



RESEARCH ARTICLE

A GEOGRAPHICAL ASSESSMENT OF RIVER CHURNI AND ITS CHANNEL HYDROLOGICAL ANALYSIS, SOCIO-CULTURAL-ECONOMIC DIMENSION, RIVER POLLUTION AND ITS CONTROL OF NADIA DISTRICT, WEST BENGAL

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Received 20th February, 2018; Accepted 09th March, 2018; Published 15^h April, 2018

ABSTRACT

Churni river is a stream in the Nadia district of the West Bengal. It is a distributary of the Mathabhanga River. The Mathabhanga River divides into two rivers The Ichhamati River and The Churni River near Pabakhali village at Majhdia in Nadia district. An ancient period, the villagers who were lived bank of rivers and depend on rivers for their livelihood and occupation. Churni River was most of them. River side's villagers were depend on Churni River for catch fish. The study is attempt discuss into four part. Journey from the confluence to origin of river Churni . (part-1): Culture of river bank sides villagers,(part-2): Hydrological channel analysis.(part-3):Socio-economic condition of river side's villagers and (part-4): Pollution, Impact and its control of river churni. Each part can divides some section. (part-1) included culture of river bank sides villagers it divides under 3 sections, *section-1.1*: Present culture of villagers, *section 1.2*: Vulnerable culture of villagers. *section 1.3*: Fairs and festivals of river sides villagers.(part 2): includes under 3 section.*section-2.1*: Identify depth of churni river in each blocks. *section 2.2*: Reason for variety of depth in different places under each blocks.*section-2.3*- Water level data on Churni river. (part -3) :includes under 3 sections. *section 3.1*: Main occupation of river side's villagers,*section-3.2* Previous condition of villagers. *section 3.3*: Present condition of socio-economic condition of villagers. (part 4): Includes under 3 section. *section 4.1*: Causes of pollution by human activity. *section 4.2*: The impact on river Churni pollution. *Section 4.3*:control of Churni river pollution.

Key words: Cultural aspects, Hydrological analysis, Water level data, Socio-economic condition, Pollution, Impact and It's Control

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Citation: Karabi Dutta, 2018. "A geographical assessment of river churni and its channel hydrological analysis, socio-cultural-economic dimension, river pollution and its control of Nadia district, west Bengal" *International Journal of Current Research in Life Sciences*, 7, (04), 1578-1584.

INTRODUCTION

The Churni River is situated at 23.40 North, 88.70 East and its confluence is 23.13 North, 88.50 East. The Churni River flows through Shibnibas under Krishnaganj block, Mamjoan Ghat, Benali Ghat under Hanskhali block. Aranghat and Birnagar under Ranaghat -2 block. Haradham and Anandadham under Ranaghat-1 blocks and finally joins river Bhagirathi-Hoogli near Gosaichar Ghat under Ranaghat-1 block. its length is almost 56 km at Pabakhali village under Krishnaganj block to Gosaichar Ghat under Ranaghat-1 block.

As a River: Churni is a river in the southern part of Nadia district of West Bengal, India. The entire district lies within the moribund sector at the Ganga delta. The area through which the river flows is flat and the general aspect is that is at a vast level alluvial plain. The river is almost 56 km in length. It is in its early old stage of flow. The river bed is dumped with sediment and full of small, often submerged river islands.

In Rennel's map (1760's) there is no trace of Churni. Only 80 years ago in the 1930's, it was the major trade route inside undivided Bengal. Now the river has lost her navigability. The Churni is a distributary of the Mathabhanga river. The Mathabhanga River originates from the river bank of the Padma of Munshiganj in Kushtia district in Bangladesh. It bifurcates near Majhdia in Nadia district, creating two rivers. The Ichhamati and the Churni. The Churni flows through Shibnibas, Hanskhali, Birnagar, Aranghata, Ranaghat and finally joins river Bhagirathi-Hooghly near Shibpur Ghat, Ranaghat. The River Churni is significant because it is a major source of surface water, it provides an income sources for thousands of fisherman.

