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Conflict and Cooperation on South Asian Water Resources

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Abstract

South Asia is gradually heading towards a shortfall of water, which is being exacerbated by growing population, industrialisation, mismanagement, and lack of cooperation. This region hosts major systems of international watercourses, including the Indus, the Ganges and the Brahmaputra. South Asian countries have taken initiatives to cooperate in development and management of water resources, but have serious issues and disputes in this sector. Because of its central location in the region and its sharing of borders with most SAARC countries, India is at the centre of water disputes in the region. It has water treaties and issues/disputes with Bangladesh, Nepal and Pakistan. The unilateral behaviour of India, asymmetric power relations among states, absence of framework agreements, nationalistic sentiments among smaller states, and lack of regional mechanism to share waters are among the main reasons for water disputes in South Asia. Therefore, to really benefit from the water resources available in the region, South Asian countries need to be more forthcoming and cooperative among themselves, with due consideration for the interests of smaller states; they have to leave their historical baggage behind and move forward with a sense of trust and understanding; they should come out of narrow nationalism and undue sensitivity, and focus on development; and they have to harness the water resources under a regional mechanism.

Keywords: South Asia, Nepal, Ganges, Brahmaputra, SAARC.

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Introduction

Four countries in South Asia (Bangladesh, India, Nepal and Pakistan)[1] cover 3.26 per cent of the world's surface area and are home to about 21 per cent of the world population. But, they possess only 6.8 per cent of the world's replenishable water resources.[2] Besides, against the world average of 7,000 cubic metres (m3), South Asia's per capita availability of water in 1995 was only 2,665 m3, indicating a possible shortfall of water in the future.[3] According to a survey, South Asia as a whole will have a surplus of 2,737 billion cubic metres (BCM) of water by 2025. But, the distribution is not even. Among the four countries, only Pakistan will have a shortfall of 102 BCM by 2025.[4] This does not mean that other countries will have abundant of water for their consumptive and non-consumptive uses. High rates of population growth, industrialization, and lack of effective management of available water have added to the increasing problem of water supply in the region.

Mark Twain is often quoted as having said, "Whiskey is for drinking; water is for fighting over".[5] This statement seems increasingly true as the growing scarcity of natural resources, including water, has become one of the most contentious issues in international relations. South Asia is no exception. As Imtiaz Alam says, "(i)f there is any single most important issue that mars bilateral relations among the countries of the subcontinent, it is water."[6] One of the many problems in proper utilization and sharing of international watercourses in South Asia is the political rivalry and mistrust among the states in the region. This is compounded by growing water needs, depleting water resources and mismanagement of available waters.

[1] As these are the major water sharing countries in South Asia, this article has discussed water issues among these countries only.

[2] Toufik A Siddiqui and Shirin Tahir-Kheli (coordinator and editor), *Water Needs in South Asia: Closing the Demand Supply Gap* (Honolulu, Hawaii: Global Environment and Energy in the 21st Century, 2004), 7.

[3] Ibid.

[4] Ibid, 7-8

[5] Timothy Foote, "The Rape of the West," *New York Times*, September 6, 1998.

[6] Imtiaz Alam, *South Asian Journal* (editorial), vol. 8, (April-June 2005).

Water Resources in South Asia (Availability and Requirements)

Country	Area (sq. km.)	Population (million)*	Average Annual Water Potential (BCM)**	Present Use of Water (BCM/year)#	Projected Demand in 2025 (BCM)##
Bangladesh	1,47,570	149.7	373	40	161
India	32,87,240	1210	1870	629	1060
Nepal	1,47,181	26.49	237	39	60
Pakistan	8,03,940	177.1	236	158	337.9
Total	**43,85,931**	**1563.29**	**2716**	**866**	**1618.9**

* *Population as per latest census.*

** *Source: Water Needs in South Asia: Closing the Demand Supply Gap, Toufiq A. Siddiqui and Shirin Tahir-Kheli (coordinators and editors), (Honolulu, Hawaii: Global Environment and Energy in the 21st Century, 2004), 8.*

\# *Source: ibid.,35*

Source ibid., 79

India is not only at the centre of SAARC region geographically, it is also at the centre of water disputes in South Asia. It has water-related problems and disputes with Bangladesh, Nepal and Pakistan. As India is the only country in the region which shares borders with all these countries (none of these countries share borders with other countries, except India),[7] it is, therefore, natural that India is the only country in the region that has water issues and disputes with other countries. There are international watercourses in this region, which are shared by two or more countries. According to international law, an international river is "one either flowing through territory of two or more states (also referred to as a successive river), or one separating the territory of two states from one another (also referred to as a boundary river or a contiguous river)."[8] The Koshi River of Nepal, for example, originates in China, and passes through Nepal before joining the Ganges in India and flowing into the Bay of Bengal via Bangladesh. Similarly, the Brahmaputra, which originates in China, passes,

[7] Among SAARC members, Afghanistan and Pakistan are the only countries that share border. However, as Afghanistan is excluded from the scope of this article, this article states that no other SAARC country shares borders except India.

