

A Brief Discussion On Farakka Barrage & Ganges Treaty

Tasnova Jerin Ulfat & Shanjia Shams

Abstract:

After the partition of the subcontinent in 1947, India took initiative to construct a barrage on its side of the Ganges & commissioned it in 1975. In the past few decades, many of the rivers in Bangladesh, that originated in India, have either been diverted or dammed upstream, inside India. All of these hydro-development initiatives have left a profound impact on Bangladesh as it is receiving end of the Himalayan fluvial regime. In particular, Bangladesh's agriculture, fisheries, human health and wellbeing are reported to have been significantly affected by the disruption of natural water flow in its rivers. The debate over the water sharing issues between India & Bangladesh dates back as early as their birth but the historical developments of the disputes have never been adequately addressed in settling the issues. This paper analyzes the Farakka Barrage & the consequences of the Ganges Water Sharing Treaty, with some recommendations that can assist to decrease the barriers in this issue.



IJSB

Accepted 29 April 2020
Published 03 May 2020
DOI: 10.5281/zenodo.3783571

Keywords: Himalaya, Ecosystem, Conflict, Agreement, Control, Harm.

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Introduction:

Bangladesh lies at the receiving end of the tributaries of the Ganges & Brahmaputra rivers. 90% of the watershed of both rivers lies outside the territory of Bangladesh, within the countries of India, Nepal, Bhutan & China. Adequate flow of these rivers during the summer season is vital for such basic functions as irrigation and navigation as well as to preserve fisheries and other components of Bangladesh's ecosystem. The Ganges-Brahmaputra delta, of which Bangladesh is a part, has been created by deposition of river borne sediments. A delta can only grow seaward and upward against a rising sea level when river- borne sediment influx is adequate. Two-thirds of the sediments supply to Bangladesh is carried by the Ganges and its tributaries. The water and sediment carried by the Ganges is therefore vital to the existence of the country. Anthropogenic as well as environmental changes bring pressures on the Bengal basin's water resources and riverine ecosystem itself, presenting unprecedented challenges and potential conflict.

Background:

Since its birth, Bangladesh has been in an over growing disputation over the water sharing issues with India. India's uniteral withdrawal of the Ganges water was not only leading to the destruction of the ecological and environmental system of Bangladesh but also posing a serious threat to sectors such as agriculture, industry, forestry and navigation. This issue of the sharing Ganges water first came into focus when on 29 October 1951 the government of Pakistan drew the attention of the Indian government to the dangers of their scheme for diverting a large amount of dry season flow from The Ganges to resuscitate the Bhagirathi river in West Bengal. India in 1952 replied that the project was only under preliminary investigation and described Pakistan's concern over possible effects as purely hypothetical. Thus began the long history of negotiations on sharing of the Ganges water. In the years upto 1970, the govt of Pakistan and India discussed the issue many times at different levels, starting from the technical experts to the heads of the govt. But even as discussions went on, India kept working on the construction of the Farakka Barrage, completing it in 1970, at a place nearly 18 km upstream of the Bangladesh border.

Methodology:

This research was done in a quantitative method and manner. Secondary data has been included for this study. Besides, all primary and secondary data have been used including books, journals. This research was done in a number edited manner.

Perspectives:**India's viewpoint :**

The foremost objective behind construction of the Farakka Barrage was reiterated in the government documents in India was only and exclusively the preservation and maintenance of Calcutta port and the water regime and navigability of Bhagirathi - Hooghly river. Calcutta port is one of the primary ports of India, serving not only the West Bengal, Bihar, Oriissa, Assam and partly Uttar-Pradesh but is also vital to the overseas trade of India. But over the years, the pre-eminent position of Calcutta port has declined due to progressive deterioration of head water supply of Bhagirathi - Hooghly. The decreased water flow created problem of situation which has resulted in frequent occurrence of tidal bores. This led to overall reduction in navigability. India opined that all the students conducted in regard to safety of Calcutta port beginning from mid-nineteenth century came to the identical conclusion that

the safety of Calcutta port is dependent upon increase in the headwater supply through diversion of water by means of a barrage.