- **Study Area:** The study area has been conducted in the 4 block (Krishnaganj block, Hanskhali block, Ranaghat -i-ii block) of river Churni during July 02/07/2017 to 08/07/2017 and 19/07/2017, river Churni, one of the important distributary of river Mathabhanga emerges at Majhdia (Pabakhali), Nadia, West Bengal flowing about 56 km, it finally confluences of river Bhagirathi – Hooghly near Mangaldeep. Latitude and longitude of

four block (including 18 stations) of the sampling are listed. The Churni river is situated at 23.40 north, 88.70 east and its confluence is at 23.13 north, 88.50 east. This study is an attempt to analysis Channel hydrological analysis, Socio-cultural-economic dimension, River pollution and its control.

- **Statement of Problem:** The River has a great economic importance in sociological environmental and economical aspects. It is the major source of surface water in this region and plays an important role in maintaining agriculture, fish production and livelihood of the fisherman. This river is believed to be an important sawing and breeding ground in reverie dishes. But due to unplanned development, rapid urbanization, domestic sewage and industrial effluents, chemical fertilizer etc. The aquatic environment at this river particularly low riparian areas one seriously polluted course a great ecological imbalanced. Increase in various source of pollution change in riverbed, stream flow, Decrease in capacity of depth, flawding and drought, agriculture and fisheries effected Instability of food, fish. Increase in diseases weakening sustainability Migration, unemployment, poverty, shifting of people.

Research Questions

- How cultural aspects are vulnerable for people living in the riverside area of churni river in nadia district?
- How can the established culture of past which is changing past today, be revived in the Future?
- How can we assess the future change in cultural issues i.e. Baul song, vaol song, Bolan song, kirtan etc. Of riverside villages in Nadia district ?
- How the river pollution is affecting the churni river of nadia district and which extent it is affecting the river in villages?
- How can we access the future control in pollution of churni river?
- What is the economically condition of riversides villager?
- What are the main cause for pollution in churni river? How churni river pollution can influence of fishes, birds and riversiders villages and how it is interrelated to each other?

Aims and Objectives

- To study physical aspect - channel hydrology analysis of churni rivers.
- To assess the vulnerability of socio-culture economics aspects. Mark stone establishment of the churni river. To analysis pollution control of churni river.

MATERIALS AND METHODS

Data base: The study has been conducted based on primary data and secondary data. primary data have been collected the help of questionnaire from 18 places under four blocks of river churni.420 households were surveyed for talking door to door survey. secondary data have been collected from DPCB of pollution data, many books and research articles, water level data and govt. Report.

Methods

Pre-filed: The study will primarily involve literature studies, books, articles, journals in details to build up a clear idea about

the study. Data and base maps have been obtained from different published and unpublished sources.

Field: The present work is very much dependent on intensive field work. The methodology at my study is geographically based on data collection and its representation with the help of sat images, gps, microsoft office, tape different types of photographs are captured from different places.

Post field: The collected information has been studied through different analytical and interpretative methods and its repetitive methods and its representation with google earth image, les-liss-iv nadia district river map, rota meter, calculator, water level data in 8 years. Finally the collected data and information have been assimilated under gis envs for the preparation of final.

Literature Review

Hydro-geomorphology aspect

It has been observed from the work of v.i. Babkin (origin and evolution of river System) that the process of erosion transport and deposition of sediments occurring with a deferent intensity during the geological epochs in the past and at present primary stage of occurrence of river systems, development of river in the paleozoic, change of hydrograph in the mesozoic, modification of river system in the cenozoic, water balance change of the river basins in mesozoic-cenozoic, features of dynamics of the hydrograph and water resources of the river of eurasia during the period of the last ice age and the holocene, processes of the formation (erosion,glaciations,run off) and development of rivers, lakes oceans, sea , land , valley, channel etc, as well as economic activity (creation of water reservoirs, water withdrawal for irrigation and numerous economic needs) determined the evolution of rivers and moderm look of the river network. It is evident from the work of s. Raha (2016) (asian journal of multidisciplinary

