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A Bridge Over Troubled Waters

Legal Principles of River Sharing and Framework for Management of Transboundary Rivers

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Introduction

Civilisations began and flourished along rivers – the Nile and the Indus are some of the earliest lifelines of human settlements. Water is and always has been a critical resource that is central to life. According to the Food and Agriculture Organization (FAO) of the United Nations (UN), by the year 2025 an estimated 1800 million people will be living in regions or countries with absolute water scarcity and two-thirds of the world population could be under stress conditions.[1]

Transboundary rivers[2] provide an estimated 60 per cent of the world's freshwater flows. Transboundary river basins cover nearly half of the earth's surface and are home to 40 per cent of the world's population.[3] Nations today engage in various negotiations to secure peaceful utilisation of water, yet there exists animosity and growing discontent between riparian nations in management of transboundary rivers with the growing demand of development in countries and their burgeoning populations.

In 1978, the UN listed 214 international basins.[4] By 2005 this figure had reached 263, largely due to the formation of new nations through political changes like the breakup of the erstwhile Soviet Union and the Balkan states as well as access to improved mapping technology.[5] Rivers do not know political boundaries and when borders were drawn across these water sources, conflicts ensue.

The advent of conflict over water has been prophesised by many. Boutros Boutros-Ghali former Secretary General of the UN said 'The next war in the Middle East will be fought over water, not politics.'[6] His successor, Kofi Annan in 2001 stated that 'fierce competition for fresh water may well become a source of conflict and wars in the future,'[7] and his successor, the current Secretary General of the UN, Ban Ki Moon remarked that 'The consequences for humanity are grave. Water scarcity threatens economic and social gains and is a potent fuel for wars and conflict'[8]; the former Director General of the UNESCO, Frederico Mayor had warned 'As [water] becomes increasingly rare, it becomes coveted, capable of unleashing conflicts. More than petrol or land, it is over water that the bitterest conflicts of the near future may be fought'.[9]

Water is the common factor across all aspects of green growth and poverty alleviation and is essential for energy and food security. The increased demand for energy will put additional strain on already constrained water resources. The capacity of water and energy systems to provide reliable and viable service is crucial for economy-wide growth and poverty

reduction.[10] Asia especially, is confronted with constraints on natural resources, particularly water. The greatest potential for water-related conflict is harboured in Asia.[11] It is estimated that in 2010 total water withdrawal in India was 761 km^3 of which 91 per cent or 688 km^3 are for irrigation.[12] The challenge lies in finding an efficient solution that is environmentally sustainable and economically viable. If no efficiency gains are achieved through new solutions, it is estimated that by the year 2030, under an average growth scenario the global water requirements would grow from 4500 billion m^3 to 6900 billion m^3, which is 40 per cent above the current accessible and reliable supply.[13]

The demand for water in India is expected to grow to approximately 1.5 trillion m^3 by 2030, driven by domestic demand for rice, wheat and sugar for a burgeoning population. Against this demand the current water supply is approximately 740 billion m^3. Therefore most of India's river basins will be severely deficient by 2030 unless and until strong and concerted action is taken, especially along the populous river banks such as the Ganga.

India faces difficult relations with co-riparian nations, and with the growing need for fresh water, and is expected to be water-stressed by 2025 and water-scarce by 2050.[14] Recent events have showcased how India has become a victim of Chinese hydro-hegemony on the upper reaches of the Brahmaputra,[15] while Bangladesh is discontent with India's hydro-diplomacy[16] and Nepal views India hydroelectric projects through the prism

of skepticism.[17] The Indus Water Treaty with Pakistan was in the news again with the arbitration being held over the dispute of building the Kishanganga Dam.[18] In this context, it is essential for India to explore a more robust water sharing framework for its transboundary rivers.

The widening gap between demand and supply of freshwater requires riparian nations to foresee a growing need for water resources to meet development requisites of its populations. While upper riparian nations wish to utilise water resources without constraints, the lower riparian nations seek to protect a minimum share of flow from their transboundary rivers. These conflicting aims and claims burden diplomatic engagements and germinate the seeds of hydro-politics. Water has become a new challenge that is 'forcing people and governments for better collaboration, finding innovative solutions to water scarcity.'[19] Navigating through the complex maze of water security requires the assistance of certain rules and principles to arrive at a peaceful resolution and a mutually beneficial decision. International law provides a framework of rules to that supports peaceful settlement of disputes and enhances cooperative efforts between riparian countries.

This paper proposes to study the legal principles under international law regarding transboundary rivers and discuss the importance of utilising these principles in creating an institutionalised shared basin management for India's transboundary rivers.

Historical Evolution of Legal Principles of Water Sharing

International water law can be classified into two categories: first, the law regulating navigational uses and second the law regulating non-navigational uses. The law governing navigational uses of water have been codified and evolved into a more established regime than the laws regulating non-navigational uses of water.[20] The reason for the variation could be attributed to the socio-economic development of the human race. The industrial revolution in Europe created considerable transportation of not only goods and materials but also people across the continent. The river was the main mode of transportation, as other modes were still in their early stages of development. However by the end of the Second World War, there was a decline in the navigational uses of watercourses partly because of the better development of new modes of transportation, and also because of the division of various countries into smaller political units, forming new countries that had new boundaries but shared rivers that cannot be divided by borders.

Although the international law governing non-navigational uses of water has been developing for over the past century, it is still in its formative stages. The elemental source of non-navigational uses of rivers is the Common Law of riparian rights which was formulated by the English legal system. This set of riparian rights coupled with the general principles of international law laid the foundations of the jurisprudence of international water law.

Dismantling Absolute Sovereignty Theories

Different theories and principles were employed during the early phases of the development on the law regarding non-navigational uses of transboundary watercourses. This variation reflected the inconsistent practice among states, and the dire need for reassessment of existing legal principles.

The Harmon Doctrine and the Rio Grande River Dispute

The theory of absolute territorial sovereignty is also commonly known as the 'Harmon doctrine'.[21] It originated in the opinion asserted by the Attorney General of the United States of America in 1896 in a dispute over the Rio Grande River[22] between the United States and Mexico. According to this doctrine a state has absolute sovereignty over water that is present within its territory and may use it in any manner it deems fit, irrespective of the detrimental effects on other riparian states. This theory meant that no riparian state has a right to demand a continued flow of water from other states. The Westphalian concept of the world order espoused absolute territorial sovereignty however in matters of transboundary waters, this concept did not have international acceptance and was heavily criticised.[23] In fact, the convention that resolved the Rio Grande River Dispute was primarily based on an equitable utilisation and not the strict theory of absolute sovereignty. The doctrine is 'generally considered to be an anachronism in today's interdependent water-scarce world'.[24]

Similarly, the theory of Absolute Territorial Integrity another Westphalian concept that is rather pertinent in international relations remains inapplicable to the practical realm of water sharing and international water law. This theory is based on the natural flow doctrine of the common law riparian right, according to which a lower riparian claims the right to receive its shares of the water, uninterrupted and in its natural condition. This theory did not receive much support and was never seriously pursued. As can be seen in the observation of the Tribunal in the Lake Lanoux Arbitration[25]:

> The rule according to which states may utilise the hydraulic force of international watercourses only in condition of a prior agreement between the interested states cannot be established either as a custom or even less a general principle of law.

