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River Churni: Assessing Trans boundary River Pollution and Options for Livelihood Protection

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Abstract

Trans-boundary Rivers are one of the major causes of conflict among the riparian states. Mathabhanga Churni is one of such 54 shared rivers between India and Bangladesh flowing in the Ganga Brahmaputra river basin which is a major source of fresh water as well as livelihood support to the people of its riverbanks for various reasons. The water quality of Churni deteriorated due to industrial waste disposal by a company, located in Bangladesh, in the river Churni. Moreover, in Indian side there are open defecation in the river Churni along with industrial and municipal waste disposal which are responsible for degradation of water quality affecting the livelihood of the common people of the riverbank of both sides. Initiatives have been taken to revive the course of river and purify its water quality by the National Green Tribunal, local environmental activists, likeminded people and organizations through awareness programme and protest. The article argues that initiatives for revival of the river Churni were taken by local activists and Government agencies but there is an acute absence of trans-boundary attention from both sides. While both the countries are busy with the Teesta and the Ganga as a result diplomatic parleys, government officials seem to have ignored the issue of pollution in the river Churni which can actually act as a catalyst for inculcating trans-boundary water diplomacy. It finds that diplomatic or bilateral engagements, issues revolving around Centre-State relations also need to be addressed in order to prevent an ecological disaster on both sides of the boundary and also to sustain livelihoods.

Key words: Churni, trans-boundary river, India, Bangladesh, River Pollution, Livelihood, Fishermen

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Introduction

Natural resources are already scarce due to the overgrowing population of the world and the situation is deteriorating by every single day. As a result, corporate capital as well as neo liberal state are trying to impose heavy taxation over land and water and use it for profit making. In the mid-1990s, World Bank has predicted that water would going to be costlier than petrol in the twenty first century. Therefore, fresh water became a bone of contention between individual, nation-state and communities living within the catchment areas of different rivers. At present, trans-boundary water related disputes are more frequent and intense among nation-states due to acute water crisis even in the regions where water is supposed to be in abandoned supply. Like other regions of the world South Asia is also facing inter and intra state conflicts relating to sharing and control of water resources.[i]

According to the report published by the *Niti Ayog* India is going to face an acute crisis of fresh water by the year 2030. Even after being located in Ganga-Brahmaputra-Meghna delta, West Bengal is also facing an acute water crisis, because of the mismanagement of water, more particularly surface water of riverine system. Bengal is known as *nadimatrik* (a land surrounded by rivers and worship rivers as mother) area in different historical texts. As a rain-fed river Churni suffers from shortage of water due to unreliable rainfall which is very seasonal in nature and its water quality is getting degraded due to the industrial pollution. The river centric life of the catchment areas is posing a serious threat to lives of marginal people, their culture and economy. The issue of Mathabhnga-Churni river pollution is one such burning issue.

The issue of management and utilization of international water is a critical one and it requires a cooperative approach of water management and maintenance of quality of flowing water in an integrated manner. But there is a lack of consensus as well as concern among the planning and implementing agencies of Government, and the common people regarding their careless outlook about rivers. Most of the countries considered rivers as their national resources but for sustainable management of water according to experts it should be viewed as the part of global commons. Moreover, when the question of management of water comes that was typically confined to the governmental agencies of both countries but there are numerous non-governmental as well as non state stakeholders who should be taken into account. However, there should be change of outlook

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among common people that rivers are not dumping ground of waste and industrial hazardous elements[ii]. And, the fluvial resources are not infinite, because it depends on how carefully and sustainably the resources be managed.

The Course of River Churni

The Mathabhanga-Churni is a tributary to the river Ganga. The river Ganga (2501 km) is a perennial river, originating from the Gangotri glacier of the Himalaya and flows through the states of Utter Pradesh and Bihar. It then turns south-east ward near Rajmahal hills and flowing through West Bengal, it enters Bangladesh as river Padma. River Ganga discharges around 400 m.a.f. out of which only 12% enter into Bangladesh and it can be used for agriculture and other purposes and rest of the water flows to the sea.

