



Governance of the Ganges River Basin

A comparative analysis of water agreements and the UN Watercourses Convention

Shawahiq Siddiqui, Shilpa Chohan, Vishwa Ranjan Sinha



BUILDING RIVER DIALOGUE AND GOVERNANCE (BRIDGE)



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PREFACE

The Building River Dialogue and Governance (BRIDGE) programme is a global programme of IUCN implemented in 15 shared river basins across the globe. The programme supports the capacities of countries sharing river or lake basins to implement effective water management arrangements through a shared vision, benefit-sharing principles and transparent and coherent institutional frameworks. In the Ganges-Brahmaputra-Meghna (GBM) region, the programme is funded by the [Transboundary Rivers of South Asia \(TROSA\) programme of Oxfam Novib](#). The objective of the BRIDGE and TROSA programme is to support the development of inclusive government policies and practices at all levels through the application of hydrodiplomacy and international water law (IWL).

The Ganges River Basin is shared by four countries: Bangladesh, China, India and Nepal. It is endowed with rich natural and human resources but is also one of the poorest regions in the world and vulnerable to natural disasters. The population density is high, and *per capita* water availability is among the lowest in the world. The Ganges Basin lacks a regional basin-level cooperation agreement to facilitate its joint management and address common challenges such as floods and climate change. However, there are four bilateral agreements on the Ganges River and its tributaries: the Kosi Agreement (1966), the Gandak Agreement (1964) and the Mahakali Treaty (1996) between India and Nepal; and the Ganges Treaty (1996) between Bangladesh and India.

A number of studies appraising the provisions and implementation of these bilateral agreements are available online and some argue the need to strengthen them through the inclusion of international water law principles. None of the available literature, however, assesses the degree to which IWL principles have already been integrated into the existing agreements. This paper uses the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC) as a reference point to provide qualitative arguments and insight on the degree to which IWL principles have been mainstreamed. The UNWC is widely considered the most important IWL principle and has been in force since 2014.

It is envisaged that this paper will help strengthen the existing legal framework for cooperation in the Ganges Basin through improved understanding of IWL principles among stakeholders, and by highlighting gap areas and opportunities to mainstream IWL into existing agreements in the Ganges Basin. The paper will be discussed and disseminated during capacity-building events and dialogues on hydrodiplomacy, and used a tool to build regional consensus for strengthening existing basin agreements and institutions in the GBM. It will be widely disseminated in the South Asian region, with particular focus on government departments, particularly those engaged in policymaking and negotiations on shared water governance. Considering that the principles of international water law, such as equity and no harm, have wider applications to conflict resolution at all levels, from regional to local, this paper will be disseminated to key government institutions linked to water resource planning and management and civil society organisations (CSOs) working at the provincial level in Bangladesh, India and Nepal.

EXECUTIVE SUMMARY

In 1997, the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses (UNWC) entered into force. This was a milestone for the global management of transboundary waters and was a significant opportunity for countries and regions lacking cooperative management frameworks for shared waters.

As a framework convention, the UNWC's central objective is to provide a flexible legal framework within which more specific basin and/or watercourse treaties can be developed, providing more nuanced governance mechanisms via context-specific provisions.

None of the countries from the GBM Basin and/or South Asian Association for Regional Cooperation (SAARC) regions ratified the UNWC. The reasons for this include the perceived inability of the Convention to tackle the region's water problems, the low level of awareness about the Convention and its key substantive and procedural aspects. Furthermore, the principles of no significant harm and prior information and consultation on planned measures are sometimes misinterpreted as favouring downstream countries. Despite these challenges, the UNWC is widely regarded as the key document on international water law and provides clear guidance for the development of new water cooperation agreements.

Chapters 1 to 3 of this paper provide an overview of the evolution, principles and procedures of the UNWC and existing bilateral agreements and treaties in the Ganges River Basin; Chapter 4 provides a comparative analysis of the UNWC, focusing on its scope, principles, and procedures. Based on this comparative analysis, a conclusion and recommendations are provided in the final chapter.

Among all the treaties analysed in this paper, the Ganges Treaty and the Mahakali Treaty, both signed in 1996, are contemporary to the UNWC and encapsulate the principles of cooperation, equitable and reasonable use, prior notification, no significant harm and other accepted IWL principles. However, this study has determined that they do not appear to be backed by the clear procedures and guidelines for operationalisation.

Several weaknesses in the treaties have been found to lead to unilateral decision-making on shared river resources. The agreements between India and Nepal on the Gandak and Kosi Rivers are specific to infrastructural projects, and the Ganges Treaty between Bangladesh and India does not include all the countries in the Basin. Furthermore, this analysis also indicates that dispute resolution mechanisms are generally weak, and in many cases neither include a fixed timeline for resolution or are binding on the parties.

Overall, this analysis suggests the UNWC could be a tool for strengthening existing agreements on the Ganges River and could support the development of basin-level agreements.

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The research to produce this report was carried out as a part of Transboundary Rivers of South Asia (TROSA) programme. TROSA is a regional water governance programme supported by the Government of Sweden and implemented by Oxfam and partners in Bangladesh, India, Myanmar and Nepal. Comments and suggestions from the TROSA Project Management Unit are gratefully acknowledged.

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ACRONYMS

BRIDGE	Building River Dialogue and Governance
CSOs	Civil Society Organisations
Cusec	Cubic feet per second
DPR	Detailed project report
GBM	Ganges-Brahmaputra-Meghna
ILC	International Law Commission
IUCN	International Union for Conservation of Nature and Natural Resources
IWL	International Water Law
JC	Joint Committee
JRC	Joint River Commission
MRC	Mahakali River Commission
PDA	Pancheshwar Development Authority
PMP	Pancheshwar Multipurpose Project
SAARC	South Asian Association for Regional Cooperation
UN	United Nations
UNWC	United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses

GLOSSARY

Convention: The creation of a written agreement whereby the states participating bind themselves legally to act in a particular way or to set up particular relations between themselves. The term is used interchangeably with 'treaty'. Treaties are also known by a variety of differing names, ranging from International Agreements, Pacts, General Acts and Charters, through to Statutes, Declarations and Covenants.

Customary laws: Long-established practices commonly accepted as correct rules of action at local, national and international levels. (see *opinio juris*).

Customary water management laws: Group of non-formal norms and behaviours that are accepted by the community and that have endured over time in the society.

Due diligence: The steps taken (including financial, legal, technical and administrative) by a state to reach a legal standard of care recognised in order to reasonably avoid committing harm to another state.

Entry into force: A treaty comes or enters into force at a time when it becomes legally binding on the parties to the treaty. A treaty does not enter into force when it is adopted (opened for signature). The date of entry into force may be a date specified in the treaty or a date on which a specified number of ratifications, approvals, acceptances or accessions have been deposited with the depositary.

Equity: Principle under which all individuals that are in the same situation must abide by the same laws, without any type of distinction or discrimination.

Good faith: Conduct with honest intent, fairness and sincerity, and with no intention of deceit.

Inter alia: "Among other things." The phrase is used to make it clear that a list is not exhaustive.

Jurisdiction: The right in international law for a state to exercise authority over its national and persons and things in its territory.

Locus standi: The right to bring an action or challenge some decision.

Opinio juris: General belief by a state that a particular state practice is legally binding upon it.

Party: A state or regional economic integration organisation that has consented to be bound by a convention, treaty etc. once in force.

Ratification: Following signature, the expression of a state's consent to be bound by a treaty. Often the term ratification is used interchangeably with 'accession', 'approval' or 'acceptance'.

Regulation: A legally binding order or rule adopted by an administrative agency or local government

Sustainable utilisation: Comprises two key elements in the context of natural resources: rational use and the protection of the ecosystem. In the context of renewable resources this means protecting the long-term viability of the resources for present and future generations.

1 INTRODUCTION TO THE UNITED NATIONS WATERCOURSES CONVENTION

The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses is the key source of international law for governing the use of shared river basins, such as the Ganges Basin. As a global convention, its central objective is to provide a flexible legal framework within which more specific basin and/or watercourse treaties can be developed, providing context-specific governance mechanisms.

With the UNWC now enforceable, it is widely “anticipated to have a significant impact on water governance in trans-boundary river basins around the globe by bolstering the strength of regional treaties already in force, supporting the development of new agreements which are aligned to the internationally accepted water law principles, and by enhancing cooperation between states by inciting new states to accede to the Convention.”¹

1.1 BACKGROUND AND OVERVIEW

The UNWC is a pivotal convention for a number of reasons: it creates a strong framework for water governance arrangements and a basic common ground that enhances predictability and encourages reciprocity; codifies and clarifies existing norms and develops emerging principles of customary international water law; constitutes a model that can guide the interpretation of other treaties and the negotiation and drafting of future ones; and has informed the judgments of international and regional courts.

One of the key accomplishments of the UNWC is the codification of the general principles and procedures of international water law that interact with each other in their implementation. The UNWC is the first legal instrument adopted at the universal level that clearly spells out the “duty to cooperate” as a core principle of international water law.

1.2 EVOLUTION

The UNWC represents the culmination of nearly four decades of work on the codification of the progressive development of international water law. In 1959, Bolivia requested the United Nations (UN) General Assembly to examine legal problems relating to the utilisation and use of international rivers, leading to UN Resolution 1401(XIV). In 1963, the International Law Commission (ILC)² was tasked with studying and codifying progressive development of the law on non-navigational uses of international watercourses, which became UN Resolution 2669(XXV).

Following 20 years of work and 15 reports by eminent international jurists, the ‘draft articles’ for the UNWC were approved in 1994. Upon receiving the ILC’s draft articles, the UN General Assembly decided to convene a working group to negotiate a convention on the basis of these articles. The

¹ Litke & Rieu-Clarke, 4 Feb 2015

² <http://www.un.org/law/ilc/>

working group met on two occasions in 1996 and 1997, prior to the UNWC being adopted on 21 May 1997 by 103 votes in favour, 26 abstentions and 3 votes against. It entered into force once the Convention was ratified by 35 countries. Viet Nam became the 35th country to ratify the Convention on 17 August 2014.

1.3 OVERVIEW

The main purpose of the UNWC is to codify international norms relating to non-navigational uses of international watercourses. This is encapsulated in the Preamble with its stated aim to “ensure the utilisation, development, conservation, management and protection of international watercourses and the promotion of the optimal and sustainable utilisation thereof for present and future generations” and taking into account “the special situation and needs of developing countries.”

