

# The Politics of Farakka Barrage and Environmental effects on Southwestern region of Bangladesh

*Rajib Haider Roman<sup>1\*</sup>*

## **Abstract**

*The Ganges River water disputes had its genesis in the division of India in 1947. After breaking away from Pakistan, Bangladesh expected to utilize the natural flows of the Ganges, Teesta and other rivers to meet her needs- but the disputes over these river's water become evident when her big neighbor, India began to construct the Barrage and other diversion works in 1951 on the upper reaches of the Ganges and other rivers ignoring the legal and vital interests of the lower riparian state. The south-western region of Bangladesh including the districts of Rajshahi, Kushtia, Pabna and Faridpur are situated on the bank of the Ganges, while other four districts namely, Barisal, Patuakhali, Jessore and Khulna located in the Ganges delta, are almost entirely dependent on the water of the Ganges. This paper tries to examine the consequences and effects of the diversion of the Ganges water on the environment and ecological balance of Bangladesh.*

**Keywords:** Ganges River, Farakka Barrage and Environmental effects

## **Introduction:**

India's design to divert the Ganges water through a feeder canal into the Bhagirathi-Hooghly River with a view to developing the navigation system of the Calcutta port ultimately led her to construct the Farakka barrage eleven miles upstream of her border with Bangladesh. It was expected that India might realize the inevitable effects and impacts of the barrage on Bangladesh as about one-third of the total population of Bangladesh fully depend on the natural flow of the Ganges. Building a barrage is of course an intervention into nature development to which people have traditionally adopted themselves. The adverse effects of Farakka have multiplied in the last four decades due to massive population growth in the Ganges in the Ganges dependent basin and their increased demand for water for agricultural and industrial production. In this study the emphasis is not over finding the soundness of the technicalities in the projected financial losses being incurred by the Bangladeshi state rather how the Farakka caused environmental disaster

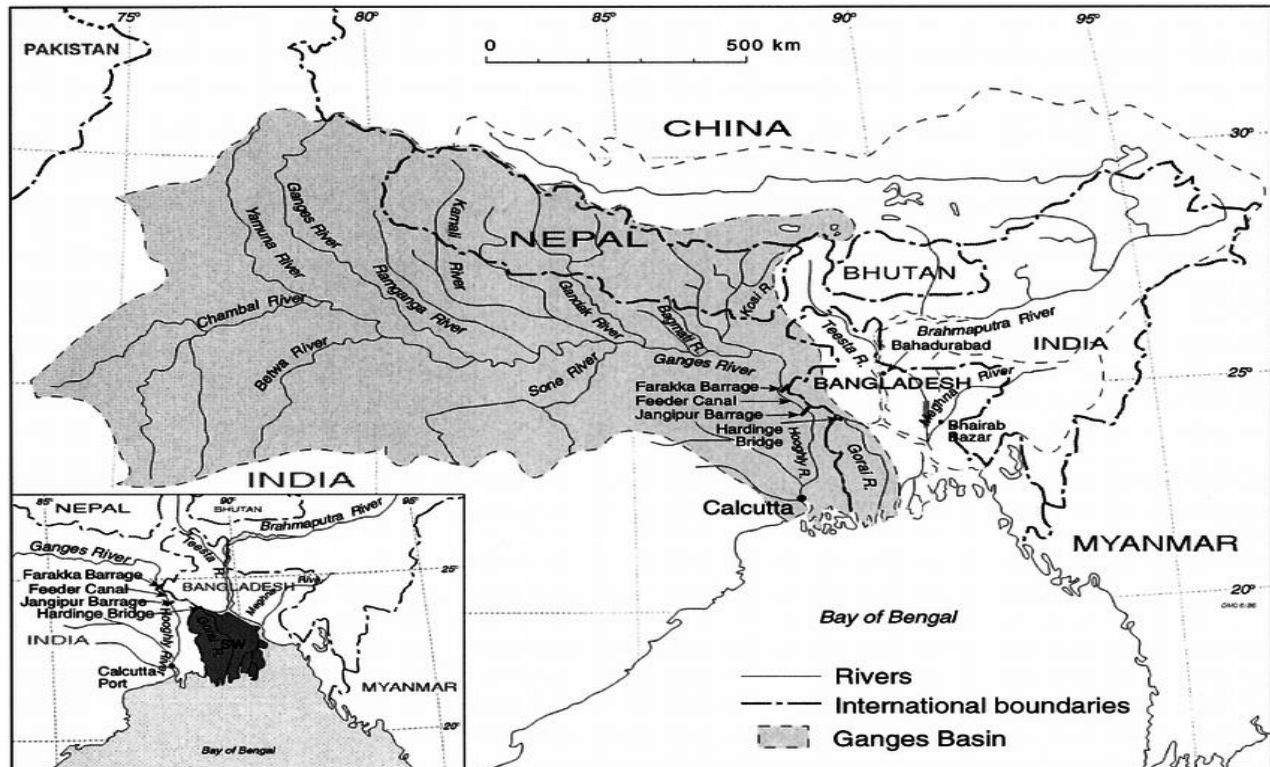
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<sup>1\*</sup> Senior Lecturer, Department of Politics and Governance, Gono Bishwabidyalay  
Correspondence author: Email: [roman17f@gmail.com](mailto:roman17f@gmail.com), Phone: +008801716123956