The theory of absolute territorial integrity is a principle in favour of the lower riparian nation, and in essence it restricts the usage of the upper riparian country to the minimal necessities. This too has drawn criticism like the theory of absolute territorial sovereignty, and is not recognised as part of contemporary international water law. [26]

Emergence of Theory of Good Neighbourliness

Thus, the extreme territorial sovereignty concepts were not recognised under international water law, and with the failure of these theories emerged the theory of good neighbourliness or limited territorial sovereignty. This theory is evolved from the Roman law maxim of *sic utero tuo ut alienum non laedas.*[27]

Under this concept states may exercise sovereignty in the use of resources within their territory subject to prohibition against causing damage to the territory of co-riparian states. This theory also requires states to tolerate some degree of harmful effects arising from the use of watercourses within the neighbouring territory. However, such harm must be within a limited threshold to remain legally permissible and relevant to the principle of good neighbourliness. This theory has been applied in various treaties, conventions and judicial decisions. This widespread acceptance has made the theory of good neighbourliness an established norm of international law.[28] A significant deficiency in this theory is the lack of specificity as to the definition of harm or injury and its threshold. Although the theory of good neighbourliness has wide acceptance, its deficiency requires international legal jurisprudence to develop judicial principles that account for the physical and natural unity of shared watercourses. Transboundary water requires to be treated as a shared resource that necessitates a cooperative agreement among the community that shares the resource.

Development of Concept of Community of Interest

The concept of 'Community of interest' was developed to address the deficiencies of the existing principles of international law applicable to water sharing. The earliest assertion of this theory was in the case of River Oder.[29] In this case the Permanent Court of International Justice, observed:

> '… the solution of the problem has been sought … in favour of a community of interest of riparian States. This community of interest becomes the legal basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the use of the whole course of the river and the exclusion of any preferential privileges of any one riparian States in relation to the others.'

Although the Court dealt with the issue of navigation, the consideration of the 'general principles of fluvial law in general'[30] endows wider application of this decision. This theory compliments and reinforces the theory of limited territorial sovereignty and good neighbourliness. It goes beyond unilateral state action and restraint by encouraging cooperative management.

Codified International Law of Non-Navigational Uses of International Watercourses

The above discussed principles have evolved over time, and some have crystallised to form principles of customary international law that are binding upon all nations irrespective of treaty obligations. The various attempts at codifying these principles governing non-navigational uses of water were made by primarily the International Law Association (ILA),[31] Institute of International Law (IIL)[32] and the International Law Commission (ILC)[33] of the United Nations.

Both the IIL and the ILA are non-governmental organisations that contribute significantly to the development of international legal jurisprudence. They have drafted various rules and

compilations of guidelines on the non-navigational uses of international watercourses. Among many bilateral treaties, guidelines, rules and conventions on the non-navigational uses of an international watercourse, the main instruments that provide the existing legal framework may be listed as follows:

1. The Helsinki Rules on the Uses of the Water of International Rivers, 1966 (Hereinafter the Helsinki Rules).

2. The UN Convention on the Law of Non-navigational Uses of International Watercourses, 1997 (Herein after the UN Convention on International Watercourses).

3. The Berlin Rules, 2004.

The Helsinki Rules

The Helsinki Rules was the first prominent attempt at codification of international water law encompassing the fundamental principles of customary international law at that time. The Helsinki Rules was drafted to be applicable to all drainage basins that cross-national boundaries, except where any other agreement between bordering nations exists. It asserted the rights of all bordering nations to an equitable share in the water resources, with due consideration of such factors as past customary usages of the resource and balancing the varying needs and demands of the bordering nations. It also provided for protection of the resource by bordering nations with respect

to water pollution and set forth recommendations for resolving disputes over usage of such watercourses.

The UN Convention on International Watercourses

The Helsinki Rules however proved inadequate in certain aspects, particularly because it did not address independent aquifers that were not connected to a river. The ILC attempted to fill this lacuna of and fortify the existing principles by codifying them through the UN Convention on International Watercourses. The preparation for drafting this convention, began in 1970, the ILC studied the law related to watercourses for 24 years and produced its Draft Articles of the Convention.[34] The United Nations General Assembly (UNGA) Sixth Legal Committee considered the Draft Articles in 1996 and in 1997, and ultimately the Convention on the Law of Non-navigational Uses of International Watercourses was adopted by the UNGA.[35]

The UN Convention on International Watercourses has not come into force. Article 36 of the Convention provides that it shall enter into force on the 19th day after the 35th instrument of ratification, accession, acceptance or approval is deposited with the Secretary General of the United Nations. Presently there are 30 contracting states, five short of the number required for entry into force.[36] India along with Israel, Egypt, Pakistan and 23 other countries abstained from voting. China and Turkey voted against, displaying the upper riparian control over the Mekong and Tigris-Euphrates River systems, respectively.[37]

India and the UN Convention on International Watercourses

India's representative at the voting of the Convention opposed various aspects of the UN Convention on Watercourses. India's objection was primarily at certain ambiguous and vague provisions. It was argued that a framework convention should ideally provide general principles but the present Convention had deviated from that approach. He specifically cited disagreement with articles 3, 5, 32 and 33. Mainly these articles affected the State's autonomy, the ambiguity of 'equitable and reasonable utilization', the superimposition of the principle of 'sustainable utilization' without an adequate definition of the term 'sustainable'. [38]

The Indian representative also noted that Article 32 presupposed regional integration. This observation is crucial to understanding the riparian circumstances in which India is positioned. The lack of a regional mechanism involving all riparian's seriously restricts any cooperative efforts, especially the reconciliation of disputes. Adding to this it was also expressed that Article 33 prescribing a mandatory third-party dispute procedure was inappropriate and does not find place in a framework convention. [39]

A detailed analysis of the principles enshrined in the UN Convention on International Watercourses has been made in the next part of this paper.

The Berlin Rules, 2004

The ILA contribution to international water law did not stop at the Helsinki Rules. It continued to issue various other rules such as the Articles on Flood Control in 1972, Administration on International Watercourses in 1976, and Contemporary Rules Applicable to International Water Resources in 1986 etc. By the early 1990s it was becoming apparent that the rules adopted by the ILA were expanding in scope and multiple rules that emerged are being dispersed through too many instruments. Consequently the ILA decided to consolidate all these rules into a single instrument. The draft of this compilation was known as 'The Campione Consolidation of the ILA Rules on International Water Resources, 1966-1999'. Following this the ILA decided in 2000 to further the development of international water law, by a revision of the Helsinki Rules and an update to correspond to the present state of customary international law.[40]

This culminated in the latest attempt of codification of the rules of non-navigational uses of water by the ILA and produced the Berlin Rules in 2004. This set of rules supersedes the Helsinki Rules, and is designed to replace it. The Berlin Rules were unique and distinct from the UN Convention on International Watercourses and the Helsinki Rules primarily for the reason that a number of the provisions apply to all watercourses – both national and international. Further the Berlin Rules also clarifies on the relationship between the substantive principles of equitable and reasonable utilisation and the no significant harm.