Bangladesh's viewpoint:

After the independence, Bangladesh government decided to set such a solution that can reduce the problem of India and do not hamper the economy of Bangladesh. In March 1972, a Joint River Commission (JRC) was formed. This Commission conducted joint aerial hydrographical surveys, joint survey of embankments on common rivers on both sides boundary to identify weak points which could be strengthened and gaps which could be closed by further embankments. Bangladesh has reconciled herself to the existence of the Farakka Barrage, During Sheikh Mujibur Rahman's visit to India in 1974, India agreed to commission the Farakka barrage only after an accord was reached on sharing of day season flow of the Ganges. A temporary arrangement allocation of Ganges waters was made following an argument signed on 18 April, 1975.

Impacts on Bangladesh :

The agreement signed in 1975 was hailed as an outstanding example of mutual understanding and accommodation. It was signed on trial basis. India withdraw water in the lean season of 1975 in terms of the agreements and remaining flow to Bangladesh. Indian share has significantly lower than her requirement that proves her political will at this stage. India's share varied Between 20 percent in first 10 days period and 24.43 percent in last 10 days period whereas Bangladesh ranged between 80 and 75.57 percent in the same period. It's clear that it was India's gesture of good will that led to a tentative solution of the dispute.

Floods bank erosion, Sudden discharge from barrage during rainy season along with siltation in river bed caused sudden floods in the south western districts of Bangladesh.

Water logging livelihood, Hundreds and thousands of farmers become landless in some of the districts of the same region in the country.

Economic, The JRC Bangladesh chapter estimated that the economic loss of Bangladesh from 1976 to 1993 due to Farakka water withdrawal is Taka 1,13,240 million which is nearly US\$ 3 billion. This loss even excludes the losses. Bangladesh has incurred because of floods and river bank erosion which has become a regular phenomenon in the country.

Navigation, Due to the effect of fresh water withdrawal of Farakka, the water table levels in the dry season have become lower everywhere in the country. In this case, ground water is being used over there and as a result the navigation depths are reducing due to polder construction in many rivers.

Salinity, While the Farakka barrage salinity in Kolkata, the diversion of the Gange has increased river salinity in Bangladesh. As rice paddies are sensitive to salinity increases, this poses a threat to Bangladeshi food security. Decreased river flow effects the Bangladeshi environment, particularly the Sundarbans mangrove forest. Rising salinity levels also have a detrimental effect on Bangladesh's potable drinking water. Unfit drinking water increases the susceptibility of Bangladeshis to venereal diseases.

Impacts on River flow, River navigation, the heart of Bangladesh's transport network was seriously affected, Due to upstream withdrawal of water, the country had already lost about 15,600 Km in land navigational route and another 3,300 km has become risky for navigation. Presently Bangladesh has only about 6,000 km inland navigational route (Ahmed 2006). The study results revealed that 93% of the local people of the study area argued that 100% flow of the Ganges river water has changed seriously during post Farakka periods and they were

directly or indirectly affected by it because adversely effected on riverine and estuarine fisheries.

On agriculture, The findings revealed that 65% of crops were directly affected by Farakka Barrage because it has changed the agricultural pattern of the region in which 34% crops were extinct due to scarcity of water, lowering the ground water table, minimum access to rainwater, etc. and 66% crops were invent for increasing char land, increasing soil fertility for the use of agrochemicals and 5% of the total crop production was increased. In 1999-2000, the country produced 23.07 million tons of rice in about 26.46 million acres of land of which about 11.15 million acres land was under navigation. If the irrigation process totally stop due to non availability of ground water, the rice production will almost come to an end.

