

India-Nepal Cooperation in Water Resources: The Problems and Prospects

Satabdi Das

Abstract : *Transboundary rivers are of immense significance for both cooperation and conflict between and among riparian states. Indo-Nepal relation is not an exception in this regard. India is a lower riparian to Nepal and a large number of small and large rivers flow from Nepal to India constituting a large part of the Ganges river basins. These rivers are significant for irrigation as well as for fulfilling growing energy needs of both the countries. There are many bilateral treaties and agreements for the optimal uses of such shared water resources but politicisation of these treaties has delayed and minimised the prospects of cooperation. Against this background the study concentrates on The prospects and potentials of shared rivers between India and Nepal in hydro power generation; What are the grey areas in Indo-Nepal cooperation over water resources? The merits and demerits of bi-lateral water treaties to escalate cooperation and minimise conflict between Nepal and India in managing trans-boundary rivers; The politico-diplomatic equations of water cooperation.*

Keywords: Water relation, Transboundary river, India, Nepal, Water Treaty, Mahakali Treaty

Introduction:

Water is a significant environmental resource that affects numerous aspects of human, natural and economic life. However, the availability of fresh water to human population is immensely disproportionate due to rising population growth, unscrupulous urbanisation and climate change. With this scarcity, the

water sector of different countries face the challenge of bridging the gap between demand and supply for this life sustaining resource. In such a situation, rivers, that is a crucial source of water resources and which connects the upstream and downstream users are often responsible for igniting serious discontent. As much of the water resources are transboundary in nature, international political fractions and tensions have arisen over the control of and access to this scarce resource. In other words, the crucial nexus between water and food production as well as water and hydro power generation have turned the shared river basins into a battleground for competing claims over 'reasonable share of water'. Along with this, the initiation of a dam building race by the upstream parties ultimately makes water a significant medium of power projection and fostering competition within and between sovereign states.

There are lots of instances of such discontents over shared water resources across the World. Competition over the access to scarce water resource is evident in Nile River basin between Egypt which depends on the Nile for 95 per cent of its drinking and industrial water and the upper riparians namely Sudan and Ethiopia. Water sharing problem is also acute in the Jordan river basin. Here water presents an environmental source of conflict, as reduced water supply due to primary effects of climate change on temperature and precipitation creates clash of interests among the countries like Israel, Jordan, Lebanon, Syria and Palestine (Myres 1989: 28-29). Having a transboundary nature the rivers Tigris- Euphrates also creates conflictual situation between the riparian states like Turkey, Syria and Iraq. The dispute between Turkey and its downstream neighbours has been erupted by a series of irrigation and dam building projects on the Euphrates by the former. It was claimed that these would have significant negative implications over Iraq's water supplies. However the problem was further aggravated by territorial battles between Turkey and Syria and any move by Turkey to cut off the flow of the Euphrates in Syria ultimately will result in Environmental degradation. In Central Asia, the Aral Sea basin in which Amu Dariya and Syr Dariya rivers situated, also witnessed great political tensions over the sharing and utilization of water by downstream countries like Uzbekistan, Kazakhstan and Turkmenistan and upstream states like Kyrgyzstan and Tajikistan. The differences in the usage of water between them have spurred conflict affecting both the environmental

and national security interests of the riparian countries (Dinar 2011:65). Common river problems are also evident between the USA and Canada and the USA and Mexico

The Indian subcontinent is not an exception in this regard. Here also the struggle for water has escalated political tensions, conflicts, 'social disharmony' and even violence as 'territorial boundaries of this region rarely coincide with the borders of watersheds'. The intensity of global climate change has amplified this risk of conflict over shared fresh water resources in the region as several political entities and actors involved, have minimised the scope of sustainable management of water resources in a changing climate. But if properly used trans-boundary rivers are of immense significance for cooperation also. They can help in irrigation, joint hydro-power generation, cooperation in river linking projects and many more. Indo-Nepal relation is not an exception in this regard. India is a lower riparian to Nepal and a large number of small and large rivers flow from Nepal to India constituting a large part of the Ganges river basins. These rivers are significant for irrigation as well as for fulfilling growing energy needs of both the countries. There are many bilateral treaties and agreements for the optimal uses of such shared water resources but politicisation of these treaties has delayed and minimised the prospects of cooperation.