According to an estimate of the United Nations, there are nearly 260 river basins and approximately 270 groundwater aquifers around the world and most of them are trans-boundary in nature. The river Churni flows through one such transboundary river basin i.e. Ganga River basin (GRB)[iii]. The entire distribution of the Ganga River basin are as follows: 79% area lies in India, 13% in Nepal, 4% in Tibet and 4%in Bangladesh[iv]. The river Ganga is divided in different branches and the western branch of the river Ganga named as Bhagirathi Hugli . This extreme lower parts of Ganga is 500 km long and flow through the state of West Bengal. There are two major distributaries of the river Ganga i.e. Bhairab-Jalangi and Mathabhanga–Churni. River Jalangi meets Bhagirathi at Mayapur and Mathabhanga-Churni at Payradanga respectively. The lower 280 km parts of Bhagirathi is tidal in nature and known as Hugli River (Note Hooghly is one of the fertile districts on the banks of Ganga like Burdwan). The tidal water penetrates through this Hugli to reach Nabadwip, one of the important Vaishnava pilgrim towns of West Bengal. The non-tidal regime of Bhagirathi-Hugli lies further north and has a length of 220 km.

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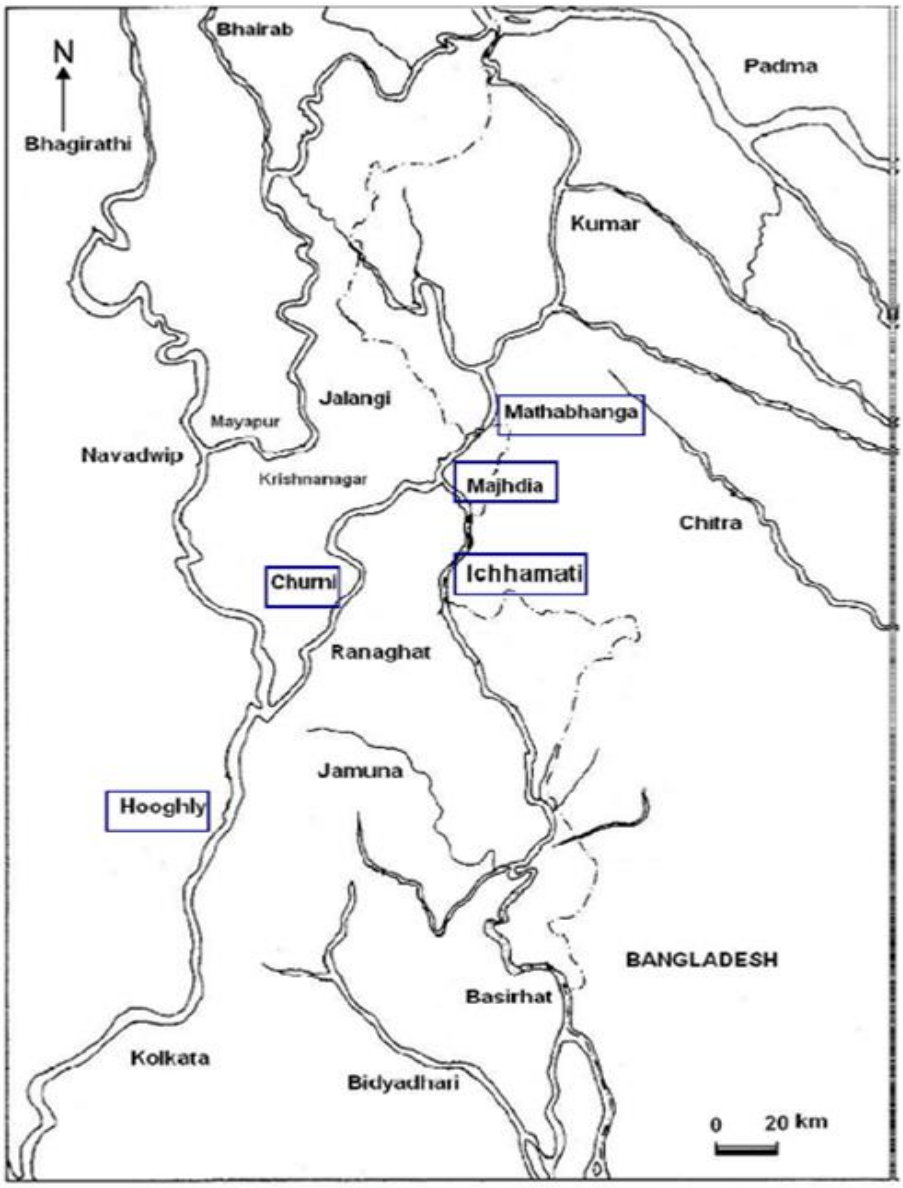

Mathabhanga-Churni-Ichhamati River System

Source: Rudra, 2018: 33

The Mathababnga-Churni flows in the eastern side of the Bhagirathi-Hugli River. The catchment area of Bhagirathi-Hugli River covering 5971 sq km is drained by two other distributaries of Ganga i.e. Bhairab-Jalangi and Mathabhanga–Churni which contribute 2922 million cubic metre water annually[v]. These two channels do not get fresh water supply from Ganga barring two or three months. Actually, Churni is a distributary of Mathabhanga River and together it is regarded as Mathabhanga-Churni[vi]. River Churni originated as a distributary of Mathabanga near Krishnaganj

(22º23ˈ26" N 88º44ˈ31" E) in the Nadia district and after about 54 km stretch it meets Bhagirathi Hugli near a place called Pyradanga (23º7'40"N 88º30'7"E). River Churni is one of the primary sources of fresh water in the district and also a major source of livelihood for the fishermen communities.