[8] Salman M.A. Salman and Kishor Uprety, *Conflict and Cooperation on South Asia's International Rivers, A Legal Perspective*, (Washington D.C.: The World Bank, 2002), 3. The UN Convention on the Law of the Non-navigational Uses of International Watercourses, 1997, has identified 'international watercourse' as "a watercourse, parts of which are situated in different states" (Article 2 (b) of the Convention).

along with its tributaries, through India and Bangladesh, and flows into the Bay of Bengal. It is, therefore, necessary for Bangladesh, China, India, Nepal, Pakistan and possibly Bhutan to develop a certain mechanism to jointly develop and share these international watercourses in the future. Depleting resources and increasing demand, resulting from growing population and industrialisation, will make such an arrangement a compelling necessity under provisions of international law.

In spite of such compelling realities, the countries in South Asia have so far not been able to make any concrete plan of cooperation to harness and develop water resources in the region. In this context, two questions come to one's mind: what are the causes for such non-cooperation? And, what measures could help these countries to cooperate in such an important area? This article tries to find answers to these broad questions, and suggests some measures that could be helpful in promoting cooperation among the states in South Asia for mutual benefit. While doing so, an attempt will be made to look into the major water issues among Bangladesh, India, Nepal and Pakistan, analyse the causes for lack of cooperation among SAARC members, and make some suggestions on how the countries could resolve these problems and share water resources in an equitable manner.

Water Issues in South Asia

India and Bangladesh

Bangladesh and India share 54 rivers, including the Ganges, the Brahmaputra and the Meghna. The 1996 agreement on Farakka Barrage[9] has resolved a longstanding dispute between the two countries.[10] However, there are people in Bangladesh who are not happy with the arrangements and the behaviour of India in the course leading to the conclusion of the agreement. Another major issue between the two countries is India's river-linking project. It would, therefore, be appropriate to have a cursory look at the Farakka Barrage agreement, and to consider the "river-linking" plan of India.

[9] Treaty between the Government of the Republic of India and the Government of the People's Republic of Bangladesh on Sharing of the Ganga/Ganges Waters at Farakka, signed on December 12, 1996.

[10] The Farakka Barrage is constructed in West Bengal, about 10 miles from the border with Bangladesh. The Barrage is about 2240 metres long, and has a capacity of diverting 40,000 cubic feet of water per second (cusecs) from the Ganges.

The Farakka Barrage Agreement

The Farakka Barrage problem precedes the creation of Bangladesh itself. India first took a decision to construct the Barrage in 1951; the actual construction work began in 1961; and the construction was completed in 1971. The 25-mile long feeder canal was completed in early 1975 and came into operation from April the same year. The purpose of the construction of the barrage was to "ensure that the Hoogli River would receive, however low the flow of the Ganges may be, up to 40,000 cusecs of water diverted from the Ganges".[11]

Ever since India's decision to construct the Farakka Barrage, the undivided Pakistan strongly opposed the project and tried hard to get it stopped. India, in a way, tried to ignore Pakistan's objection claiming that the Ganges was not an international river.[12] Despite its contention to this effect, India denounced the Barcelona Convention on March 26, 1956, which, according to Pakistan's conclusion, was aimed at going ahead with the construction of the barrage without being seen as violating international law. India's reply was that "the Barcelona convention and statute dealt with only some aspects of inland navigation and its purpose had been superseded by GATT".[13] It should also be noted at this point that India and Pakistan, at that point of time, were negotiating the Indus Water Treaty, which was signed in September 1960. However, India refused to change its position or reconsider the construction of the Farakka Barrage.

After its creation in 1971, Bangladesh, too, continued raising the issue of Farakka Barrage with India. During the first ever visit to India by Bangladesh Prime Minister in February 1971, this matter, too, was discussed, and the Joint Communiqué issued on February 8, also mentioned it. Again, during the visit to Bangladesh by India's Prime Minister, Indira Gandhi, Farakka Barrage was one of the two most prominent issues discussed (the other issue was about the refugees). The Treaty of Friendship, Cooperation and Peace between Bangladesh and India, signed

[11] Salman M. A. Salman and Kishor Uprety, *Conflict and Cooperation on South Asia's International Rivers, A Legal Perspective*, (Washington D.C.: The World Bank, 2002), 135-136.

[12] India had been taking a position that the Ganges was not an international river. This position is based on the ground that about eighty per cent of the Ganga Basin area lies within Indian territory. Therefore, from Indian perspective, discussions on the Ganges with other countries would go against India's existing position. For details, please see Ben Crow et al., *Sharing the Ganges-The Politics and Technology of River Development* (New Delhi: Sage Publications, 1995), 84.