Against this background the objective of the study is to concentrate on the prospects and potentials of shared rivers between India and Nepal in hydro power generation; what are the grey areas in Indo-Nepal cooperation over water resources? The merits and demerits of bi-lateral water treaties to escalate cooperation and minimise conflict between Nepal and India in managing trans-boundary rivers; and finally the politico-diplomatic equations of water cooperation.

Strained Riparian Relation in the Indian Subcontinent due to Geographical Reason:

In the words of Ramaswami. R. Iyer, "Some of the water resources of the country flow into it from beyond our borders- say from Nepal or Tibet- and some cross our borders and go into other countries (Pakistan, Bangladesh). We have expectations of flows from the 'upper countries' and obligation to the 'lower countries'(Iyer 2003 :259)." Thus as a river runs through more than

one country, the countries concerned must reach an agreement on the sharing of the waters of that river. He has classified Nepal as upper riparian, India middle riparian (Lower riparian to Nepal, Bhutan and Upper riparian to Bangladesh), and Bangladesh as lowest riparian deltaic country (Iyer 2003 :259). Against such a geographical scenario often efforts for required augmentation of both inter and intra state river water in the lean seasons through diversion of surplus of other rivers as well as dam building over rivers which leads to forced resettlement of population as well as extreme climate variability may act as drivers of conflict escalations in the subcontinent. There are three fundamental treaties- The Indus Treaty of September 1960 (India-Pakistan), The Ganga Treaty of December 1996 (India-Bangladesh), and the Mahakali Treaty of February 1996 (India-Nepal) which have tried to resolve the discord and blame game over dam building and impounding of shared river water.

Effects of Climate change on Trans boundary Rivers in South Asia:

Climate change has a tremendous effect on glaciers. The acceleration of melting of glaciers is likely to cause increase in river flows that initially results in higher incidence of flooding and landslides. But later as the volume of ice available for melting decreases, the glacial runoff and river flows are expected to get diminished (Shiva and Bhatt 2009: 13). In the IPCC estimates, it is found that due to climate change, in the Himalayas, glaciers less than 4 kilometres long would disappear entirely if average global temperature rise by 3 degree Centigrade. Receding glaciers and the increased frequency of glacial lake burst floods pose serious risks to mountain states of Bhutan and Nepal and downstream, to India and Bangladesh. This will initially cause increased flooding and mudslides followed by an eventual decrease in flow in rivers that are glacier fed. World Wide Fund for Nature projection indicates that the annual renewable Ganges flow could slip into a situation of scarcity by 2025. This could further jeopardize supply particularly in the dry seasons prior to the monsoon (The Hindu 2007). The complexity and variability of river flow generation is also vulnerable to such effect. Such effects have serious implications for South Asia, specially hundreds of millions of people depend on perennial rivers such as the Indus, Ganges and Brahmaputra that are all fed by the

unique water reservoir formed by the 16000 Himalayan glaciers. Along with glacial shrinkage and retreat, climate change has largely impacted the amount, intensity and distribution of precipitation over time and space that have a direct effect on total and peak river run off, potentially moving it away from agricultural and dry season demands and toward monsoon flash floods (Eriksson et.al. 2009: 4-7). The situation in India is more critical due to its geographical location.

Indo-Nepal Water Relation: The pros and cons of landmark agreements:

India is a lower riparian to Nepal. She needs the latter not only to meet some of its growing energy needs but more crucially for flood management and navigational uses. The water dispute between them has been over the Mahakali River which defines Nepal's border with India in the West. 'Political passions were kindled in Nepal over India's 1988 construction of Tanakpur Barrage on the Mahakali under the terms of an agreement signed in 1991 and renegotiated in 1996'(Chellaney and Najbullah 2007 : 37). Nepal's mistrust, has been reinforced by what it perceives to be unequal treaties starting from the Sharada Dam construction (1927), Kosi Agreement (1954), Gandak Agreement ((1959), Tanakpur Agreement (1991) and finally the Mahakali Treaty (1996). Nepal, like Bangladesh, is also concerned over India's river inter-linking proposal. India has identified 30-link schemes. Five of the 14 river links of the Himalaya are directly related to Nepal's 28 storage schemes. These are Kosi- Mechi; Kosi-Gandak; Gandak-Ganga; Sarada-Yamuna and Ghagra-Yamuna. These concerns will feature predominantly in any water discussion and cooperation with Nepal (IDSA Task Force Report 2010 : 58-60).