As Mathabhnaga–Churni flows in the lower reach of the Bhagirathi-Hugli therefore, it is replenished regularly by the tidal flow. Mathabhanga River started its journey from the right bank of the Padma at Munshigung Kushtia now in Bangladesh. Mathabhanga River divides into two streams near Majdia in Nadia district, originating two different course of flows i.e. Ichamati and Churni. The course of river Churni flows through Shibnibas, Hanskhali, Birnagar, Aranghata, Ranaghat and finally connects the river Bhagirathi Hugli at Shibpur Ghat near Payradanga. River Churni is 56 km long and having 120.24 km of bank in both sides, is significant as a major source of surface water. It is one of the major sources of livelihood for thousands of fishermen residing in its bank. According to an estimate, Churni is the basic supply line of water and other sources of livelihood to nearly 0.3 million local people in the towns of Ranaghat, Chakdah, and Krishnanagar. There are near about 10 ferry services between Ranaghat to Hanskhali covering total 59 km of waterways services at Krishnagunj, Hanskhali and Ranaghat with nearly 7 lac people using waterways as one of the source of transport in the Nadia district. Interestingly, among the three rain gauge station in the district of Nadia for flood control, two rain gauge stations are situated over Churni at Hanskhali and Majdia respectively under Ranaghat subdivision.

A state in India for administrative and other purposes is divided into districts, which is further divided into subdivisions. Again for the micro level administrative purposes subdivisions are divided into blocks. The course of river Churni is in its early old stage of flow and it flows through the southern part of the district Nadia. Nadia is a district which lies within the moribund part of Gangetic delta which is flat in nature. River Churni passes through Chakdah, Ranaghat –II, Aranghata, Hijuli –I &II Gram panchyat, Shibnibas Gram Panchyat, Krishnagunj, Ramnagar –I, Kalinarayanpur and Anulia which entirely fall under Nadia district administrative jurisdiction[vii]. A common characteristics of that level of river Churni is alluvial plain. Due to its location in the lower parts of the Gangetic delta, the river bed is dumped with small and medium sediment and also full of submerged islands. As a result, the riverside embankment became weak due to constant

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erosion with the soil dumped into the riverbed as well. There are several vulnerable embankments over Churni near Batikamar under Betna Gram Panchyat, near Goyesh under Mamjoan Gram panchyat and near Per Batikamari under Mayurhat –II Gram Panchayat which are vulnerable for the people residing those areas.

Interestingly, the Rennel's map (1760) which is considered as one of the oldest map of Bengal has not indicated about the existence of river Churni. According to local historian, during 17th century, the famous King of Nadia Maharaja Krishna Chandra ordered his men to dig a moat to protect his kingdom from the attacks of Bargis (a kind of armed dacoits) of Maharashtra. During that time there was another river name Anajana, which originated from Jalangi River and flowed to the river Bhagirathi. A distributory from river Anajana near a place called Yatrapur joined Ichamati. At that point of time, lower part of Mathabahnga River was known as Ichamati River. Later the distributary was filled up artificially and upper part of Anajana got stuck due to alluvial sedimentation. The canal along with the lower part of Anajana of the present day is known as river Churni or Mathabhanga-Churni. River Churni was used as a major trade route within the undivided Bengal during 1930's which lost its navigability in less than a hundred years. As mentioned earlier, Churni is a distributary of Mathabhanga which originated from riverbank of Padma at Munshigunaj near Kustia district in Bangladesh. Therefore, it can be assumed that Churni is not a river rather an artificial canal like *Adi Ganga* of Kolkata and locally it is known as *Kata Khal* (dug canal)[viii].