[13] Salman M. A. Salman and Kishor Uprety, *Conflict and Cooperation on South Asia's International Rivers, A Legal Perspective*, (Washington D.C.: The World Bank, 2002), 136.

on March 19, 1972, also mentions the water issue saying "the parties agreed to make joint studies and take joint action in the fields of flood control, river basin development and the field of hydroelectric power and irrigation". It should be noted here that the two countries, in this Treaty, agreed to take *joint* measures for development and utilization of water resources.

Farakka Barrage could create serious problems for Bangladesh. During the lean season, from January to May every year, the flow of the Ganges used to go as down as 50,000 to 55,000 cusecs. During this period the diversion of 40,000 cusecs from the feeder canal could be disastrous for Bangladesh, and could result in serious drought. Bangladesh claimed that "there is not enough flow in the Ganges that could be diverted through Bhagirathi-Hoogli to flush Calcutta port and at the same time maintain the agriculture, ecology and economy of the areas downstream, particularly the southern part of Bangladesh".[14] During the hey-days of Indo-Bangladesh friendship, i.e. in the 1972-73, the two countries created the Joint River Commission and Bangladesh tried to take some measures to limit the damage. Gradually, Bangladesh came to realize that Farakka Barrage was a *fait accompli*, and that it was not possible to undo it. Consequently, the two countries signed a short-term Partial Agreement in 1975, in which they agreed on a water sharing formula. Such short-term arrangements were agreed upon again in 1977 and 1982. The two countries also concluded another MoU on Teesta River in 1985.

If we look at the negotiations between Bangladesh and India from the very beginning, we realize how Bangladesh had been gradually losing ground. Bangladesh had taken this issue to the United Nations, but not much was achieved, except the Consensus Statement of November 1976.[15] Its proposal for construction of storage reservoirs in the upper reaches of the Ganges (in India and Nepal) also went unheeded. The 1975 Accord contained a clause that guaranteed a certain amount of water for Bangladesh, but the 1977 Agreement and the 1982 MoU did not have any such guaranteeing clauses.

Finally, the two countries concluded the Farakka Barrage Treaty in 1996, which will remain valid for 30 years. This Treaty has resolved the longstanding issue between the two countries. However, there are still concerns about the guarantee of minimum flow for Bangladesh.[16] Through

[14] Emaduddin Ahmad, *South Asian Journal* 8, (April-June 2005): 55.

[15] Bangladesh succeeded in getting the issue included in the agenda of the 31st Session of the UN General Assembly and get it discussed in the Political Committee. For details about the Project, please see World Bank Report No. TO-146B: "Appraisal of the Port of Calcutta Rehabilitation Project," April 7, 1958.

[16] Emaduddin Ahmad, *South Asian Journal* 8, (April-June 2005): 64

this Treaty, both countries softened their earlier differences on the method for the augmentation of the flow of the Ganges River in the dry season, i.e., Bangladesh's proposal for the construction of storage reservoirs in the upper reaches of the Ganges in India and Nepal, and India's proposal for construction of a canal linking the Brahmaputra River with the Ganges. Thus, Bangladesh tacitly accepted that construction of storage reservoirs in the upper reaches of the Ganges could not be possible. India, on its part, gave up its demand for augmentation of the rivers in the region (particularly Brahmaputra) for bilateral use.[17]

The River Linking Project of India

Another problematic issue between Bangladesh and India is India's major river-linking project. India has announced to undertake the river-linking project, which will divert water from "water-surplus areas" to "water-deficit areas". The major river basins in the eastern region, including the Ganga and the Brahmaputra basins, have been identified as marginally surplus and surplus areas, respectively, while the southern and western regions are identified as water deficit regions. Under this project, India intends to divert a large volume of water from its eastern region (i.e. from Ganga-Brahmaputra basin) to its western and south-western regions. Bangladesh has taken it seriously, and has voiced its serious concern to the Indian side. Bangladesh has felt that the Indian response so far has remained "discouraging to initiate a fruitful dialogue on the issue"[18]; and it was hoped that the change of Government in India from NDA to UPA would help review the plan.[19] However, the Manmohan Singh-led UPA Government not only decided to go along with the project but also reiterated it in early 2014.

India and Nepal

Nepal is rich in water resources, with 237 billion cubic metres of average annual potential of internal renewable water resources.[20] It has also very

[17] The differing proposals for augmenting the flow of the Ganges in the dry season came out since 1972. This matter was mentioned in the Side Letter signed along with the 1977 Agreement. For details, please see Salman M.A. Salman and Kishor Uprety, *Conflict and Cooperation on South Asia's International Rivers, A Legal Perspective* (Washington D.C.: The World Bank, 2002), 156-57.

[18] Ibid

[19] Ramaswamy R. Iyer, *South Asian Journal*, 8, (April-June 2005): 16.