Sarada Treaty: Since pre independence period they have strained riparian relations. The following water treaties and agreements are mostly significant to determine the water relations between India and Nepal. In 1920s the Sarada treaty for constructing Sarada barrage on Mahakali River had been signed between Nepal and the Colonial administration of India. It transferred 4,000 acres of the eastern banks of the Mahakali to India to build the Sarda barrage in exchange for 4,000 acres of forested land in areas to the east as well as Rs 50,000 to Nepal. Furthermore, the Treaty allowed Nepal to withdraw 4.25 cumecs of water in the dry season and 13 cumecs in the wet season, which

could be increased to 28.34 cumecs if water were available. What India could withdraw out of the approximately 650 cumecs average annual flow of the Mahakali was, however, not specified. In effect, it was limited only by the scale of the technology it was free to employ (Gyawali and Dixit 1999 : 2). It had been considered as a partial treaty in favour of India by Nepal for allocating less amount of water to them.

Kosi and Gandak agreements: The two nations have signed many other water agreements in the post-independence period as well like 1954 Kosi agreement and 1959 Gandak agreement. Kosi is one of the longest rivers of Nepal but it was called as the 'Sorrow of Bihar' in India. Originating from Tibet and Nepal and flowing towards India into the Ganges, Kosi River is prone to seasonal and geographical variations in its flow and sediment discharge. The River has constantly changed its course (Thapa). The 2008 floods in Kosi river showed that this river can create havoc for India and Nepal. Since the construction of embankment after the treaty the process of shifting is extremely controlled. The dam also changed the situation in Bihar in the early phase. Previously, Bihar was usually hit by flood due to the River overflowing. It has been said that dam construction on the Koshi River was proposed by India for meeting its own interest more while giving few palpable benefits for Nepal. If the dam had been constructed in the north of the present site Nepal would have benefited more than the present location, because nearly 95 per cent of the water went to India and only 5 per cent to Nepal (Tabassum 2019 : 105). So the agreement did not get much acceptance in Nepal rather it faced fierce resentments from that side. It also demanded more water and electricity from the project. As a result revision of the agreement was initiated mainly depending on Nepal's insistence. In 1966 the treaty was amended and some new clauses were added to it.

The Gandak agreement was signed between India and Nepal on 4th December, 1959. It allowed India to construct a barrage at its own cost across the Gandak River at the Nepal-India border near Bhaisalotan village. It was also considered by Nepalese population as partial. The treaty specified Nepal's share of water, the quantum of water that India could draw from Gandak river was not mentioned. A report says that "The Gandak Irrigation and Power Project irrigates 2,884,000 acres of land in India. Nepal's irrigation area is only 100,000

acres. Due to the Indian design of raising the tail-race level of power house, only 7 MW of 15 MW installed capacity is available – that also is not available due to siltation problem”(Shrestha 2018).

Revision of the Gandak and Kosi treaties in 1964 and 1966 respectively has allowed Nepal to use water in her territory without any restriction. In the revised Kosi agreement, India has recognised Nepal’s right to use water from any of the tributaries of Kosi for any purpose Nepal likes. So the treaty favoured Nepal more than India. The validity of the Kosi treaty was extended to 199 years which allows Nepal to implement water sector development projects in the Kosi Basin step-by-step.