has affected the common population in the last forty seven years. This paper tries to examine the consequences and effects of the diversion of The Ganges water on the environment and ecological balance of southwestern region of Bangladesh.

## Ganges River:

The Ganges an international river, about 2510 kilometers long flows through between India and Bangladesh. The Ganges River originates at the Indian town of Gangotri on the southern slope of the Himalayas, and flows southeast through Bangladesh before reaching the Bay of Bengal. The Ganges splits into two main channels at the town of Farakkain West Bengal, India: the Bhagirathi-Hooghly, flowing south through India, and The Padma, the name of the Ganges as it flows southeast through Bangladesh. The Padma channel of the Ganges, after covering a distance of about 112 Kilometers, Join with the Brahmaputra River in the heart of Bangladesh, their combined flow then runs south to empty into the Bay of Bangal (Pandey, 2014). The Major tributaries of the Ganges are the son, Kosi and Gandak, and they all originate from Nepal. The Ganges is called Ganga in India and it is considered by the Hindus as the holist river on earth.



The Ganges River basin and Farakka Barrage project (Mirza, 1998).

## The Farakka Barrage: Geo-Political Background

The Ganges water dispute dates back to 1951 when Bangladesh formed the Eastern Province of the Federation of Pakistan (Akter, 2021). The Government of India plan included a 38 kilometers canal to take off from the barrage in order to supplement the water Bhagirathi-Hooghly at the lower point that would make the current of water strong enough to flush off the silt and make Calcutta port clear. Getting to know about this proposal from the Indian press report, Pakistan sent a not to India on 19 October 1951, pointing out that she should be consulted before any schemes likely to prejudice her vital interests be undertaken (Jayakody, 2011).

Bangladesh independence in 1971, it was expected that the water sharing dispute would resolved to the mutual advantage of both the neighbors in view of the help rendered by India during the liberation struggle of the Bengalis. This initial enthusiasm between the two countries helped to set up the Indo-Bangladesh Joint River Commission (JRC) to develop the waters of the rivers common to the countries on a cooperative basis (Islam M. A., 2017). On 21 April 1975, the Farakka Barrage was commissioned on basis following a short-term agreement signed by India and Bangladesh after several days of negotiation; both countries agreed on 18 April share the water at Farakka for the last 40 days of the 1975 dry period (Samad, 2016).

After death of Sheikh Mujibur Rahman, India's Prime Minister, Mrs. Indira Gandhi hardened her attitude towards Bangladesh. In the beginning of the next dry-season, from January 1976, India unilaterally started to divert the Ganges dry-season, flow (40,000 cusecs) at Farakka without any consultation with or concurrence by Bangladesh. After lodging a formal protest with India on 15 January 1976 against the continuous operation of the barrage, Bangladesh brought this issue at the Islamic Foreign Ministers conference at Istanbul in May 1976, the Colombo summit of non-aligned countries in August 1976 and the 31<sup>st</sup> session of the United Nations in September 1976. The United Nations referred the matter back to the two countries at the initiative of the other non-aligned countries (Banglapedia, 2021).