International rivers and transboundary ecosystems under the UNWC are referred to as ‘watercourses’, which has been legally defined to include all the connected surface and groundwater flowing into a common terminus. This means the ‘watercourse’, as derived from Article 2(a) and (b) of the Convention, applies to rivers that cross international boundaries, including major and minor watercourses, their tributaries, and connected lakes and groundwater, even when these individual components are entirely located within a single state.

The meeting record of the drafting committee provides insight into the concept of ‘watercourses and its application’. Initially, the drafting committee discussed the use of the term ‘international drainage basin’, but many states objected, arguing that this phrasing could result in regulation not only of water use, but also of land territory. Ultimately, the term ‘watercourse’ was chosen and supported by states. However, many academics argue that the scope of ‘watercourses’ as defined by Art. 1(1) of the UNWC indirectly applies to land-based activities within a river basin, to the extent that such activities might be relevant for the use, protection and management of an international watercourse.³

1.4 PRINCIPLES

The core of the UNWC Part II sets out general principles and includes what is regarded as the most significant provision in the whole text: ‘Equitable and Reasonable Utilisation and Participation’ (Articles 5 and 6). The Convention provides a detailed set of criteria for determining equitable and reasonable use irrespective of context, which include: (a) geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character; (b) the social and economic needs of the watercourse states concerned; (c) the population dependent on the watercourse in the watercourse state; (d) the effects of the use or uses of the watercourse in one watercourse state on other watercourse states; (e) existing and potential uses of the watercourse; (f) conservation, protection, development and economy of the water resources of the watercourse and the cost of measures taken to that effect; and (g) the availability of alternatives of comparable value to a particular planned or existing use.

³ <http://www.unwatercoursesconvention.org/the-convention/part-i-scope/article-2-use-of-terms/2-1-2-international-watercourse/>

Significantly, the UNWC is the first legal instrument adopted at the universal level that clearly spells out the duty to cooperate as a general principle of international water law (Art. 8). It further defines that cooperation shall be based on principles of sovereign equality, territorial integrity, mutual benefit and good faith. To support cooperative development of the basin, states are obligated “to take all appropriate measures” (Art. 7) to utilise an international watercourse so as not to cause significant harm to another riparian state.

1.5 PROCEDURES

Part III of the UNWC provides procedural guidelines, including an obligation of prior notification that must be followed when initiating any new planned measures in one state that may have significant detrimental impacts on other riparian states sharing the watercourse. It then outlines the environmental provisions by laying out the unqualified obligation for states to “protect and preserve the ecosystems of international watercourses” (Art. 20). The UNWC also outlines duties whereby states must immediately notify other states of emergency situations that pose an imminent threat to the basin states. These include both natural threats such as floods, ice breakage, landslides or earthquakes, and manmade threats such as industrial accidents (Articles 27 and 28).

Finally, it provides for dispute resolution procedures, allowing a state to pursue judicial and/or administrative procedures against another, and makes automatic dispute resolution procedures compulsory if negotiations are not settled within six months (Articles 32 and 33). Annexes to the UNWC outline specific processes such as Arbitration (Annex II).

1.6 ADOPTION AND ENTRY INTO FORCE

The UNWC was adopted by the UN General Assembly in 1997 as a total of 103 UN Member States voted in its favour. Only three countries voted against: Burundi, China and Turkey. Among the countries sharing the Ganges River, Nepal and Bangladesh (upper and lower riparian respectively) voted in favour of the UNWC, while India (a middle and upper riparian state) abstained from voting.

It took 17 years, until 2014, for the Convention to get the minimum of 35 ratifications required for it to come into force. There are various reasons for this delay. First, the Convention has no secretariat or any specific entity to push for its ratification. The timing of its adoption is also a factor; the 1990s are referred to as the “decade of treaty congestion,” with the global focus around the ratification of the UN Convention on Biological Diversity and the Kyoto Protocol. In South Asia, both the Ganges and Mahakali Treaties were signed in 1996; Cambodia, Lao PDR, Thailand and Viet Nam in the Lower Mekong were busy negotiating the Mekong River Agreement, which they signed in 1995.

The lack of awareness about the UNWC, especially regarding the content of its specific provisions and how they could be implemented, also contributed to the delay in ratification. None of the GBM or SAARC countries had ratified the UNWC. China expressed concerns about the number of articles, felt the Convention was too detailed and complex, and worried that the authority of fact-finding missions was too broad and could damage state confidentiality or commercial secrets. India disagreed with the

provision on mandatory third-party intervention, and Pakistan felt that the dispute resolution mechanisms were “not fully binding.”⁴

⁴ Salman, 2015

2 AGREEMENTS BETWEEN INDIA AND NEPAL

Currently, three bilateral agreements exist between India and Nepal on the three tributaries of the Ganges River. The agreements on the Kosi and Gandak Rivers were first signed in the 1950s, and the Mahakali Treaty was ratified in 1996. These Agreements were not inspired by any visions of basin-level cooperation; they were conceived by India and Nepal to solve specific problems, such as those related to flooding, or to jointly develop multipurpose dam projects.

2.1 THE REVISED AGREEMENT ON THE KOSI PROJECT BETWEEN NEPAL AND INDIA, 1966

2.1.1 EVOLUTION

The Kosi is a transboundary tributary of the Ganges River. It is 720km long from its origin to confluence with Ganges River, and drains an area of about 74,500km², which includes part of China (Tibet), India (Bihar) and Nepal. The Kosi River Basin is prone to flooding and is a highly meandering river.

The Kosi Project was sanctioned by the government of India in 1953 and then endorsed by the government of Nepal, followed by the signing of the agreement in 1954.⁵ The Kosi Project was the first joint venture between India and Nepal on a shared river and was presented as a mutually beneficial Multipurpose Scheme for both countries on flood control, irrigation and hydropower. However, due to criticism of the Kosi Project Agreement, particularly in Nepal, it was amended in 1966.

2.1.2 OVERVIEW

The Amended Agreement between His Majesty's Government of Nepal and the Government of India concerning the Kosi Project, 1966, (the Revised Kosi Agreement) defines the understanding between India and Nepal on implementing the Kosi Project for flood control, irrigation, generation of hydroelectric power and erosion control by India in the territory of Nepal.

Consisting of 16 Articles and the letters exchanged between the Parties, the Revised Kosi Agreement defines the terms and conditions for the surveys, investigations, construction, maintenance and operations of the Kosi Project, thus limiting the application of the Agreement to the rights, responsibilities and obligations of Parties with respect to the requirements of the project.

2.1.3 PRINCIPLES

The Revised Kosi Agreement is based on the principles of 'cooperation' and 'common benefits'. The Agreement clearly stipulates the rights and responsibilities of India and Nepal regarding the implementation of the Kosi Project. The Agreement implicitly recognises the concept of the 'river basin' when it refers to the soil conservation measures and afforestation in the catchment of the river

⁵For details on the origin of the Kosi Project, see Dinesh Kumar Mishra's "Refugees of the Kosi Embankments," https://www.indiawaterportal.org/sites/indiawaterportal.org/files/refugees-of-kosi-embankments_dinesh-kumar-mishra.pdf

in view of the “complete solution to the ‘Kosi problem’ in future.” Furthermore, Article 4 mentions the ‘Kosi Basin’ in reference to Nepal’s right to withdraw water for irrigation or any other purpose.

The Agreement is grounded in the well-established IWL principle of sovereignty. Although the Agreement allowed India to undertake construction and maintenance of the Kosi Project, there is clear recognition of Nepal’s right to withdraw water for irrigation and to use the river and its tributaries for navigation and fisheries.

2.1.4 PROCEDURES

The Agreement defines the procedures regarding the implementation of the Kosi Project, such as the authority of execution, royalties, land lease and compensation for use of land and the mechanism for dispute resolution.

As per the Agreement, the land and properties acquired as part of the ‘Kosi Project Area’ were leased to India for 199 years. The Agreement also provides that in case of intentional (public or private) land submergence, India will need to secure the prior approval of the government of Nepal. The Agreement requires compensation be paid for four classes of land: a) cultivated land, b) forest land, c) village land and d) immovable property.

Under the Agreement, Nepal is entitled to 50% of the total hydropower generated by any powerhouse situated within a 10 mile (16km) radius of the barrage site. The construction of transmission lines up to a mutually agreeable point on the India-Nepal border is also the responsibility of the Indian government. However, the power generated is not free for Nepal, and is subject to a mutually agreeable tariff.

The Agreement mentions that navigation and fishing rights in the Kosi River in Nepal will continue to rest with Nepal. However, navigation and fishing within two miles of the barrage is regulated through special permits issued by Nepalese authorities in consultation with the Executive Engineer of the Kosi Barrage.

Any dispute concerning the construction, effect or interpretation of any provision of the Agreement has to be settled through discussion. In cases where discussion fails, any party can give written notice to refer the case for arbitration. Within 90 days of the receipt of notice by the other party, a commonly agreed-upon arbitrator can decide the case. If the parties don’t agree to the decision of an arbitrator, the parties can consult and appoint an umpire whose decision will be final. However, the Agreement does not mention any timeline for resolving disputes.

2.1.5 ENTRY INTO FORCE

The Kosi Agreement came into force soon after it was signed in 1954. By the time it was revised in 1966, most of the works related to the Kosi Project had already been completed, a fact noted in the Preamble of the Revised Agreement. The Kosi Project and the Agreement had been contentious since the very beginning and were criticised in both India and Nepal. The objections raised in Nepal were on the grounds of the extraterritorial nature of the project, submergence of fertile land in Nepal, and unfair compensation. Though the Kosi Project (the main barrage) is under the territorial jurisdiction of Nepal, the Agreement does not envisage any role for the government agencies and institutions of Nepal in project implementation. All practical and operational measures, from project surveys to soil conservation and afforestation programmes to solve the Kosi flood problem, are to be decided by the State Government of Bihar (India) through a designated Chief Engineer of the Kosi Project.

In India, the Kosi Project has been criticised for its inability to solve the flood problem in the state of Bihar. The Kosi Agreement is therefore not regarded as progressive or adequate to manage such a dynamic river system as the Kosi for the permanent solution of flooding. There is a clear need to broaden the focus of the Agreement to include a basin-level approach and foster cooperation between India and Nepal to implement integrated river basin management approaches.

2.2 THE AGREEMENT ON THE GANDAK IRRIGATION AND POWER PROJECT, 1959 (REVISED 1964)

2.2.1 EVOLUTION

The Gandak River, also known as the Narayani or Gandaki, is one of the major rivers in Nepal and a left bank tributary of the Ganges in India. It has a total catchment area of 46,300km², most of it in Nepal.

