Chief Engineer of the Kosi Project. By virtue of this, for all practical and operational purposes, from surveys to soil conservation measures and afforestation programs, required for a complete solution to the Kosi Problem in future<sup>60</sup>, Government of Indian state of Bihar became the chief executing agency of the Kosi Project in the Project Area<sup>61</sup>. While all surveys were to be carried in 'cooperation' with Government of Nepal, surveys and investigations necessary for general maintenance of the Project shall be carried out with due intimation to the

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Article 1 (ii), the Revised Kosi Agreement, 1966. For details Also see the Annexure-A to the Revised Agreement, supra 7

<sup>58</sup> Proviso to the Article 1 (iii)

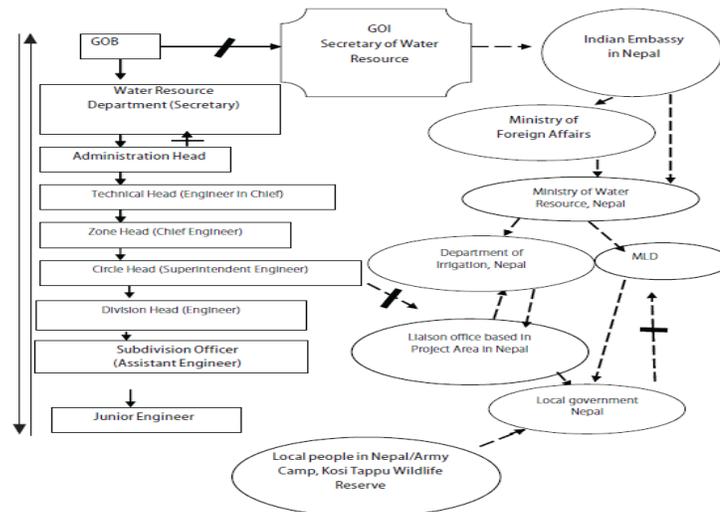
<sup>59</sup> Article 1 (iii)

<sup>60</sup> Article 2 (ii)

<sup>61</sup> Article 2 (i), Project Area under the Revised Agreement means area acquired for the Project

Government of Nepal<sup>62</sup>. The flow chart below summarises the existing Institutional arrangements on the Kosi Project.

Flow chart: Institutional arrangements on Kosi<sup>63</sup>



Source: Field research 2008-09. The dotted line means institutional hierarchy in Nepalese side as well as Nepal and India. Whereas the non-dotted line means the institutional hierarchy in Bihar government and Indian government.

Absence of reciprocity in data sharing: The data, surveys and investigations carried out by or on behalf of India in respect of Kosi in Nepal is to be made available to the Government of Nepal without any delay. Similarly, the Government of Nepal is also required to make all the data available to the Government of India on request in respect for Kosi in Nepal<sup>64</sup>. While the data sharing is based on the principle of reciprocity, it is only the data for the Kosi in Nepal which can be shared. There is no provision for sharing of data with respect to Kosi in India.

### Issues of Land and Compensation:

The process of land acquisition in Nepal began soon after the signing of the 1954 Agreement. While the construction was on the way, the amendment of the Agreement was proposed by Nepal. The position with respect to land acquisition under the 1954 Agreement continued under the Revised Agreement. Under the

<sup>62</sup> Article 2(i) (ii) (iii)

<sup>63</sup> Rashmi Kiran Shrestha, et al., Institutional Dysfunction and Challenges in Flood Control: A Case Study of the Kosi Flood 2008, Economic & Political Weekly January 9, 2010 vol xlv no 2

<sup>64</sup> Article 2 (iv)

Revised Agreement, 1966 the land required for the purposes of the Project was to be acquired by Nepal, and compensation was to be paid by India<sup>65</sup>. Since the land to be acquired belonged to individuals, communities, village institutions and government agencies, the compensation mechanism could only be routed through the Government of Nepal. The Assessment for compensation, however, was based on a methodology agreed by the parties under the 1966 Revised Agreement. As per the agreed methodology, for compensation purposes, land were to be divided into four classes to include: (i) cultivated lands, (ii) forest lands, (iii) village lands and houses and other immovable property standing on them, and (iv) waste lands. The Agreement provides that all lands registered in the cadastre in the territory of Nepal actually cultivated were deemed to be cultivated lands<sup>66</sup>.