Although the rules and conventions discussed above form the existing legal framework on the non-navigational uses of water, none of these instruments are legally binding upon nations. The UN Convention on International Watercourses was not signed by India, and is yet to come into force. Even when it does come into force, when countries like China, Turkey and even India are not signatory to the Convention, it shall have little influence over the management of the transboundary rivers of these countries. However, we may cull out the key principles enshrined in the various conventions to form the modern legal principles of the sharing of river waters. The UN Convention on International Watercourses effectively made an attempt to codify these principles of customary international law. These principles that were incorporated into the Convention are considered as the pillars of international water law. The key principles of international water law enshrined in the UN Convention on International Watercourses and distilled from the other Rules may be categorised and discussed as follows:

Pillars of the Law of Non-navigational Uses of International Watercourses	
Substantive Law	Procedural Law
1. Equitable and Reasonable Utilisation	1. Duty to Exchange Information
2. No Significant Harm	2. Duty to Notify
3. General Obligation to Cooperate	3. Duty to Consult and Negotiate

Substantive Principles Codified by the ILC

1. *Equitable and Reasonable Utilisation*: The principle of equitable utilisation is the most fundamental principle underlying in any instrument addressing water sharing. It is the cornerstone of the UN Convention on International Watercourses.

Article 5 states that:

> 'Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits there from, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse'

Although the language of the article is drafted in a manner of an obligation, it also expresses the co-relative right of a State to reasonable and equitable share or portion of the uses and benefits of international watercourses within its territory.

This principle has been applied by the International Court of Justice in the case of the Gabčíkovo-Nagymaros Project.[41] The Court rightly emphasised on the implementation of the 'multi-purpose program ... for the use, development and protection of the watercourse… in an equitable and reasonable manner'.

Equitable utilisation is built on the concept of equality of rights. Equality of rights in this context does not mean equal division of a shared water resource among riparian states. Instead,

it requires only the recognition and balancing of reasonable uses of and benefits from shared water resources by the states.[42]

The application of this principle requires a thorough understanding of the parameters to be considered while evaluating what is 'equitable and reasonable'. India cited the ambiguity of the meaning of this term as one of the reasons it abstained from voting on the UN Convention on International Watercourses. Both the Helsinki Rules and the UN Convention on International Watercourses provide detailed list of factors to be considered in determining reasonable and equitable utilisation.

The parameters listed under Article 6 of the UN Convention on International Watercourses reflect the changing nature of International Water Law. While the Helsinki Rules included the past utilisation of the waters of a particular river,[43] the UN Convention on International Watercourses does not consider this factor.

Both the Helsinki Rules and the UN Convention on International Watercourses consider the following parameters in determining reasonable and equitable utilisation:

a. Geography, hydrology, climatic, ecological and other nature dependent factors.

b. The economic and social needs of the riparian states.

c. The population dependent on the waters of each riparian state.

d. The alternatives available to a particular plan of utilisation, or an existing utilisation.

e. The effects of the utilization of one riparian state on the other riparian state.

Using these parameters, it is imperative for nations to employ the principle of reasonable and equitable utilisation in their use of transboundary rivers. Most often co-riparian states are disgruntled by the unilateral diversion or utilisation of transboundary rivers; this can be avoided to a large extent by factoring the reasonable and equitable share of co-riparian states. It must be cautioned however that when these parameters are translated from paper to reality, the figures and values are often not crystal clear to come to a decision. Intensive negotiations and talks cannot be ruled out and the legal concepts act as a foundation for the same.

2. *No significant harm*: The general obligation of one state not to cause harm to another state is one of the fundamental principles of international law.[44] The ILC introduced this principle in the UN Convention on International Watercourses specifically to address the situation where equitable utilisation may cause harm to another state.[45] This principle is therefore a corollary obligation to the right to equitable use of an international watercourse by a riparian state. The primary difficulty in the application of this principle is that there is no clear definition of what constitutes 'significant'. The ILC had initially adopted a 'no appreciable harm' standard with the intention to introduce a factual standard and to lower the threshold to something

that was not insignificant.[46] However this was changed in the 1994 Draft Articles to 'no-significant harm' as the threshold limit. Therefore, under Article 7(1) of the UN Convention on International Watercourses adopted the no-significant harm rule and provided 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'.

The legal obligation to not cause significant harm seeks to protect the co-riparian state from the harmful effects of environmental pollution, or diversion of waters or the construction of new structures on the transboundary river. The absence of a clear definition of the term, or factors to be considered for determining 'significant harm' creates much difficulty in the application of this principle. It gives riparian states wide discretion to utilise the transboundary river in any manner, as it may decide that the utilisation is well under the threshold of 'significant' harm. This impediment can be overcome by the formulation a set of parameters jointly decided by the community of interest, i.e. each riparian state of the transboundary river. The evaluation of such parameters can be incorporated into the domestic environmental impact assessment mechanism implemented in countries.

The requirement under this article is to take all appropriate measures to prevent the causing of significant harm to other watercourse states, therefore the obligation is fulfilled by

creating an appropriate mechanism to evaluate, and regulate the utilisation of the waters of transboundary rivers. The difficulty that nations face in fulfilling obligations under this article can be effectively tackled by creating an appropriate domestic set of rules within this framework.

3. *General obligation to cooperate*: Any provision of the UN Convention on International Watercourses is dependent on the mechanism of cooperation for its implementation. Yet the ILC deliberately made a separate provision to reiterate the principle. In its commentary to Article 8 of the Convention, the ILC stated:

> 'Cooperation between watercourse States with regard to their utilization of an international watercourse is an important basis for the attainment and maintenance of an equitable allocation of the uses and benefits of the watercourse and for the smooth functioning of the procedural rules contained in part three of the draft'.[47]

Accordingly the ILC positioned the obligation to cooperate as the effective mechanism to attain any and every aspect of the UN Convention on International Watercourses. For example, in attaining equitable and reasonable utilisation and no significant harm in accordance with Articles 5, 6 and in regular exchange of data and information in Article 9; in carrying out the requirement of notification, consultation and negotiation concerning planned measures under Article 11 to 19; in the protection, preservation and management of international watercourses under Articles 20 to 28 and in settlement of disputes under Article 33. Even

when exchange of data and information need not be exchanged due to national security, states are still required under Article 31, to cooperate in good faith to provide as much information as possible. Under Article 30, in which there are serious hurdles for direct contact, for example, during armed conflict, states are still required to continue the duty of cooperation, namely the exchange of data and information through an indirect procedure agreed by them. Therefore the entire gamut of rights and duties under the UN Convention on International Watercourses relies on the obligation of cooperation for achieving all its objectives.[48]

While the obligation to cooperate is the foundation to all other provisions, the separate provision creates a duty – the failure to perform which would be result in an internationally wrongful act. Thus the provision contained in Article 8 gives rise to an international responsibility.[49] The principle of co-operation enshrined in Article 8 has a two pronged objective. First, 'it provides a general framework for further specification through special watercourse agreements for the prevention, or settlement of disagreements or disputes over the utilisation and management of an international watercourse'.[50] Second, 'it stands as a legal obligation of its own'.[51]

According to McCaffrey there is no doubt that the obligation to cooperate is now recognised as a general principle of international law.[52] He opines that cooperation between states is not only necessary but is required under general international law. The fact that it takes a variety of forms should not lead

one to conclude that is it therefore not a genuine, independent obligation binding on the riparian states.

However, the obligation to cooperate or any other substantive legal norm cannot be achieved without concrete procedures, namely the exchange of data and information, consultation, negotiation, etc. The effective implementation of substantive principles of international water law requires a strong procedural framework. The ILC was instrumental in placing this procedural framework within the UN Convention on International Watercourses.