During the dry season when water is much needed in all areas of Bangladesh in particular for the irrigation of 200 thousand hectors of land in the Ganges-Kobotak project. It provides the source of water for irrigation for the Kustia, Jessore, Magura and Chuadanga. The G-K project is the largest irrigation project of Bangladesh. It supplies water from the Ganges to 3 lakh acres of land. The project consists of 120 miles long main canal, 292 miles long branch canals and 62 miles long sub-branch canal. But scarcity of Ganges water has made the project ineffective. As the country will have to depend solely on ground water for irrigation, the ground water level will go down every year. For replenishment of ground water, rain contributes about 20% and river flow about 80%. If the river flow decreases and ultimately stops totally, the 80% of the replenishment process would also stop and if the ground water level goes down by about 5 meter from the present level all the shallow tube-wells will become non-functional. During the dry season when water is needed in all areas of Bangladesh, in particular for the irrigation of 200 hectors of land under the Ganges-Kobotak project, water becomes almost unavailable. The 94% respondent has strongly represented the scarcity of water during the cultivation period that is adversely affecting the irrigation because of the insufficient flow of water through their main sources i.e., Ganges river water (surface water) 35% and 65% lowering the ground water table.

On livelihood, The study revealed that 65% of the fisherman, 24% of boatman, 3% of businessman and 8% of the farmer has changed their livelihood pattern during post Farakka period.

On biodiversity, The results revealed that 71% of the respondents would believe the population growth is responsible for the loss of floral composition due to the excessive utilization of resources and 29% also mentioned the scarcity of water or the insufficient flow of water is responsible for decreasing floral composition in this region. The result of the study also revealed that, 68% respondents would believe the loss of habitat is responsible for decreasing fauna and 32% also mentioned that the scarcity of water or the insufficient flow of water is responsible for decreasing floral composition in this region.

The Ganges Water Sharing Treaty:

Bangladesh assailed India for diversion of water which caused her severe hardships. Both at the national and International level, Bangladesh displayed widespread resentment against withdrawal of water by India.

Farakka Long March, Nationalist leader Maulana Bhasani launched The Farakka Long March on may 16,1976 to draw the attention of people of India towards demands of People of Bangladesh on sharing of waters. It was evident that the govt of Bangladesh was concerned with maintaining good relations with India and at the same time was trying to mobilise a

public support to make India understand the potential ecological & economic danger of Farakka Barrage in Bangladesh.

Motion at Conferences, Despite the elimination of hostility, not much progress was seen regarding the Farakka issue. In May 1976, Bangladesh raised the issue at the Islamic Foreign Ministers Conference. Failing to dissuade India, Bangladesh took the issues to the United Nations. On 26 November 1976, the UN General Assembly adopted a consensus statement which inter alia directed India to sit with Bangladesh urgently to negotiate a fair and expeditious settlement of the problem. It, however, could bring India into the negotiation.

Ganges Agreement of 1977, After protracted negotiations India and Bangladesh formally entered into an agreement on 5 November, 1977 devising a formula for sharing dry season flow of water. The agreement signed for 5 years offered only partial solution as it only decided the sharing of lean period flow. The short term aspect the agreement fixed to quantum of water from the flow of Ganges at Farakka for the two sides during 5 months period from January to May every Year. As a long term solution, it referred to augmentation of flow of Ganges waters. This agreement expired on May 30, 1982.

Memorandum of Understanding (MoU) of 1982 & 1985, The MoU signed in 1982, recognized that the basic problem of inadequate flow of water in Ganges available at Farakka imposed concessions on both the countries. It agreed that long term solution lay in increase of flow at Farakka. It was decided that JRC would complete the economic and technical prefeasibility study of schemes of either side after which the two govts would implement the augmentation proposals. The 1985 MoU provided the sharing of the Ganges river water during the lean season for the next 3 years, with the provision for functioning out a scheme to augment to the flow through a joint study within a duration of 1 year. The agreement provided for setting up a Joint Committee consisting of an equal member of representatives nominated by the two countries to evolve a long term solution for the augmentation of water flow of Ganges during the lean season.

