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***THE WATER ISSUE IN INDIA: EMERGING  
TRANSBOUNDARY ASPECTS***

It has been seen that in recent years there has been a rapid increase in worldwide public awareness of the fact that the world's fresh water supplies have become a scarce and limited resource, and which is extremely vulnerable and dependent on human activities. This awareness is coupled with the growing realization that it is becoming increasingly difficult and expensive to provide sufficient supplies of wholesome fresh water to meet the ever-growing needs of various communities and countries, thereby leading to the creation of a variety of tensions. These tensions are further accentuated by widespread population growth, as well as increased rates of agriculture, urbanization and industrialization. As a result, there has been a dramatic increase in the level of competition for access to water across sectors, within countries and between countries.

As India is progressing towards a new economic engagement with the world, the issue of water resources and the transboundary aspects of water management have come into focus. The stress of water resources will increase in India given its huge population and industrial activity. India is a co-riparian country and shares many of its rivers with Bhutan, Bangladesh, China, Nepal and Pakistan, and this highlight the diplomatic engagement required by India with its neighbours relating to transboundary water sharing and management. India has had varying tones of overall diplomatic relations and engagement with its neighbours over the past few decades after its independence, and this is bound to have spillover effects on transboundary water issues in the overall region. India will have to employ innovative diplomatic strategies to tackle emerging transboundary water issues.

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This paper will attempt at an analysis of the past diplomatic engagements India has had on transboundary water issues, and for this it will take up the case study of relations and negotiations between India and Bangladesh over the waters of the Ganges. The other case study that this paper will take up is relating to the emerging fears and contestations between the two rising Asian economic superpowers, China and India, over the sharing and management of the waters of the Yarlung Tsangpo-Brahmaputra river system.

The emerging scenario becomes interesting as this can be the first time that India will be involved in multilateral negotiations over transboundary water sharing and management. India has chosen to have bilateral negotiations over transboundary water resources in the past with Bangladesh, Nepal and Pakistan, and the varying bilateral relations with these countries have come to bear upon these negotiations, but the diplomatic nuances and issue-linkages in a multilateral setting will completely be a different ball game for India.

The negotiations between India and Pakistan has had a turbulent past, given the overall basket of bilateral tensions, and still continue to evade any lasting solution. However, in spite of the hugely oscillating tensions between India and Pakistan over other issues, they have remarkably found a workable cooperative spirit on transboundary water sharing and management issues. The Indus Water Treaty of 1960 has brought about an effective framework for water governance between India and Pakistan, which is seen as a success story in international water resources sharing and management.

### **India and Bangladesh: The Past Experience**

India and Bangladesh has had a tenuous relationship over the issue of transboundary sharing and management of the waters of the Ganges. The river Ganges has its origin or headwaters in the Gangotri glacier in India, having a total length of approximately 2600 kilometres; the Ganges river basin including India, Bangladesh, Nepal and China<sup>1</sup>. From its Himalayan source the Ganges traverses south and southeastward in India for about 1,400 miles, and about 11 miles below Farakka in India, the river forms the international boundary between India and Bangladesh and continues for 63 miles before finally entering Bangladesh<sup>2</sup>.

At first glance, Bangladesh would not appear to be a likely candidate for water scarcity, as it shares 57 rivers with neighboring countries, the most major ones shared with India and Myanmar<sup>3</sup>. However, being a small and generally very flat deltaic country, it has minimal water storage capacity, and this geographical condition results in severe seasonal water scarcity,

which has become more threatening with time, as the rivers flowing in across its borders are gradually diminishing, as water extractions increase in the upper riparian states, particularly India<sup>4</sup>.

This effectively means that Bangladesh is unusually dependent for assured water supply on the upper riparian states in the Ganga-Brahmaputra-Meghna basin, the major upper riparians being India and China in particular, with flows from Nepal and Bhutan having a much lesser impact. The situation of water scarcity is being exacerbated by a rising population in a country with one of the highest high density of population in the world,. Bangladesh's water supply is internationally protected by only one bilateral treaty, concluded with India in 1996, and the treaty, though considered by many a generally reasonable compromise agreement, applies to only one barrage, which is the Farakka barrage, and only on one river, that is the Ganges, shared by the two countries; and the treaty is due to expire, unless renewed, in 2026<sup>5</sup>.