The Agreement between His Majesty's Government of Nepal and the Government of India on the Gandak Irrigation and Power Project, 30 April 1964 (the Gandak Agreement) was concluded to operationalise the Irrigation and Power Project on the Gandak River in Nepal. The Gandak Agreement was approved by the Planning Commission of India and endorsed by the government of Nepal, leading to its signing on 4 December 1959. The Agreement was revised to address the concerns raised by Nepal and the revised Agreement was ratified in 1964.

2.2.2 OVERVIEW

The Gandak Agreement concerns the surveys and investigations for the construction, maintenance and operations of the Gandak Project. This includes the construction of a barrage and a system of irrigation and water distribution canals in Nepal where the Gandak River forms the boundary with India. The Gandak Agreement also includes provisions for India to construct a 15,000kW hydro-dam and transmission lines to share power between the two countries.

2.2.3 PRINCIPLES

Similar to the Kosi Agreement, the Gandak Agreement is based on the principles of enhancing the 'common interests' or 'common benefits' derived from the Gandak River by developing a barrage, irrigation canal infrastructure and hydropower. Significantly, Nepal's riparian rights and prior use rights to the Gandak River are respected so long as they do not give preference to the water requirements of the Gandak Project. The sovereignty and territorial jurisdiction of Nepal with respect to the lands made available to India for survey and investigation remains unimpaired under the Agreement.

2.2.4 PROCEDURES

The Gandak Agreement mentions procedures related to surveys, investigations, authorisation, land acquisition, land transfer, compensation and maintenance of primary, secondary and tertiary canal systems. The land acquired by the government of Nepal for the Gandak Project was to be transferred to the government of India for a one-time fee and additional land required for maintenance work etc. would be compensated on a case-by-case basis and mutually agreed upon.

The Gandak Agreement includes a provision to deal with accidents caused by damage to any Gandak Project structure (Art. 2(ii)). However, the responsibility for preventing such damage rests fully with

India. The dispute resolution mechanism is similar to that of the Kosi Agreement, including the provision of arbitrators and umpires.

2.2.5 ENTRY INTO FORCE

The Gandak Agreement was signed on 4 December 1959 but came into force only when it was amended in 1964. The Agreement has been criticised in Nepal for two main reasons. The first is the high social cost, as the project led to the submergence of fertile land and displacement of people without an adequate compensation and rehabilitation plan. The second is the low level of involvement by Nepalese institutions in the design, development and the maintenance of the project, except for the tertiary canal system, which had been handed over to Nepal after the project was completed. On the Indian side, the Gandak project is regarded as obsolete; it supplies water when it is not needed and does not serve the areas which are most water scarce.

2.3 THE MAHAKALI TREATY, 1996

2.3.1 EVOLUTION

The Treaty of His Majesty's Government of Nepal and the Government of India concerning the Integrated Development of the Mahakali River Including Sarada Barrage, Tanakpur Barrage and Pancheshwar Project, 12 February 1996 (the Mahakali Treaty) was negotiated against the backdrop of the 1920 Agreement on Sarada Barrage (Mahakali is known as 'Sarada' in India) and the 1991 Agreement on Tanakpur Barrage between India and Nepal on the Mahakali River System.

Nepal was not satisfied with its share of water under the Sarada Agreement. To address Nepal's concerns, and to find an alternative to the aging Sarada barrage, India and Nepal signed an Agreement for the construction of Tanakpur Barrage in December 1991. As per the Agreement, Nepal would provide India with land for the construction of Tanakpur barrage. In exchange, India agreed to share water with Nepal for irrigation. India also agreed to supply 10mW of electricity from the Tanakpur power station to Nepal, free of charge, as a "goodwill" gesture.

2.3.2 OVERVIEW

As indicated in the preamble, the Mahakali Treaty represents the desire of India and Nepal to jointly develop the Mahakali River's water resources. The Treaty defines the obligation of parties and their corresponding rights and duties.

The Treaty addresses the concerns in the Agreements on the Sarada Barrage (Art. 1) and defines the modalities for land transfer for the construction of the Tanakpur Barrages (Art. 2). The Treaty also provides a framework for the joint development and implementation of the Pancheshwar Multipurpose Project (PMP) on the stretch of the river forming the boundary between the two countries. The Treaty can be regarded as an improvement on earlier treaties between India and Nepal, as it acknowledges the need for integrated development of the Mahakali Basin and provides a mechanism to establish a Mahakali River Commission.

2.3.3 PRINCIPLES

The Treaty's preamble highlights the determination of the parties to cooperate to develop the Mahakali River's water resources, stated as a "duty to cooperate." The Treaty includes principles of reasonable and equitable utilisation, expressed through the provision of equal entitlement to Mahakali

water and through the joint development of the PMP to enhance hydropower, irrigation and flood control in each country. The Mahakali Treaty is the only treaty in South Asia that acknowledges the significance of river ecosystems (Art. 1(2)) and includes a provision for maintaining minimum flow in the Mahakali River (Art. 7). In addition, the water needs of communities is acknowledged (Art. 7), and the Treaty clarifies that maintenance of minimum flow shall not preclude the use of water by communities. There is explicit recognition of the no harm principle. The Treaty also provides for the establishment of a Mahakali River Commission guided by the principles of equality, mutual benefit and no harm to either party.

2.3.4 PROCEDURES

The Treaty defines the procedures linked to Nepal's rights to the water from the Sarada Barrage (Art. 1) and to the transfer of 2.9ha of land (in Jimuwa Village) by Nepal to India for the construction of the eastern afflux bund of the Tanakpur Barrage (Art. 2). However, the major focus of the Treaty is on defining the modalities linked to the joint development of the PMP on the stretch of river forming a boundary between the two countries. The Pancheshwar Development Authority (PDA) has been established as a dedicated institutional mechanism composed of an equal number of members from each country, responsible for the joint development of the PMP (Art. 10). The key functions of the PDA include collection of information, inspection of all structures created under the Treaty, and making recommendations for the implementation of the Treaty and conservation and utilisation of the Mahakali River. The Treaty also provides for the establishment of Mahakali River Commission (MRC) that would implement the Treaty, make recommendations on the conservation and use of Mahakali River and act as the first forum to examine any disputes between the parties concerning the interpretation or implementation of the Treaty. In case a dispute is not resolved by the MRC, the parties can jointly appoint an arbitrator. If the parties do not agree with the arbitrator's decision, within 90 days of receiving a proposal either party may request the Secretary-General of the Permanent Court of Arbitration at the Hague to appoint an arbitrator who is not a national of either country.

2.3.5 ENTRY INTO FORCE

The Mahankali Treaty could not be implemented immediately after its ratification by India and Nepal in 1997, but since it replaced the Sarada Agreement and Tanakpur Agreement, it remained in force with respect to the two projects mentioned in Articles 1 and 2. The implementation of the PMP has recently increased with the establishment of the PDA under Article 10. The PDA has been tasked with the preparation of a detailed project report (DPR) for the implementation of the PMP, but little has been discussed on the need for a Joint River Commission to support the integrated development of the basin.

3 AGREEMENTS BETWEEN BANGLADESH AND INDIA

3.1 THE GANGES TREATY, 1996

3.1.1 EVOLUTION

Bangladesh and India signed a Treaty of Friendship in 1972 and established the Joint Rivers Commission (JRC). A statute defining the composition and functions of JRC was agreed and signed by two countries in Dhaka on 24 November 1972..

In 1977, both countries signed a five-year agreement to share the Ganges waters at Farakka and to augment the river's flow in the dry season (1 January to 31 May). In the 1978 JRC meeting, both India and Bangladesh shared their proposals for augmenting dry season flow. Bangladesh's proposal was to store water by constructing dams and reservoirs in upper parts of the Ganges Basin, mostly in Nepal; India's proposal was to make an inter-basin transfer⁶ of water from the Brahmaputra to the Ganges River system through canals, based on the assumption that the Brahmaputra had plenty of water and was mostly untapped. Neither of these proposals materialised, but the devastating floods of 1988 in Bangladesh re-emphasised the need for bilateral cooperation and the Ganges Water Sharing Treaty was signed in 1996.

3.1.2 OVERVIEW

The Ganges Treaty marks an important advancement in the water governance relationship between the two countries, as the Treaty resolved the long-standing dispute over Ganges River water use during the dry season and was also the first time that a long-term (30-year) water governance agreement was signed by India and Bangladesh.

The Treaty includes 12 Articles and two Annexes. Articles I to III are concerned with the division of volumes of water based on a formula described in Annex I. Articles IV to VII provide for the establishment of a joint Committee (JC) consisting of an equal number of representatives nominated by both governments. Articles VIII and IX highlight the desire of the two countries to work together on a water-sharing agreement. Articles X to XII are concerned with the periodic review of the Treaty, the water-sharing formula when no agreement is in force and the Treaty's entry into force.

3.1.3 PRINCIPLES

The preamble mentions the term 'river basin' but the Treaty is for sharing volumes of water and does not account for the other values and uses of the river. It does not even take into consideration the uppermost riparian nation, Nepal, meaning that it neither takes a basin-level approach to river management nor factors in the effects of upstream use of the Ganges on water availability at the Farakka Barrage. There is no mention of basin-wide approaches to finding integrated solutions and increasing dry season flow. However, the Treaty under Articles IX and X clearly mentions that any future agreement on shared rivers between Bangladesh and India and future revisions of the Ganges Treaty shall be based on the principles of equity, fairness and no significant harm.

⁶ http://www.fao.org/nr/water/aquastat/countries_regions/profile_segments/gbm-Intlss_eng.stm

3.1.4 PROCEDURES

Articles I, II and III and two Annexes of the Treaty define the formula for sharing quantities of water between India and Bangladesh during the dry season, from 1 January to 31 May. Article IV defines the main responsibility of the JC, which is to support the implementation of the Treaty. The JC is entrusted with ensuring the availability of daily water flow data from the Farakka Barrage (India) and the Hardinge Bridge (Bangladesh). The JC is required to submit all data collected from the two locations and provide annual reports on the implementation of the Treaty to both governments. The JC is also responsible for looking into disputes that may arise between the Parties. If the JC fails to resolve the disputes, it must refer the Parties in conflict to the two governments.