[20] Toufik A Siddiqui and Shirin Tahir-Kheli, eds., *Water Needs in South Asia, Closing the Demand Supply Gap*, Global Environment and Energy in the 21st Century, (Honolulu, Hawaii, 2004): 7-8.

high potential of hydropower generation, with a potential of 83,000 megawatts of electricity.[21] More than half of the potential is technically and economically feasible. Paradoxically, only a little over one per cent of potential electricity has so far been generated in Nepal; and only a little over 40 per cent of the Nepalese people have access to electricity. Moreover, Nepal's agricultural hub in the southern part of the country needs irrigation facilities. However, due to lack of awareness, financial capacity and technical expertise, Nepal has so far not been able to develop and harness its water resources adequately. On the other hand, the North-Eastern part of India is in need of a large quantity of power; and the fertile Gangetic plains, especially Uttar Pradesh and Bihar, are in great need of water for irrigation. The rivers flowing from Nepal are the only viable alternatives for irrigating these lands. Against such a background, there are real potentials and possibilities for harnessing and developing Nepal's water resources for the benefit of both Nepal and India.

Not that these two countries have not thought about or acted on developing Nepal's water resource. Nepal and India concluded, through an exchange of letters, an agreement as early as 1920 on utilizing the waters of Mahakali River, a border river between Nepal and India.[22] After that, the two countries have concluded the Koshi Agreement in 1954, the Gandak Agreement in 1959, the Tanakpur Agreement in 1991, and the Mahakali Treaty in 1996. There are a number of other agreements and understandings between Nepal and India on developing and harnessing Nepal's water resources.

There is a feeling among the Nepalese people that India, as a big and powerful neighbour, has taken undue advantage from the earlier agreements on Nepal's water resources, at the expense of Nepal's rights and interests. India's behaviour with other neighbours like Bangladesh, Bhutan and Pakistan has contributed to vindicating this perception among the Nepalese people. On the other hand, there are views in India that Nepalese politicians are "rendered so paranoid by nationalist sentiments that they were incapable of striking sensible deals with New Delhi".[23] Scholars in India also agree

[21] Dr. Hari Man Shrestha, a Nepali engineer, estimated in 1960s that Nepal has a potential of producing more than 83 thousand MW of hydropower. From then on, authorities and individuals in Nepal have been citing this figure as Nepal's hydropower potential. Also see the Energy Sector Synopsis Report, Nepal, 2010 brought out by Water and Energy Commission Secretariat, Government of Nepal, Kathmandu, at page 53. The Report is also available at www.wec.gov.np.

[22] Nepal and British India exchanged the letters on October 21, 1920 for irrigation and power in Utter Pradesh, the northern state of India. This agreement has been incorporated as a part in the 1996 Mahakali Treaty between Nepal and India.

[23] "Nepal and India: Splashing Out," *The Economist*, (London), January 25, 1997, 79.

that the earlier treaties were unequal. S. D. Muni, one of the Nepal analysts, says: "There is some truth in the allegation of one-sided and exploitative use of Nepal's water resources by India in what is known as mutual benefit projects between the two countries such as Koshi and Gandak projects. It is generally conceded that these projects give greater advantage to India than to Nepal and thus could have been better designed to ensure adequate benefits to the Nepali side."[24] Similarly, another expert, Mr. Ramaswamy R. Iyer, says, "All I can say is that both the Indian tendency to blunder and the Nepalese tendency to misunderstand seem to be very strong…. India has a propensity to make mistakes repeatedly, and Nepal has a propensity to misinterpret everything that India does or says, put the worst possible construction on Indian actions and statements, and ascribe active malevolence to India."[25]

From the very beginning, i. e. from the Exchange of Letters of 1920, Nepal-India water treaties seem to ignore international law, prevailing practices and also the sense of equity and justice. Going through the earlier Nepal-India water treaties, one feels that they are not agreements reached between two sovereign states on the basis of equality. Though Nepal is an upper riparian country, the treaties seem to give a message that India was in a giving position and Nepal at the receiving end. Following is a brief account of the major water treaties between Nepal and India.

The Koshi Agreement of 1954

Nepal and India concluded the Koshi Agreement on April 25, 1954. Though the project was essentially conceived for flood control, it is a multipurpose scheme including hydropower generation and irrigation also. A 1,150-metre barrage was built in Bhimnagar in Nepal, about 8 kilometres from Nepal-India border. Two canals were built on either side of the canal. The eastern canal irrigates 6,12,000 hectares of Indian territory, and the western canal irrigates 11,300 hectares of Nepalese and 3,56,610 hectares of Indian agricultural land. A powerhouse with an installed capacity of 20,000 kw of electricity (four units of 5,000 kw each) was constructed along the eastern canal.

The Koshi Agreement of 1954 was so one-sided, in favour of India, that it was severely criticized in Nepal soon after its conclusion. The critics asserted that the project was not beneficial to Nepal in any manner, and that it granted extraterritorial rights to India for an indefinite period without adequate compensation to Nepal. They also asserted that India would get

[24] S. D. Muni, *India and Nepal: A Changing Relationship* (New Delhi: Konark Publishers, n.d.), 3.