River Churni forms acute meandering during its flow. The river remained disconnected from Ganga since the early twentieth century and now replenished by monsoon water and effluent seepage from the ground water pool. The existence of many oxbow lakes on flood plain helps to appreciate the fact as to how the river have changed courses in the recent past. The seasonally variable discharge and unconsolidated `quaternary sediment layers composing the bank governed formation of intricate meandering. The Mathabhanga takes off at Munshiganj in Kustia district of Bangladesh and crosses Indo-Bangladesh border near Gobindopur (Nadia district) and flows about six km to reach Majdia in India. At Majdia it is divided into two streams –the river Ichamati and Churni. The Ichamati river flows south through Bongaon, Basirhat and Sundarbans, North and

South 24 Pargana districts respectively. The Churni flows westwards for about 45 km and ultimately joins river Bhagirathi at Shibpur Ghat near Payradanga located in Nadia district.

As the river Churni receives tidal water there was huge biological diversity in this river and it was known for availability of various fish species such as tiger prawn, hilsa and pabda along with other aquatic anthropoids like crab and snails[ix]. But the water quality of the river is under serious threat which is casing loss of biodiversity since last few decades due to anthropogenic imbalances caused by river pollution[x]. The major sources of river water pollution are due to direct human interference.

Environmental Pollution

The upper riparian part of the river Churni passes through Bangladesh and within in its riverbank there are two major industrial complexes near Darshana i.e. Sugar Cane Mill Complex and Carew Wine factory[xi]. From these two industrial complexes huge amount of industrial discharges directly contaminate the river water on regular basis disturbing the rivers' natural ecological flow. In the Indian side it flows through Nadia district which is famous for dying factories and there are several dying factories in the riverbank of Churni which are also discharging their solid and liquid waste directly into the river without taking into account its severe consequences. Thus a 72 km downstream stretch of the river that flows along some 120 fishing villages in West Bengal has become unusable. Moreover, there are brick manufacturing industries within the riverbank of Churni that result in unplanned digging of soil of the river side which is responsible for erosion of the bank. At the same time, dumping of fly ash into the confluence resulting in rapid change in the geomorphological character of the river system.

There are two municipal and several Panchyat areas along the course of river Churni. The Birnagar and Ranaghat Municipalities are dumping their partly treated or untreated waste in the river resulting in severe chemical imbalances in the river water quality. According to an estimate near bout 30000 liters of effluent is poured in the river water of Churni on regular basis. The water quality of the river Churni has degraded partly because of disposal of agricultural waste from riverside fields, use of pesticides, animal waste as well as night soil from the habitation areas beside the embankments, solid waste from Hindu burning ghat, and jute processing system during monsoon season[xii]. There is another allied problem related to pollution which is also responsible

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for deterioration of fish species in the river Churni. Besides pollution there are number of *bhadals* (transverse check dams) built illegally across the river bed by unscrupulous persons to take away all the fish. Silting of the river bed have reduced the fish stock in the rivers so much so that fishermen are migrating out from fishing and engaged in other low wage occupation in search of livelihood. The pandemic situation has worsened the livelihood problem of the fishermen to a tragic level.

International Negotiations on Transboundary Water Sharing

Water is not only crucial for sustenance of human life but it is also important for anthropogenic world consisting of flora and fauna. According to Indian law, water is a state property whereas according to Dublin principle water is regarded as private property. In ancient Indian texts like *dharmashastra* do not consider ownership rights on flowing water but only the right to use. Rather it regarded as a common resource belonging to the community, like air. The British administration and the Indian state after independence were much more concerned with securing control over natural resources. Although water as a resource belongs to humanity as a whole but conflict arises over flowing water when water body passes through a number of nation states then difficulty arises from upstream vs. downstream and issue of riparian rights over river came into existence.

After prolonged discussion the United Nations Organisation has mentioned in general comment 15 that the right to water is also considered as human right. Since 1960's there has been growing concern about transboundary water issues around the world which resulted in creation of a number of bilateral and multilateral treaties and agreements. But first international understanding came in 1966 with the appearance of the Helsinki Rules of 1966 on the use of waters of international and Transboundary Rivers with emphasis on equitable and beneficial use of water in a reasonable manner. In late 1990's the United Nations General Assembly adopted the Convention on the Law of the Non Navigational Uses of International Watercourses. In that convention it was adopted as a principle that upper riparian state must not cause substantial harm to the lower riparian state[xiii].