Studies: article ‘spatial pattern of hydrology of payradanga: some observation) issn-2321-8810 have analyzed that an artesian well has been found in the payradanga region alongside river churni is a distributary of the mathabhanga river itself is a distributary of padma river of munshiganj in the kushtia district of bangladesh. Churni river flows through pabakhali (majdia) to gosaichanghat (ranaghat) including places – shibnivas , hanskhali, birnagar, aranghata, ranaghat, payradanga and finally joins with river bhagirathi-hooghly. And the hooghly or bhagirathi-hooghly is an 260 km long distributary of ganga river in west bengal, indian. It from the ganges as a cannal in murshidabad district of the farakka barrage. The drainage network of payradanga consists of two river and subsequent streams create a dendraitic network. Here the river churni comes from the eastern portion and hooghly starts flowing howrahs the west and makes a clean boundary between two types of water.

The hooghly river mixes the churni. Hooghly river is black color and the churni river coloured boundary near payradanga features at relative relief indentified ecists in payradanga. Creating a denditic patern of drainage the drainage flows at the direction of south – west. He also analysed stream ordering by horton-strakes and drainage density at payradanga region. From the book “nadias no- nodi o jalabhumi” (in bengali) by s. Karmakar (2011) on detailed account has been collected about

the origin, evolution, alongside settlement, various historical places specifically deoganj, shibnivas temple, ulaichandi. Jugol kishore temple at aranghata, haradham, anandadham etc. Are situated alongside the river churni. These were many barrages, hanskhalı barrages, chandannagar barrages etc. Different rivers at nadia district are destroyed for flood. He has stated that there were some canals-polates canal-nabadwip block, khal-boalia canal, krishanaganj block, kali – gangnee canal-krishnaganj block were situated in banks of various rivers. Various types of watershed a vangeer bill, pipulberia bill, ramnagar bill, chapri vill- hanskhalı block, putikhali bill-krishnaganj block etc also included. It is evident from the work of anirban basu in his book ‘churni – ekti nodir Nam’ (in bengali) has stated that about origin, past history of villages banks on churni river, evolution, village festivals etc. Alongside the churni river, village festivals are shibnivas, bhim ekadashir mela, pir saheber mela, mahakaler mela etc. Now a days, there are most important discussion of churni river pollution. He has analysis pollution ranaghat river block wise specially ranaghat block and its management, detailed in vulnerable fishes, birds, animals in churni river. Continuous management process of churni river is also included. From the book ‘pabchimbanger nod-nodi’ (in bengali) by ashok kumar basu Has analysed about origin, evolution, source point, destination point, at district wise in west bengal are also included. Another hand detail on different river with their canal, channel etc. According to ‘j.h.e. Garret’, in his book ‘bengal district gazetteers – nadia’ has Stated that various aspects of nadia district. Physical feature like rivers (origin, source, past history), topography, vegetation, soil, climate etc. Socio – economic features like occupation, cultural aspect, literacy, and transport, communication, historical place with people on nadia, about churni, the churni was originally a branch of the ichhamati as shown by renewal and it joined the present channel at aranghata. Later, the mathabhanaga opened on to it and the ichamati lost much at the spill it used to get from the mathabhanga. The churni was branched off due westwards and passing by the north at aranghata went south-west –wards into its present channel at ranghat. The opening at churni in the last century, country to the slope at the tract, must, these fore, have been due to some unusual cause.

Environmental aspects: From the paper ‘the telegraph’ by subhasish chaudhuri in the year (8th april, 2017) has stated that the churni river is polluted in krishnaganj block, hanskhalı block, ranaghat block. Residents of a cluster of villages in nadia district have written to the prime minister to save a river and its branch that originate in bangladesh and are polluted with industrial effluents allegedly in the neighbouring country. There is a sugar manufacturing unit on the Bangladesh and some other industries. They discharge effluents in to the mathabhanga. As a results churni river is highly polluted and having bio-chemical oxygen content as high as 12 mg/l (against a normal at 4-5 mg/l) state pollution control board report). In such a condition, the chance of survival of fish and plants is very low (environmental activities Bibartan Bhattacharjee). The waste discharged in the Bangladesh has been causing enormous damage to fish cultivation. People fear taking a bathe in the river. (Swapan Bhowmick - secretary at the churni river). According to a. Bakshi, a. Panigrahi, a. Mondal in their book (international Journal of applied and Pune science and agriculture) article-seasonal variation at aquatic diversity of a lotic ecosystem – a case study of river churni, west bengal (2016), issn-2394-5532) have analysed the fact that a qualitative plankton study to estimate the seasonal