In March 1977, India witnesses a consummate political transformation as consequence of which the Janata Party took over the reins of government by defeating Indira Gandhi's Congress Party. In the beginning, the new government attempted earnestly to give fresh directions to foreign



policy, particularly by deciding to strengthen India's relations with its immediate neighbors (Swain E. C., 1996). In this climate, the two countries come to an agreement extending over a period of five years to share the Ganges water during the dry-seasons. They also pledged to work for finding long-term arrangement which was signed on 5 November 1977, during the leanest ten days, 21 to 30 April, India was allowed to withdraw at Farakka 20,500 cusecs and Bangladesh 34,500 cusecs, the Indian share was 37.5 percent of the total estimated flow of 55,000 cusecs and was to increase in the ensuing periods to 40 percent of the total flow. (Imran Khalid, 2010).

When Congress came back to power in India after the mid-term election in 1980, the critics of the 1977 agreement again become the Congress Party in West Bengal was quite critical of Janata Party government's action in 1977. An all-party delegation from West Bengal called on Prime minister India Gandhi on the eve of the visit by the new President of Bangladesh Hussain Muhammad Ershad to New Delhi in October 1982 both leaders signed a memorandum of Understanding for 18 months by extending the 1977 agreement with some changes for another 18 months and agree to work for finding ways to augment the dry-season (Swain E. C., 1996). As Rajiv Gandhi become became the Prime minister after the assassination of his mother in November 1984, in the beginning India's attitude towards her neighbors changed. He was anxious to build upon that goodwill and to improve India's relations with its neighbor. This was reflected first in October 1985, when President Hussain Muhammad Ershad and Prime Minister Gandhi reached an understanding on the sharing of river water while they were both in Nassau (Bahamas) for the summit meeting of Commonwealth Heads of Government. In pursuance of this, talks took place between delegations from the two countries at New Delhi in 22<sup>nd</sup> November 1985 Memorandum of Understanding was signed for a three-year period. This was based on the sharing of the Ganges dry season flow through 1988 (Imran Khalid, 2010).

Khalida Zia's government, which came to power in the 1991. The Prime Minister of India and Bangladesh met in New Delhi in May 1992 and agreed to make renewed attempts to find a solution to this issue. Though a long time has passed, not even a short agreement has been feasible. The availability of water in the dry seasons has reportedly fallen well below the previous acceptable figure 55,000 cusecs. While the political situation is still volatile in both countries, no one wants to make any compromise with the figures already allocated in past agreements (Swain E. C., 1996). Under the Government of Bangladesh during 1996-2001, a

negotiation resumed and finally a 30 year treaty on sharing of the Ganges water treaty was signed between India and Bangladesh on 12 December 1996. This treaty, in theory, secures minimum water flow during The Ganges Dependent Area in Bangladesh. However, in reality, the 1996 Ganges Treaty failed to make any positive outcomes (Islam M. A., 2017). Because, The 1996 Treaty did not have a direct guarantee clause similar to the 1977 Agreement (Kazi Saidur Rahman, 2019). When Awami League came back to power 2009, the government of the People's Republic of Bangladesh honestly tried to settle the Ganges water issues with the governments of India. The current government of Bangladesh convinced the Indian government to come up with some terms and conditions embodied in an agreement, none as 30-year Agreement to find out some solution of the prevailing vexing water issues, water crisis for Bangladesh. The result of or the outcome of the agreement is yet to come. Bangladesh and India also signed an agreement in 2011 to share surface waters at the Farakka Barrage near their mutual border. The proposed deal was called off after repeated objections by West Bengal Chief Minister Mamata Banerjee. The water-sharing issue was once again discussed during Prime Minister Narendra Modi's visit to Dhaka in June 2015, but it remains unresolved till date (PTI, 2021).

## **Environmental effects on southwest region of Bangladesh**

The most devastating effect of the operation of the Farakka barrage has been on the economic and environmental sectors of the country, namely, agriculture, industry, forestry, salinity, navigation, flood, and river bank erosion.