Nothing better highlights India's fact-creating inclination and capacity than its construction of a barrage on the Ganges river at Farakka, a site about 11 miles west of the border between India and Bangladesh, which was launched in the year 1961 when Bangladesh was still a part of Pakistan, and commissioned in 1975 after the successful secession of Bangladesh from Pakistan following the Bangladesh Liberation Movement of 1971; and the Farakka barrage was designed to divert waters from the Ganges southward to the Hooghly river primarily to aid de-silting of the port of Calcutta in India<sup>6</sup>. No serious inter-governmental discussion about the project was ever undertaken prior to Bangladesh's achievement of independence in 1971; and it took the governments of India and Bangladesh from then until the signing of the Ganges Treaty in 1996 to work out a mutually acceptable formula in regard to sharing of the Ganges waters at Farakka<sup>7</sup>. The unilateral decision to construct the Farakka barrage on the Ganges still looms large in many Bangladeshi minds, as the single-most conspicuous symbol of India's 'bullying' tactics and utter indifference to lower riparian water needs of Bangladesh<sup>8</sup>. This has created a sense of looming distrust by Bangladesh on the role played by.

India's diversion of Ganges waters to the Hooghly river at the Farakka barrage has unquestionably had a number of unfortunate downstream effects, which include reduced navigability of the Ganges river, decline in fisheries and reduced availability of fresh water supply for dry season agricultural irrigation in the south-western region of Bangladesh<sup>9</sup>. Another effect of India's action, though very difficult to measure, is that the barrage at Farakka additionally bears some portion of responsibility for the steady deterioration of Bangladesh's vast coastal mangrove forest, the Sundarbans, and various studies have made it abundantly clear that any substantial

reduction in freshwater in-flows into Bangladesh in the dry season would place in great jeopardy the delicate balance of fresh and salt water, as well as the blend of nutrients, that maintain the Sundarbans' unique, commercially valuable and wildlife rich forest ecosystem<sup>10</sup>. The loss of rich biodiversity in the Sundarbans has been one of the starkest ecological impacts of inadequate arrangements of transboundary water sharing between India and Bangladesh.

There did not exist then and there does not exist even now, an international Ganges-Brahmaputra-Meghna river basin organization, or a basin-wide water management plan, or any established forum where such a plan could be developed, as unilateralism has been the dominant behaviour of the upper riparian country, which in the case of the Ganges, is India<sup>11</sup>, and such behaviour can prove to be a precedent in the future with upper-riparian China in relation to lower-riparian India first and then upper-riparian India in relation to lower-riparian Bangladesh in the case of the Yarlung Tsangpo-Brahmaputra river system.

An example which exemplifies the strong compulsion of national political leaders, to plunge ahead with river development plans on a shared transboundary river, devoid of any agreement settling the matter of water entitlement; is the decades long contention between India and Bangladesh over the Teesta river<sup>12</sup>. Flowing southward from its Himalayan headwaters first through India, and then through Bangladesh until it joins the Brahmaputra river, the Teesta, in volume of water, ranks as the fourth most important river in Bangladesh. India and Bangladesh both have major, multi-phase irrigation projects underway on their sides of the international border, and both sides acknowledge that the Teesta does not hold enough water in it to satisfy simultaneously the project requirements of both the upper and lower riparian states; but that fact has not slowed things down, with both India and Bangladesh utilizing the waters of the Teesta, without any thoughts on its sustainability<sup>13</sup>. India does not want to be saddled with an agreement that undercuts development objectives that seem indispensable to its domestic political interests; while Bangladesh being conscious of India's inescapable upper riparian ability to divert the waters of the Teesta at will, sees no benefit to be gained from suspending its own development plans pending a future bilateral agreement with India<sup>14</sup>.

India has been able to maintain a minimum adherence to international principles of water sharing and management, be it with Pakistan, Nepal under the Mahakali Treaty or Bangladesh, and this has ensured relative peace and stability in the region. However, given India's upper-riparian status, domestic pressures on water, and certain past actions which have been disruptive of lower-riparian rights, the fears of Bangladesh are justified.