(pre-monsoon, monsoon, post-monsoon) availability of different phytoplankton and zooplankton. Macro benthic invertebrates have also been collected seasonally and identified. All the specimens have been classified under the following groups : bivalve, gastropod, diptera hemiptera, coleoptera and oligochaeta (das .2007) otherwise the river churni had a great biological diversity. It was well known for availability at gaint tiger prawn (penacusmondm) hilsa, pabda fish in the past (ghosh 2002), but, now this river has been suffering from ecological degradation and biodiversity loss since last two or three decades fundamentally because of anthropogenic disturbances. The identified pollution sources for this river are basically anthropogenic in nature caused due to human interference. The river gets the discharges of sugar cane mill complex of danshana. Bangladesh fly arch dumped, wastes effluents from river side crop fields. Burning ghat effluents, jute retting procedure during monsoon and post monsoon period (panigrahi 2015)

Socio-economic aspect: According to ‘Bakshi Avijit’ and ‘Panigrahi. Ashish’, their articles ‘a study on Profile of fishing community of the river side villages of river churni, Nadia, west Bengal with special reference to socio-economic and technological appraisal of fisherman’ in his book ‘impac journals (international journal of research in applied, natural and social science: ijrass) 2(3), 2014 march, issn : 2321-8851, has stated that the socio-economic status at the fishermen community of river-side villages at river churni revealed a sharp distinction between previous and present condition. Religious structure caste structure, reduction structure, cultural activities, economic aspects of the fishermen community included. Through major occupation was fathering of the respondents affirmed about presence of their past time works like rickshaw pulling, contract laboring in their livelihood to increase the income a little monthly income at most of the families are found between rs. 2500 to 5000. The basic problem at the socio –economic degradation is due to the increasing pollution in to and gradual decrease in the productivity at the river. The general socio-economic status at the fishermen community of the riverside area could be improved by the planned development at infrastructural condition related to fishing. According to ‘j.h.e. Garret’, in his book ‘bengal district gazetteers – nadia’ has Stated that various aspects of nadia district. Physical feature like rivers (origin, source, past history), topography, vegetation, soil, climate etc. Socio – economic features like occupation, cultural aspect, literacy, and transport, communication, historical place with people on nadia, about churni, the churni was originally a branch of the ichhamati as shown by renewal and it joined the present channel at aranghata. Later, the mathabhanaga opened on to it and the ichamati lost much at the spill it used to get from the mathabhanga. The churni was branched off due westwards and passing by the north at aranghata went south-west –wards into its present channel at ranghat . The opening at churni in the last century, country to the slope at the tract, must, these fore, have been due to some unusual cause.

Data Collection and Interpretation

The research has been conducted from Gosaichar Ghat under Ranaghat police station to village Pabakhali under Krishnaganj police station near the origin point. The length of river Churni is almost 56 km length. Along the journey of river Churni 18 places have selected to examine their water level pollution for the socio-economic survey.

Culture part of villegers of churni river: The Churni river flows at 18 places under four blocks – such as Krishnaganj block, Hanskhali blocks, Ranaghat-1 and Ranaghat-2 blocks. Krishnapur village under Krishnaganj block has been observed as a significant place of traditional culture and local festival. A large section of people have been surveyed. Budhhiswar Ghosh is a famous Baul singer at Parchandanagar, Paschimpara. He uses instrument Casio, Dugi, tara etc. Panchugopal Tarafder who is Patni community, famous for Bolan Song at Purbapara. He started Bolan Song .He uses instrument Dhol, Kasi, Jhumur etc. Parbatikamarighat under Hanskhali block has been observed as a significant place of traditional culture. A large section of people have been sueveyed. Sukhdev Mondal is a famous Baul singer. Ratan Barik is a famous Kirtan singer has stated about their song, Their live, their culture and their relation river Churni. Traditional rural bengal song namely Vaoal Song is a very important song so far as the traditional culture is concern. Chittaranjan Mondal has been surveyed on Vaoal Song. Panchanon Mondol on (last 30 years before) Padmapuran (Manosa Mangal). Others famous baul singers Madan Khyapa, Madhob Khyapa are famous for Baul Lokogiti. besides Sharat Khyapa is Baul singer at Kalipara, Tapas Dutta is Kirtan singer at Hanskhali, Dhiren Sarkar is Baul singer at Bhatisal, Sebak Mondal is Bolan singer, Kalipara under Hanskhali block.