The Tanakpur agreement: The Tanakpur barrage issue was another bone of contention in the Indo-Nepal water relation. Initially without involving Nepal, India unilaterally started the construction of the Tanakpur project in 1983. The Project was almost completed by 1988 but it was apprehended that without the left afflux bund which it needed to tie the barrage to the high ground on the left bank in Nepal, the project would be ineffective. India requested 577 metre Nepali land for this purpose. During this period the political relations between these countries started worsening. India imposed a peacetime economic blockade against Nepal in reaction of growing China-Nepal nexus. Such nexus was evident in the fact of importing Chinese light arms by Nepal. As a result the matter of extending left afflux bund was kept aside for the time being. In 1990, the foreign ministers of both the countries met in New Delhi where India tabled a draft proposal of mutual cooperation where the water issue had been included and one of its articles read as follows-”The two contracting parties being equally desirous of attending complete and satisfactory utilization of the waters of the commonly shared rivers, under take to: (i) plan new uses or projects subject to the protection of the existing uses on the rivers; and (ii) cooperate with each other to formulate and modify the planned new uses project taking into consideration the water requirement of the parties”(Gyawali and Dixit 1999 : 14). Finally a treaty was made between them during the Nepal Premiere’s visit to India in 1991 giving some incentives to Nepal. Under the new understanding, Nepal agreed to allow the construction of 577 metre left afflux bund on its territory. India, in return, as a gesture of good will agreed to provide to Nepal 10 million units of electricity and 1,000 cusecs of

water initially every year (Tabassum 2019 : 107). But the Koirala Government decision in this regard did not get much acceptance in Nepal. When India's then Prime Minister P.V. Narasimha Rao visited Nepal in 1992, the Indian side made some concessions. The Pancheshwar project on the river and other possible interventions were separated from the understanding reached on Tanakpur, allowing both countries the possibility to negotiate for any other development in the Mahakali basin. India agreed to provide an additional 10 megawatts of electricity to Nepal, making a total of 20 megawatts (Swain 2018b). These Indian concessions failed to satisfy the Nepalese people. The Tanakpur treaty remained a hot issue between the Koirala government and the opposition. Even it led to the dissolution of the Parliament. In the 1994 election, no party received clear majority which resulted in the formation of a minority government by the Communist UML as the single largest party in a hung parliament. The new government started new talks with India on all important issues including the issue of Mahakali River.

The Mahakali Treaty: The Mahakali Treaty was signed by the then Indian Prime Minister P. V. Narshimha Rao and the then Nepali Prime Minister Sher Bahadur Deuba in 1996. The treaty was signed for the joint utilisation and development of the Mahakali River. The Treaty included three separate water development projects in its scope. In addition to endorsing the Tanakpur MoU of 1991, the Treaty took under its annex the regime established by the 1920 Sarada Treaty. It also included the planned construction of the Pancheshwar Hydropower Project on a stretch of the Mahakali between the two countries (Swain 2018b). The Treaty is very significant both in substance and the way it is drafted. It gives weightage to Nepal in some provisions as is evident in Article 5 which allows Nepal for using water. But at the same time the Treaty ensures the Indian claim over the unused water in Nepal's share. Nepal's concerns in this regard must be mentioned. The main concern was on the unequal distribution of water under the terms of the Treaty. India receives 9,000 cusecs of water from the Sarada and Tanakpur barrage compared to Nepal, which receives 1,000 cusecs. The total water available at Mahakali is 24,000 cusecs, so the remaining 14,000 cusecs is available for redistribution between the two countries (which means both will get 7,000 each) so the total water India receives will be 16,000 cusecs and Nepalese share would be 8,000

cusecs. Another concern of Nepal was on its right of share of the excessive water (Tabassum 2019: 106-108).