## **India and Bangladesh: The Emerging Issues**

A related emerging issue in the Ganges-Brahmaputra-Meghna basin is the Tipaimukh Multipurpose Hydroelectric Dam Project which was commissioned by India in the year 2006, and the subject of much debate, as various concerns and objections have been raised by the Bangladesh government as well as civil society and environmental groups both in India and Bangladesh, over the implications the dam would have on the region. This dam project could be the next unilateral action, which upper-riparian India can inflict on lower-riparian Bangladesh.

The Tipaimukh dam is located near the confluence of the Barak and the Tuivai rivers in the Tipaimukh sub-division of Churachandpur district of Manipur, and this area is close to the Manipur-Mizoram-Assam border, and therefore the project involves three states in Northeast India. The Barak River flows downstream to meet the Surma river system in Bangladesh and is considered to be the lifeline of the Sylhet region of Bangladesh. There have been intense debates in Bangladesh among civil society groups, environmental groups, human rights organizations and media over the implications of the Tipaimukh Dam on the share of water coming from India, and this continues to gather momentum as many civil society groups from Manipur in India and Sylhet in Bangladesh resonating with similar concerns and demands spanning across the international borders.

The Tipaimukh dam issue has been linked to the bitter past bilateral negotiating experience between India and Bangladesh on the Farakka barrage dispute. This has been played to the hilt in the domestic political scene in Bangladesh in the past, and the lines are clearly drawn now as opposition parties led by Begum Khaleeda Zia actively supporting the anti-Tipaimukh dam civil society groups in Bangladesh<sup>15</sup>. The political opposition has been vociferously attacking the Sheikh Hasina led government which was recently voted to power in Bangladesh, and which has been seen as friendly towards India; and the four party alliance led by the Bangladesh National Party (BNP) has vowed to take the Tipaimukh Dam issue to international forums if the government failed to take action to stop it<sup>16</sup>. A parliamentary delegation formed from the Bangladesh Parliamentary Standing Committee on Water Resources led by Water Resources Minister of Bangladesh, Abdur Razzaq, visited New Delhi en route to the Tipaimukh Dam site in Manipur in the beginning of August 2009, amidst the growing domestic criticism of the project in Bangladesh, and stressed upon the need to have a proper study and discussions on the concerns and issues raised between both countries<sup>17</sup>.

New Delhi should take urgent note of these events in Bangladesh and treat them with diplomatic caution, especially at a time when the current

regime is being seen as friendly towards India. The diplomatic path India takes and the solutions it offers, could in fact prove to be a pointer towards what India itself expects other upper-riparian countries to follow as a precedent, especially as water diversion concerns are rising over the Yarlung Tsangpo in Tibet by China, which can severely affect the Brahmaputra in India as well as the Jamuna river further downstream in Bangladesh.

India needs to address the issues and concerns raised by Bangladesh in a manner which will set the tone and agenda for future transboundary water negotiations in the larger region, which sits on a potential hotbed for future water related conflict. New Delhi has to realize that alongside keeping in mind India's need towards developing its hydro-power potential, bulk of which is in Northeast India, it also has to cater to concerns of environmental degradation, human displacement and overall sustainability of such projects. India has pursued a policy with Bangladesh over the waters of the Ganges, which is much similar to which it could potentially face in the future with China over the Brahmaputra. On the question over how the flow of water could be augmented at Farakka, India was of the position that the water augmentation should be from the Brahmaputra, and ensuring additional water flow through a canal. Bangladesh has however refused to negotiate on the Brahmaputra-Ganges river basin under a single river basin framework. This fills the overall water negotiations in the region with a sense of pessimism and of national riparian opportunism, led both by China over the Brahmaputra with India and Bangladesh, and by India over the Ganges and the Barak with Bangladesh.

### **India and China: The Emerging Issues**

In the Yarlung Tsangpo-Brahmaputra river system, China enjoys the status of an upper riparian country; India being both lower riparian country in relation to China and upper riparian country in relation to Bangladesh, and Bangladesh being the lower riparian country.. Effective resource optimization among the three riparian countries, and the streamlining of cooperation procedures in the context of transboundary water sharing in the region, has been gaining prominence in recent times.

The Brahmaputra has over the recent past caused tension between India and China and could be a potential conflict flashpoint for two of the world's biggest armies in the future. The sharing of hydrological data on the flow of the Yarlung Tsangpo-Brahmaputra river system, between China and India has proved to be somewhat a thorny issue in bilateral relations between the two countries, often discussed at the highest levels of diplomacy.