[25] Interview with Mr. Ramaswamy R. Iyer by the author.

undue benefit in irrigation and electricity as well. The resentment was so wide and severe that India agreed to revise the agreement. Subsequently, it was extensively revised in 1966. The preamble of the revised agreement states that "Nepal had suggested revision of the said (1954) Agreement in order to meet the requirements of the changed circumstances" and that India had agreed to the revision "with a view to maintaining friendship and good relation subsisting between Nepal and India".[26]

The revised Agreement has rectified many of the criticisms. The general layout of the project was changed before signing the Agreement. In the agreement, it was agreed that the land in which the Nepal Link Bund was situated would be surrendered to Nepal and that any construction and other undertakings by India would be carried out in consultation with the Government of Nepal. The revision also delineated the responsibilities of each Government.

However, some reservations still remain on the Nepalese side. These pertain to sovereignty, benefits and compensation. The Agreement, for example, refers to India as "the Union" whereas the Nepalese side is referred to as the "Government of Nepal". Some have interpreted this as a violation of Nepal's sovereignty.[27] Other contentious issues include land ownership, water and power use, navigational and fishing rights and dispute settlement mechanism.

The Gandak[28] Treaty

Nepal and India signed the Gandak Agreement on December 4, 1959. A barrage has been built at Bhaisalotan, on the reaches of the Gandaki River, which forms the boundary between Nepal and India. Two canals have been constructed on either side of the barrage. In total, the canals irrigate 57,900 hectares of Nepalese and 1,850,000 hectares of Indian land. A powerhouse with an installed capacity of 15,000 kw of electricity has been built in Nepalese territory. It needs to be noted that the project was built by, and at the cost of, India. Nepal would get an aggregate maximum of 10,000 kw of electricity, up to 60 per cent load at power factor not below 0.85. However, Nepal has to buy this electricity on the basis of the actual cost of production.[29]

[26] Preamble to the 1966 Agreement.
[27] Aditya Man Shrestha, *Bleeding Mountains of Nepal* (Kathmandu: Ekta Books, 1999), 157.
[28] The River is called Gandaki in Nepal and Gandak in India.
[29] For details, please see the Gandak Treaty between Nepal and India. www.moen.gov.np/treaties/gandak treaty.

As this Agreement, too, was criticized in Nepal, it was revised in 1964. The revision attempted to address some of the concerns of the Nepalese side. The amended Article 9, for example, gives Nepal exclusive right to withdraw for irrigation or any other purposes from the river and its tributaries such supply of water as may be required from time to time. However, the same article also restricts Nepal from trans-valley transfer of water during the months from February to April. The treaty has "maintained an ominous silence as far as the project's irrigation prospects for India were concerned".[30]

Under the Agreement, the Nepalese Government undertook to acquire land necessary for the project. The land thus acquired would be transferred to the Government of India, which would pay compensation. The Government of India will own this land. If the land is not required by India for the project, it would be reconveyed to the Nepalese Government free of cost. The Agreement authorizes the officers of the Government of India to execute all necessary works in case of any apprehended danger or accident to any of the structures.

From the Nepalese perspective, the Gandak Agreement is favourable if compared with the Koshi Agreement. However, a question can be raised whether Nepal has reasonable and equitable share of benefits from the project. Though the project was implemented at the cost of Indian Government, Nepal gets only a negligible share of benefit, both in terms of irrigation facility and electricity. Moreover, the social cost Nepal has to incur is higher than the benefits it gets. The submergence of land behind the barrage and rehabilitation of displaced persons have remained serious problems for Nepal. The Gandak Agreement also gives India the ownership of the land acquired for the project. Under the Koshi Agreement, the Government of India holds the land under a 199-year lease but there is no mention about the term or expiry of the Gandak Agreement.

The Mahakali Treaty

The Mahakali Treaty[31] was concluded between Nepal and India in February 1996. It is significant that it sets forth the foundation for an integrated approach in developing and harnessing water resources between Nepal and

[30] Salman M. A. Salman and Kishor Uprety, *Conflict and Cooperation on South Asia's International Rivers, A Legal Perspective*, (Washington D.C.: The World Bank, 2002), 91.

[31] The name of the treaty is Treaty between His Majesty's Government of Nepal and the Government of India Concerning the Integrated Development of the Mahakali River including Sharada Barrage, Tanakpur Barrage and Pancheshwar Project.

India. Moreover, this is the first treaty in the history of Nepal-India water relations which provides for equal investment and benefits. The Treaty mentions the "desirability (of the two Governments) to a treaty on the basis of equal partnership to define their obligations and corresponding rights and duties thereto".[32]

The Mahakali Treaty consists of three parts. The first part relates to Sharada Barrage. Nepal and India had concluded, through an Exchange of Letters in 1920, the Sharada agreement. This agreement gives Nepal the right to a minimum supply of 28.35 m3/s (1000 cusecs) and a maximum of 10,000 cusecs of water from the Sharada Canal and 70 million kw/hour of electricity annually (the total capacity is 448.4 million kw/hour) for giving its consent to use a piece of its land of about 577 metres to India for the construction of the eastern afflux bund. There is no mention about the share of India. Nepal was not satisfied with this arrangement, and kept trying to obtain an increase. However, it could not succeed in its efforts. Finally, the 1996-Mahakali Treaty replaced this treaty, and incorporated its arrangements without making any changes.