Procedural Principles codified by the ILC

1. *Duty to Exchange Information***:** The duty to exchange information is one of the most fundamental rules that are internationally accepted. Regular exchange of information and data is the foundation of closer cooperation between riparian states. It is essential that states sharing freshwater resources exchange a broad range of data and information concerning those resources on a regular basis. This duty is in fact an integral part of the obligation of equitable utilisation, and prevention of significant harm. Without data and information from a co-riparian state concerning the condition of the watercourse, it would be very difficult for a state to regulate the utilisation or protection within its own territory and nearly impossible to ensure its utilisation is equitable and reasonable vis-à-vis other states sharing the watercourse.[53]

The UN Convention on International Watercourses has codified this principle under Article 9 and also under Article 11.

Article 9 provides for the general obligation to exchange information on a regular basis, and Article 11 provides for exchange of information specifically concerning planned measures.

India and Bangladesh regularly exchange data and information through the Joint Rivers Commission (JRC). The exchange of data creates transparency and facilitates reasonable and equitable utilisation of transboundary water resources.

2. *Duty to Notify*: The duty to notify seeks to protect co-riparian states from possible transboundary harm. The UN Convention on International Watercourses requires under Article 12 to notify 'planned measures which may have significant adverse effects'. [54] The ILC in the commentary to the 1994 Draft Article explains that the threshold 'significant adverse effect' is intended to be lower than 'significant harm' under Article 7; this is to avoid the situation in which any time a state notifies another state of a planned measure, it is an admission that such measure would result in significant harm to other watercourse state. [55]

Under Article 12, the notification requires to be accompanied by available technical data and information, including any environmental impact assessment, to enable the notified states to evaluate possible effect of planned measures. Further provisions of the Convention also provide a structured regime to follow in the aspect of notification, and the replies thereto.

There are certain exceptions to this rule. If a state is required to implement measures for protection of public health and safety,

or other such emergencies of utmost urgency, it may proceed to implement such measures without notifying co-riparian states beforehand. Another exception allowed is if the information being shared is vital to national defense and security. The rule of exception in both these cases does not allow a state to deny information to co-riparian states, but the time frame within which information is to be shared is relaxed.

The recent series of dams being constructed by China on the upper reaches of the Brahmaputra came as a surprise to India, and other co-riparian states. China failed to notify any of the co-riparian states of the planned measures being constructed on a transboundary river. Although it claims these are run-of-the-river projects, that do not affect the flow, it is duty bound to notify and share the corresponding data and information with co-riparian states, including India.

3. *Duty to Consult and Negotiate:* Consultations play a crucial role in the law of non-navigational uses of international watercourses. The UN Convention on International Watercourses refers to the obligation of states to consult in connection with several of its provisions. For example, paragraph 5 of Article 3 of the Convention states that 'where a watercourse State considers that adjustment and application of the provisions of the present Convention is required because of the characteristics and uses of a particular international watercourse, watercourse States shall consult with a view to negotiating in good faith for the purpose of concluding a watercourse agreement or agreements'.

Paragraph 2 of Article 6 prescribes that 'watercourse States concerned shall, when the need arises, enter into consultations in a spirit of cooperation'. Provisions such as these provide legally compel states to consider the rights of co-riparian states, and prevent unilateral action without due regard to the principles of reasonable and equitable utilisation of the transboundary rivers.

A recent example of such duty being performed can be seen between India and Bangladesh on the construction of the Tipaimukh Dam.[56] The failure to perform this duty can be seen with the construction of dams on the upper reaches of the Brahmaputra by China without any consultations with India whatsoever. Transparency regarding projects on rivers is necessary to comply with the basic principles of water sharing on transboundary rivers.

These principles of customary international law provide some light in the dark alleys of hydro-politics, however their lack of enforceability is the main catalyst for water conflict. 'The problem here is … Custom does not and cannot say. This is something that must instead be decided on a case-by-case basis, by negotiation'.[57] Negotiations have been the most effective form of peaceful resolution of conflict. In India management of transboundary rivers rests purely on the bilateral negotiations. However, bilateral negotiations have limitations and are hindered by political friction between nations. Thus, developing a multi-lateral forum and an institutionalised SBM system is the most appropriate tool of hydro-diplomacy that is central to building a bridge over troubled waters.

India's Transboundary River Management

India's problems with river sharing began with its independence. With the British withdrawal, the once united country was partitioned and political boundaries cut across two of its major rivers – namely the Indus and the Ganga. While the Indus dispute was settled with the Indus Water Treaty between India and Pakistan, the sharing of the waters of the River Ganga was a tougher issue to resolve. When East Pakistan was liberated and the independent nation of Bangladesh was formed, the Ganga was host to one more riparian nation. Between India and Bangladesh there are 54 common transboundary rivers.[58] This can be both a reason of conflict or cooperation – as can be seen through the timeline of India-Bangladesh relations where there have been periods of conflict as in the case of the Farakka Barrage and cooperation as in the case of the Ganges Water Treaty.

Rainfall and glacial snowmelt in the Himalayas are the two major sources of water in India. Although snow and glaciers are poor producers of freshwater, they are good distributors as they yield at the time of need, in the hot season. About 80 per cent of the river flow occurs during the four to five months of the southwest monsoon season.[59] Several vital river systems originate in upstream countries and then flow to other countries, for example, the Indus originates in China and flows to Pakistan, the Ganges-Brahmaputra river system starts off partly in China, Nepal and Bhutan and flows to Bangladesh, some minor rivers drain into Myanmar and Bangladesh. Asia has a very high

potential for interstate water conflict which is highlighted by the existence of approximately 57 transnational rivers basins. A number of Asian countries including India, Bangladesh, Cambodia, Laos, etc are significantly dependent on the inflow of river and aquifer water from across their national borders.[60]

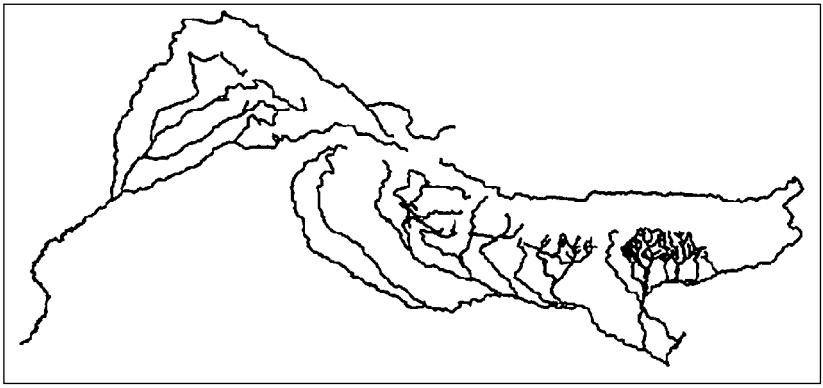
A country like India has a rather unique position. It is both an upper and a lower riparian state. Depending on the transboundary river India's responsibilities vary. India is the upper riparian to Pakistan or Bangladesh in the case of the Indus and the Ganga Rivers, respectively, whereas India is a lower riparian to Nepal or China with respect to the Ganga and the Brahmaputra Rivers, respectively. Thus a uniform formula for management of water relations with neighbours is clearly impossible for India.