Trans-boundary Water and India Bangladesh Negotiations

The issue of river water sharing has been one of the priority areas between India and Bangladesh relationship for last few decades. Since its appearance as a nation state in 1971, Bangladesh has

openly acknowledged the contribution of India in their liberation war against Pakistan. Bangladesh signed a treaty of Friendship, Cooperation and Peace (1972) with India as a trusted bilateral partner and agreed to jointly initiate action plan for river basin management and development of hydropower projects along with the issue of flood control[xiv]. But the 1975-1976 coup and counter coup in Bangladesh resulted in mutual misunderstanding with both sides blaming each other of deficit in trust[xv]. In 1977, both countries agreed to reach a comprehensive time bound agreement. In 1988, Bangladesh witnessed huge flood submerging two thirds of Bangladesh souring Indo-Bangladesh relations over issues concerning flood control measures by India. Finally, in 1996 both counters reached to a logical and inclusive deal on water sharing of Ganga flow and related issues putting in place the Joint River Commission[xvi]. President Ramnath Kobind visited Dacca and signed a few agreement for bilateral and multilateral development and cooperation during his visit to Bangladesh on 15-17 December, 2021 as part of 'neighbourhood first policy'. While Indo- Bangladesh relation has revolved around the Ganga water sharing, both parties are silent about other fifty three transboundary streams. There is hardly a noticeable concern about protecting the water quality of these other streams, barring politically motivated issues like Teesta or Tipaimukh dam.

River pollution of Mathabbhanga-Churni is a serious matter of concern. According to a source of West Bengal State Pollution Control Board report on Churni, the river has been already regarded as highly polluted and having a level of bio-chemical oxygen content as high as 11.3mg/L (The normal range is 4-5 Mg/L).

Top most Polluted River Stretch in West Bengal

Sl No	Priority	River	Polluted Stretch Identified	BOD (mg/l) when identified as polluted
1	I	Vidyadhari	Haroa Bridge to Malancha Burning Ghat	26.7-45.0
2.	II	Mahananda	Siliguri to Binaguri	6.5-25

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3.	III	Churni	Shantipur Town to Majhdia	10.3-11.3
4.	III	Dwarka	Tarapith to Sadhak Bamdeb Ghat	5.6-17.0
5	III	Ganga	Tribeni –Dimond harbour	5.0-12.2

Source: Report of Action Plan for Rejuvenation of River Churni, Nadia, West Bengal, Priority III, July 2020, p-6

As it has been mentioned Churni once regarded as one of important site of exotic fish biodiversity[xvii]. But due to high bio-chemical oxygen content the chance of survival of fish and plants are very low. Awakening to the new realities, local communities of Hanskhali, Kisangunj and Ranaghat established Matahbhanga and Churni River Rescue Committee and they have been raising the issue since 2007. The Secretary of the Churni River Rescue Committee Swapon Bhoumik mentioned that:

> 'The waste discharged in the Bangladesh side has been causing enormous damage to fish cultivation. People having fear in taking a bath in the river. We want our Prime Minister to take up the issue with Sheikh Hasina so that waste water treatment plant is set up on the Bangladeshi side soon.' [xviii]

Major Water Polluting Industries Located Within the Catchment Area of the River Churni

Sl No	Name and Address of Industrial Unit	Water Consumption in KDL		Waste Water Generation in KDL		
		Industrial	**Domestic**	**Industrial**	**Domestic**	**Mixed**
1	Amson Textile Industries , Ranaghat Municipality, Ranaghat, P.O. & PS Ranaghat , Pin 741201	13.00	0.40	---	----	8.00
2	Shree Durga Processing & Finishing Mills Pvt.	9.25	1.5	---	---	1.65

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	Ltd. ,Vill-PO and PS Ranaghat , Pin 741201					
3	Natan Fulia Tantubay Samabay Samity Ltd, PO -2no Natun Fulia, P.S –Shantipur , P.O. Fulia Dist Nadia, Pin 741402	3.6	0.5	3.0	0.4	0.00
4	Tangail Tantubai Unnayan Samabai Samiti Ltd, Shantipur, P.O-Fulia, P.S. – Shantipur , Dist – Nadia-741402	7.20	1.20	6.00	0.90	0.00
5.	Fulia Tanagail Bayan Silpa Samabay Samiti Ltd., Samabay Sadan, Fulia, P.O. Fulia, P.S.-Shantipur, Dist –Nadia	4.20	0.50	3.50	0.420	
6	PMA Handweaves Private Limited, Nabala Gram Panchyat, Belemath, P.O.-Belemath, P.S – Shantipur, Dist –nadia, Pin 741204	10.00	1.50	7.0	1.50	
	Total	47.25	5.6	19.5	3.22	9.65

Total Industrial Water Consumption: 52.85 KLD, Total Industrial Wastewater Discharge: 32.37 KLD, Existing Waste Water Treatment Facility: 32.37 KLD, Gap in Industrial Wastewater Treatment: 0.00KLD,

Source: Report of Action Plan for Rejuvenation of River Churni, Nadia, West Bengal, Priority III, July 2020, p-11

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Voice for reviving the river

Sustainable development requires the protection of natural course and water quality of the river. At present, water is considered as a multidimensional issue for sustainable development as the deteriorating water quality of the river directly affects the livelihoods of communities residing dependent on it. In the case of Churni therefore, the local community directly affected by river pollution decided to publicly raise their voice against the river pollution.