The Mahakali Treaty had a special focus on the planned construction of the Pancheshwar Hydropower Project on a stretch of the Mahakali between the two countries. However, the construction of the Pancheshwar Dam has not started yet as it continues to be a politically volatile issue. Nepal had prepared a detailed project report in 1995, but India took till 2003 to prepare its report. There are many discrepancies involved. The countries also disagree over the sharing of the capital cost and even had to revise the original plan about the location of re-regulating the Rupaligad Dam downstream of the Pancheshwar Dam site. Not only that, while India proposes phasing the power component in two stages for an assured supply of water to its Girjapur barrage downstream, Nepal prefers to maximise the power benefit (Swain 2018b). The failure to reach an understanding on the Pancheshwar project had delayed the implementation of the Mahakali treaty in sole and spirit. After many years since its signing, with the formation of the Pancheshwar Development Authority in November 2009, the Mahakali treaty has finally reactivated. The 6,720 Megawatt Pancheshwar Multipurpose Project³ (PMP) with an annual average energy of 12,333 million units and a live storage of 6.56 billion cubic meter of fresh water is the principal flagship of the Mahakali treaty (Pun 2010). When Modi visited Nepal in August 2014, a new MoU was signed between the two countries regarding the amendment of Terms of Reference of the Pancheshwar Project. This dam is the key to the planned Sharda-Yamuna River link project to address Delhi's growing water demand. The Modi government has given top priority to implement the country's decades-old controversial plan of river linking. However the dam if constructed it might cause environmental harms to both the countries. Anti dam activists are pressurising the government on this account as well. Even after strong opposition from affected people and environmental groups, a public hearing process of expected dam affected people started in August 2017. So, there are many issues involved in the Mahakali treaty that have contributed towards its disfunctioning. The Treaty remained non-productive due to the prolonged political debate on it from both sides and is over-shadowed by its over-politicisation. All leads to a deadlock situation in Nepal-India water relations.

Reasons of Strained Water Relation:

Given the bountiful water resources of Nepal while both the countries are aware of the potential and necessity of hydro-power, there is a lack of effort, cooperation and political will to transform these benefits into reality. There are numerous reasons behind the water woes between India and Nepal. They can be enumerated under following heads:

Mutual Distrust and Lack of Transparency:

The distrust and lack of transparency in data and information sharing have exacerbated the grim situation. Politicians from each side were engaged more in blame game rather than finding a common solution during the recurrent flood and other natural calamities. The 2008 Kosi flood was a major natural disaster for instance. But, the media and politicians from India and Nepal blamed each other for it. Same thing happened in the 2013 floods in the Mahakali Basin that wreaked chaos in Nepal and India (Uttarkhand and Himachal Pradesh). The causes of the disaster were not explored seriously, whatever was studied, was kept secret, which created suspicion between both sides. In this way, politicisation of the problem faced and keeping information secret has further hampered Indo-Nepal relations for water resource cooperation.

Blame-Game:

Water issues have plagued the bilateral relations between India and Nepal for many years. Both sides have their own opinions. India claims that Nepal's water release creates regional flooding and projects may harm parts of northern India, while there is a strong perception in Nepal that India by prioritising its national interest has often overlooked Nepal's interest and that the benefits have been one-sided rather than mutual. Climate change has a critical role to play here. Water crisis is mounting in this land locked country. Some of the adaptation measures require close cooperation with India in terms of building dams, reservoirs and hydroelectricity projects. 'Basin scale adaptive measures on the rivers Karnali, Narayani and Kosi' is also an urgent necessity. However, many of the joint projects with India relating to flood control, irrigation and hydroelectricity have been myopic and mismanaged. The problem gets worsened

due to fluctuating political relations between them that have hampered water resources development.

Cooperation between India and Nepal has thus been mired by historical and political antagonism. Under international law, unhindered transit facility is a fundamental right of a landlocked nation. However, in late 2015, there was an unofficial blockade preventing vehicles from entering the country. The Indian side claimed that the blockade was done by Madhesi protesters in the border area, rather than the government. Fuel supply was almost halted which put the Government of Nepal (GoN) in a difficult position, especially since this came on the heels of its Constituent Assembly passing a Constitution with overwhelming majority. In this context, the K.P. Oli -led government made political promises for more hydropower production in the country to end power-shedding in the near future. But, the challenges are still apparent as Nepal lacks the necessary technology (Upreti and Acharya 2017 : 155).

China Factor:

China is exhibiting its good diplomatic gesture towards Nepal as a friendly major power in recent times. Like in other South Asian Countries, China is making huge investments in Nepal for infrastructural development, energy production etc. Nepal is also a beneficiary of China's low cost social capital. From the diplomatic point of view, China's growing presence in Nepal has many equations. It is concerned about the perceived threat to Tibet through Nepalese territory. It was planned to extend the Qinghai-Tibet to railway by 2020. Such move is alarming for India because of its strategic importance. The Nepal China border actually remains a centre of competition for influence between China and India for ages. India had also drafted a plan to extend its railway link to Nepal. Not only that, India's position is always significant in Nepal's foreign policy equations too. In 2014 the diplomatic relations between these two countries reached to a new height when PM Modi visited the country and various commitments for infrastructural assistance from Indian side had been made. These include the Power trade agreement, Project development Agreement between the Investment Board of Nepal and India's (GMR) group for the development of the upper Karnali hydropower project etc.