In this context, it is pertinent for India to graduate from its bilateral water negotiations to creating a multi-lateral shared basin management institute.

Currently all of India's transboundary rivers are managed bilaterally with each individual co-riparian nation. The Joint Rivers Commission (JRC) established by India and Bangladesh comprising experts of both the States is the only institutionalised joint river management between India and its neighbouring riparian.

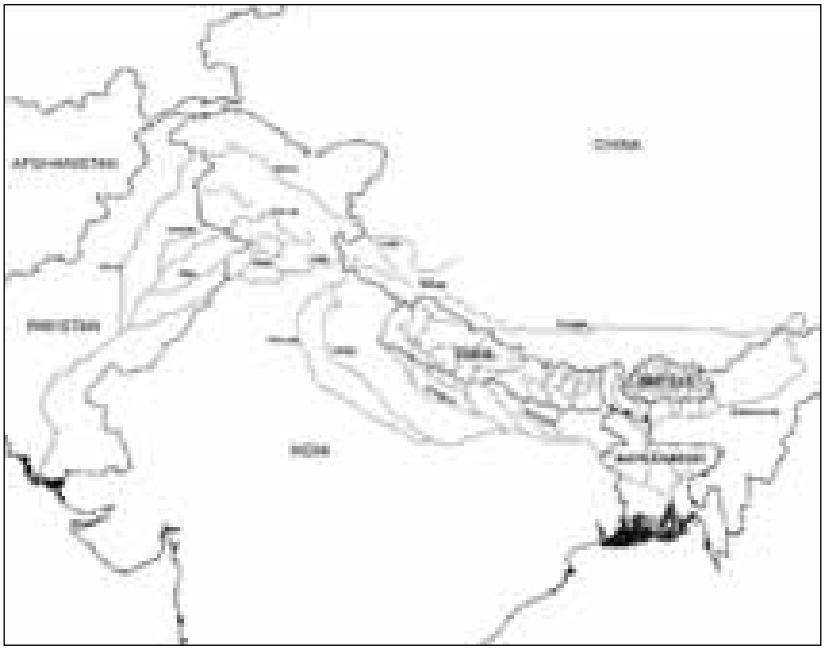
The concept of SBM is not new to Asia. Although pioneered by the American[61] and the European[62] countries it has been an ideal model for management of transboundary rivers, the

Rivers without political boundaries



Source: *Water Security for India: The External Dynamics*, IDSA Task Force Report (2010)

Rivers with political boundaries



Source: Water Security for India: The External Dynamics, IDSA Task Force Report (2010)

Mekong River Commission is an ideal example of successful implementation of the SBM model in Asia.

B.G. Verghese very aptly captured the importance of cooperation amongst co-riparian nations in his book *Harnessing the Eastern Himalayan Rivers.*

> 'If the nations that share the Ganga-Brahmaputra-Meghna basin are to roll back poverty, ignorance and disease and ensure a better quality of life for a large part of humankind, they cannot turn their backs on the wealth that they have only to reach out to grasp. The differences that divide them and the quantitative values involved in their water disputes are relatively small compared to the far greater benefits that each of them could realize through cooperation. … In the end none need be a loser. Everybody can gain, and South Asia will emerge a stronger, better and happier region in which to live'.[63]

When there are multiple riparian nations forming the 'community of interest' with respect to a particular river, it requires an integrated effort to utilise the river in a sustainable manner. This integration is done by institutionalising the management of the river.

Institutionalisation of Shared Basin Management

Transboundary rivers are best managed through institutionalised mechanisms. River management cannot be confined solely to the division of water resources or augmentation of flow. A river is also an energy resource and provides immense potential for hydro-electric power. Similarly the agricultural sector is heavily dependent on river water for irrigation. Thus rivers are no longer a one-dimensional resource and its dependants are

across various sectors and strata. However, indiscriminate use and arbitrary management of a river will result not only in conflict between riparian states but also render the river ecosystem weak and unsustainable. River management today involves not only water security but also food and energy security. In the absence of an institutionalised mechanism, a conflict or tension between co-riparian nations becomes extremely complex to resolve.

Particularly in the context of the South Asian sub-continent, institutionalisation provides greater transparency and smoother functionality as co-riparian nations have other political friction. Institutionalisation prevents a spill-over into the management of transboundary rivers thereby protecting the supply and usage of the shared water resources.

Many nations with transboundary rivers have progressed from bilateral treaties to multi-lateral institutions for management of rivers and sustainable use of its resources. Some of the examples are:

The European Union Water Framework Directive (WFD): The Water Framework Directive of the European Union is a major initiative to improve the water quality throughout the European Union.[64]

The Nile Basin Initiative: The Nile Basin Initiative (NBI) is an inter-governmental organisation that was composed on nine member states that are co-riparian states – namely Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda[65]; and in Asia.

The Mekong River Commission: The Mekong River Commission (MRC) was established pursuant to the Mekong River Agreement on the Co-operations for the Sustainable Development of the Mekong River Basin' that was signed in 1995 by Cambodia, Laos, Thailand and Vietnam.[66]

These SBM institutions are not free of problems or difficulties. However, the existence of an institutional framework immensely contributes to the peaceful settlement of disputes, and a creates a comprehensive approach to overcome the problems or difficulties in management of transboundary rivers.

The success of institutionalisation of water sharing mechanisms is rather apparent. A report of the South Asia Water Initiative (SAWI) of the World Bank prioritises the development of institutions to facilitate mechanisms for high-level dialogue on the shared opportunities and risks of management of transboundary rivers.[67]

Essentials for Institutionalised Shared Basin Management of Transboundary Rivers of India

The Ganga-Brahmaputra-Meghna Basin is one of the world's largest river basins second only to the Amazon river and there is dire need for cooperative effort for management of such transboundary rivers. In creating an instituionalised SBM model for India's transboundary river's the following aspects are to be considered:

1. *Multi-lateral Shared Basin Management* – India's engagement at a multi-lateral level with regard to SBM would be far more effective than its current bilateral efforts. Confining cooperation to bilateral mechanisms limits the harnessing potential of a river system. The South Asian continent requires a regional mechanism to harness the potential of the multitude of river systems that are shared between nations. For example, the Ganga-Brahmaputra-Meghna Basin has immense potential for cooperative management involving India, Nepal and Bangladesh. It is important to involve both upper and lower riparian states in forming the multi-lateral institution such that the community of interest along the entire course of the river is involved in the management. Political obstacles such as uncooperative riparian nations that limit the joint efforts of many nations must not prevent the other co-riparian nations from forming a multi-lateral institution to cooperate on river management. The Mekong River Commission was formed and continues to function even though China and Myanmar are not members. However, the MRC as an institution engages with both China and Myanmar as Dialogue partners and continues to work towards the management of the Mekong River.

2. *Environmental Protection*: The lack of an ecological perspective affects the management of the river. The environmental maintenance and protection of the river must be integrated into scope and ambit of the SBM institution. Control and management of water pollution from various sources must form a part of the agenda. Joint discussions and mitigation strategies

would be more effective in the prevention and management of water pollution. The lament that the co-riparian states pollute the river and render the water unusable for the lower riparian can be effectively resolved by joint discussions where the pollution control of the entire river is collectively discussed and cooperative efforts are made to mitigate the levels of pollution.