Besides *Matahbhanga and Churni Nadi Banchao Committee* (*Matahbhanga and Churni* River Rescue Committee), the local fisherman of the Majdia town , a locality bordering Bangladesh in the Nadia district formed another collective organization under the banner of the *Dakshinbanga Matsyajibi Forum* (DMF) (South Bengal Fisherman's Forum) for saving the river system and its water quality. In their meeting they resolved to propel the movement to restore Mathabhanga and Churni rivers through various initiatives:

- Regularly organize demonstration with along with hunger strike to effectively remove the check dams (*badhals*);
- Mobilise both the Government of West Bengal and the Government of India to take up the issue of cross border pollution with the Government of Bangladesh;
- Constantly keep in touch with Media Conference to highlight the issue and involve the civil society as well as local people.[xix]

Initially, they decided to save the river system under the banner *Matahbhanga and Churni Nadi Banchao Committee* (*Matahbhanga and Churni* River Rescue Committee)(MCRRC) along with local environmental activists, members of *Vigyan Mancha* (Platform for Science) and local fisherman, boatman and other affected community. Gradually, they realized that saving a river means saving the livelihood of the fishing communities that depend on water quality of the river. As a result, *Dakshinbanga Matsyajibi Forum* (DMF) under the leaderships of Debasis Shyamal and Ambia Hossain mobilized the support of the local people and motivate them to launch protest against river pollution.

Initially, the *Dakshinbanga Matsyajibi Forum* (DMF) launched a demonstration of about 350 fishermen at the BDO (Block Development Officer) office at Krishnaganj on 8th February 2018.

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This was the first public move of the fishing communities. Major demand of the demonstration are:

a) Immediate demolition of the Badhals put across the river bed by miscreants, steps by the government to stop pollution flowing into the river from Bangladesh.
b) Supports to the fishing communities in terms of finance, infrastructure and social security.
c) Issue of official identity cards for the fishermen as recognition of their occupational dignity.

The fishermen clearly mentioned to the BDO and the FEO (Fisheries Extension Officer), unless immediate action is taken by the authority on their demands they will step up their agitation. After prolonged discussion with the delegation of demonstrators the FEO agreed to take immediate steps to issue identity cards to the fishers, the BDO promised to take steps to demolish the *badhals* and request the government to take measures regarding the pollution coming from Bangladesh. They also promised that that they will also look after the demands of the fisherman community and other affected communities and do their level best to meet their demands.

Demonstration by *Dakshinbanga Matsyajibi Forum* (DMF), Source: *Anandabazar Patrika*, 11/04/2018

Immediately, after the meeting the BDO took up the issues with concerned authorities on urgent basis. Orders were issued to remove the *badhals*. Steps were also initiated to issue government identity cards to the fishers. A number of *badhals* were removed. Unfortunately, the process was stalled through the intervention of some political leaders, hand in glove with the miscreants who had built the *badhals.*

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Political interference motivated the *Dakshinbanga Matsyajibi Forum* (DMF) to organize their movement in larger scale. Gradually, the representatives of the fishing communities held a meeting at Majdia. In that meeting the fishing community representatives spoke on the problems they are experiencing day to day basis due to the degradation of rivers and neglect of the government, particularly the irresponsible attitude of the fisheries department of the Government of West Bengal. In the mutual exchange of views they gradually get aware about politician, administration and the builders of *bhadals.*

Within a couple of months they organized a rally on 10th April 2018 and protested against the river pollution where near about 500 fisherman assembled with the slogan 'Save River, Save Fish, Save Fisherman People'. From that rally fisherman sent a strong warning to the authorities and the protest delivered a clear message to those who had built the *badhals*. If the government fails to take effective action to remove the *badhals*, the fisherman community would have to intensify the agitation for the sustainability of the river and livelihood of common people. They also sent a deputation letter to the honorable Prime Minister of India drawing his attention to stop the cross border river pollution from Bangladeshi owned Carew & Co (Bangladesh) Ltd. The said plant which is a distillery producing alcohol from sugarcane located in Darshana, Chuadanga, Khulna Division, and Bangladesh. The company is located inside the Darsana Sugar Mill compound and is under the authority of Bangladesh Sugar and Food Industries Corporation (BSFIC). It is the only one of the 15 mills owned by BSFIC that makes a profit, as per media reports.