Ganges Treaty of 1996, Situation changed with the change of the govt in Bangladesh. New govt started negotiating with India for a new treaty. A thirty year water sharing treaty was signed in 1996 between the two countries. The treaty sets out for each country the share of the incoming flows it will receive in each 10 day period between 1st January and 31st May each year. The flows are measured in cusec at Farakka and almost all India's share is diverted down the Feeder Canal to the Bhagarathi-Hooghly, a mere 200 cusecs being reserved for the use in India downstream of Farakka. The sharing arrangement covers flows in three stages, the highest Indian diversion being 40,000 cuses, equal to the capacity of the Feeder Canal. Under the treaty India may divert this flow when the incoming flow is 75,000 cusecs, leaving 35000 cusecs for Bangladesh. The permitted diversion is reduced gradually as the incoming flow reduces to 70,000 cusecs and below that the flows are shared equally. This flow of 70,000 cusec is exceeded 60 percent of the time in the dry season period covered by the treaty of the flows are shared equally. If the flow falls below 50,000 cusec, the two governments will enter into immediate consultations to make adjustments on an emergency basis, in accordance with the principles of equity, fair play and no harm to either party.

Articles of the treaty:

A. ARRANGEMENTS FOR SHARING OF THE WATERS OF THE GANGES AT FARAKKA

Article I. The quantum of waters agreed to be released by India to Bangladesh will be at Farakka. **Article II. (i)** The sharing between Bangladesh and India of the Ganges waters at Farakka from the 1st January to the 31st May every year will be with reference to the quantum shown in column 2 of the Schedule annexed hereto which is based on 75 percent

availability calculated from the recorded flows of the Ganges at Farakka from 1948 to 1973. **(ii)** India shall release to Bangladesh waters by 10-day periods in quantum shown in column 4 of the Schedule: provided that if the actual availability at Farakka of the Ganges waters during a 10-day period is higher or lower than the quantum shown in column 2 of the Schedule it shall be shared in the proportion applicable to that period; provided further that if during a particular 10-day period, the Ganges flows at Farakka come down to such a level that the share of Bangladesh is lower than 80 percent of the value shown in column 4, the release of waters to Bangladesh during that 10-day period shall not fall below 80 percent of the value shown in column 4. **Article III.** The waters released to Bangladesh at Farakka under article I shall not be reduced below Farakka except for reasonable uses of waters, not exceeding 200 cusecs, by India between Farakka and the point on the Ganges where both its banks are in Bangladesh. **Article IV.** A Committee consisting of the representatives nominated by the two Governments (hereinafter called the Joint Committee) shall be constituted. The Joint Committee shall set up suitable teams at Farakka and Hardinge Bridge to observe and record at Farakka the daily flows below Farakka Barrage and in the Feeder Canal, as well as at Hardinge Bridge. **Article V.** The Joint Committee shall decide its own procedure and method of functioning. **Article VI.** The Joint Committee shall submit to the two Governments all data collected by it and shall also submit a yearly report to both the Governments. **Article VII.** The Joint Committee shall be responsible for implementing the arrangements contained in this part of the Agreement and examining any difficulty arising out of the implementation of the above arrangements and of the operation of Farakka Barrage. Any difference or dispute arising in this regard, if not resolved by the Joint Committee, shall be referred to a panel of an equal number of Bangladeshi and Indian experts nominated by the two Governments. If the difference or dispute still remains unresolved, it shall be referred to the two Governments which shall meet urgently at the appropriate level to resolve it by mutual discussion and failing that by such other arrangements as they may mutually agree upon.