Vulnerable culture of villagers bank of river churni: Vulnerable cultures are Hool Utsav, Nabanno Utsav, Boat racing, Frequency of boats, Swimming competition, Clay model, Holui song which started Matua community, Lonch (last seen 2005) etc under Krishnaganj block are melted at now. Under Hanskhali block, Kirtan song which was started by Sri Krishna community, Vaoal song which was started by Chittaranjan Mondol and Panchanan Mondol and Fishing occupation, Sketch in naksi katha all are melted at now. Indigo agriculture, yatra which was started by Bijoy Ghosh at

Ranaghat – 1 block.those are melted at now

BLOCK	Ranaghat-1	Ranaghat-2	Hanskhali
NO.OF BOATS	70	65	75

Fair and festivals bank of river churni

Shibnibas under Krishnaganj block has been observed as a significant place of local fair and festivals. There is Bhim Ekadoshir mela are held on every Shravana and on the full moon day of the month Magh of bengali calendar. On Maha Shibratri, these is a huge line of devotes from various places around for two days and a night to perform their ritual. River side villagers drive engine can to work join specific women participation Ganga puja in festival in some selected places. Hindu muslim mela at Jamadertala under Krishnaganj block is held on last thursday of the month of Falgun of bengali calendar. It is held on three days continue. Pir Saheber mela is held on at every Shravana and Panchami Tithi the month of Magh of bengali calendar on the bank of river Churni. This mela was started 30 years ago.Parbaticamari Ghat under Hanskhali block has been observed for local festivals.Ganga puja are held after 12 days at Baroniganga place for long time34 years continue. There is Mahakaler mela is held on Shib Chaturdoshi at every Falgun month of bengali calendar.This fair is held on 4 days 3 night and it was started 30 years ago and now time continue. It is started before 3 days of holi. There is main attraction baul song. Aranghata under

Ranaghat 2 block and held on Yugol Kishor mela in Jyaistho month of bengali calendar.

Hydrological Channel Analysis

At pabakhali village,depth of the churni river is 23 ft. Coz there is mouth of three rivers – the mathabhanga river and its two distributaries, source of the churni river and the ichhamati river.at halderpara, shibnibas under krishnaganj block is full of distressing and bamboo made bridge.benali ghat and benali ghat paschimpara under haskhali block are blocked for retting of jutes and bamboo made bridge. Water height of lower part of bridge is 20 ft, coz made of brick bond bridge and river bank erosion. aranghata, birnagar (ghora ghata) are blocked by full of distressing. kalinarayanpur is blocked for bridge constructed and full of distressing etc which are located under ranaghat 2 block. Anulia ghat, rabonbore ghat and gosaichar ghat are situated under ranaghat 1 blocke which is low depth coz river bank erosion.

Water level data

Socio-Economic Condition of River sides Villagers

Points	Sites	Height (FT)
A	Pabakhali (Majhdia), (stasting Point)	23 ft
B	Haldepana Shibnivas	14.83 ft
C	Benalighat (Hanskhali)	9.16 Ft
D	Benalighat paschimpara (Hanskhali)	10.41 ft
E	Hanskhali Bridge	20 Ft
F	Mamjoan Ghat (Hanskhali)	11 ft
G	Aranghata (Jugol Kishore Ghat)	9Ft
H	Ghoraghata (Birnagar)	13 Ft.
I	Kalinarayanpur Bridge	18 Ft.
J	Anullia ghat (Ranaghat)	13.66 ft
K	Rabonbure ghat (Ranaghat)	13.41 ft
L	Gosaichan ghat (Ranaghat)	11 ft
M	Shibnivas Ghat (Ending Point)	12 Ft.