However, there exist an anti-India feeling in Nepal in Nepal and in many cases it was fuelled by China. India's governmental policies are often criticized in Nepal as expansionist and partial. Many pointed out that India made Nepal its 'bonded market'. The asymmetrical water treaties as Nepal considered them have exacerbated the situation. India is also aware of the fact that China is making inroads in Nepal. China has become the biggest investor in Nepal and their bilateral trade relation between them has also increased. In such a situation India is also concerned for minimising Chinese influence in Nepal. Pm Oli's visit to India opened several avenues of cooperation including several bilateral agreement enabling Nepal to use more India's transit points along its borders. But Oli's visit to China signalled that Nepal wants to minimise its high dependence on India by making closer economic ties with China. K P Oli opened almost every sector like hydro, tourism, IT etc for Chinese investments. Such China-Nepal cooperative relations can act at the detriment of India to a large extent. This is evident during the economic blockade of 2015, when Nepal faced enormous energy crisis which added fuel to Nepal's anguish against India and helped in building Nepalese desire to make closer ties with China. However, India exerted various pressure as well to oppose China's involvement in developing Nepal's water resources. Such activities are evident during election in Nepal, in November 2017, when the previous government under Nepalese Congress leader Sher Bahadur Deuba coming under Indian pressure had to cancel the US\$2.5 billion deal with China's Gezhouba Group to build Budhi Gandaki Hydro Electric Project. Later though Prime Minister Oli wants to collaborate with China for the project, Modi government did not favour such moves (Swain 2018a).

Lack of cooperation at Regional Platforms:

South Asia is one of the most water stressed regions of the world. Although the South Asian region is not without water sharing arrangements, including treaties, there exist lack of unity to reach an all pervasive agreement for reasonable share of water. Therefore strained riparian relations are inevitable. The issue of water resources is vital in the agenda of bilateral cooperation between Nepal and India as well for a long time. Both are members of many regional and sub-regional groupings like SAARC, BBIN and BIMSTEC for

greater economic integration by harnessing collectively the potentials and complementarities available in the region. Such multilateral regional groupings are expected to provide strong platform to minimise the water between these two countries as well. But this remains a dream. The cross border rivers and its common economic importance to the states make water sharing – “a forum for relinquishing or asserting exclusive sovereignty”(Haines 2014) and consequently a “fulcrum for peace or war in South Asia”(Kraska 2003).

SAARC was formed in 1985 with the aim to provide its member states with a regional space for policy making and implementation at the South Asian level. It was meant for advanced collective action for shared prosperity in the region. But SAARC failed to bridge the gap between proclaiming ornamental declarations and concrete ground action that can make South Asia a potent and effective player in the region and the world at large. In the initial years India's attitude towards this regional forum is like an observer. It was keen on making bilateral relations with members and expected reciprocity more than multilateral engagements. During 1990s the growing economic clout of India made it a regional leader. The Gujral doctrine emphasized the importance of making closer ties with the neighbours once again. In 2007 SAARC summit, External Affairs Minister Pranab Mukherjee, in an address to a Conference of Parliamentarians from the SAARC Region, declared India's readiness – as the largest nation in the region – “to accept asymmetrical responsibilities, including opening up her markets to her South Asian neighbours without insisting on reciprocity.” (Sajjanhar et.al 2014) But this has not been materialised. Rather being an economically, militarily and politically stronger nation, India's big brotherly attitude and the asymmetric structure of the subcontinent has given birth to big Neighbour Small Neighbour syndrome. This contributed towards ignorance for a sustainable solution to the water quibbles.