The National Green Tribunal and River Rejuvenation Committee Report on Mathabhanga Churni:

Since 1980's the West Bengal Pollution Control Board in association with the Central Pollution Control Board started monitoring the water quality of all major rivers, canals, ponds and reservoirs across the country. On the basis of that study CPBC identified polluted river stretches in the country. River Churni is among the list of top five polluted rivers of Bengal.

An application was registered before the National Green Tribunal Principal Bench New Delhi as O.A. No 673/2018 on the basis of a news item dated 17.09.2018 in the Hindu newspaper. On the basis that newspaper report the National Green Tribunal passed an order identifying seventeen

polluted river stretches in the state of west Bengal and categorized these polluted stretches in five priority classes. The Tribunal directed the State to prepare action plan for rejuvenation of these 17 polluted river stretches. On the basis of the direction of the National Green Tribunal, the Govt. of West Bengal constituted the River Rejuvenation Committee (RRC) for preparation of such action plan under the supervision of Principal Secretary, Department of Environment, and Govt. of west Bengal. The Member Secretary, West Bengal Pollution Control Board became the Chairman and the Chief Executive Officer, Kolkata Metropolitan Development Authority became the Member Convener of the River Rejuvenation Committee on Mathbhanga Churni.

According to experts the major sources of river pollution are: i) discharge of industrial waste water, ii) discharge of untreated municipal waste water, c) pollution from non point sources. Moreover as churni is not a perennial in nature, during lean season the volume of water became less resulting in high concentration of pollutants. As a result Action plan for rejuvenation of Churni was prepared keeping in mind the sources of pollution from catchment areas of the river such as the discharge from industrial sources, discharge from municipal sources , diversion of the sewage, solid waste management, bio-medical waste management, e-waste management, ground water management, rain water harvesting, ground water charging, maintaining flow of the river, protection and management of flood plain zones, adopting sustainable irrigation practice, plantation on the both banks of the river, setting up bio diversity parks etc.

After several meetings and modifications the recommendation of the Central Pollution Control Board Task Team and the River Rejuvenation Committee, West Bengal has finally approved the report of the action plan in its 8th meeting held on 02.07.2020.

As per the report the major town located in the polluted river stretch is Ranaghat along with a population of 75365 as per 2011 Census. The municipal authorities were advised to treat the municipal sewage and also treat the trade and other effluents generated within the catchment area. It was identified that nine canals and drains are discharging large quantities of waste water into the river.

Details of drains contributing to the River Mathabhanga Churni

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Sl No	Landmark of Drain/Outfall	Coordinate		Type	Flow (MLD)	BOD(mg/l)	FC (MPN/100ml)
		North	East	Domestic /Industrial/Mixed			
1.	Chaitanya Ghat	23˚10’58.94	88	Mixed	0.518	59.50	300,000.00
2	Radharani Seba Sadan			Mixed	0.333	47.82	1,300,000.00
3	Nadia Samaj Pally			Mixed	1.296	54.24	210,000.00
4	Chotonajar			Mixed	0.091	71.30	190,000.00
5	Churipara			Mixed	0.822	70.00	160,000.00
6	Thanapara I			Mixed	0.187	92.00	220,000.00
7	Thanapara-II			Mixed	0.456	58.00	140.000.00
8	Sreenathpur			Mixed	2.799	48.00	900,000.00
9	Bakso Khal			Mixed	3.638	68.00	230,000.00

Source: Compiled by Author from field study.

Steps Taken for Rejuvenation of the River Churni

As per recommendation of the River Rejuvenation Committee, the interception and diversion network including setting up of STPs within Ranaghat Municipal area in understated. However KMDA as an interim measure has taken up by in situ treatment in June 2020 in Sreenathpur and Baskokhal. As per estimate of the experts, the present amount of solid waste of Ranaghat Municipal area is 26 Ton per day. The Ranaghat Municipality has initiated measures to introduce door to door solid waste collection since March 2021. As per recommendations of the RRC, Ranaghat Municipality has started working on waste processing facility including sanitary land fill. In West Bengal there is only one Common Hazardous Waste Treatment Center. Therefore treating hazardous waste is still a matter of concern. Also, there are six Bio-Medical Waste Treatment, Storage and Disposal facilities and Kalyani is one of them. All the health care institutes and hospitals are disposing their bio-medical wastes through the bio-medical waste treatment facility at Kalyani. For monitoring the real time Ground water level in the catchment area of the river Churni, tender has been floated to install the DWLR. Near about 87 projects has been undertaken for water conservation in the catchment area of river Churni. In 151 places ground water recharge pit has been installed in the catchment area of the river Churni for raising ground

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water level. It is expected that due to above mentioned initiatives the water quality of Mathbhanga Churni will definitely improve up to certain quality.