The rate of compensation was ascertained by exchange of letters. The letters exchanged on December 19, 1966 clarified the position with respect to the rate for land acquired for the Koshi Project by the Government of Nepal. India would pay the compensation annually at the rate of Nepalese Rupees five per Nepali Bigha. This provision was to be applied retrospectively for all the lands that were already acquired for the Kosi Project. For land required in future, the existing rate would be applicable. The loss of land revenue would be determined at the time of acquisition of land.

Compensation, land and related notions of sovereignty continue to remain hotly contested issues between the two countries till date. Despite that the 1966 provision has done away with the 1954 position on land [..The Union shall be the owner of all land acquired by the Government (of Nepal)...and of all water rights secured to under it under Clause 4..] and changed India's position from owner of land acquired for the Project to 'lessee' where Government of Nepal has leased the land to Government of India for 199 years at an annual nominal rate<sup>67</sup>, communities in Nepal feel that Nepal's most productive land has been submerged for irrigation, flood control and power benefits of India and Nepal's gain is disproportionately less than

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<sup>65</sup> Article 8

<sup>66</sup> Proviso, to Article 8, the Revised Koshi Agreement, 1966

<sup>67</sup> Article 5 Provided that the sovereignty rights and territorial jurisdiction of the Government in respect of such lands shall continue unimpaired by such transfer

India's share of benefits. It is to be further noted that at the request of India, Nepal is to grant renewal of the lease on mutually agreed terms and conditions.

**Unusual lease period:**

In this context, commentators and jurists have observed that the duration of lease period under the Revised Kosi Agreement far exceeds the usual lease period observed in treaties of this sort. Another observation made by commentators is that the letter exchanged on December 19, 1966 provide that if Government of Nepal takes over the Project properties at the end of the lease period, Government of India would be reasonably compensated for the cost of the project incurred till date (until 1966) and future costs, taking into account the depreciation in the cost of materials used for the project. It may also be noted that what would be reasonable compensation after 199 years is subject to negotiations and interpretation by both countries.

**Water Rights over the Kosi River:**

Contentions regarding rights over the Kosi River that arose due to the position of Nepal agreed in 1954 were addressed effectively by the 1966 Agreement. The 1954 Agreement provided that Without prejudice to the right of Government [of Nepal] to withdraw for irrigation or any other purpose in Nepal such supplies of water, as may be required from time to time, the Union [India] will have the right to regulate all the supplies in the Kosi River at the Barrage site. Under the Revised Agreement, 1966 Nepal's position with respect to control over Kosi in Nepal has been improved considerably. As per the revised provision Government of Nepal shall have every right to withdraw for irrigation and for any other purpose in Nepal water from the Kosi River and from the Sunkosi River or within the Kosi Basin from any other tributaries of the Kosi River as may be required from time to time. The Union shall have the right to regulate all the balance of supplies in the Kosi River at the barrage site thus available from time to time and to generate power in the Eastern Canal<sup>68</sup>. However,

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<sup>68</sup> Article 4 (i) HMG shall have every right to withdraw for irrigation and for any other purpose in Nepal water from the Kosi river and from the Sun-Kosi river or within the Kosi basin from any other tributaries of the Kosi river as may be required from time to time. The Union shall have the right to regulate all the balance of supplies in the Kosi river at the barrage site thus available from time to time and to generate power in the Eastern Canal.

there is still a perception among certain groups that Nepal's position with respect to rights over Kosi river is same as was provided under the 1954 Agreement.

### **Power Use**

The Revised Agreement is also understood to improve Nepal's position with respect to power. Government of Nepal is entitled to obtain for use in Nepal any portion up to 50 percent of the total hydro-electric power generated by any power house situated within a 10 mile radius from the barrage site and constructed by or on behalf of India. Further, if power to be supplied to Nepal is generated in India, the Indian government would construct necessary transmission lines to a point at the Nepal Indian border that shall be mutually agreed upon and the tariff for the electricity supplied to Nepal is also to be fixed mutually<sup>69</sup>. There are two remarkable observations here. First, power generated under the project is an entitlement for Nepal and not a benefit that would accrue automatically. Second, the revised provision continues to state the tariff to be charged from Nepal on mutually agreed basis. Therefore there is no substantive change from the 1954 position except that the responsibility of India for constructing transmission lines up to the point as may be agreed has been stated.