### **(a) Agriculture**

Bangladesh economy is largely dependent on agriculture and it is the major source of income and occupation. 33% of the total population and 37% of the total area of Bangladesh is dependent on Ganges basin. Some 41% of total labor force is directly involved in agriculture and it contributes 14.025% share to GDP (Ridwan, 21 August 2020). The water supply and distribution in Ganges River adversely impacts the agriculture in the south-western part of Bangladesh. The contribution of the southwest region to overall agriculture is undeniable. But the production of this region mainly disturbed due to extreme water crisis. The uncertainty of water availability of the Ganges has been a serious concern for the large number of farmers in the south-western region, which also includes the Ganges-Kobadak (GK) project area, as farmers

cannot plan their irrigation programme in the dry seasons. The GK Project, which has been providing irrigation to 142,000 hectares of land in the south-western part of the country from mid 1960, has been severely affected due to India's water withdrawal at Farakka. In 1993 dry season, all the irrigation facilities under the command area of this project were forced to be suspended as result of sharp fall in the water level of the Ganges River (Ridwan, 21 August 2020). Agriculture contribute about one-half of the country's GDP in 1972-73 that declined to one third because of less production (Israt Jahan, 2017). About one-third of the total population lives in the south-western region of Bangladesh whose agriculture, the most importance victim by the withdrawals of Ganges water. 65% of crops were directly affected by the Farakka barrage (Mia, 2009). Shortage of surface water for irrigation caused 3.2% reduction in rice cultivation in year 1992-93 and production loss valued US\$56.9 million in the same year (Israt Jahan, 2017).

### **(b) Industry:**

The next important sector affected by the diversion of the Ganges was industry. The different industries of the southwestern region were mainly affected by the increased salinity level. For instance, the Goalpara Thermal power station could not be operated properly due to an increased cost of bringing fresh water by barges from long distances. Similarly the power station of Bheramara went on inoperative because the water level of the intake channels record below 17 feet. The production of the Khulna newsprint reduced to half the capacity as the chloride content of the water used for the mill increased by more than 20 times. In similar ways, the Paksey paper mill and many other industries of south-western region of Bangladesh went out of production (Islam M. N., 1993). The productions of these industries, like that of agriculture, have fallen remarkably and, thus, Bangladesh suffered a heavy loss to her already shattered economy.

### **(c) Forestry:**

The forests, a important sector of our country's economy, are equally affected as a result withdrawals of water from the Ganges River in the upper-stream of the river in Uttar Pradesh and Bihar in India. The salinity, increases due to extremely low flows of the Ganges River, is causing considerable reduction in the growth of forests of the south-western region of Bangladesh (Islam M. N., 1993). The salinity increase and the encroachment of saline water are the responsible for the dying of Sundari trees. This Sundari tree is the valuable species of the Sundarbans as it



accounts for 60 percent of forest's total marketable timber. The Sundarban, in the southwestern region of Bangladesh, is the biggest natural mangrove forest in this earth in one patch and cover a total area of 571,508 hectares. A research survey shows that 40 to 50 percent of the Sundari and Gewa trees in this forest are being destroyed due to salinity. Not only the trees are affected, the increasing salinity has also created health hazards for its world-famous inhabitants The Royal Bengal Tigers. The forest Department of Bangladesh estimates, "Sundorbans is losing the timbers worth of about USD \$20 millions every year there is possibility that if the existing situation continues then sundorbans will be transformed into a desert" (Swain, 1996). This mangrove forest being the major supplier of the country's timber production of the whole Bangladesh has been badly affected. The figure provided by the Forest Department exhibits a downward trend of country's timber production as form 17,336,000 cubic feet in 1981-82 to 6,600,000 cubic feet in 1991-92 (Swain, 1996).

#### **(d) Salinity:**

Due to reduced flow of the Ganges in the dry seasons, salt water intrusion from the Bay of Bengal has become a pressing problem in the south-western region of Bangladesh. Approximately 830,000 million hectares of arable land are affected by varying degrees of soil salinity (M.A.Abedin, 2012). Due to the decreasing trend of dry season flow in the Ganges, The Gorai-Madhumati, a distributary, is getting a very low discharge, as a result, the salinity as well as tidal limit is penetrating further into the country. According to BEDB, the Khulna region is worst affected as the river water salinity has jumped up to 40,000 micro-MHOS/CM in April 1993 in place of normal figure of 1800 micro-MHOS/CN. (Swain, 1996). In 1977 to 1997 in this 20 year we see that, the highly saline area had increased 1594 km<sup>2</sup> (Mohammed Abdul Baten, 2015). This is turn has affected the agriculture, domestic water supply, forestry, and industries.