Fig : Depth of Churni River.

Source: Field survey, 2017

Main occupation of villagers

Occupational structure	Total responds	Percentage of responds (%)
Only catch fish	86	20.57
Catch fish and retail	160	38.2
Fishing and others occupation	174	41.23
TOTAL	420	100

Source: Field survey, 2017 (followed by A.K. Panigrahi and A. Basksh, 2014), Calculate by scholar

Year	Water Level (M)	Date	Time
2009	6.99 (HWL)	1/09/09	6 Pm
	2.98 (LWL)	26/03/09	3 Pm
2010	6.26 (HWL)	28/09/10	12PM
	3.02 (LWL)	13/04/10	6AM
2011	6.52 (HWL)	12/09/11	6 PM
	3.14 (LWL)	04/03/11	6 AM
2012	6.79 (HWL)	28/08/12	6PM
	3.09 (LWL)	28/02/12	12 PM
2013	6.86 (HWL)	8/09/13	6AM
	3.02 (LWL)	21/03/13	6AN
2014	6.49 (HWL)	27/08/14	6PM
	2.95 9LWL)	17/03/15	3PM
2015	7.89(HWL)	8/08/15	6PM
	3.05 (LWL)	17/03/2015	3PM
2016	7.49 (HWL)	23/08/16	12 PM
	3.10 (LWL)	5/02/16	3 PM

Source: Irrigation and Waterway Department of Department, Govt. of W.B

Present condition of river sides villagers: An ancient time river sides villagers are depend on fishing.62% fisherman were

depend on fishing on churni river in 1980s.44% fisherman were depend on fishing on churni rivert. But now time 27% people are depend on fishing (A.K. Panigrahi and A.Bakshi, march 2014). Most of people are engaged in part time works such as rickshaw pulling, contract laboring, bidi binding and most of young boys run along in another states or country for jobs.

Table for export and import by Churni River

GOODS	MEASURE (MN)
Paddy	300695mn
Jute	12751mn
Rice	69236mn
Gram pulse	7330mn
Coal	14723mn
Molasses	2781mn
Tobacco	1343mn
Kerosene	6302mn

Source: ANTARDIPAN TRUST-Anirban Basu

Previous condition of villagers only depend on churni river

Monthly income	Total households	Percentage of households (%)
2200-3000	120	28.35
3000-4000	151	35.82
4000-5000	94	22.5
5000-6000	55	13.33
TOTAL	420	100

Source: Field survey, 2017, calculate by scholar

Biological Aspect

Pollution and its Control of Churni River: Churni River is gifted by holistic flora and fauna. An ancient time, there is varieties species of birds and different kinds of fish (48 types). These are Alge, Herbs, Medicinal plant .Kinds of fishes: Hilsa, Lobsten, Shrimp, Prawn, Fry fish, Mullet, Walking fish, Sheet fish, Mackerel, Shoal fish, Climbing fish. Kinds of birds: King fisher, Driver, Owl, Swallow, Wood Pecker, Kite, Swan, Waterhen, Mastin, Egret. Kinds of animals (habitat): Snake, Frog, Squirrel, Rat, Iquana, Cat, Hane, Bat, Mouse, Vixen. (Source- "ANTARDIPAN TRUST"- Anirban Basu) But now time Churni River has no biological living species. Coz Churni river is polluted by many kinds of source specially by human activity.

Nature of human influence on the churni: Untreated industrial effluents and sewage from adjacent settled area are directly released into the river. The upper stretchers receive discharges of sugan mill effluents from the Darshana sugar mill factory (situated in Bangladesh) Bamboo-made bridge at several places (Shibnibas, Parchandannagar, Benali ghat, Aranghata) on the lower stretches of the river obstruct the normal flow of the water. Digging of soil at riverside areas for several brick manufacturing plants is also responsible for changing geomorphological character of the river (Gosaichar ghat, Aranghat). Fly ash dumping into the confluence is also evident at some places. Apart from these, two middle populated municipalities-Ranaghat and Birnagar or completely untreated wastes directly into the river stream causing severe changes in chemical characters of the river water. The water is also influenced by agricultural wastes from riverside crop fields, burning-ghat effluents, dumped solid wastes. Churni River carries 20 thousand cusec water and 15.3 lakh tone sediment. (Ganga flood control commission)