### **Implementation experience of the Gandak Project and the Agreement**

Key contentions over the Gandak Agreement, 1959 and 1964 that implementing agencies continue to face:

While Gandak Agreement is criticised among the scholars and community of practice, a formal complaint by Government of Nepal on the implementation or working of the Project has never been raised. Many Nepalese scholars considered the 1959 Gandak Treaty a bad deal for Nepal, because it had the effect of curtailing Nepal's right to Gandaki water for use inside Nepalese territory, essentially for trans-valley uses in the months of February to April<sup>70</sup>.

Article 9 of the Gandak Treaty reads as follows: "*His Majesty's Government will continue to have the right to withdraw for irrigation or any other purpose from the river or its tributaries in Nepal such supplies of water as may be required by them*

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<sup>69</sup> Article 4 (ii)

<sup>70</sup> Thapa, [2002](#) Thapa, A. B. 2002. The Gandak river treaty. *21 Spotlight*,: 9–10.

*from time to time and His Majesty's Government agrees that they shall not exercise this right in such manner as is likely, in the opinion of the parties hereto, prejudicially to affect the water requirements of the Project (the Gandak Irrigation Project) as set out in the schedule annexed hereto”.*

The monthly water requirements provided in the Schedule to the Treaty were either very close or exceeded the river flows barring a few months of the monsoon season. This provision had the effect of virtually ending all future prospects for irrigation development in the Gandaki basin within Nepalese territory. Therefore, following protests, the Gandak Agreement was slightly revised on 30 April 1964, to lessen its negative impact. Article 9 of the revised Agreement reads as follows: “His Majesty's Government will continue to have the right to withdraw for irrigation or any other purposes from the river or its tributaries in Nepal such supplies of water as may be required by them from time to time in the valley. For trans-valley uses of Gandak waters separate agreements between His Majesty's Government and the Government of India will be entered into for the uses of water in the months of February to April”.

Certainly, the revised Treaty was an improvement over the previous one. However, the trans-valley uses of Gandak water for the months of February to April have still been restricted. Therefore, Nepal's side has been seeking further revision to drop the clause restricting such use inside Nepal, but to no avail.

There are issues faced by communities in Nepal and India due to poor maintenance of canal infrastructure and embankments that often breach. The issue of breaches from Tirhut canal inundating crops and villages has been raised by downstream communities for a long time<sup>71</sup>. Similarly, the communities in the upstream have been demanding compensation for the loss and damages due to embankment breaches in the Gandak Project area. The communities claim that maintenance of embankments and other infrastructure is the responsibility of the State Government of Bihar and that of Government of India and that the loss and damages to property arising due to

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<sup>71</sup> <https://www.bhaskar.com/bihar/patna/news/BIH-PAT-HMU-farmers-opposed-the-extension-of-the-tirhut-canal-news-hindi-5499909-PHO.html>, [Farmers Opposed The Extension Of The Tirhut Canal- Dainik Bhaskar](#)

breach of embankments shall be compensated<sup>72</sup>. The issues are discussed in detail in the section on the trends on Grassroots hydrodiplomacy.

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<sup>72</sup> [Dinesh Kumar Mishra](http://www.indiawaterportal.org/articles/embankments-related-compensation-drain-indian-exchequer-need-review-flood-control-policy), Embankments related compensation to drain Indian exchequer : Need to review the flood control policy of the Government, <http://www.indiawaterportal.org/articles/embankments-related-compensation-drain-indian-exchequer-need-review-flood-control-policy>

### Topic 3: Emerging Opportunities for Water Cooperation in Himalayan River Systems

While the bilateral cooperation in South Asia is surrounded by multi-layered complexity due to perception and dynamics of various actors involved in the decision making processes related to water resources, there are also attempts being made to enhance cooperation that would bring economic benefits and opportunities to the people in the region. Potential for regional cooperation through Navigation and hydroelectricity trade through trilateral cooperation between Bhutan, India and Bangladesh are seen as new opportunities for enhancing regional cooperation in the GBM Basin.