Since 2014, after coming into power one of the significant focuses of Modi government was to underscore the pre-eminence of the ‘neighbourhood first’ template in the evolving foreign policy while attempting to reinvigorate SAARC. This was evident while he invited the South Asian Association for Regional Cooperation (SAARC) leaders to his swearing-in ceremony. Such move provided the necessary impetus in bringing SAARC to the forefront of India's diplomatic strategies. Modi also announced to deepen ties with SAARC for fighting

common ills and shared problems like water woes. The SAARC summit in Kathmandu and Modi's visit to Nepal endorsed such efforts. On the other hand Nepal is also eager to revive SAARC and to make close relations with India and China. However SAARC initiatives in solving water rivalry between India and Nepal is miniscule. It is also said that participation of SAARC members in other regional frameworks might dilute the interests of member states in SAARC, like BIMSTEC where both India and Nepal are members. But PM Oli during his visit to India in 2016 himself said that the latter cannot replace the former rather they are complementary to each other. The BBIN sub regional platform can also be used for greater cooperation between these countries as it aims to improve sub-regional connectivity in the South Asian region. Through this initiative the hydropower potential of Nepal and Bhutan and thermal power capabilities of India and Bangladesh could be utilised for each-others benefits. The third meeting of BBIN Joint Working Group (JWG) on Water Resource Management and Power/Hydropower and on Connectivity and Transit was held in Dhaka in January 2016. It discussed the scope for power trade and inter-grid connectivity cooperation and water resources management. It also took up specific hydropower projects for discussion that could be concretised on equitable basis.(Shukla 2019) So the formal and informal interaction with other regional frameworks actually help in improving SAARC's progress from the lessons learnt from the experiences of others. But the problem is that like SAARC, the sub regional groupings are not working in a time bounded manner. Narrow political interests has preceded the broader regional interests. As a result these platforms are not that fruitful as expected.

There are bilateral efforts too in addition to sub regional initiatives for mitigating water problems. Both the Governments of India and Nepal have set up three-tier mechanisms called Joint Ministerial Commission for Water Resources (JMCWR), Joint Committee on Water Resources (JCWR) and Joint Standing Technical Committee (JSTC) to implement agreements and treaties and also address water induced problems of flood and inundation. There is also an additional mechanism – Joint Committee on Inundation and Flood Management (JCIFM) – which deals explicitly with the issues of inundation, embankments and flood forecasting.(Ministry of Foreign affairs, Nepal) All these efforts can be materialised only if politico-diplomatic relations between the two countries

can be improved at the same time they should be aware as well that strained water relation should not affect the scope of improved bilateral and regional cooperation in other fields where both are stakeholders.

Conclusion:

Water sharing issues between India and Nepal thus affect the bilateral relation between the two countries for almost a century now. Though the bilateral water treaties between India and Nepal, though helped in avoiding water conflicts. But in terms of generating development outcomes, the bilateral treaties and agreements have failed. Future development of shared water resources must take environmental cooperation, economic cooperation, political cooperation, civil society cooperation and research and technological advancement into account. While looking through the diplomatic lens it can be said that if India wants to get rid of China factor contributing vigorously in further worsening the Indo-nepal ties, it must concentrate on mutual trust building and establishing good will among Nepalese masses. The treaties like Kosi, Gandak and Mahakali- all are mutually advantageous for both the countries. Often the treaties are blamed for overlooking Nepal's due share whereas there are evidences that as and when demands were raised to rectify the treaty provisions, India reciprocated well. However the communication gaps, and over politicisation of the issues have inhibited both sides to reap the optimal benefits of those landmark water deals.

References

1. Chellaney, Brahma., and Najibullah, Heela . 2007. *On the Frontline of Climate Change: International security Implications*. New Delhi: KAS Publication Series No.17.
2. Dinar, Shlomi. 2011.*Environmental Security*.In: Gabriela Kutting (ed.), *Global Environmental Politics: Concepts, Theories and Case studies*. pp.60-75. London: Routledge.
3. Eriksson, Mats. et. al. December 11, 2009. 'The changing Himalayas :Impact of climate change on water resources and livelihoods in the Greater Himalayas (ICIMOD)', pp.4-7.