3.1.5 ENTRY INTO FORCE

The Ganges Treaty entered into force upon signing and will remain valid for 30 years (until 2026). However, the Treaty has a provision which allows the parties to review it every five years or fewer (Art. X) based on mutual agreement and the principles of equity and no significant harm. Although the Treaty has not been amended or changed since it came into force on 12 December 1996, the downstream environmental impact of the Farakka Barrage and augmentation of water flow still remain contentious issues for Bangladesh. This has hindered the full implementation of the Treaty or the development of a basin-level management approach to augmenting dry season flow.

4 COMPARATIVE LEGAL ANALYSIS OF THE UNWC AND AGREEMENTS ON GANGES RIVERS

4.1 THE UNWC AND THE KOSI AGREEMENT, 1966

4.1.1 SCOPE AND DEFINITIONS

UNWC, 1997	The Revised Agreement between India and Nepal on the Kosi Project, 1966
<p>The UNWC applies to uses of international watercourses other than navigation and to measures for the purposes of “protection, preservation and management related to the uses of those watercourses and their waters” (Article 1(1)). Watercourse uses which affect navigation or which are affected thereby also fall within the scope of the Convention.</p> <p>Under the UNWC, “watercourse” is defined as a river system including both surface water, which incorporates a river’s tributaries, as well as groundwater, flowing into a common terminus (Article 2(a)). An “international watercourse” is one which falls within or touches the boundary of two or more states (Article 2(b)). A “watercourse state” is a “State Party to the present Convention in whose territory part of an international watercourse is situated or a Party that is a regional economic integration organization, in the territory of one or more of whose member states part of an international watercourse is situated” (Article 2(c)). A “regional economic integration organization” is any regional inter-governmental institution which operates for the purposes of economic integration and development (Article 2(d)).</p>	<p>The Kosi Agreement is for the implementation of the Kosi Project and not one that reflects an understanding between the countries to jointly manage the entire Kosi watercourse. The Agreement is about procedure and protocols to be followed for constructing the Kosi Barrage and for carrying out other civil works in the area acquired for the Kosi Project in Nepalese territory.</p> <p>Though its primary objective is to achieve flood control and other non-navigational uses of Kosi waters such as irrigation and hydropower, the Agreement does not define navigational rights in the Kosi in Nepal. The Agreement focuses on the Kosi Project rather than the Kosi River throughout its text and does not define the river and its tributaries as the Indo-Nepal Kosi Basin.</p>
<p>Compatibility and gaps</p> <ul style="list-style-type: none"> The scope of the Kosi Agreement is very limited compared to the UNWC definition of watercourses and nowhere defines the Kosi River Basin or the Kosi system. There is no mention of groundwater in the entire text of the Agreement, though there is mention of the tributaries of the Kosi River in Nepal with regard to Nepal’s rights to this water. 	

4.1.2 SUBSTANTIVE PRINCIPLES: SUSTAINABLE DEVELOPMENT

The UNWC refers explicitly to the principle of sustainable development in its text. Article 24, which concerns the management of international watercourses, stipulates that “Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism.” Articles 24(1) and 24(2) then state that “for the purposes of this article, ‘management’” refers, in particular, to: (a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and (b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.” In this regard, the UNWC provides a legal reference point for the practical application and utilisation of the principle of sustainable development as it pertains to the planning and adoption of plans in the overall management of an international watercourse.

The Agreement on the Kosi Project makes no explicit or implicit reference to the principle of sustainable development of the Kosi River or Kosi Basin.

The Chief Engineer of the Kosi Project is responsible for overseeing the implementation of the Treaty, carrying out surveys and investigations on storage dams or detention dams on the Kosi, and taking the soil conservation and afforestation measures required to completely solve flood problems in the Kosi Basin. The Agreement seeks to solve the Kosi problem permanently but there is no clear mechanism to achieve this sustainably, as the Agreement does not mention sustainable development. This may be attributed to the developments in international environmental law since the Agreement was signed, and the fact that the concept of sustainable development itself only gained worldwide traction in the 1970s.

Compatibility and gaps

- The Kosi Agreement nowhere refers to ‘sustainable management’ of the Kosi Basin, whereas in the UNWC, the focus is on integrated basin-level development.
- There are no control measures that would ensure the protection of the Kosi River. Soil conservation and afforestation, which are necessary for silt management and which ideally require joint planning and execution with upstream stakeholders (Nepal, in this case), were completely left to the Chief Engineer of the Kosi Project. As a result, the parties completely lack the obligation to ensure de-silting of the barrage and flood protection embankments.

4.1.3 SUBSTANTIVE PRINCIPLES: EQUITABLE AND REASONABLE UTILISATION

In the context of international watercourses, legal experts have determined that the term “equitable” within the UNWC and customary international law can be understood to mean “the equal right to use the water for beneficial purposes, rather than division into equal portions.” The UNWC does not define what “equitable and reasonable” means in specific legal terms; instead, it provides guidance on how equitable and reasonable utilisation is to be determined in a practical sense by listing the major indicative factors to be considered when evaluating whether or not a new or increased use is consistent with the principle in Articles 5 and 6.

The Kosi Agreement does not provide a framework for sharing or allocation of water. However, the Agreement seeks to acquire the benefits from the Kosi Project equitably. The Agreement also does not interfere with Nepal’s prior usage rights of the Kosi River.

Compatibility and gaps

- There is no clear mention of equitable and reasonable criteria for determining the benefits from the Kosi Project within the context of Article 6 of the UNWC. This can be attributed to the lack of guidance and scientific calculation of benefits from the Kosi Project at the time of conception and implementation. The Kosi Agreement would benefit from guidance provided by Article 6 of the UNWC to reassess the uses of the Kosi Basin resources and the Kosi Project.

4.1.4 SUBSTANTIVE PRINCIPLES: OBLIGATION NOT TO CAUSE SIGNIFICANT HARM (AND RELATED DUTY TO PROTECT ECOSYSTEMS)

Article 7 of the UNWC deals in detail with the general obligation not to cause significant harm. It begins by stating that “Watercourse States shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States” (Article 7(1)). Directly related to this general obligation, Article 7(2) goes on to specify that “where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of Articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.” It is this explicit reference to “having due regard” that many legal experts consider as giving ultimate legal primacy to the principle of equitable and reasonable utilisation over the obligation not to cause significant harm. Indeed, this direct reference “in effect recognizes that, where it can be shown that significant harm occurs, but it can also be proven that such harm is equitable and reasonable, a State will be in compliance with international law” and *inter alia* customary international law as codified within the UNWC.

The Agreement does not include any type of ‘no harm’ rule. However, Article 3 includes safeguards in the implementation of the Kosi Agreement. Major construction work not envisaged in the amended plan (Amended Annex A) under the Agreement referred to in Clause 1(ii) requires the prior approval of the government of Nepal. After approval is received, then construction can be allowed to start

Thus, in effect, the Agreement imposes an obligation of prior notification for new measures and puts in place a clearance mechanism by way of prior approval of the government for whose territory new construction measures are planned.

Compatibility and gaps

- The references to safeguards are in Article 3 of the Kosi Agreement, which requires the prior approval of Nepal. The consultation mechanism, though weak, is present. However, the element of due diligence to eliminate or mitigate threats or imminent danger resulting from the planning and implementation of the Kosi Project is missing.
- Compensation under the Kosi Agreement remains a very controversial issue. The Agreement provides a detailed methodology to determine compensation for submerged land but does not provide any mechanism for compensation if the project causes significant harm.

4.1.5 PROCEDURAL OBLIGATIONS: PRINCIPLE OF COOPERATION AND INFORMATION EXCHANGE

The over-arching duty to cooperate is encapsulated in Article 8 of the UNWC where it obliges watercourse states to “*cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith* in order to attain optimal utilization and adequate protection of an international watercourse” (Article 8(1)).

The Kosi Agreement includes several provisions on cooperation and information exchange. However, this is specific to the Kosi Project and not any planned measures. The sovereignty rights and territorial jurisdiction of the government of Nepal, including the application and enforcement of the law of Nepal on issues linked to leasing of land, are unimpaired (Art. 5(5)). Regarding information exchange, the Agreement requires that all data, specimens, reports and other results of surveys and investigations carried out by or on behalf of the Government of India shall be made available to Nepal. In turn, Nepal is also obligated to share any relevant data upon India's request.

Compatibility and gaps

- The sovereign equality of Parties is clearly mentioned in the text of the Kosi Agreement, and the data and information-sharing mechanism is detailed. However, the requirements for data sharing are narrow, only focusing on the project area in Nepal with no obligation for data sharing from any other part of the river in either India or Nepal. Information exchange under the Kosi Agreement is therefore reciprocal in a true sense.

4.1.6 PROCEDURAL OBLIGATIONS: PRINCIPLE OF PRIOR NOTIFICATION, CONSULTATION AND NEGOTIATION (OVER PLANNED MEASURES)

Article 11 of the UNWC requires Parties to exchange information, consult each other and, if necessary, negotiate plans with regard to their possible effects on the condition of a given international watercourse. Article 13(a) dictates that the state providing notification must allow six months for the notified state(s) to evaluate this information, carry out their own studies, and ultimately reply. With regard to consultations and negotiations, Article 17(1) dictates that where the notifying state has communicated via reply that they determine the planned measure is inconsistent with Articles 5 and/or 7, both the notifying and notified states are bound to “enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation.” In this regard, all states must engage in any consultations and negotiations “in good faith [and] pay reasonable regard to the rights and legitimate interests of the other State” (Article 17(2)).

Obligations for notification and consultation can be found throughout the Kosi Agreement, but they pertain to the planned measures already agreed upon by the Parties. As per Article 3 of the Kosi Agreement, any major construction work which is not mentioned in the Agreement requires prior approval from Nepal. There is an obligation under the Agreement to acquire prior approval, notify Nepal and include them in various activities during the construction phase of the Project. However, no such obligation exists for the post-construction phase, which leaves a considerable gap in the implementation framework.

Compatibility and gaps

- Similar to the UNWC, the Kosi Agreement includes provisions for prior notification and approval for unplanned measures not listed in the Annexes of the Agreement. However, the scope of the prior notification and consultation clause of the Kosi Agreement is limited to the construction phase and for areas and territory not included in the plan, whereas the UNWC sets the overall procedural obligation to provide information and notification for all planned measures on a shared watercourse.