#### **(e) Navigation**

Bangladesh being interested by the rivers, banks mostly on the inland water navigation system. The falling dry-season flow has seriously affected the waterways dependent on the Ganges flow. The construction of Farakka Barrage has directly affected 79 rivers and canals, 75 thousand ponds, lakes and hoars downstream. The continual withdrawal of water upstream, at Farakka Barrage, the flow of river downstream has been in jeopardy since year. After the construction of

Farakka Barrage out of 230 rivers, 80 rivers of Bangladesh have been waterless (Israt Jahan, 2017). According to Bangladesh inland Water Transport Authority, the total water ways for mechanically propelled vessels, motorized launches, steamers, coasters etc, have shrunk to 5896 kilometers in 1990-91 from the 25,000 kilometers, before the Farakka project (Swain, 1996). Bangladesh already about 3,300 km inland navigation route has become risk, about 15,600 km inland navigation route already lost due to upstream withdrawal of water, At the present time the country has only about 6,000 km inland navigation route (Mia, 2009).

### **(f) Flood**

The discharge data of the Ganges from 1956 to 1990 at Hardinge Bridge indicates that the average annual maximum discharge (August-September flow) before and after 1975 are 49,498 and 55,621 cumecs (Cumec = Cubic meters per second. One cumec equals 35.32 cusecs (cubic feet per second) respectively. On the other hand, the corresponding average minimum annual discharge (March-April flow) is 2006 and 772 cumecs, respectively. These figures show that average peak discharge has increased by about 12.47% and the average annual low flow has decreased by 61.51% (Swain A. , 1996). The occurrence of the high floods has also numerically increased from 3 times in the 1950s, 1960 and 1970s to 4 times in the 1980s. In August and September 1988, the divesting flood brought three-fourth of Bangladesh under water and Bangladesh openly criticized India for the disaster.

### **(g) River-bank Erosion**

When water and no sediment is diverted at an upstream point, downstream goes through severe morphological imbalances. It leads to the siltation of river bed and then shifting of the channel. Each river has its own capacity to carry silt and when the river has to carry additional loads of silt or water in monsoons, they start erosion of banks. Normally shifting is a natural process in an alluvial river. However, man-made changes such as upstream withdrawal can have aggravating effects on bank line movement in the downstream areas. These problems have been observed in the Ganges. The shifting of the rivers in Bangladesh is a dominant environmental problem and the magnitude of its destruction is enormous. This phenomenon is one of the main culprits of making people landless in Bangladesh. An environmental impact study claims that, one million



Bangladeshis are affected annually due to river bank erosion and nearly 19 percent of the slum dwellers in the cities of Bangladesh are the victims of this tragedy (Ghosh, 2022).

### **Concluding Remarks**

The rivers are the free gifts of the nature. They flow from the upper stream to the downstream without knowing the political boundaries for their own. Human civilizations are mostly indebted to the natural flows of the rivers. It has both positive and adverse effects on human lives and environment. The river provides water for agricultural irrigation, industry, hydroelectric power generation, domestic and livestock use and navigation. Sometime, its acts adversely by flooding vast areas, causing extensive damage to standing crops, human lives and livestock and finally it may pollute the environment. That is the reason why the affected parties are becoming increasingly conscious of finding out the ways and means (mutually acceptable) of controlling and managing the flows of the rivers to meet their respective requirements without injuring others interests.

In this context, India's refusal to Bangladesh's proposal of associating Nepal and making storage dams there, and Bangladesh's rejection to Indian's suggestion of the link canal for diverting water from the Brahmaputra to the Ganges ultimately created a situation to a point of no-return.

It is argued that the acceptance of India's proposal of link canal will ultimately multiply the existing problems of Bangladesh (which is already beyond her control) whereas, the acceptance of Bangladesh's proposal would have been for the benefit of the co-basin states of the Ganges river, namely, India, Nepal and Bangladesh.

For an obvious reason, the agreement of 1977 was not renewed beyond the expiry of three years. In the absence of such an agreement or memorandum of understanding, Bangladesh is denied her due share of international river water, the Ganges water since 1980. Bangladesh has been continuing dialogue and discussion with India to arrive at an agreement acceptable to both the countries on the sharing of the Ganges water at Farakka during the dry season.

Since the Governments of India and Bangladesh have failed to ensure the minimum share of the Ganges water for the latter in particular, similar to that of 1977 agreement, the unilateral

withdrawals have become a constant source of environmental disaster for a developing country like Bangladesh to bear. There is therefore, an urgent need for develop the Ganges river basin for their mutual benefit.

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