3. *Data Collection and Exchange:* The problem of data collection and exchange is one of the main reasons of discord even with the existence of water treaties and river management institutions. Monitoring the water levels at different parts of the river is essential for the sharing of the waters of a transboundary river. Discrepancy in the data collected by the respective national organisations that monitor data is often a difficulty that is face by riparian nations of a transboundary river. This is best avoided by collaborating the data monitoring and collection with the assistance of third-party experts from organisations like the UN Water Program or the IUCN, etc. Data monitoring and collection on water levels and other related information conducted jointly and in the presence of third-party organisations like the IUCN provides impartial and credible data that prevents arbitrary accusations against co-riparian nations, and provides the expertise from a neutral and unbiased organisation.

4. *Incorporating Principles of Sustainable Development:* Creating a model of institutionalised SBM for India needs to involve principles of sustainable development. Essentially, sustainable development encourages consideration of the

regenerative capacity of the resource base.[68] The sustainable development perspective also considers the ecosystem as an integral whole and advocates a precautionary approach to prevent harm to the environment. [69] The concept of Sustainability received its due recognition in the decision of the International Court of Justice in the case of the Gabčíkovo-Nagymaros Project[70] where the Court held that 'the need to reconcile economic development with the protection of the environment … aptly expressed in the concept of sustainable development.' [71] The basic principles of sustainable development related to transboundary rivers include the precautionary principles, the polluter pays principles and inter-generational equity. Incorporating the principles of sustainable development involves shifting the focus of rights over water from state sovereignty to state responsibility. It also encourages community based resource management involving strong public participation. Tapping into the indigenous knowledge of the local populations in formulation of policies is recommended. It involves the various stakeholders and makes a more effective policy framework.

5. *Strong Legal Regime:* An institutionalised legal regime for management of transboundary rivers provides a framework for peaceful settlement of disputes, and a dialogue platform to reconcile differences and discord. India and Pakistan's dispute over the construction of the Kishanganga Dam is under arbitration, and the arbitration tribunal has awarded a partial award in favour of India which is final and binding upon both parties,[72] this way even in the situation of a disagreement having

the Indus Water Treaty has helped in arriving at a peaceful resolution through arbitration. Creating a strong legal regime provides speedy settlement of disputes, and a equitable water sharing framework.

6. *Consultations with Co-riparian States:* Development projects along the rivers should proceed with due consultation of co-riparian nations. Investment offers and sharing of output of such projects create interest of co-riparian states in the said project. India's offer to Bangladesh on the Tipaimukh Project is one such example. Enabling multi-lateral projects on transboundary rivers enhances the collective responsibility of the community of interest.

7. *Coordination at Local, National and International Level:* State and National Committees may be established for coordinating amongst each other, and with foreign countries and inter-governmental organisations on management of transboundary rivers. Establishing designated river basin districts with specific task committees would be highly efficient. This would enable a formulation of a uniform policy that does not vary from the local to the national level. Therefore, the local level committee participates in the policy formulations and coordinates with the national level committee, which in turn negotiates keeping in mind the interests of the local community and the rules applicable to sharing of transboundary rivers.

8. *Compatibility with Domestic Law and Policy - Provisions of National Water Policy 2012:* India's National Water Policy is

a good step forward, especially with regards to its transboundary rivers. Even while accepting the principle of basin as a unit of development, on the basis of practicability and easy implementation ability, efforts should be made to enter into international agreements with neighbouring countries on bilateral basis for exchange of hydrological data of international rivers on near real time basis.[73] Negotiations regarding sharing of waters of international rivers should be done in consultative association with respective riparian federal States to secure the state's requirement, while keeping national interest as the paramount consideration. Adequate institutional arrangements at the Center should be set up to implement international agreements.

Conclusion

"Water, water everywhere, only if we share" was the winning slogan written by Ms. Mega Kumar of India that was announced at launching ceremony of the 'International Year of Water Cooperation' in Paris. This presents an opportunity to accelerate India's cooperative efforts in transboundary water sharing. The international political climate favours cooperation rather than competition for water resources. Thus building a cooperative framework involving co-riparian nations supported by a strong legal framework is essential for India's water security in the near future.

Regional groupings would provide an ideal platform to stage the cooperative efforts for management of transboundary rivers. 'The vision of SAARC would perhaps be most strongly

embodied in a collaborative endeavour to harness the potential of the Ganga-Brahmaputra-Meghna waters. These are waters of hope'.[74] SAARC was established with the aim of promoting regional cooperation. Transboundary rivers connect various countries in this region and cooperative management is therefore crucial for the best use of water resources which is closely linked to the economic development of the region. Hydro-diplomacy has not featured on the SAARC agenda, although it is not only an ideal platform but a necessary element of regional cooperation. Involving China's cooperation as a dialogue partner with a multi-lateral forum, like the MRC has done, certainly seems more plausible than the present bilateral water relations with China, which seems to be taking unilateral decisions on the dam constructions along upstream Brahmaputra.[75] Signing the UN Convention on International Watercourses may be regarded as a step forward, but not all provisions of the Convention can be uniformly applied across the world. Not having signed the Convention gives India an opportunity to re-imagine the management of transboundary river management incorporating the principles enshrine in the UN Convention on International Watercourses, yet fine tuning these principles to suit the regional and geo-political landscape of the sub-continent.

Foundations of a multi-lateral river management institute should be based on sharing benefits, protection of the environment. Participation and capacity building operations is crucial for the success of an SBM institute. A strong legal framework with facilitation and mediation for peaceful settlement of disputes is

indispensable. Finally, without financial support none of these ideas and initiatives can translate in concrete action.

The World Bank's South Asia Water Initiative (SAWI) created a network of experts and provided a platform to promote the goals of water security through significant and measurable improvements in water resources management and development at the regional, international basin and national levels in South Asia.[76] Third party help brings in financial assistance that is much needed and the growing economies of South Asian countries is an added incentive. The approach of the SAWI is inter-disciplinary & inter-sectoral, focusing on high-level policy, parliamentary & civil society dialogue, international cooperation and dispute resolution. It aims at being responsive to the demands from water users, co-riparian states and individual governments. Initiative's like the World Bank's SAWI provides the platform to overcome traditional water divides and meet the growing challenges in water security.

Assistance may also be sought from organisations like the IUCN and the UNESCO. The International Hydrological Programme of the UNCESCO facilitates multi-level and interdisciplinary dialogues to foster peace, cooperation and development related to the management of transboundary water resources.[77] The IUCN through its Water Programme brings together an extensive network of IUCN members, experts, governments and private sector partners to provide sustainable solutions to water woes.[78] These agencies can provide great assistance in strengthening the tools of hydro-diplomacy.

India can lead an initiate to develop a new perspective on management for its transboundary rivers. The challenges of poverty alleviation, food security, energy security and the socio-economic well being of the people depend on the art of hydro-diplomacy. The time is ripe for water cooperation, and India must seize this opportunity to build a bridge over the troubled waters of its transboundary rivers.