Conclusion

The length of river Churni and Mahtabhanga is nearly 72 Km and mainly flowing in the Nadia district of West Bengal and it has remained heavily polluted for nearly four decades. The sugarcane mill complex and the Carew Wine factory which are the major source of pollution were nationalized by the Government of Bangladesh in 1973 i.e. immediately after independence and they are the major industry of Bangladesh under the Industrial Ministry of Govt. The total area of the company is nearly 19 acre and there are nearly nine industrial firms situated together. The total area of human habitation surrounding the industrial premises is 1462 acre. There are 20 feet high wall constructed to protect the company premises. In earlier years, 1016 metric ton sugarcane was crushed for making spirit but the amount has risen to 1150 metric ton recently. For selling their foreign liquor there are nearly 200 distribution agents and for country liqueur there are 13 agents[xx]. The level of pollution from these companies have affected the lives of people of 120 villages and municipal areas across the border of both the countries on the banks of the river Churni.

The Bangladesh Govt. and the Govt. of India both are well aware of the fact regarding the pollution of the river Churni due to several public demonstrations but neither side had taken adequate measures to stop it. No survey has been made on the effect of polluted water on the crops grew in the sides of river. Many voluntary organizations and NGO along with the local people tried to attract the attention of the State and Central Government of Govt. of India to bilaterally discuss the issue in the diplomatic level with Republic of Bangladesh. A petition has been filed in the Green tribunal by a local advocate residing at Ranaghat and eventually he died. The verdict of the court was there to stop the pollution and a mass petition was forwarded to the Govt. of India but nothing fruitful has been done so far in connection with the issue of pollution. Nearly 30,000 fisherman are without job, the biodiversity of the riverine has almost at the verge of extinction. The skin disease is the major consequences faced by the local inhabitants using the water in various forms .But even after that the fate of the common people is in utter distress. The combined bilateral effort of two countries can jointly mitigate the long term problem of sustainability.

Transboundary water governance is the need of the hour for the development of resources of both countries in a sustainable manner. Most of the scholars blamed India for its hegemonic role in South Asia however in case of river Churni, Bangladesh is playing dominating role. While visiting Bangladesh on the eve of fifty years of Indo- Bangladesh relations in March 2021, Prime Minister Mr. Modi signed Memorandum of Understanding on bilateral cooperation especially in the field of disaster management, resilience and mitigation. However, it is true that Indo Bangladesh trans boundary river relations will not be depend on what New Delhi and Dacca will think, but will also be very much dependent on center state federal relations, and the movement of federal state's position and the political obligations of domestic politics of both countries with special references to trans boundary river governance. However it is worthy to note, that on the 5th Joint Consultative Committee Meeting held between Foreign Minister of India and Bangladesh, Bangladesh Government has intimated that they were installing waste water treatment plant in various Sugar industries and in Darshna Sugar Mill is already included in their plan.

Having about 4% of the water resources of the world, India should have been water adequate nation .However, in 2011 India turned into water stressed nation .The present rank of India is 120 among 122 countries on the water quality Index as per report of the Niti Aayog. Water became a political object of South Asia as besides the river other resources there are 23 million pumps in use in the region. Keeping this background in mind it is essential for south Asian countries particularly India and Bangladesh to engage in water diplomacy and water governance though constant dialogue using the regional platform of SAARC. For addressing the issue of river pollution and river basin management the initiative has been taken for organize *Nodi Boithok* (river meeting) both in India and Bangladesh in consultation with civil society organizations, scientists and activities initiated by the Oxfam led Transboundary Rivers of South Asia (TORSA), and later adopted by an international Ngo CUTS international (Consumer Unity and Trust Society). These programme is designated to build the capacity enhancement to the communities living in the river bank areas to secure safe water resources including dialogue and cross border visits among communities and civil society organizations. In Bangladesh more than 200 Nadi Boithks were held across 35 different location in Bangladesh from 2018 to 2021. In India CUTS organized 20 Nodi Baithaks in 2021 only[xxi]. [21] Similar arrangements can be made to address the transboundary river pollution in the river Mathabhanga Churni, where the suggestions provided by national green tribunal of India can be consider as guiding manual.

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