B. LONG-TERM ARRANGEMENTS

Article VIII. The two Governments recognise the need to cooperate with each other in finding a solution to the long-term problem of augmenting the flows of the Ganges during the dry season. **Article IX.** The Indo-Bangladesh Joint Rivers Commission established by the two Governments in 1972 shall carry out investigation and study of schemes relating to the augmentation of the dry season flows of the Ganges, proposed or to be proposed by either Government with a view to finding a solution which is economical and feasible. It shall submit its recommendations to the two Governments within a period of three years. **Article X.** The two Governments shall consider and agree upon a scheme or schemes, taking into account the recommendations of the Joint Rivers Commission, and take necessary measures to implement it or them as speedily as possible. **Article XI.** Any difficulty, difference or dispute arising from or with regard to this part of the Agreement, if not resolved by the Joint Rivers Commission, shall be referred to the two Governments which shall meet urgently at the appropriate level to resolve it by mutual discussion.

C. REVIEW AND DURATION

Article XII. The provisions of this Agreement will be implemented by both Parties in good faith. During the period for which the Agreement continues to be in force in accordance with article XV of the Agreement, the quantum of waters agreed to be released to Bangladesh at Farakka in accordance with this Agreement shall not be reduced. **Article XIII.** The Agreement will be reviewed by the two Governments at the expiry of three years from the date of coming

into force of this Agreement. Further reviews shall take place six months before the expiry of this Agreement or as may be agreed upon between the two Governments. **Article XIV.** The review or reviews referred to in article XIII shall entail consideration of the working, impact, implementation and progress of the arrangements contained in parts A and B of this Agreement. **Article XV.** This Agreement shall enter into force upon signature and shall remain in force for a period of 5 years from the date of its coming into force. It may be extended further for a specified period by mutual agreement in the light of the review or reviews referred to in article XIII.

IN WITNESS WHEREOF the undersigned, being duly authorised thereto by the respective Governments, have signed this Agreement. DONE in duplicate at Dacca on the 5th November 1977 in the Bengali, Hindi and English languages. In the event of any conflict between the texts, the English text shall prevail.

The major barriers :

The signing of the Ganges Water Sharing Treaty in 1996 was considered as a new prospect to offer the opportunity for regional cooperation Between India & Bangladesh. India, in spite of being the hydro-hegemon controlling most of the Ganges waters, showed positive intention towards a peaceful resolution of the conflict by incorporating the principles of equity. But despite having a unique water sharing formula, the efficacy of the treaty was questioned several times due to the low of flow at Farakka during the post treaty periods. This study indicates the major barriers for successful implementation of the treaty are - Inaccurate projection of future available flows at Farakka. In appropriate provision of guaranteed flow during critical dry period. Inadequate projection at Hardinge bridge, Lack of guarantee clause for Bangladesh. No consideration of environmental and economic drives.

Some recommendations

Following recommendations maybe considered to improve and prevent the present and future consequences of the Ganges Treaty for saving the environment and survival of Bangladesh. Bangladesh has many internationally reputed experts on environment, water resources management, agricultural, economics and bio-diversity and also water rights activists including those of International Farakka committee in home and abroad. Govt can incorporate them for the planning, management and to solve the problem. Govt can include a provision for multi-lateral cooperation involving all riparian of the Ganges Basin such as India, Nepal, Bangladesh for the integrated management of the basin. The government should make decisions, sets national strategies, implements policies and enforces compliance. The government should facilitate research to assess the consequences and should open to all in home and abroad.

Conclusion:

It is understandable why the 1996 Ganges treaty would be celebrated as one of the world's successful examples of a peaceful resolution to a long- drawn river water dispute. Over a 25 year period, the govt of India & Bangladesh convened over 100 meetings during which long term conflict resolution remained elusive. A series of short term agreements helped alleviate tensions but overall this period was marked by great uncertainty and distress for Bangladesh, which lacked any assurances of dry season flow and suffered from India's period unilateral water withdrawals. The sanguine evaluation of the treaty was only partially true. Treaty rectification was a major event structuring water use and excess in South Asia and it has provided critical assurance of water flow to Bangladesh during dry season.

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Cite this article:

Tasnova Jerin Ulfat & Shanjia Shams (2020). A Brief Discussion On Farakka Barrage & Ganges Treaty. *International Journal of Science and Business*, 4(4), 157-164. doi: <https://doi.org/10.5281/zenodo.3783571>

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