The hydrological data on the Brahmaputra has been shared between



India and China from 2002 onwards, when New Delhi negotiated a memorandum of understanding with Beijing on information-sharing about the Brahmaputra's water flow into downstream Assam during peak flood season, and this was offered by China free of cost to India for the period 2002-2008; but later reports suggested that Beijing had demanded payment for the period 2008-2012<sup>18</sup>. This demand had been widely perceived in India, as a signal about China proceeding with its ambitious water diversion project on the Brahmaputra and allegations that China is trying to deliberately stop data sharing which may point towards its manipulations upstream; but on closer analysis, this apprehension seems misplaced. The hydrological data on the Sutlej river has been shared by China and India has been paying a fee for the same over the past and the fee is justified as China has to maintain hydrological data collection centres at extremely inhospitable terrain in Tibet. The territoriality and sovereignty issue has been reflected in the mutual perceptions of both India and China, as the water sharing issue has had spillover effects on the boundary contestations and Chinese claims over Arunachal Pradesh. India has chosen to refute any claims of China on the province of Arunachal Pradesh, while China have continuously been unsettling India with comments and claims on the same. Meanwhile, India has set the wrong precedent by planning huge hydroelectricity projects in this critical biodiversity hotspot, which has not gone down well with Beijing. This forward policy of hydropower development in Arunachal Pradesh by India could send wrong signals to Beijing, and this would have an adverse impact on bilateral relations, needed for the success of any future negotiations to resolve the sensitive transboundary water sharing issues, and extending cooperation on water issues.

There will certainly be contestations over transboundary waters but the question rather is how conflicting interests will be handled and whether both India and China can find ways and means to cooperate in other fields and also regarding river control projects that benefit both countries. The water issue would become an important geopolitical factor in the relationship between the two countries than what it ever was in the past, mainly because of economic and technological developments and possibilities, leading to further avenues of cooperation. The two countries will have to move ahead towards mutually benefit-sharing of water resources and have to resolve all outstanding issues of territoriality and sovereignty, particularly the boundary dispute over Arunachal Pradesh.

The effective management of the flood waters by both countries would mean less devastation and land erosion by the Brahmaputra and causes annual floods, thereby paving the way for sustained economic development of the region. The state of Assam remains engaged in fighting the ravaging

floods and erosion effects of the Brahmaputra for almost five months of the year, which hampers economic growth and the timely completion of related developmental and infrastructural projects immensely..

The respective governments in Beijing and New Delhi have been maintaining a guarded position on the contentious issue of sharing of water and hydrological information on the Brahmaputra River. India and China do not have any formal treaty arrangement which cater to the aspect of transboundary water sharing, and this becomes the major hurdle in the effective management of the issue of managing the waters of the Brahmaputra. There have been only two memorandums of understanding in the past between India and China on sharing of hydrological data, one on the Brahmaputra and the other on the Sutlej<sup>19</sup>.

The widely reported plans of China diverting the waters of the Brahmaputra have prompted India to take up the matter with Beijing at the diplomatic level. The 2003 visit by Prime Minister Atal Bihari Vajpayee saw the matter being taken up for discussion at the highest diplomatic level, and India voiced its concerns to Beijing<sup>20</sup>. The Chinese have all along denied having any plans for such a project, but given the huge number of dams being constructed by China, in many parts of the country, which includes mega dams such as the Three Gorges Dam and the dams on the Salween River, New Delhi has some reason to be apprehensive. The South-North river diversion plan on the Yarlung Tsangpo-Brahmaputra river system may not happen in the immediate future, but is definitely on the Chinese government's long-term agenda.

Prime Minister of India, Manmohan Singh has on many occasions raised the issue with Beijing, but has not got any assurance in the form of a treaty arrangement over the waters flowing into India from the Tibetan plateau of China<sup>21</sup>. The Chinese are ready to negotiate a treaty with India, if India uses the water only for irrigation purposes and not establish any hydroelectricity power projects, but this is not acceptable to India, and the rigid diplomatic posturing by both sides explains the lack of any formal bilateral arrangement on water sharing on the Brahmaputra. There has been a lot of political speculation in India relating to Chinese plans of diverting the Brahmaputra, and the issue has been raised in the Indian Parliament at many occasions, and has effectively become another excuse for the various political parties in India to attack Chinese policies, linking Chinese territorial claims on Arunachal Pradesh and transboundary water sharing issues.