Two economic initiatives with the potential to enhance regional cooperation have been initiated. 1) The Bangladesh Bhutan-India-Nepal (BBIN) is a quadrilateral initiative, focusing on issues such as water resources management, connectivity of power, transport, and infrastructure; 2) The Protocol on Inland Water Transit and Trade (PIWTT) is a bilateral protocol connecting the inland waterways of India and Bangladesh. Both of these initiatives are likely to be advantageous to India's North Eastern Region and enhance its economic and developmental prospects which are lagging behind due to low connectivity. These initiatives deserve to be discussed in some detail.

**BBIN:** The Bangladesh Bhutan-India-Nepal (BBIN) is a regional connectivity corridor that seeks to create economic corridors for the landlocked countries of South Asia to the sea.

Bangladesh, India and Nepal have agreed on the text of the operating procedures for passenger vehicle movement in the sub-region under the Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement (MVA) signed in June 2015, and will soon complete the internal approval processes for signing of the passenger protocol. The participating countries have also agreed to conduct more trial runs for cargo vehicles under the agreement. High-level officials of the three countries discussed the implementation of the MVA at a meeting held on 10-11 January, 2018 in Bengaluru, convened and chaired by the Ministry of Road Transport and Highways (MoRTH) of

the Government of India. A Bhutanese official delegation also attended the meeting as observers<sup>73</sup>.

### **The Protocol on Inland Water Transit and Trade (PIWTT) between India and Bangladesh:**

Pursuant to the 1972, India and Bangladesh Protocol on Inland Water Transit and Trade (PIWTT), two governments of India and Bangladesh renewed the protocol on 6 June 2015. The protocol is an agreement between the two governments for the transportation of goods and keeping their respective waterways navigable, while providing infrastructure facilities. The protocol further states that both countries will mutually decide the proposed expenses; voyage permissions shall be taken at least four days prior to the actual journey; and the vessels shall share equal tonnage<sup>74</sup>.

In May 2017, the two governments also signed an MoU on river cruises on the PIWTT routes, which will see the upcoming cruise vessel Charaidew to begin its voyage from September 2018<sup>75</sup>. Thus it is understood that the two countries have been mutually cooperating on the development of water resources and enhancing connectivity by way of implementing agreements and protocols that were entered into in the 1970's which demonstrates their continued will to cooperate on trans-boundary rivers. One of the unique aspects of the Protocol (PIWTT) is that it has a five-year automatic renewal mechanism, until either government terminates the protocol. The termination is valid on the expiry of the protocol, and shall not affect the actions already taken<sup>76</sup>.

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<sup>73</sup> 15-January-2018 18:13 IST, BBIN Motor Vehicles Agreement Regains Momentum

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=175638>

<sup>74</sup> "Protocol on Inland Water Transit and Trade", High Commission of India, Dhaka, Bangladesh, at [https://www.hcidhaka.gov.in/bi\\_doc/Protocol%20on%20Inland%20Water%20Transit%20and%20Trade.pdf](https://www.hcidhaka.gov.in/bi_doc/Protocol%20on%20Inland%20Water%20Transit%20and%20Trade.pdf), accessed 15 May 2017

<sup>75</sup> "Luxury vessel being readied for Assam-Bangladesh river cruise," India Today, April 13, 2017,

<sup>76</sup> "Protocol on Inland Water Transit and Trade", High Commission of India, Dhaka, Bangladesh, at [https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwjx8ouowLfUAhVHtY8KHeQ6Cj8QFggsMAE&url=https%3A%2F%2Fwww.hcidhaka.gov.in%2Fpdf%2FPIWTT170816.PDF&usg=AFQjCNEEzO3Y\\_ZxFeydwTYjtgB1luxwliA&sig2=TmWvXFDDCHJ54H5p7535dw](https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwjx8ouowLfUAhVHtY8KHeQ6Cj8QFggsMAE&url=https%3A%2F%2Fwww.hcidhaka.gov.in%2Fpdf%2FPIWTT170816.PDF&usg=AFQjCNEEzO3Y_ZxFeydwTYjtgB1luxwliA&sig2=TmWvXFDDCHJ54H5p7535dw)

#### Topic 4: Community Response to formal water cooperation in South Asia *Stories on trends in Grassroots hydro diplomacy in action*