ENDNOTE

1 FAO Water Unit, See http://www.fao.org/nr/water/issues/scarcity.html

2 The Term 'transboundary rivers' also known as 'international rivers' is defined as "one either flowing through the territory of two or more states or one separating the territory of two or more states from one and another." Over time the use of the term 'international watercourses' has gained more acceptance as a more inclusive term for transboundary rivers and other water bodies. This paper uses the term international watercourses or transboundary rivers interchangeably. For detailed discussion see Salman M.A. Salman and Kishor Uprety (2004) *Conflict and Co-operation on South Asia's International Rivers: A Legal Perspective* (World Bank Publications).

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5 Wolf, Aaron T., Annika Kramer, Alexander Carius, and Geoffrey D. Dabelko. 2005. Chapter 5: Managing Water Conflict and Cooperation. *In State of the World 2005: Redefining Global Security.* (The WorldWatch Institute. Washington, D.C.), p. 83.

6 Mike Thomson (2005, February 6). Ex-UN Chief warns of water wars. BBC News. Retrieved from http://news.bbc.co.uk/2/hi/africa/4227869.stm

7 Cited by Alexander Carius, Geoffrey D. Dabelko and Aaron T. Wolf (2004) Water, Conflict and Cooperation. *ECSP Report Issue 10*, 60, 60-66. Retrieved 25 December 2012 from http://www.unep.org/disastersandconflicts/Portals/155/disastersandconflicts/docs/ecp/ecspr10_unf-caribelko.pdf

8 *Secretary-General, In Message to Inaugural Asia-Pacific Water Summit, warns that scarcity threatens socio-economic gains, could fuel conflicts.* (2007, December 7) United Nations Department of Public Information, News and Media Division. Retrieved 20 October 2012 from http://www.un.org/News/Press/docs/2007/sgsm11311.doc.htm

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10 *The World Bank and the Water-Energy Linkages* (2013, February 1) an interview with Diego Rodriguez, Senior Economist, World Bank Water Initiative. Retrieved 28 February 2013 from http://www.water-energy-food.org/en/news/view__1088/the-world-bank-and-the-water-energy-linkages.html

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12 Aquastat. (2011). *India Survey.* Food and Agriculture Organization of the United Nations. at p. 8

13 2030 Water Resources Group. (2009). *Charting Our Water Future.* At p. 5-6

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15 Chellany Brahma, (2013, February 7) Chinas Hydro-Hegemony. *The New York Times.* Retrieved 28 February 2013 from http://www.nytimes.com/2013/02/08/opinion/global/chinas-hydro-hegemony.html?_r=0

16 Gogoi . G. & Sarkar .U., (2013, February 13) *Looking East, first in the line of sight*. The Hindu. Retrieved 28 February 2013 from http://

www.thehindu.com/opinion/op-ed/looking-east-first-in-the-line-of-sight/article4415536.ece

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18 Correspondent (2013, February 19*) Controversial Project: Hague Court issues partial award on Kishanganga Dam.* Retrieved 28 February 2013 from http://tribune.com.pk/story/509278/controversial-project-hague-court-issues-partial-award-on-kishanganga-dam/

19 Strategic Foresight Group. (2012). *Blue Peace for the Nile.* Zurich: Swiss Agency for Developement and Cooperation, Directorate of Political Affairs. At p.1

20 The Law governing navigational uses is mainly governed by the United Nations Convention on Law of Sea (UNCLOS) which came into force 16 November 1994.

21 Harmon Doctrine: The doctrine is also known as the American doctrine of absolute sovereignty. It was propounded by Judson Harmon, the then Advocate General of USA in the Rio Grande River case with Mexico in 1895. He observed that "the rules, principles, and precedents of international law impose no liability or obligation upon the United States".

22 McCaffrey, S. C. (1996). The Harmon Doctrine One Hundered Years later: Buried, not Praised. *Natural Resources Journal* , 549-590, p. 549. See also (1895) 21 Official Opinions of the Attorney Generals of the United States 283

23 Salman, S. M. (2007). The Helsinki Rules, the UN Watercourses Convention and the Berlin Rules: Perspectives on International Water Law. *Water Resources Development*, 625-640, p. 627; Also see Islam, N. (2010). *The Law of Non-navigational Uses of International Watercourses: Options for Regional Regime Building in Asia.* The Netherlands: Kluwer Law International, p. 102-105

24 Spiegel, C. (2005). International Water Law. *Duke Journal of Comparitive and International Law* , 333-361.

25 Lake Lanoux Arbitration – Summary: Lake Lanoux is situated in southern France near the border of Spain. The lake is fed by several

streams that all originate in France. Water flows out of the lake in a single stream that joins the Carol River before crossing into Spain. In the 1950's, France began developing a plan to divert water from Lake Lanoux over a 789 meter drop to generate hydroelectric energy. Even though France promised to return the diverted water to the Carol River, Spain pressed France to arbitrate the dispute because Spain believed the plan would violate its water rights under a series of treaties signed in 1866. The arbitration tribunal issued an award in 1957, which rejected Spain's arguments because the French plan promised not to alter the volume of water entering Spain through the Carol River. Although France would not have been allowed to unilaterally promote its legitimate interests at the expense or injury of neighboring states, the tribunal did not identify a foreseeable injury to Spain. Further, the Tribunal stated that the 1866 treaties did not constitute a reason to subjugate the general rule that standing and flowing waters are subject to the sovereignty of the state where they are located. *24 International Law Reporter 101 (1957) (Spain vs. France)*

26 Salman, S. M. (2007). The Helsinki Rules, the UN Watercourses Convention and the Berlin Rules: Perspectives on International Water Law. *Water Resources Development*, 625-640, p. 627

27 Literally translated it means "Use your property so as not to do damage to others." For a detailed explanation on the application of this Roman law maxim to international environmental law see, Tuomas Kuokkanen, *International Law and the Environment: Variations on a Theme* (Hague: Kluwer Law International, 2002), 57 – 58.

28 Islam, N. (2010). *The Law of Non-navigational Uses of International Watercourses: Options for Regional Regime Building in Asia.* The Netherlands: Kluwer Law International, p. 110

29 Territorial Jurisdiction of Int'l Comm'n of River Oder (U.K. v. Pol.), 1929 P.C.I.J. (ser. A) No. 23 (Sept. 10) Summary: The treaty of Versailles established an international commission to rework international regulations pertaining to the Oder river and its tributaries. Poland disagreed with the commission's assertion of jurisdiction over two tributaries within polish territory; because the tributaries were found to be "navigable" and to "naturally provide more than one state with access to the sea," the court held that jurisdiction extended to navigable tributaries within Polish territory. See http://

www.internationalwaterlaw.org/cases/river-oder.html for detailed judgment.