The second part relates to Tanakpur Barrage. Nepal and India had reached a Memorandum of Understanding on Tanakpur Barrage in 1991. The agreement provided for the construction of the left afflux bund in Nepalese territory. Nepal agreed to provide 2.9 hectares of land to build the bund and a 120-megawatt power station. In exchange, Nepal would get 150 cusecs of water from the head regulator and 10 megawatts of electricity. This agreement was strongly criticized in Nepal. Questions were raised about the territorial sovereignty of Nepal (for giving the land to India) and benefits from the project. Nepal's Parliament debated the issue and a writ petition was filed in the Supreme Court. The issue was highly politicized. However, by the time Nepal's Supreme Court gave its verdict, the physical work at Tanakpur area had almost been completed. It was another example of India's high-handedness and unilateral behaviour.

The third part of the Mahakali Treaty is related to Pancheshwar Multipurpose Project (PMP). The project requires the construction of a 315-metre high dam (Pancheshwar Dam) with a capacity of generating 3,480 megawatts of electricity. The dam project will be implemented in accordance with the Detailed Project Report (DPR) to be jointly agreed upon between the two sides.

The Mahakali Treaty also establishes some guiding principles on sharing of water resources between Nepal and India. The Treaty specifies that both Nepal and India are entitled to equal utilization of water, without prejudice to their respective consumptive use. It also provides that future

[32] Preamble to the Mahakali Treaty

projects in the border area would be designed and implemented by agreement between the two countries using the principles established by the Treaty. The Treaty requires Nepal and India "not to use, obstruct, or divert the waters of the Mahakali River, so as to adversely affect the natural flow and level of the river".[33]

Besides, the Mahakali Treaty establishes four new principles. The first principle is that the PMP would be designed and implemented to produce maximum total net benefit for both countries. The second principle is that both countries would work together in an integrated manner to develop and share their water resources. The third principle is about sharing the cost of the project in proportion to the benefits accruing to each country. And, the fourth principle is that a portion of Nepal's share of energy will be sold to India.

There are people who still hold the view that the Pancheshwar Multipurpose Project is in fact a myth, and within it lies the disguised deception of Indian intent. The first concern is that the Treaty recognises the Mahakali River as the border river on major stretches, which goes against the Treaty of Sugauli concluded between Nepal and British India in 1816.[34] Moreover, even after 18 years of its conclusion, the Detailed Project Report (DPR), which is a must for the implementation of the Treaty, has not been agreed upon.[35] Besides, India, in 1997, presented a proposal for water sharing, requiring that "the Mahakali waters should be shared only after ensuring that the flow of water to the canal to the lower Sharada Project, situated about 160 kilometres downstream from the Sharada Barrage at the Nepal-India border, was assured prior use."[36] This surprised the Nepalese side, and has created real problem in the preparation of the DPR.

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[33] Mahakali Treaty, Article 7.

[34] Recognition of the Mahakali River as a boundary river on major stretches is a controversial provision. Article 5 of the Sugauli Treaty of 1815/16 (proposed by British India on December 2, 1815 and exchanged on March 4, 1816), reads, "*The Rajah of Nipal renounces for himself, his heirs, and successors, all claim to or connexion with the countries lying to the west of the River Kali and engages never to have any concern with those countries or the inhabitants thereof.*" According to this provision, Nepal renounced its claims to the countries/areas lying to the 'west' of the Mahakali River, meaning the river itself belongs to Nepal. Therefore, there is a section of people in Nepal which believes that recognition of the Mahakali River as a boundary river stands against the Sugauli Treaty.

[35] The DPR was to be prepared within six months from the conclusion of the Treaty.

[36] Dipak Gyawali and Ajaya Dixit, "How not to do a South Asian Treaty," in Himal South Asian, Kathmandu, April 2001.

India and Pakistan

India and Pakistan had serious dispute on Indus river system. However, they resolved the dispute by concluding the Indus Water Treaty on 19 September 1960 under the auspices and mediation of the World Bank. This Treaty has withstood major wars between India and Pakistan, and has been successful in regulating the water issue between the two countries.