4.1.7 PROCEDURAL OBLIGATIONS: DISPUTE RESOLUTION PROCEDURES

<p>Article 33 of the UNWC, supported by the only Annex to the Convention’s text, provides the UNWC legal framework for the settlement of disputes. Article 33(1) stipulates that in the absence of an applicable agreement, in the event of a dispute between two or more parties concerning the interpretation or application of the UNWC, states are obligated to “seek a settlement of the dispute by peaceful means.”</p> <p>State parties to the UNWC are bound by the subsequent provisions under Article 33. Article 33(2) dictates that if such parties to a dispute fail to reach an agreement via negotiation = they can then “jointly seek the good office, or request mediation or conciliation by, a third party, or make use, as appropriate, of any joint water course institutions that may have been established by the agreement to submit the dispute to arbitration or to the International Court of Justice.”</p> <p>Article 33(3) provides detailed timelines and procedures whereby, if after six months from the time a state party requests negotiations the parties to the dispute have failed to negotiate a solution, the dispute must “be submitted, at the request of any of the parties to the dispute, to impartial fact-finding in accordance with paragraphs 4 to 9, unless the parties so otherwise agree.” The legal role and relevance of impartial fact finding in the overall scheme of the UNWC dispute resolution procedures cannot be underestimated because it is largely unique to this framework agreement within the field of international water law and transboundary basin or river agreements. Furthermore, given the range of dispute settlement mechanisms provided by Article 33(2), it remains the only truly non-negotiable, binding procedure within the UNWC.</p>	<p>The Kosi Agreement envisages that disputes be settled peacefully but does not clearly stipulate the level at which parties need to engage for settlement of such disputes. The Agreement states that “in the event of disputes arising out of the construction of the Kosi Project or the interpretation of the 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.”</p> <p>The Agreement also stipulates how arbitration be carried out. If a dispute arises, any of the parties may give notice in writing to the other party of its intention to refer the dispute to arbitration. Upon the delivery of such notice, within 90 days, the two parties shall nominate an arbitrator. If the dispute is not resolved, the Agreement requires an umpire be appointed through mutual consultation. The umpire’s decision shall be final and binding.</p> <p>The mechanism appears to be three-tiered but has inherent weaknesses. Firstly, the parties are not obligated to inform each other of their intention to go to arbitration. Secondly, the precise wording is that a dispute is to be “determined,” not resolved. If the parties fail to appoint arbitrators, then they are not obligated to settle the dispute by any other means. If an issue requires urgent attention, 90 days to nominate an arbitrator is too long. Failure of arbitration can lead to a total failure of the dispute mechanism, as it can be completely defeated if the two parties do not agree on the umpire they want to appoint.</p>
<p>Compatibility and gaps</p> <ul style="list-style-type: none"> • The Kosi Agreement does provide for a dispute settlement mechanism. With inherent weaknesses in the process as highlighted above, the mechanism is almost insignificant as the dispute can only be ‘determined’ and not necessarily resolved. The parties have no obligation to appoint an umpire in case of disagreement. Another major gap compared to UNWC is that countries under the Kosi Agreement have no <i>locus standi</i> to seek third party help if harm has been done. 	

4.2 THE UNWC AND THE GANDAK IRRIGATION AND POWER PROJECT, 1964

4.2.1 SCOPE AND DEFINITIONS

UNWC, 1997	The Agreement between India on the Gandak Irrigation and Power Project, 1964
<p>The UNWC applies to uses of international watercourses other than navigation and to measures for the purposes of “protection, preservation and management related to the uses of those watercourses and their waters” (Article 1(1)). Watercourse uses which affect navigation or which are affected thereby, also fall within the scope of the Convention.</p> <p>Under the UNWC, “watercourse” is defined as a river system including both surface water, which incorporates a river’s tributaries, as well as groundwater, flowing into a common terminus (Article 2(a)) ; “International Watercourse” is one which falls within or touches the boundary of two or more states (Article 2(b)) ; “watercourse state” is a “State Party to the present Convention in whose territory part of an international watercourse is situated or a Party that is a regional economic integration organization, in the territory of one or more of whose member states part of an international watercourse is situated” (Article 2(c)) ; and a “regional economic integration organization” is any regional inter- governmental institution which operates for the purposes of economic integration and development (Article 2(d)).</p>	<p>The Gandak Agreement is for the implementation of the Gandak Irrigation and Power Project with no basin focus. Though the Agreement is not on the navigational uses of the Gandak River, it does have a provision on the regulation of riverine traffic across the barrage.</p> <p>The Agreement focuses on the Gandak Project and the obligation of each party with respect to the requirements of the Project during construction, operations and maintenance. The Agreement is silent when it comes to the Gandak Basin or its tributaries.</p>
<p>Compatibility and gaps</p> <ul style="list-style-type: none"> The Gandak Agreement, being project-centric, significantly diverges from the UNWC definition of watercourses or shared rivers. The Agreement nowhere defines the Gandak River or the Gandak system and its tributaries. There is no mention of groundwater in the entire text of the Agreement. 	

4.2.2 SUBSTANTIVE PRINCIPLES: SUSTAINABLE DEVELOPMENT

The UNWC refers explicitly to the principle of sustainable development in its text. Article 24, concerns the management of international watercourses. It stipulates that “Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse., which may include the establishment of a joint management mechanism” (Articles 24(1) and 24(2)), and then states that “for the purposes of this article, ‘management’ refers, in particular, to: (a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and (b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.” In this regard, the UNWC provides a legal reference point for the practical application and utilisation of the principle of sustainable development as it pertains to the planning and adoption of plans in the overall management of an international watercourse.

The Agreement on the Gandak Project does not make explicit or implicit reference to the principle of sustainable development of the Gandak River Basin. Quarrying in the Project area for the construction and maintenance of the Project can be carried out after obtaining permission from Nepal and paying rental fees on the area (Art. 4). Though the Agreement includes post-project maintenance it does not envisage any sustainability plan for the development of integrated basin management approaches.

Compatibility and gaps

The Gandak Agreement nowhere refers to ‘sustainable management’ of the Gandak River Basin and its resources.

4.2.3 SUBSTANTIVE PRINCIPLES: EQUITABLE AND REASONABLE UTILISATION

In the context of international watercourses, legal experts have determined that the term “equitable” within the UNWC and customary international law can be understood to mean “the equal right to use the water for beneficial purposes, rather than division into equal portions.” The UNWC does not define what “equitable and reasonable” means in specific legal terms; it instead provides guidance on how equitable and reasonable utilisation is to be determined in a practical sense by listing the major indicative factors to be considered when evaluating whether or not a new or increased use is consistent with the principle in Articles 5 and 6.

The Treaty nowhere defines equitable and reasonable utilisation but does include an agreed-upon formula for sharing irrigation and hydropower benefits. However, due to the limited scope of the Treaty, the focus of benefit-sharing is limited to those from the Gandak Project itself.

Under the Gandak Agreement, the beneficial uses of water for consumptive and non-navigational uses arising from the Project should be shared equitably. The Agreement also does not interfere with upstream Nepal’s prior usage rights in the Gandak River.

Compatibility and gaps

- Article 6 of the UNWC provides practical guidance for determining equitable and reasonable use, but in the Gandak Agreement, the scope of benefit sharing is limited to benefits derived from the Gandak Project.

4.2.4 SUBSTANTIVE PRINCIPLES: OBLIGATION NOT TO CAUSE SIGNIFICANT HARM (AND RELATED DUTY TO PROTECT ECOSYSTEMS)

Article 7 of the UNWC deals in detail with the general obligation not to cause significant harm. It begins by stating that “Watercourse States shall, in utilising an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States” (Article 7(1)). Directly related to this general obligation, Article 7(2) goes on to specify that “Where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of Articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.” It is this explicit reference to “having due regard” that many legal experts consider as giving ultimate legal primacy to the principle of equitable and reasonable utilisation over the obligation not to cause significant harm. Indeed, this direct reference “in effect recognizes that, where it can be shown that significant harm occurs, but it can also be proven that such harm is equitable and reasonable, a State will be in compliance with international law” and *inter alia* customary international law as codified within the UNWC.

The Agreement does not mention the no harm principles. The safeguards on the implementation of planned measures are contained in Article 2(ii), which stipulates that in case of any imminent danger, the officers of the government of India will take action and execute all necessary work to prevent such accidents. The involvement of Nepal in the process is not required under the Agreement. Thus, in effect, the Agreement does not obligate all parties to be notified and places all responsibility for harm prevention, mitigation and response on the government of India.

There is also no mention of a post-project compensation mechanism. Only compensation for the lands acquired has to be given at the time of acquisition.

Compatibility and gaps

- The Gandak Agreement has much to learn from the UNWC on the no harm principle and its substantive and procedural dimensions.

4.2.5 PROCEDURAL OBLIGATIONS: PRINCIPLE OF COOPERATION AND INFORMATION EXCHANGE

<p>The overarching duty to cooperate is encapsulated in Article 8 of the UNWC where it obliges watercourse states to “<i>cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith</i> in order to attain optimal utilisation and adequate protection of an international watercourse” (Article 8(1)).</p>	<p>The principle of ‘cooperation’ runs throughout the text of the Gandak Agreement in various activities linked to the implementation and operation of the Gandak Project, such as investigation and surveys (Art. 1), execution and maintenance (Art. 2), land acquisition (Art. 3), communication (Art. 5), and irrigation and power development (Articles 7 and 8).</p>
<p>Compatibility and gaps</p> <ul style="list-style-type: none">• The Gandak Agreement promotes cooperation between the states on the issue of joint investigation, as well as during the construction and operation of the Project. Comparing the provisions of the Treaty with the elements of cooperation as envisaged under the UNWC, the territorial integrity of the Parties is unimpaired, and the mutual benefits are articulated as common interest and common benefit.	

4.2.6 PROCEDURAL OBLIGATIONS: PRINCIPLE OF PRIOR NOTIFICATION, CONSULTATION AND NEGOTIATION (OVER PLANNED MEASURES)

Article 11 of the UNWC obliges states to: exchange information, consult each other and, if necessary, negotiate on the possible effects of planned measures on the condition of an international watercourse. Article 13(a) dictates that the state providing notification must allow six months for the notified state(s) to evaluate this information, carry out their own studies, and ultimately reply. With regard to consultations and negotiations, Article 17(1) dictates that where the notifying state has communicated via reply that they determine the planned measure is inconsistent with Articles 5 and/or 7, both the notifying and notified states are bound to “enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation.” In this regard, all states must engage in any consultations and negotiations “in good faith [and] pay reasonable regard to the rights and legitimate interests of the other State” (Article 17(2)).