4. Gyawali, Dipak & Dixit, Ajaya. Feb 27-March 5, 1999. 'Mahakali Impasse and Indo-Nepal Water Conflict' *Economic and Political Weekly*, 34(9),pp. 1-26.
5. (Haines, D. 2014. 'Disputed Rivers: Sovereignty, Territory and State-Making in South Asia'. *Geopolitics*, 19, pp.632–655.)
6. IDSA Task Force Report. 2010. *Water Security for India: The External Dynamics*, New Delhi :Institute for Defence Studies and Analyses.
7. Iyer, Ramaswamy.R. 2003. *Water:Perspectives, Issues, Concerns*. New Delhi: Sage.
8. Kraska, J. 2003. 'Sustainable development is security: The role of transboundary river agreements as a confidence building measure in South Asia'. *Yale Journal of International Law* 28, pp. 465–504.)
9. Ministry of Foreign affairs, Nepal. 'Nepal-India relations'. <https://mofa.gov.np/nepal-india-relations/> (Accessed on 11th November, 2019).
10. Myres, Norman. Spring, 1989. 'Environment and Security', 74, pp. 28-29.
11. Pun, S.B.. January, 2010. 'Nepal's Portion of Power, SB Pun', *Hydro Nepal*, 6. <http://www.nepjol.info/index.php/HN/article/viewFile/4186/3560> (Accessed on 13.10.19).
12. Sajjanhar, Anuradha., Tongia, Rahul., Sidhu, Waheguru Pal Singh, Ravi, Shamika, Gakhar, Shruti. 2014. *Reinvigorating SAARC: India's Opportunities and Challenges*. <https://www.brookings.edu/research/reinvigorating-saarc-indias-opportunities-and-challenges/> (Accessed on 11.11.19).
13. Shiva Vandana and Bhatt, Vinod Kumar (eds.). 2009. *Climate Change at the Third Pole: The impact of Climate Instability on Himalayan Ecosystems and Himalayan Communities*. New Delhi: Navdanya/ Research Foundation for Science, Technology and Ecology.
14. Shrestha, Rabindra Bahadur. 1 August 2018. 'Wither Nepal's water Resources?' <http://telegraphnepal.com/whither-nepals-water-resources/> (Accessed on 11 October, 2019).
15. Shukla, Asish. 2019. *Subregional Cooperation under BBIN framework: an Analysis*. Issue Brief, IWA. <https://icwa.in/pdfs/IB/2014/BBINFrameworkIB04012019.pdf>(Accessed on 11 November, 2019).
16. Swain, Ashoke. 7 April, 2018a. 'It Is Water Not China That Has Ruined Nepal's Relations With India', *Outlook*. <https://www.outlookindia.com/website/story/it-is-water->

- not-china-that-has-ruined-nepals-relations-with-india/310684*(Accessed on 14.10.2019).
17. Swain, Ashoke. 24 April, 2018b. 'Going beyond the mega project mindset is a must for India-Nepal relations', *Down to Earth*. <https://www.downtoearth.org.in/news/water/going-beyond-the-mega-project-mindset-is-a-must-for-india-nepal-relations-60285>).
 18. Tabassum, Shaista. 2019. *Revisiting Nepal's Foreign Policy in Contemporary Global Power Structure*. New Delhi: G.B. Books.
 19. Thapa, Dr. A. B. 'Koshi River had Shifted From East to West Over 70 Miles Within the Period of 200 Years', *Nepal's Constitution Making and Water Resources*, <http://www.spotlightnepal.com>.(accessed on 20 June, 2016)
 20. *The Hindu*. March 24, 2007. 'Rivers in Danger'.
 21. Upreti, Bishnu Raj and Acharya, Gopikesh. 2017. *Shared Water Resources: Indo-Nepal Conflict and Cooperation*. In: Sarah S. Aneel, Uzma T. Haroon and Imrana Niazi(eds.), *Securing Peace and Prosperity*. pp.151-167. Pakistan: SDPI and Sang-e-Meel.

Bio Note :

Assistant Professor, Dept of Political Science, South Calcutta Girls' College.
 Email:satabdi09das@gmail.com
 Mob. No. 9830963189