As seen in the foregoing sections that the conflict and cooperation in trans-boundaries rivers of South Asia has been primarily driven by the Projects, mostly with the ambition of achieving multipurpose benefits such as flood control, irrigation and hydro-power. The Kosi Project, the Gandak Irrigation and Power Project and the Farraka Barrage are examples of such design. However, the beneficiaries of these benefits, specially the communities who have been promised the benefits view that the perceived benefits have not really trickled down to them due to faulty legal and infrastructural design of these projects. There is an evidence to show that the project centric trans-boundary water cooperation over the dynamic systems has completely altered the ecology of the area and has further impoverished people (except in the case of Bhutan), especially in the Ganges Basin. Few case studies from the Gandak and Kosi Basin that demonstrate the community experience of living with these multi-purpose water resource development projects over shared rivers are discussed below.

#### **Grassroots Hydro-diplomacy in the Gandak Basin: The Case of Gandak Nadi Niyantran Sangharsh Samiti, Nawalprasi District, Nepal**

Background: The general feeling in Nepal exacerbated by politics is that it failed to get its due share of benefits under the bilateral water agreements with India. This is also on account of the fact that projects were planned and implemented entirely by India in the Nepalese territory. The contribution of Nepal was facilitation of the projects by acquiring land, making available construction materials etc. The water experts in Nepal have expressed on various occasions that execution of the agreement was not a consultative or deliberative process taking into account the impact on communities residing in the Terai region. It was felt that the institutional mechanism provided by agreement was ineffective in resolving the engineering, socio-economic issues that arose during execution and operation of the project. The exclusion of local community in the entire process of project formulation, execution and operation was viewed with suspicion resulting in growing mistrust'.

The Facts leading to the Dispute: The non-redressal of long standing grievances such as river erosion and yearly flooding on account of weakening infrastructures was heightened due to floods on 23.07.2002 flooding 10 Village Development Committees (VDC) including Triveni Susta, Rupauliya, Pratappur, Guthi, Suryapura in Nepal. Mr. Jagatananda Singh, Minister, Bihar visited the affected areas in Nepal and promised payment of compensation for loss of life and property. The assurance never fructified into any concrete action. The various infrastructures that were constructed under the project such as siphon were not regularly cleaned resulting in annual flooding and erosion.

The loss of fertile agricultural land in Nepal Terai compounded the suffering of the community in the Gandak command area of Nepal. The Gandak command area in Nepal comprises area of 13 V.D.C of Triveni Susta, Rupauliya, Kudiya, Narsahi, Paklihawa, Guthi Prasauni, Guthisuryapura, Baidauli, Thulo Bhaairtawa, Bhujhawa, Somani, pratappura and Jamuniya. The non-redressal of grievances of the community residing in the command area by either Nepal or India led to formation of Gandak Nadi Niyantaran Sangharash Samiti in 2006 to formalise actions towards compelling India to implement provisions of Gandak agreement. The meetings of Joint Committee on Kosi and Gandak Projects (JCKGP) on the emergent issues such as infrastructure strengthening and payment of compensation for losses due to flood and river erosion.

"The Stopwater Campaign": An example of Grassroots Hydrodiplomacy

The members of Gandak Nadi Niyantaran Sangharash Samiti ("Samiti") launched "Stop Water Campaign" on 21st May 2008 an agitation seeking to draw attention of Indian authorities to their 21 demands. The members of Gandak Nadi Niyantaran Sangharash Samiti camped near the silt ejector installed in the main Western Gandak canal, stopping release of water into the canal affecting the agricultural operations in Uttar Pradesh and Bihar. This was the crucial time as water was required for irrigation purposes, it being planting time. There was immense pressure from the agriculturists in Uttar Pradesh and Bihar for release of water. The demands of the Samiti were communicated to the then, Chief-in-Charge, Irrigation department, Lalitpur, Nepal who in turn contacted the officials at Ministry of Foreign Affairs, Kathmandu to seek a solution to the impasse. The Ministry of Foreign Affairs, Nepal

apprised The Embassy of India, Kathmandu regarding the ground situation and the demands of the Samiti.