The Indus River originates near Mansarovar in Tibet, and is about 2,000 miles long. The Indus system of rivers comprises three principal tributaries in the West: the Kabul, the Swat and the Kurram; and five principal tributaries in the East: the Jhelum, the Chenab, the Sutlej, the Beas and the Ravi. The Indus rivers cover a drainage area of 450,000 square miles.[37]

Disputes over the Indus system of rivers began long before the creation of Pakistan. The Indus was being used for irrigation since historical times. In 1859, the construction of the Upper Bari Doab Canal was completed, which facilitated irrigation of about one million acres of land between the Ravi and the Beas Rivers, with the waters from the Ravi. Later, in 1919, a tripartite agreement on the use of the waters of the Indus was signed among Punjab, Bikaner and Bahawalpur.[38] However, the disputes on the Indus system of rivers, which had historically emerged as inter-state differences among Punjab, Sindh, Bahawalpur and Bikaner, turned into an international dispute, especially between East (Indian) and West (Pakistani) Punjab, after the creation of Pakistan in 1947. Since the boundary of the two states had not by then been demarcated, the British Act of Parliament did not deal with the allocation of water between India and Pakistan. As mentioned by Salman M.A. Salman and Kishor Uprety, Radcliffe "in his deliberations did acknowledge the importance of the Indus system to both countries, but did not make any explicit recommendation other than to hope that they would work together in finding a solution".[39] Until 1960, when they reached agreement on the Indus Water Treaty, India and Pakistan, though with serious differences and problems, managed to work out a *modus operandi* through the Stand Still Agreement of December 20, 1947, the Delhi Agreement of 4 May 1948, and the understanding of March 10, 1952. The World Bank played crucial functional role in negotiating the Treaty. The Bank also acted as the Administrator of the Indus Basin Development Fund.

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[37] Salman M. A. Salman and Kishor Uprety, *Conflict and Cooperation on South Asia's International Rivers, A Legal Perspective*, (Washington D.C.: The World Bank, 2002), 37.
[38] Ibid, 40-41
[39] Ibid, 42, note 15.

The preamble to the Indus Water Treaty says that the two Governments were equally desirous of attaining the most complete and satisfactory utilization of the waters of the Indus system of rivers", and recognized the need for "fixing and delimiting, in a spirit of goodwill and friendship, the rights and obligations of each in relation to the other concerning the use of waters and of making provision for the settlement, in a cooperative spirit, of all such questions as may hereafter arise…".[40]

According to the Indus Water Treaty, all the waters of the Eastern Rivers, viz. the Sutlej, the Beas and the Ravi, shall be available for the unrestricted use of India. Pakistan agreed not to permit any interference with the waters of the Eastern Rivers, except for domestic and non-consumptive use. Similarly, all the waters of the Western Rivers, viz. the Indus, the Jhelum and the Chenab, shall be available for unrestricted use of Pakistan; and India would not interfere with their waters, except for domestic and non-consumptive use. However, in addition to domestic and non-consumptive use, each country was allowed to use waters of the rivers allocated to the other party for agricultural use (as set out in Annex C) and generation of hydropower (as set out in Annex D).

Under the Treaty, India and Pakistan also agreed to cooperate in undertaking engineering works, and to exchange data and other relevant information. They also agreed to a comprehensive dispute settlement mechanism, under which any differences would be settled by the Indus Water Commission, comprising a Commissioner from each party. If the Commission cannot settle the differences, they would be referred to a neutral expert. In case the neutral expert fails to resolve the issues, they would go for arbitration.

The Indus Water Treaty tried to address every concern of both India and Pakistan. Some opine that "[e]very conceivable safeguard that Pakistan's engineers and lawyers could suggest was included to prevent India from altering the amount or the time of its water supplies to Pakistan during the transition period".[41] However, there are some complaints, too, on both sides. To quote Ramaswami R. Iyer, [m]any in India feel that the allocation of 80 per cent of the waters to Pakistan and 20 per cent to India was an unfair settlement foolishly accepted by the Indian negotiators; and many in Pakistan argue that the territories that went to India under Partition were historically using less than 10 per cent of the Indus waters, and that the Treaty was generous to India in giving it 20 per cent of the waters".[42]

[40] Preamble to the Indus Water Treaty of 1960.

[41] Salman M. A. Salman and Kishor Uprety, *Conflict and Cooperation on South Asia's International Rivers, A Legal Perspective*, (Washington D.C.: The World Bank, 2002), 50.

[42] Ramaswamy R. Iyer, *South Asian Journal*, 8, April-June 2005, 18.

However, Mr. Iyer concludes that both are "fallacious" arguments, and that 20 per cent is not *ipso facto* low, nor is *a priori* view on what is fair is possible.[43]

As noted above, the conclusion of the Indus Water Treaty was an achievement for both India and Pakistan. The negotiations on the treaty not only helped avoid war between the two countries,[44] it has also provided a strong framework for settling water disputes. The Treaty is also an example of the effectiveness of the third-party mediation in dispute settlement. A few years back, the Baglihar Dam dispute between India and Pakistan was resolved through the Neutral Expert appointed by the World Bank to the satisfaction of both sides. Experts hold the view that other disputes between India and Pakistan can also be resolved under the framework of the Indus Water Treaty.