China also would want to keep the water card with India alive, since it can link it effectively with the larger question of territorial contestations over Arunachal Pradesh, much more so at a time when it has somewhat lost the Pakistan or Kashmir cards to unsettle India. China is in no hurry to



address water sharing and river control issues relating to the Brahmaputra with India and Bangladesh. China can afford to just sit on it if it wishes to, and thereby maintain the ambiguity in riparian politics and control over rivers going on in the region, for some time to come.

India and China need to engage purposively in co-managing the rivers of the region, and thereby ensure that the development of the region is not impeded by unnecessary posturing on the sensitive water issue. The totality of Sino-Indian bilateral relations and mutual economic cooperation would largely depend on how they handle the issues of water in the future, which will become even scarcer, given huge population growth in both the countries. Both countries should seek to cooperate towards a solution based on functional terms rather than on a political basis, and rise above the existing environment of mutual suspicion and ambiguity between China and India, working towards providing for its people, the advantages of integrated river basin management and development.

Various community and non-state stakeholders in the upper-riparian (China), middle-riparian (India) and lower-riparian (Bangladesh) countries should come together at the international level to offset the hardened stances which have been in respective bilateral engagements, and bring about an honourable, equitable and sustainable solution to the water sharing and river control issue over the Brahmaputra. There should be joint research studies conducted on the hydrological cycle of the Brahmaputra River, and a systematic scientific study of the actual impact of any possible diversion project by China on the Brahmaputra, in downstream India and Bangladesh. China, India and Bangladesh are already facing active domestic opposition to their present policies and approach towards the development and utilization of shared water resources, particularly in Tibetan Autonomous Region (TAR) of China, Arunachal Pradesh and Assam in India and Sylhet in Bangladesh; and therefore a holistic and sustainable basin-wide management approach must be adopted by the three co-riparians. This will help promote mutual cooperation and understanding, and provide positive spillover effects on regional economic development.

**Notes :**

<sup>1</sup> Rahaman, Muhammad Mizanur (2009), "Principles of Transboundary Water Resources Management and Ganges Treaties: An Analysis", *Water Resources Development*, 25 (1): 159-173.

<sup>2</sup> Nishat, A. and M.F.K. Pasha (2001), "A Review of the Ganges Treaty of 1996", paper presented on Globalization and Water Resources Management: The Changing Value of Water, AWRA/IWLRI- University of Dundee International Specialty Conference 6-8 August 2001, University of Dundee: Dundee, Scotland.

<sup>3</sup> Wirsing, Robert G. (2008), *Rivers in Contention: Is There a Water War in South Asia's Future?*, Heidelberg Papers in South Asian and Comparative Politics, University of Heidelberg, [Online: web] Accessed 10 October 2009, URL: <http://www.sai.uni-heidelberg.de/SAPOL/HPSACP.htm>.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

<sup>15</sup> Verghese, B.G. (2009), "Straight talk on Barak", *The Indian Express*, New Delhi, 6 August 2009.

<sup>16</sup> Ibid.

<sup>17</sup> *The Assam Tribune* (2009), "Bangla team arrives in Delhi", *The Assam Tribune*, Guwahati, 30 July 2009.

<sup>18</sup> *The Assam Tribune* (2008), "India has to pay for China Flood Data", *The Assam Tribune*, Guwahati, 22 August 2008.

<sup>19</sup> Menon, M.S. (2007), "India should talk rivers with China", *The Indian Express*, New Delhi, 17 July 2007.

<sup>20</sup> Mansingh, Surjit (2005), *India-China Relations in the Context of Vajpayee's 2003 Visit*, The Sigur Center Asia Papers, The George Washington University, [Online: web] Accessed 10 October 2009, URL: [www.gwu.edu/~sigur/assets/docs/scap/SCAP21-Mansingh.pdf](http://www.gwu.edu/~sigur/assets/docs/scap/SCAP21-Mansingh.pdf).

<sup>21</sup> Samanta, Pranab Dhal (2008), "India pushes for joint projects on climate change, Himalayan ecology with China", *The Indian Express*, New Delhi, 13 January 2008.