The Ministry of Foreign Affairs, Nepal endorsed some of the demands of the Samiti such as construction of embankment from silt ejector to tail of A Gap bund, spur near tail of A Gap, embankment along A Gap and B Gap bunds, channelised local drains, fully operational Main western Canal at FSL and compensatory measures for damages caused due to land erosion impressing upon India to implement them. The Counsellor (Commerce) addressed a communication dated 16.06.2008 and 17.06.2008 to Joint Secretary, Ministry of External Affairs, Indiabrining to their attention the communication from Ministry of Foreign Affairs, Nepal. On the same day a communication was addressed to Principal Secretary, Water Resources, Government of Bihar, India by Joint secretary, Ministry of External Affairs to redress the issues raised. The entire parley led to officials of Irrigation Department. Government of Uttar Pradesh being signatory to an agreement with members of Gandak Nadi Niyantaran Sangbarash Samiti, Nepal to implement the measures pertaining to the state. This paved the way for the execution of a tripartite agreement between members of Gandak Nadi Niyantaran Sangharash Samiti, officials of Irrigation Deparbnt. Valmikinagar, Bihar and Land Acquisition Officer and irrigation department officials, Nawalparasi, Nepal on 26.06.2008 bringing to an end the agitation of the Samiti. The demands relating to infrastructure around the Gandak project was formulated as Nepal Benefit Scheme-2009 being implemented by India. The status on implementation of demands raised by Samiti finds mention a san agenda item in the meetings of Joint Committee on Kosi and Gandak Projects (JCKGP) since 2009.

The stoppage of water of a transboundary river by an upper riparian country as a means of negotiation is violative of principles of International water law. On the other hand, the tripartite agreement is a novel agreement executed between a non-state actor and governments of two countries who are signatory to a bi-lateral transboundary agreement over the Gandak river. In international law agreement/treaty means an international agreement concluded between States and governed by international law, thereby underlying that in case of any existing agreement whether bi-lateral or multi-lateral any implementation of an

existing agreement should be executed by the original signatories. In case of India, Constitution of India empowers only the Central government" to enter into any agreement concerning transboundary subject thereby debarring any capacity to sub-state actors to conclude international agreements. In the present agreement neither the Central government nor Nepalese Federal government is a party though, it was executed with the tacit approval of both the governments.

**Grassroots Hydro-diplomacy in the Kosi Basin: The Case of a minor river Khado and dispute over an unilateral Stop-Bank at the 'No-Man's Land' at India-Nepal border**

Background: Khado is a small trans-boundary river shared by Nepal and India. It is an important tributary of the Ganges basin as it sustains life in the shared Indo-Nepal lower terai region for millennia. Lower Terai plains serve as food bowl of Nepal and contribute significantly to food production in India. While the region is blessed with abundant water resources, recurring floods, silt deposits on fertile lands and changing course of Himalayan Rivers present serious survival challenges for the subsistence farming communities of the Terai. Given this reality, collaborative management of smaller river systems shared by Nepal and India by local communities is warranted. In an event when villages on the Indian side chose to unilaterally construct a diversion embankment to divert the natural flow of Khado River, shared by Nepal and India.

**The Dispute: Unilateral construction of a Diversion Embankment at Khado River**

Sustained demands by local politicians for constructing an embankment to divert the flow of Khado river in Kunauli, Bihar paved the way for the unilateral construction of the diversion bund/embankment at the downstream Indian village. Over a period of years, as a result of the impacts of floods, the structure got partly demolished, allowing the river to flow from its original course through uninhabited areas. Allegedly, five years ago, succumbing to the pressure from a hunger strike led by an illustrious politician from Bihar, the state government allowed the reconstruction of the diversion structure that during the floods of July 2016 resulted in the changing the flow of the river from inhabited villages to populated habitations, inundating several thousand houses and causing irreversible damage to the agricultural land,

local ecology and destroying poor households and their assets in Tilathi, Sakarpura and other villages in Nepal.

#### The 2016 Floods in the Khado river and violent clashes

In July 2016, floods in the Khado river lead to inundation of 800 houses in Saptari district of Nepal. The villages (VDCs) close to the India-Nepal Border, Rampura, Malahniya and Tilathi were most affected<sup>77</sup>. The inundation in these villages was caused, allegedly, due to the unilateral construction of an embankment structure on/adjacent to the 'No Man's Land' on the India-Nepal border to serve as a flood protection measure for Indian villages. The structure being built by villages on the Indian side has long been contested and has led to serious conflicts between the villages sharing the Khado river basin<sup>78</sup>. The clashes ensued after local youths from Nepal villages demolished the diversion structure that was being constructed unilaterally by the Indian side at the no-man's land and was causing inundation in the upstream villages in Nepal<sup>79</sup>. Due to the nature and scale of floods, Khado floods received national attention in Nepal and the government announced 'Khado River Control Project in December 2016<sup>80</sup>.