There are water-related disputes between India and Pakistan, basically on projects initiated by India and protested by Pakistan as going against the provisions of the Indus Water Treaty. The major among the disputes include the 690 MW Salal Hydroelectric Project (India started its construction in 1970), Wullar/Tulbul Barrage Project (India started its construction in 1984; Pakistan knew about it and lodged its protest in 1986), and the 330-MW Kishanganga Hydroelectricity Project. Though these issues are yet to be settled, the good thing is that both sides have referred to the Indus Water Treaty as the basis for their claims (Pakistan claims that the projects violate the provisions of the Treaty while India claims that they are in accordance with the Treaty).

Conclusion

The analysis of the water issues in South Asia shows some striking features. The first of such features is the unilateral behaviour of India. India constructed the Farakka Barrage against the protest of Pakistan. Such behaviour can be seen in relation to Bangladesh, too. Similar trends were visible with regard to Nepal as well. The Koshi and the Gandak Agreements were concluded without detailed discussions with Nepal, though they were implemented with the consent of the Nepalese Government. But a clear example of India's high handedness and unilateralism can be seen in the case of Tanakpur Barrage.

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[43] Ibid.

[44] Salman M. A. Salman and Kishor Uprety, write, "In this situation (in which India claimed after the expiry of Standstill Agreement that the West Punjab had no rights to any share of waters), one option for Pakistan was war, and there were many who advocated for it…," please see *Conflict and Cooperation on South Asia's International Rivers*, 43.

The second feature is the asymmetric power relation between states that has resulted in unequal treaties or one-sided behaviour on the part of the more powerful state. The Koshi Agreement of 1954 between Nepal and India demonstrated India's plan to get unreasonable and undue benefits from Nepal. The same is the case with Bangladesh. However, such treatment is absent in relations between India and Pakistan. The main reasons for equal treatment can be assigned to the political strength of Pakistan, its awareness of its rights and obligations, its expertise in the area of water resources, and its capacity to mobilize financial resources necessary to implement projects.

The third feature relates to the involvement of a third party in the development and management of water resources. The World Bank's involvement was crucial and decisive in the negotiation of the Indus Water Treaty between India and Pakistan. As we have seen above, no third party was involved in cases of Bangladesh and Nepal. It can be argued that involvement of a neutral and influential third party could have resulted in better and more equal and equitable treaties between Bangladesh and India and between Nepal and India as well.

The fourth feature is the absence of an over-arching treaty between Bangladesh and India and Nepal and India. The Indus Water Treaty has provided an overarching framework for water relations between India and Pakistan, but no such frameworks exist between other countries. It can be assumed that had there been a framework agreement between those countries, their water relations could have been more cooperative and mutually beneficial.

One more feature visible in the area of water resources in this region is the extra sensitivities among smaller states. The unilateral behaviour and high-handedness of India has greatly contributed to creating, developing and perpetuating sensitivity, cautiousness and concerns among the peoples of Bangladesh, Nepal and Pakistan. However, it is also true that undue cautiousness and mistrust have affected the effective and realistic utilisation of projects. India can be expected to show flexibility and magnanimity commensurate with its size and strength, and, at the same time, smaller countries should be more practical and realistic, and should refrain from being too nationalistic and sensitive while taking up developmental projects.

Finally, a regional arrangement on water resources seems highly desirable. Two reasons can be cited to justify this proposition. One, all riparian states need to be consulted while harnessing an international watercourse.[45] As we have seen above, many rivers in South Asia originate

[45] Article 4 (1) of the UN Convention on the Law of the Non-navigational Uses of International Watercourses, 1997, states: “Every watercourse state is entitled to

from Tibet, a part of the People's Republic of China. Again, the Kabul River, a tributary of the Indus River originates from Afghanistan. Therefore, a comprehensive agreement among Afghanistan, Bangladesh, Bhutan, China, India, Nepal and Pakistan needs to be worked out. Such an agreement will ensure compliance with international law, and, at the same time, make cooperation among the parties smooth, reasonable and equitable. Given India's preference for bilateralism, such an agreement may seem a little bit difficult, but ultimately, it would be beneficial for India as well.

The second basis for justification of regional arrangement is the presence of SAARC. Under SAARC, the members have been exchanging cooperation in a number of areas. Though the Charter does not specifically mention sharing of water resources, it mentions that promoting "active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields" is one of its objectives.[46] Afghanistan is a member of SAARC, and China is an observer. The association of Afghanistan and China with SAARC will facilitate conclusion of a regional arrangement for developing and harnessing water resources in this part of the world.

Thus, if the states of South Asia can be more forthcoming and cooperative; if they can leave their historical baggage behind and move forward with a sense of trust and understanding; and if they try to harness the water resources under a regional mechanism, the peoples of South Asia could hope to enjoy a better and peaceful future.■

participate in the negotiation of and to become a party to any watercourse agreement that applies to the entire international watercourse, as well as to participate in any relevant consultations".

[46] Article 1 (e) of Charter of the South Asian Association for Regional Cooperation, www.saarc-sec-org