30 *Ibid*

31 The International Law Association was founded in Brussels in 1873. Its objectives, under its Constitution, are "the study, clarification and development of international law, both public and private, and the furtherance of international understanding and respect for international law". The ILA has consultative status, as an international non-governmental organisation, with a number of the United Nations specialised agencies. For further information on the ILA see http://www.ila-hq.org/en/about_us/index.cfm

32 The Institute of International Law was founded on 8 September 1873 at the Ghent Town Hall in Belgium. Eleven international lawyers of renown had decided to join together to create an institution independent of any governmental influence which would be able both to contribute to the development of international law and act so that it might be implemented; For further details about the IIL see http://www.idi-iil.org/index.html; The IIL adopted in the Salburg Session in 1961 the general principles applicable to non-navigational uses of non-maritime waters. This can be accessed at http://www.idi-iil.org/idiE/resolutionsE/1961_salz_01_en.pdf

33 The International Law Commission was established by the United Nations General Assembly in 1948 for the promotion of the progressive development of international law and its codification. A detailed account of its history, organization, structure and functions can be accessed at http://www.un.org/law/ilc/

34 Draft Articles for First reading was presented in 1991 available at (1991) 2(2) YB ILC, 66. Draft Articles for Second reading was presented in 1994 available at (1994) 2(2) YB ILC; also available at http://untreaty.un.org/ilc/texts/instruments/English/commentaries/8_3_1994.pdf

35 Convention on the Law of Non-Navigational Uses of International Watercourses: UNGA Res 51/229, 21 May 1997; available at http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf

36 As of 19 March 2013. For real time status of the UN Convention on International Watercourses see http://treaties.un.org/

Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-12&chapter=27&lang=en

37 A total of 103 countries voted for the Convention, with Burundi, China and Turkey voting against. There were 2 abstentions and 52 countries did not participate in the voting.

38 United Nations General Assembly Press Release GA/9248 Available at http://www.un.org/News/Press/docs/1997/19970521.ga9248.html

39 *Ibid*

40 Salman, S. M. (2007). The Helsinki Rules, the UN Watercourses Convention and the Berlin Rules: Perspectives on International Water Law. *Water Resources Development*, 625-640, p. 631

41 *Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment,* I.C.J Reports1997, at p.7

42 Sadoff, C., Greiber, T., Smith, M. and Bergkamp, G. (2008). *Share – Managing water across boundaries*. Gland, Switzerland. at p.55

43 Article V of the Helsinki Rules, 1966

44 McCaffrey, S. C. (2007). *The Law of International Watercourses.* New York: Oxford University Press. At pg. 406

45 Article 7 of the UN Convention on International Watercourses, 1997 reads as follows:

Obligation not to cause significant harm

1. 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.
2. 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.

46 See commentary to Draft Article 8: Report of the Commission to the General Assembly on the Work of its Fortieth Session, in (1988) 2(2) YB ILC, 36.

47 Para. 1 of Commentary to Art. 8, 1994 Draft Articles on the Law of Non-Navigational Uses of International watercourse, as adopted in its second reading in 1994, UN. GAOR, International Law Commission, forty-sixth Sess. UN. DOC. A/CN.4/L.493; (1994) 2(2) YB ILC; also available at http://untreaty.un.org/ilc/texts/instruments/English/commentaries/8_3_1994.pdf

48 Islam, N. (2010). *The Law of Non-navigational Uses of International Watercourses: Options for Regional Regime Building in Asia.* The Netherlands: Kluwer Law International, p. 155-156

49 Art. 8 of the UN Convention on International Watercourses, 1997 reads as follows:

General Obligation to Cooperate

1. Watercourse States shall 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.
2. In determining the manner of such cooperation, watercourse States may consider the establishment of joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in the light of experience gained through cooperation in existing joint mechanisms and commissions in various regions.

50 Arcari, M., & Tanzi, A. (2001). *The United Nations Convention on the Law of International Watercourses.* London/The Hague/Boston: Kluwer Law International at p. 183.

51 Arcari, M., & Tanzi, A. (2001). *The United Nations Convention on the Law of International Watercourses.* London/The Hague/Boston: Kluwer Law International. at p. 183.

52 McCaffrey, S. C. (2007). *The Law of International Watercourses.* New York: Oxford University Press. at p.471.

53 McCaffrey, S. C. (2007). *The Law of International Watercourses.* New York: Oxford University Press. at p.410

54 Article 12 of the UN Convention on International Watercourses reads as follows:

Notification concerning planned measures with possible adverse effects:

> Before a watercourse State implements or permits the implementation of planned measures which may have a significant adverse effect upon other watercourse States, it shall provide those States with timely notification thereof. Such notification shall be accompanied by available technical data and information, including the results of any environmental impact assessment, in order to enable the notified States to evaluate the possible effects of the planned measures.

55 Islam, N. (2010). *The Law of Non-navigational Uses of International Watercourses: Options for Regional Regime Building in Asia.* The Netherlands: Kluwer Law International, p.166. Also see paragraph 2 of commentary to Article 12, 1994 Draft Articles

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57 Barret, S. (2003). *Environment and Statecraft: The Strategy of Environment Treaty Making.* Oxford: Oxford University Press. At p.126.

58 Briefs on Foreign Relations, available at http://www.mea.gov.in/foreign-relations.htm

59 Aquastat. (2011). *India Survey.* Food and Agriculture Organization of the United Nations.at pg. 4

60 Chellany, Brahma (2011) Water: Asia's New Battleground. New Delhi, India: HarperCollins Publishers. At p. 244

61 For example the Mississippi River Commission established in 1879, the International Joint Commission (IJC) established in 1961, by the USA and Canada under the Columbia River Treaty.

62 For example the International Commission for the Protection of the Danube River (ICPDR) established in 1998.

63 Verghese, B., & Iyer, R. (1993). *Harnessing the Eastern Himalayas.* New Delhi: South Asia Books. At p.25

64 For further information see http://ec.europa.eu/environment/water/water-framework/index_en.html

65 For further information see http://nileis.nilebasin.org/content/shared-vision-program

66 For further information see http://www.mrcmekong.org/

67 The World Bank (2011), *South Asia Water Initiative: Annual Report 2011*, at p.10.

68 Islam, N. (2010). The Impact of the Principles of Sustainable Development. In N. Islam, *The Law of Non-navigational Uses of International Watercourses: Options for Regional Regime Building in Asia* (pp. 179-243). The Netherlands: Kluwer Law International. pg 179

69 *Ibid*

70 *Gabčíkovo-Nagymaros Project (Hungary/Slovakia),* Judgment, I.C.J Reports1997*, p.7*

71 *Gabčíkovo-Nagymaros Project (Hungary/Slovakia),* Judgment, I.C.J Reports1997*, p.7, para. 140.*

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73 PRS Legislative Research, *Report Summary Draft National Water Policy 2012*, Retrieved 28 February 2013 from http://www.prsindia.org/administrator/uploads/general/1345794528_Draft%20National%20Water%20Policy%202012-Summary.pdf

74 Verghese, B. (2007). *Waters of Hope: Facing New Challenges in Himalaya-Ganga Cooperation.* New Delhi: India Research Press. At p.

75 PTI, (2013, January 30) *China to construct three more dams on Brahmaputra River.* The Times of India. Retrieved 28 February 2013 from http://timesofindia.indiatimes.com/world/china/China-to-construct-three-more-dams-on-Brahmaputra-river/articleshow/18257155.cms

76 The early focus of the South Asia Water Initiative has been to build knowledge and institutions, and promote information-based dialogue within countries, across basins and throughout the region. It will also

support project preparation for future investments in water resource management by the World Bank and other donors in the region. It supports the Abu Dhabi Dialogue which, since 2006, has brought together water sector specialists in an informal dialogue on regional water cooperation. Retrieved 14 December 2013 from http://www.ausaid.gov.au/countries/southasia/swa-regional/Pages/init-economic-water.aspx

77 For further information see http://www.unesco.org/new/en/natural-sciences/environment/water/ihp/ihp-programmes/pccp/

78 For further information see http://www.iucn.org/about/work/programmes/water/wp_about_water_prog/

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