In the Gandak Agreement, notification and consultation runs concurrent to the implementation of planned measures during the construction phase. Following construction, there is very little scope for notification, consultation or negotiation. A majority of issues that would ordinarily require notification are agreed upon in the Treaty itself with the responsibility of prior notification resting with the Chief Engineer of the Gandak Project. For post-construction and maintenance of the Project, all activities, even in the instance of an anticipated accident, are already authorised by Nepal, negating any need or possibility for any kind of prior notification.

Compatibility and gaps

- There is no obligation on either party to notify or consult each other on any aspects of the Gandak River after the Gandak Project is completed. The only platform to raise any issue remains the Joint Kosi and Gandak Committee, which meets from time to time.

4.2.7 PROCEDURAL OBLIGATIONS: DISPUTE RESOLUTION PROCEDURES

Article 33 of the UNWC, supported by the only Annex to the Convention's text, provides the UNWC legal framework for the settlement of disputes. Article 33 (1) stipulates that in the absence of an applicable agreement, in the event of a dispute between two or more parties concerning the interpretation or application of the UNWC, states are obligated to "seek a settlement of the dispute by peaceful means."

State parties to the UNWC are bound by the subsequent provisions under Article 33. Article 33 (2) dictates that if such parties to a dispute fail to reach an agreement via negotiation requested by one (or more of them in the case of multiple parties) they can then "jointly seek the good office, or request mediation or conciliation by a third party, or make use, as appropriate, of any joint water course institutions that may have been established by the agreement to submit the dispute to arbitration or to the International Court of Justice."

Article 33 (3) provides detailed timelines and procedures whereby, if after six months from the time of a state party requesting negotiations the parties to the dispute have failed to settle through negotiation or other means, the dispute must "be submitted, at the request of any of the parties to the dispute, to impartial fact-finding in accordance with paragraphs 4 to 9, unless the parties so otherwise agree." The legal role and relevance of impartial fact-finding in the overall scheme of the UNWC dispute resolution procedures cannot be underestimated because it is largely unique to this framework Agreement within the field of international water law and transboundary basin/river agreements. Furthermore, given the range of dispute settlement mechanisms provided via Article 33 (2), it remains the only truly non-negotiable, binding procedure within the UNWC.

The Gandak Agreement provides for resolution of disputes concerning the construction of the Project or interpretation of the Treaty through discussion (peaceful means). In case the dispute is not resolved, either party can inform the other in writing about their intention to refer a dispute for arbitration. If the case is selected for arbitration, each party must nominate its arbitrator, whose decision would be final and binding. In case the arbitrators are unable to agree, then the parties, after due consultation, would appoint an umpire, whose decision would be final and binding.

The provision of a neutral arbitrator is similar to the independent fact-finding mission as defined under the UNWC.

Compatibility and gaps

- Unlike the UNWC, the Gandak Agreement has no binding dispute-settlement mechanism. Any dispute between the Parties on the construction, effect or meaning of the Agreement needs to settle it by discussion or arbitration. However, there is no time limit defined within which the parties should resolve the dispute.

4.3 THE UNWC AND THE MAHAKALI TREATY, 1996

4.3.1 SCOPE AND DEFINITIONS

UNWC	The Mahakali Treaty, 1996
<p>The UNWC applies to uses of international watercourses other than navigation and to measures for the purposes of “protection, preservation and management related to the uses of those watercourses and their waters” (Article 1(1)). Watercourse uses which affect navigation, or which are affected thereby, also fall within the scope of the Convention.</p> <p>Under the UNWC, “watercourse” is defined as a river system including both surface water, which incorporates a river’s tributaries, as well as groundwater, flowing into a common terminus (Article 2(a)) ; “international watercourse” is one which falls within or touches the boundary of two or more states (Article 2(b)) ; “watercourse state” is a “State Party to the present Convention in whose territory part of an international watercourse is situated or a Party that is a regional economic integration organization, in the territory of one or more of whose member states part of an international watercourse is situated” (Article 2(c)) ; and a “regional economic integration organization” is any regional inter-governmental institution which operates for the purposes of economic integration and development (Article 2(d)).</p>	<p>The Mahakali Treaty is for non-navigational uses and the integrated development of the Mahakali River. The Treaty’s preamble clearly acknowledges the transboundary nature of the Mahakali River by recognising it as a boundary river between the two countries.</p>
<p>Compatibility and gaps</p> <ul style="list-style-type: none"> The scope of the definition of watercourses is very limited under the Mahakali Treaty. There is no acknowledgement of the tributaries of the Mahakali River, and the focus is on the stretch of river forming the boundary between India and Nepal. 	

4.3.2 SUBSTANTIVE PRINCIPLES: SUSTAINABLE DEVELOPMENT

The UNWC refers explicitly to the principle of sustainable development in its text. Article 24, which concerns the management of international watercourses, stipulates that “Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism” (Articles 24(1) and 24(2)), and then states that “for the purposes of this article, ‘management’” refers, in particular, to: (a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and (b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.” In this regard, the UNWC provides a legal reference point for the practical application and utilisation of the principle of sustainable development as it pertains to the planning and adoption of plans in the overall management of an international watercourse.

The Mahakali Treaty refers to the ecological needs of the river and acknowledges the need to preserve the river ecosystem (Art. 1(2)). The Parties are may not obstruct or divert the natural flow of the Mahakali River, except through prior agreement (Art. 7).

The Treaty acknowledges the spirit of joint development of the Mahakali River through collaborative means and seeks to promote it on the basis of ‘equal partnership’ (Preamble), joint operations (Art. 2(2a)), joint studies and preparation of a DPR and mobilisation of finances for joint projects (Art. 3).

The Treaty provides for a Mahakali River Commission, consisting of an equal number of members from both countries, to support the integrated development of the Mahakali Basin. The Commission is tasked with making recommendations to both Parties for the conservation and utilisation of the Mahakali River.

Compatibility and gaps

- In effect, the Mahakali Treaty does have very clear provisions to ensure sustainable development of the river basin within the meaning of Article 24 of the UNWC. There are elements within the Treaty that can be collectively interpreted to provide a framework to address ecological aspects of the river. For example, there is an acknowledgement of the need to preserve the river ecosystem and not to obstruct or divert the natural flow of the river. However, these are not supported by clear procedural guidelines.

4.3.3 SUBSTANTIVE PRINCIPLES: EQUITABLE AND REASONABLE UTILISATION

<p>In the context of international watercourses, legal experts have determined that the term “equitable” within the UNWC and customary international law can be understood to mean “the equal right to use the water for beneficial purposes, rather than division into equal portions.” The UNWC does not define what “equitable and reasonable” means in specific legal terms; it instead provides guidance on how equitable and reasonable utilisation is to be determined in a practical sense by listing the major indicative factors to be considered when evaluating whether or not a new or increased use is consistent with the principle in Articles 5 and 6.</p>	<p>Under the Mahakali Treaty, the Parties are equally entitled to utilise the Mahakali River without prejudice to their respective existing consumptive uses of the waters (Art. 3). In addition to the equal entitlement clause, the Treaty also provides for a joint approach to the development and utilisation of the water resources through the establishment of the Mahakali River Commission (Art. 9).</p> <p>As per the Treaty, the water requirements of Nepal are given priority consideration (Art. 5). However, it is not clear whether this priority consideration is to be given with respect to existing or future utilisation. The Treaty entitles each Party to draw an equal share of water from specified and mutually agreed-upon points (Art. 5).</p>
<p>Compatibility and gaps</p> <ul style="list-style-type: none">• The UNWC and Mahakali Treaty are compatible as far as the ‘equal rights’ of watercourse states to consume water for beneficial use is concerned. The Mahakali Treaty respects the consumptive use of both countries but does not mention whether it is the consumptive use at the time of ratification or also includes future use, making it difficult to apply the criteria for determining equitable and reasonable utilisation as defined by Article 6 of the UNWC.	

4.3.4 SUBSTANTIVE PRINCIPLES: OBLIGATION NOT TO CAUSE SIGNIFICANT HARM (AND RELATED DUTY TO PROTECT ECOSYSTEMS)

Article 7 of the UNWC deals in detail with the general obligation not to cause significant harm. It begins by stating that “Watercourse States shall, in utilising an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States” (Article 7(1)). Directly related to this general obligation, Article 7(2) goes on to specify that “Where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of Articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.” It is this explicit reference to “having due regard” that many legal experts consider as giving ultimate legal primacy to the principle of equitable and reasonable utilisation over the obligation not to cause significant harm. Indeed, this direct reference “in effect recognizes that, where it can be shown that significant harm occurs, but it can also be proven that such harm is equitable and reasonable, a State will be in compliance with international law” and *inter alia* customary international law as codified within the UNWC.

The Treaty obligates the Parties to protect the ecosystem of the Mahakali River. Firstly, downstream flow shall be maintained to protect the River ecosystem (Art. 1). Secondly, in order to maintain the flow and level of the waters of the Mahakali River, each Party has an obligation not to obstruct or divert its waters, except by agreement (Art. 7). Both countries are allowed to make unilateral decisions on the Mahakali tributaries within their territories (Art. 8) as long as they maintain the natural flow of the main river.

The unilateral development of the river is not allowed on stretches where it forms a boundary between two countries, and any future project on the boundary stretch of the river is to be developed based on agreement between the Parties (Art. 6)

Compatibility and gaps

- The no harm principle as defined by the UNWC is also encapsulated in the Mahakali Treaty. However, the provisions linked to the establishment of Mahakali River Commission has not been operationalised, leading to limited applicability of no harm principles at the basin level. There exists a joint platform in the form of the PDA, but it has a limited mandate that focuses on the implementation of the Pancheshwar Multi-purpose Project (Art. 9).

4.3.5 PROCEDURAL OBLIGATIONS: PRINCIPLE OF COOPERATION AND INFORMATION EXCHANGE

The overarching duty to cooperate is encapsulated in Article 8 of the UNWC where it obliges watercourse states to “*cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith* in order to attain optimal utilization and adequate protection of an international watercourse” (Article 8(1)).

All planned measures under the Mahakali Treaty are to be undertaken in the spirit of equal partnership. For the Pancheshwar Multi-purpose Project, the Treaty provides for a joint body, the Pancheshwar Development Authority, for the development of a detailed project report and the mobilisation of finances (Art. 3). Any measures on the stretch of river that forms the boundary between the two countries have to be implemented through a mutual agreement between the Parties (Art. 6). The Treaty provides for the Mahakali Commission to coordinate efforts between the governments for the integrated development of the basin.