#### The local level engagements and Grassroots hydro-diplomacy

As per the district level officials in Nepal the clash took place as the Indian side built the construction 'violating the agreement' (emphasis supplied) recently reached between local authorities from both the countries. As per the Chief District Officer (CDO) Saptari "The incident wouldn't have taken place had they [Indian side] worked as per the agreement reached with us; the unfortunate incident took place partly because of lack of proper coordination and because of their (Indian villages) haste to carry the construction." It is however unclear as to who are the parties to the agreement and where does this agreement draw its legal gravitas on an issue of trans-boundary cooperation on a minor river. It is interesting to note that the district level administration in India and Nepal played a constructive role, apparently, attempting to strike an agreement on water cooperation on an international river.

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<sup>77</sup> Water-induced disasters that year led to 102 deaths, 58 injuries, and 22 missing persons across 43 Nepali districts

<sup>78</sup> Nepalis, Indians clash as structure erected at no-man's land; [www.myrepublica.com/news/2911](http://www.myrepublica.com/news/2911)

<sup>79</sup> ibid

<sup>80</sup> [Irrigation Minister of Nepal Inaugurates Khado River Control Project](http://www.trishulikhabar.com/2016/12/09/10512)  
<http://www.trishulikhabar.com/2016/12/09/10512>

From the news reports it could be inferred that the agreement includes river cooperation by way of discouraging unilateral structure by upstream and downstream communities and ensuring unrestricted natural flow of the Khado River. The Agreement, however, could not be sourced.

### **Local level engagements and Grassroots Hydro-diplomacy: The Pandai River sharing between villages of Nepal and India**

Background: The Pandai River flowing along the India-Nepal border represents is long contested claims of sovereignty, ownership and control over the River highlight multiple challenges faced by communities and institutions responsible for managing water, land and territorial integrity in India and Nepal. The attempt here is to highlight the water related issues and challenges, particularly equitable allocation, the criteria for which are vague and often contradictory, faced by the communities living along the Pandai River, in the absence of any water cooperation framework for smaller rivers between India and Nepal.

#### Understanding the conflict over Pandai

In the upstream portion of the Pandai River, many village communities in Nepal, including Budhnagar and Ramnagar, depend on it for their daily needs and agriculture. In the downstream portion, many villages including Bhiknathorhi<sup>81</sup>, Khagariya, Dhamaura, Ekwa, Sahodara, Khairatiya, Sitapur, Ankhawa and Bhawanipur in the West Champaran<sup>82</sup> district of Bihar are critically dependent on the streams of Pandai River for drinking and other daily needs. During summer months, when the river turns into very thin streams, the Pandai becomes a source of conflict as both the upstream and downstream communities claim their rights over little water that is available in its thin streams. Every year as the summer approaches, villages in Nepal create temporary dams along the river to stop the water flowing into Indian Territory. .

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<sup>81</sup> The village is situated on the northern border of the district is Gaunaha Block and located on the Someshwar hill at a height of about 600 feet above the sea level. ([http://www.censusindia.gov.in/2011census/dchb/DCHB\\_A/10/1001\\_PART\\_A\\_DCHB\\_PASCHIM%20CHAMPARAN.pdf](http://www.censusindia.gov.in/2011census/dchb/DCHB_A/10/1001_PART_A_DCHB_PASCHIM%20CHAMPARAN.pdf))

<sup>82</sup> The name Champaran is a degenerate form of Champak-aranya, which dates back to the time when the district was a tract of the forests of Champa trees and was abode of solitary ascetics; The District Gazeteer, Champaran, <http://lrc.bih.nic.in/Gazetteer/Champaran/chapter-1.pdf>

During monsoons, the temporary dam is removed to protect upstream from flooding that could occur due to inundation caused by the temporary dam built to stop the downstream flow of the River. The removal of temporary dam results in flooding of downstream villages, that further leads to incalculable loss of life, cattle and crops in these villages. The ongoing contest and past conflicts over sharing the waters of the Pandai River have resulted in persistent tensions and deteriorating relations between the local communities in both countries, which is straining their deep rooted cultural and economic interdependence.