Compatibility and gaps

- Both the UNWC and the Mahakali Treaty provide for information exchange as one of the measures to adhere to the overall obligation to cooperate. All the planned measures under the Mahakali Treaty are to be executed through joint efforts right from the planning stage. However, cooperation is only limited to the stretch of the river forming a boundary between India and Nepal. Both countries are free to unilaterally develop other parts of the river and its tributaries within their respective territory.

4.3.6 PROCEDURAL OBLIGATIONS: PRINCIPLE OF PRIOR NOTIFICATION, CONSULTATION AND NEGOTIATION (OVER PLANNED MEASURES)

Article 11 of the UNWC obliges states to: exchange information, consult each other and, if necessary, negotiate on the possible effects of planned measures on the condition of an international watercourse. Article 13(a) dictates that the state providing notification must allow six months for the notified state(s) to evaluate this information, carry out their own studies, and ultimately reply. With regard to consultations and negotiations, Article 17(1) dictates that where the notifying state has communicated via reply that they determine the planned measure is inconsistent with Articles 5 and/or 7, both the notifying and notified states are bound to “enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation.” In this regard, all states must engage in any consultations and negotiations “in good faith [and] pay reasonable regard to the rights and legitimate interests of the other State” (Article 17(2)).

The Mahakali Treaty promotes joint planning and implementation which *inter alia* requires notification, consultation and negotiations over planned measures. The parties are at liberty to form project-specific joint entities for the planning and execution of mutually beneficial projects (Art. 10). The Treaty also provides mechanisms for prior consultation and notification through the establishment of project-specific joint bodies (Art. 3) and the Mahakali Commission (Art. 9). Any future project on the stretch of the Mahakali River forming a boundary between the two countries needs to be designed and implemented by an agreement between the parties under the principles established by the Treaty (Art. 6).

Compatibility and gaps

- The Treaty provides for operationalisation of the principles of notification and consultation through the formation of a Joint Commission. However, the scope of the Treaty is limited to the stretch of the river forming the boundary between India and Nepal and does not apply to the Mahakali Basin as a whole. The two countries are allowed to unilaterally develop the tributaries of the Mahakali River within their territory.

4.3.7 PROCEDURAL OBLIGATIONS: DISPUTE RESOLUTION PROCEDURES

Article 33 of the UNWC, supported by the only Annex to the Convention's text, provides the UNWC legal framework for the settlement of disputes. Article 33 (1) stipulates that in the absence of an applicable agreement, in the event of a dispute between two or more parties concerning the interpretation or application of the UNWC, states are obligated to "seek a settlement of the dispute by peaceful means."

State parties to the UNWC are bound by the subsequent provisions under Article 33. Article 33 (2) dictates that if such parties to a dispute fail to reach an agreement via negotiation requested by one (or more of them in the case of multiple parties) they can then "jointly seek the good office, or request mediation or conciliation by a third party, or make use, as appropriate, of any joint water course institutions that may have been established by the Agreement to submit the dispute to arbitration or to the International Court of Justice."

Article 33 (3) provides detailed timelines and procedures whereby, if after six months from the time of a state party requesting negotiations the parties to the dispute have failed to settle through negotiation or other means, the dispute must "be submitted, at the request of any of the parties to the dispute, to impartial fact-finding in accordance with paragraphs 4 to 9, unless the parties so otherwise agree." The legal role and relevance of impartial fact-finding in the overall scheme of the UNWC dispute resolution procedures cannot be underestimated because it is largely unique to this framework Agreement within the field of international water law and trans-boundary basin or river agreements. Furthermore, given the range of dispute settlement mechanisms provided via Article 33 (2), it remains the only truly non-negotiable, binding procedure within the UNWC.

The Mahakali Commission as an advisory body is given the responsibility to examine the differences between the Parties (Art. 9(3e)) and if it fails to resolve disputes then it is taken to a tribunal composed of three arbitrators (Art. 11), one nominated from each country and a neutral arbitrator nominated jointly but from different country. In the event of disagreement on the appointment of the neutral arbitrator, either party can, within 90 days, request the Secretary General of the Permanent Court of Arbitration at the Hague to appoint a neutral arbitrator. The inclusion of the Permanent Court of Arbitration in this Article strengthens the dispute resolution mechanism of this Treaty.

Compatibility and gaps

- The dispute settlement mechanism under the Treaty is more evolved and robust than all the previous Agreements on water resources between India and Nepal. However, the Treaty does not specify a timeline for resolving disputes by the Tribunal. Moreover, the proposed Mahakali River Commission, responsible for examining any disputes before sending them to the Tribunal, has yet to be established.

4.4 THE UNWC AND THE GANGES WATER SHARING TREATY, 1996

4.4.1 SCOPE AND DEFINITIONS

UNWC	The Ganges Water Sharing Treaty, 1996
<p>The UNWC applies to uses of international watercourses other than navigation and to measures for the purposes of “protection, preservation and management related to the uses of those watercourses and their waters” (Article 1(1)). Watercourse uses which affect navigation or which are affected thereby, also fall within the scope of the Convention.</p> <p>Under the UNWC “watercourse” is defined as a river system including both surface water, which incorporates a river’s tributaries, as well as groundwater, flowing into a common terminus (Article 2(a)) ; “international watercourse” is one which falls within or touches the boundary of two or more states (Article 2(b)) ; “watercourse state” is a “State Party to the present Convention in whose territory part of an international watercourse is situated or a Party that is a regional economic integration organisation, in the territory of one or more of whose member states part of an international watercourse is situated” (Article 2(c)) ; and a “regional economic integration organisation” is any regional inter- governmental institution which operates for the purposes of economic integration and development (Article 2(d)).</p>	<p>The Ganges Water Treaty is primarily concerned with the sharing of Ganges waters using average historical flows at the Farraka Barrage as the reference point. The preamble of the Treaty indicates the desire of the two countries to work together on the optimum utilisation of the Ganges River for non-navigational purposes such as flood management, irrigation, generation of hydropower and integrated development of the river basin for the mutual benefit of the people of the two countries (preamble).</p>
<p>Compatibility and gaps</p> <ul style="list-style-type: none"> The Ganges Treaty does not define the watercourse of the Ganges River as a system of surface and groundwater. The scope of the treaty is limited to the sharing of surface water, even though the preamble mentions the need for developing strategies to augment the flow of the Ganges river as a long-term solution for water scarcity in the mutual interests of the peoples of both Bangladesh and India. 	

4.4.2 SUBSTANTIVE PRINCIPLES: SUSTAINABLE DEVELOPMENT

The UNWC refers explicitly to the principle of sustainable development in its text. Article 24, which concerns the management of international watercourses, stipulates that “Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism” (Articles 24(1) and 24(2)) then states that “for the purposes of this article, “management” refers, in particular, to: (a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and (b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.” In this regard, the UNWC provides a legal reference point for the practical application and utilisation of the principle of sustainable development as it pertains to the planning and adoption of plans in the overall management of an international watercourse.

There is no mention of sustainable development in the text of the Ganges Water Treaty. However, the preamble indicates the desire of the two countries to work toward optimum utilisation of water resources in flood management, irrigation, river basin development, and hydropower generation for the mutual benefit of the people of both countries.

The Ganges Treaty is primarily a water-sharing agreement for the volumetric allocation of water in the dry season. The Treaty establishes India’s right to withdraw up to 40,000 cusecs of water at the Farakka Barrage between 1 January and 31 May every year. If availability at Farakka falls below 70,000 cusecs, the water will be divided equally between the two countries, while guaranteeing a minimum of 35,000 cusecs to each over alternating 10-day periods between 11 March and 10 May.

Compatibility and gaps

- The Ganges Treaty is primarily a water-sharing agreement. The preamble indicates the desires of the two countries to develop the basin for mutual benefit, though this is not backed by any provision or guidance on how to operationalise the joint and sustainable development of the basin.

4.4.3 SUBSTANTIVE PRINCIPLES: EQUITABLE AND REASONABLE UTILISATION

In the context of international watercourses, legal experts have determined that the term “equitable” within the UNWC and customary international law can be understood to mean “the equal right to use the water for beneficial purposes, rather than division into equal portions.” The UNWC does not define what “equitable and reasonable” means in specific legal terms; it instead provides guidance on how equitable and reasonable utilisation is to be determined in a practical sense by listing the major indicative factors to be considered when evaluating whether or not a new or increased use is consistent with the principle in Articles 5 and 6.

The preamble of the Ganges Treaty mentions the desire of the countries for ‘fair and just’ decision-making on entitlement and rights to the Ganges River. The countries also seek to ensure optimum utilisation of water resources for mutual benefit. The sharing arrangements and any revisions, if required by the Parties, are required to be guided by the principles of equity, fairness and no harm to either party (Art. X). Equity is explicitly the guiding principle for writing treaties or agreements with regard to other common rivers (Art. IX).

Compatibility and gaps

- The Ganges Treaty does make explicit mention that the parties shall be guided by the principles of equity and fairness but falls short of defining the means and mechanism to do so at the basin level to support the augmentation of flow. The application of these principles is limited to the sharing the decision linked to sharing of quantum of waters.

4.4.4 SUBSTANTIVE PRINCIPLES: OBLIGATION NOT TO CAUSE SIGNIFICANT HARM (AND RELATED DUTY TO PROTECT ECOSYSTEMS)

<p>Article 7 of the UNWC deals in detail with the general obligation not to cause significant harm. It begins by stating that “Watercourse States shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States” (Article 7(1)). Directly related to this general obligation, Article 7(2) goes on to specify that “Where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of Articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.” It is this explicit reference to “having due regard” that many legal experts consider as giving ultimate legal primacy to the principle of equitable and reasonable utilisation over the obligation not to cause significant harm. Indeed, this direct reference “in effect recognizes that, where it can be shown that significant harm occurs, but it can also be proven that such harm is equitable and reasonable, a State will be in compliance with international law” and <i>inter alia</i> customary international law as codified within the UNWC.</p>	<p>The Ganges Treaty encapsulates the no harm principle. In case of an emergency, such as less water reaching Bangladesh than is required by the Treaty, the immediate consultations on restoring water flow should be based on the fair play and no harm principles (Art. II). No harm principles are also mentioned as the guiding principle for Treaty review and renewal.</p> <p>The Treaty, however, does not have any mechanism to ensure the protection of transboundary ecosystems or joint development of shared rivers within the basin. It allows for unilateral development of rivers in each one’s territory for the optimum utilisation of the water resources of their region in the fields of flood management, irrigation, river basin development and generation of hydropower for the mutual benefit of the two countries</p> <p>The only reference to the duty to protect ecosystems can be linked to the desire of the two countries to achieve river basin development for the mutual benefit of the people of two countries (preamble), which could be interpreted as a duty to safeguard natural resources.</p>
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Compatibility and gaps

- The Ganges Treaty mentions the no harm principle. The major difference is that there is no procedural guidance under the Ganges Treaty on how to eliminate or mitigate any potential harm. There is also no mention of the duty of the Parties to protect the ecosystem. Thus, there is immense scope for improvement on the Ganges Treaty, particularly by expanding it to foster basin-level management and by including procedural guidance on the principle of no harm and related duty to protect the ecosystem.

4.4.5 PROCEDURAL OBLIGATIONS: PRINCIPLE OF COOPERATION AND INFORMATION EXCHANGE

The overarching duty to cooperate is encapsulated in Article 8 of the UNWC where it obliges watercourse states to “*cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith* in order to attain optimal utilization and adequate protection of an international watercourse” (Article 8(1)).

The principle of cooperation is enshrined in the pursuit of finding just and fair solutions to problems without affecting the existing rights and entitlements of the Parties (preamble). The direct reference to the principle of cooperation is contained in Article VIII of the Treaty wherein the two governments recognise the need for cooperation in augmenting the dry season flow of the Ganges River.

The provisions for setting up a Joint Committee as an institutional mechanism for implementing the Treaty and for annual reporting underline the principle of cooperation and information exchange (Art. IV). Information exchange is ensured through the mandate of the Joint Committee to share data on river flow from selected locations and to submit annual reports to the members’ respective governments. Following this information exchange, the two governments have a duty to decide on further action as needed (Art. VI). Thus, information exchange is also associated with a duty to take action based on information exchange.

Compatibility and gaps

- The UNWC and the Ganges Treaty both contain the principle of cooperation and information exchange. There are clear institutional and procedural mechanisms for the exchange of information and there is an associated duty to take action based on the information. However, cooperation is limited by the scope of the Treaty, which is to ensure volumetric sharing of water.

4.4.6 PROCEDURAL OBLIGATIONS: PRINCIPLE OF PRIOR NOTIFICATION, CONSULTATION AND NEGOTIATION (OVER PLANNED MEASURES)

Article 11 of the UNWC obliges states to: exchange information, consult each other and, if necessary, negotiate on the possible effects of planned measures on the condition of an international watercourse. Article 13(a) dictates that the state providing notification must allow six months for the notified state(s) to evaluate this information, carry out their own studies, and ultimately reply. With regard to consultations and negotiations, Article 17(1) dictates that where the notifying state has communicated via reply that they determine the planned measure is inconsistent with Articles 5 and/or 7, both the notifying and notified states are bound to “enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation.” In this regard, all states must engage in any consultations and negotiations “in good faith [and] pay reasonable regard to the rights and legitimate interests of the other State” (Article 17(2)).

The Treaty was signed to formalise the sharing of water quantities, with the flow at Farakka Barrage as the reference point. The Treaty provides for the establishment of a Joint Committee (JC) to implement the Treaty, collect data and exchange information. However, the Treaty makes no reference to prior notification and consultation for any planned measures, except for the desire of the two countries to develop the river based on the principle of “good neighbourliness” and the wellbeing of their people (preamble).

Compatibility and gaps

- The obligation of prior notification and negotiations are limited by the scope of the Treaty. The preamble mentions the need to cooperate on finding long-term solutions to Ganges water flow and on the development of the river for the benefit of people in each country. However, it does not include any provisions to operationalise these needs. The role of the JC established by the treaty is limited to information sharing and reporting on the flows in the river at the two selected points.

4.4.7 PROCEDURAL OBLIGATIONS: DISPUTE RESOLUTION PROCEDURES

Article 33 of the UNWC, supported by the only Annex to the Convention's text, provides the UNWC legal framework for the settlement of disputes. Article 33(1) stipulates that in the absence of an applicable agreement, in the event of a dispute between two or more parties concerning the interpretation or application of the UNWC, states are obligated to "seek a settlement of the dispute by peaceful means."

State parties to the UNWC are bound by the subsequent provisions under Article 33. Article 33(2) dictates that if such parties to a dispute fail to reach an agreement via negotiation requested by one (or more of them in the case of multiple parties) they can then "jointly seek the good office, or request mediation or conciliation by a third party, or make use, as appropriate, of any joint water course institutions that may have been established by the Agreement to submit the dispute to arbitration or to the International Court of Justice."

Article 33(3) provides detailed timelines and procedures whereby, if after six months from the time of a state party requesting negotiations the parties to the dispute have failed to settle through negotiation or other means, the dispute must "be submitted, at the request of any of the parties to the dispute, to impartial fact-finding in accordance with paragraphs 4 to 9, unless the parties so otherwise agree." The legal role and relevance of impartial fact-finding in the overall scheme of the UNWC dispute resolution procedures cannot be underestimated because it is largely unique to this framework Agreement within the field of international water law and transboundary basin or river agreements. Furthermore, given the range of dispute settlement mechanisms provided by Article 33(2), it remains the only truly non-negotiable, binding procedure within the UNWC.

The Joint Committee has the mandate to examine any dispute under the Treaty. If the Committee fails to settle the dispute, it shall be referred to the Indo-Bangladesh Joint River Commission. If the dispute is still unresolved, it is referred to the two governments who meet, at the appropriate level, to resolve the dispute by mutual discussion (Art. VII).

Thus, the dispute settlement mechanism under the Ganges Treaty is ambiguous. If the Commission fails, it becomes unclear at what level and in what time frame the dispute should be resolved, which is especially pertinent to matters that require immediate resolution, such as drought and floods.

Compatibility and gaps

- The Ganges Treaty does not have well-defined dispute settlement mechanisms. To strengthen them, the Parties could use the UNWC provisions on dispute resolution as an example.

CONCLUSION AND RECOMMENDATIONS

None of the bilateral agreements and treaties on the Ganges River or its tributaries have a basin focus or reflect the same understanding or scope as defined under the UNWC. As discussed in Chapter 1, the definition of 'watercourses' under the UNWC includes all physically connected ground and surface water flowing to a common terminus. The Mahakali Agreement can be considered the most advanced of the treaties this paper has analysed in terms of the application of international water law principles and its recognition of joint development of Mahakali River. However, like all other bilateral agreements in the Ganges Basin, the scope of the Mahakali treaty is limited to a stretch of river forming a boundary between India and Nepal and the two countries are free to unilaterally develop the tributaries of the Mahakali that fall within their territory. Therefore, despite the presence of a basin-level cooperation vision, potential basin-wide application is limited by the treaty's scope.

The existing bilateral agreements and treaties in the Ganges Basin could be categorised into two groups. The Kosi and Gandak Agreements were negotiated in 1950s and '60s, when international water law was at a nascent stage of development, and these treaties therefore do not promote equity and reciprocity in water cooperation in a way that ensures joint protection and management of the river system itself. These treaties are project-centric, so there is no scope for the full-scale application of modern international water law. However, these two agreements acknowledge principles of national sovereignty and provide the mechanism for sharing benefits from the project. The Mahakali and Ganges Treaties, both signed in 1996, are contemporary to the UNWC. These two agreements reflect a higher level of IWL principle mainstreaming, which indicates a clear desire for cooperation and collaboration in shared water governance. Both agreements mention the principles of equity, fair play and no harm, and also recognise the need to develop basin-level approaches as long-term solutions to flooding and the effects of drought.

The higher level of compatibility between the UNWC and the Ganges and Mahakali Treaties indicates an attempt by the countries to mainstream internationally agreed-upon principles related to shared water governance. However, the lack of elaboration on the procedural aspects has led to challenges in implementation. This analysis suggests that there is scope for the improvement of existing regional agreements and treaties in the Ganges Basin through expansion of scope and strengthening of procedures.

Based on the comparative analysis of these treaties in relation to the UNWC, it can be concluded that the UNWC framework provides a tool to reinforce and strengthen existing agreements and also to promote the harmonisation of water laws regionally. This could create an environment of regional peace and trust and help countries better adapt to common local and global challenges such as climate change and floods.

Some specific points are detailed below:

Protection of the river: Commonly missing in all bilateral agreements and treaties in the Ganges Basin is a mechanism to protect the international watercourses from environmental pollution. None of the bilateral treaties analysed have binding provisions regarding the prior notification and consultation on shared river basin issues related to environmental degradation. The UNWC offers ample guidance on aspects of ecological conservation and communication on planned measures on the shared river, so the adoption of uniform procedural measures based on UNWC principles would enhance the level and standard of river protection by holding riparian countries accountable for their obligation to cooperate and communicate on ecological protection.

The UNWC will reinforce and not replace existing bilateral agreements: The UNWC⁷ is a framework convention that allows states to continue with or have new water cooperation agreements that are tailored to their needs. Therefore, even if the UNWC is ratified by the GBM countries, it will not replace existing water agreements or treaties. However, it could help strengthen existing agreements by providing guidance on the development of basin-level joint planning and binding mechanisms for the timely resolution of disputes. For example, the dispute resolution mechanism under the Ganges Treaty (India and Bangladesh) is ambiguous and non-binding; if a dispute is not resolved by the Joint Committee it is referred to Bangladesh-India Joint Commission, but no timeframe for complete resolution of the dispute is provided by the Treaty. Ratification of the UNWC, which includes strong dispute resolution mechanisms and guidance on timelines and procedures, would be the first step in strengthening some of the existing mechanisms within the GBM's bilateral arrangements.

The UNWC will promote regional harmonisation of water agreements and national policies: Collectively, the water cooperation instruments in the Ganges Basin present a scattered and sometimes contradictory legal regime. Each treaty or agreement seeks to fulfil its own limited purpose, without regard for other agreements. For example, although the Ganges Treaty's focus is on sharing volumes of water, it also indicates a desire and acknowledges the need to augment water flow as a long-term solution to water sharing issues – yet does not include Nepal, where the Ganges headwaters are located. The Kosi Agreement, which *does* include Nepal, has not achieved flood control or irrigation benefits to the extent that it promised. Different set of rules and regimes apply to different parts of the same river, resulting in a fragmented approach to its management and sustainable utilisation. Therefore, the UNWC as a framework and a regional umbrella agreement has the potential to foster regional cooperation for the development of integrated basin-level approaches in the Ganges Basin. This standardisation of transboundary river system governance is required to deal with the destructive impacts of climate change on river flows and its annual water distribution.

⁷ Art. 3 UN Watercourses Convention

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