Riparian claims: Upper riparian villages in Nepal assert their sovereign rights over the Pandai River as it originates in the Someshwar Hills in Nepal and claim that it is 'Nepal's water' and hence it cannot be shared with the citizens of any other country.<sup>83</sup> Downstream villages along the river, on the Indian side, do not contest water rights of the Nepalese people over the Pandai but at the same time, also assert their riparian rights, including prior use rights and natural right to use water. Downstream villages in Bihar (India) also assert that the Pandai River had never been dammed in the past and its waters were peacefully shared since ages and traditional community institutions were able to come up with a sharing formula during times of water crisis<sup>84</sup>. Dramatic changes and reduction in the flow of the river during summer months is understood to be one of the main reasons as to why the upstream villages have resorted to damming the river.

Damming of the River: Complete blockage of the freeflowing river streams in the summer by the upstream neighbour, is relatively a recent development that has cropped up in the last 10 years, wherein not only the villagers in Nepal, but also their forest department has become involved<sup>85</sup>. Consequently, almost 40,000 people in nearly 10 villages in the downstream area, directly dependent on the Pandai streams, are severely impacted due to the absence of any other alternative sources of water. In the face of mounting tension between the upstream and downstream communities, the Border Guards from the two countries have often had to intervene to resolve the

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<sup>83</sup> In a personal interaction with the villagers of the Bhiknathohri and Ekwa Villages in Gram Shivirs organised under the Project

<sup>84</sup> *ibid*

<sup>85</sup> ([Down to Earth, March 15, 2010](#))

water disputes<sup>86</sup>. According to locals, the prevailing peace and settlement on water sharing is due to the interventions by the Sashastra Seema Bal (SSB) on Indian side and Border security guards from Nepal, who have mediated along with some administrative support from the district administrations. The district administrations have been advising communities to refrain from indulging in ‘unlawful activities’ on international boundary. The administrations in both countries, however, do not officially recognise the conflicts as issues on international rivers requiring a longterm solution. Reportedly, the issues have never been taken up by any government officials to the ministerial level in the central government, which has primary jurisdiction over international rivers. In this scenario, the only institution left, that communities can trust are the officials of Sashastra Seema Bal (SSB)<sup>87</sup>.

The Pandai example also highlights the limitations of India-Nepal water cooperation agreements and their narrow scope to address only the river in question. The key question then arises:

“Are the border security forces in India and Nepal the most suitable institutional mechanisms that the countries should resort to for solving their water problems or is there a need for imagining a better and participatory framework for water cooperation on smaller rivers shared between India and Nepal?”

Apparently, the District administration on the Indian side may seem to be not involved in the conflicts arising out of the Pandai River; however, farmers’ views suggest otherwise. Until 2001, the farmers of the Bhikna Thohri village used to pay land revenue (mal pot), however, the collection of land revenue has been discontinued since 2002. This is critical as only villages legally recognised as revenue villages by the District administration and the State Government are required to pay land revenue. Farmers fear that the district administration is aiming to derecognise the village, and if this happens, their future is uncertain. On the other hand, the Forest Officials have been stating that the area along the Pandai River on the Indian side where communities live is a Protected Forest, and therefore is under the jurisdiction of the Forest Department. There is however, no official confirmation

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<sup>86</sup> ([The Telegpah, June 17, 2014](#))

<sup>87</sup> [Sashastra Seema Bal](#) (SSB) has a border post at Bhiknathohri village

of the same, as the Forest Department has not issued any notification in this regard, though Bhiknathorhi village borders the Valmiki Tiger Reserve<sup>88</sup>.

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<sup>88</sup> Local accounts from community members from India and Nepal during the field visits to the villages along the Pandai River.

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## **Annexure 1: List of Learning Resources**

### **Books**

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1. Kishor Uprety & Salman M. A. Salman; Legal aspects of sharing and management of transboundary waters in South Asia: preventing conflicts and promoting cooperation , *Aspects juridiques du partage et de la gestion des eaux transfrontalières en Asie du Sud: prévention des conflits et promotion de la coopération*  
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