Anthropogenic structures like bridges have been constructed on the river: Hanskhali Bridge, Aranghata-Birnagar bridge, Kalinarayanpur rail bridge, Ranaghat churni bridge. Encroachment along the river banks by the illegal migrants especially from Bangladesh. River bank cultivation and cutting soil alongside the river bank, retting of jute in the river, unscientific cultivation and catche fishes.

The cumulative impacts of the rivers: Iltation in the river bed owing to the residues left after the retting of jute. Retting of jute in the river has caused a rise in the riverbed and enhanced the problem of silting and aggravated the problem flowed. Soil erosion and bank destabilization due to river bank cultivation and cutting of soil along the banks. Construction of railway bridge on the churni river at Majhdia, Kalinarayanpur as a result, the river has lost her navigability, speed. Settlement have spring up alongside the river. Huge amount of sea wage is thus regality released into the river causing sewage pollution.

Control the churni river pollution: The river pollution control needs consideration of the following aspects for clean up:

Industrial should install the machines to remove contaminants from their effluents and waste water by installing effluent treatment plant (etc), untreated effluent discharge into river should not be allowed and into river should not be allowed and immediate closure of all the unauthorized activities which discharge industrial effluents, sludge and chemicals. Birnagar, Ranaghat -two towns should also have facilities to clean sewage effluent. Towns should have sewage treatment plant to treat the sewage. Religious practices which pollute river water. Idols should be made from natural materials as described in the holy scripts. It would be approximate to use traditional caly fro making rather than baked clay. Use of painted idol should be discouraged. Systems and procedures need to be strange threned to ensure aciculate measurement of both the quantity of treated sewage being discharge as well its quality with reference to the presided parameters. Proposals for creation of treatment capacity must be based with reference to the estimated sewage generation in the relevant catchment area which should be estimated after taking all should be estimated after taking all factors into account including population trends and availability supply of water.

RESEARCH FINDINGS

Analysis the data and information presented in this river paper findings got are

Effects on natural hydro geomorphology - flow on river churni

- In Krishnaganj block, railway guard wall at majhdia on the churni river. As a result the speed of the river churni has been slow, and lost her navigability.
- In Ranaghat – 2 block, Aranghata – Birnagar bridge on the churni river.
- In Krishnaganj block, bamboo-made bridge at Sibnivas, Majhdia.
- In Ranaghat-2 block, brick-kilns at Aranaghata. As a result transfer of soil in mechanized boats to brick-kilns alongside the Churni

- In Hanskhali block, river bank erosion alongside Churni river at Parbatikamari ghat, Hanskhali. In Ranaghat – 1 block, Ranaghat churni bridge on the river Churni.
- Based on 8 points the research has been conducted that the churni river has lost her flow, speed and navigability. If we try to save the churni river then strong administrative action should be taken immediately had this ends. So that we have can ours river back.

Recommendation of drazzing churni river

- In hanskhali block, benali ghat, bengali panchimpara at hanskhali has been lowest depth for resting jute, catch fishes with uses chemicals.
- In ranghat – 2 block, aranghata under (aranghata panchayet), jugol kishore ghat has
- Been lowest depth. In ranghat – i block, gosainchanghat under noapara panchayet has been lowest depth four waste effluents.
- Based on 4 pints the research has been conducted the churni river has lowest depth some selected place as like benalighat, benfali panchimpara, aranghata jugol kishore ghat, mamjoan ghat, gosaichan ghat. So, these place has been needed drazzing in continuously then increases depth on river and decrease pollutant.

Agricultural practice in riverbed

- In Krishnaganj block, Krishnaganj, Majhdia Shibnivas under Majhdia panchayet, agriculture practice in river bed.
- In Ranaghat-2 block, Hazrapur Barhatta under Aranghata grampanchayet, unscientific agriculture and catch fishes in old process. In Ranghat -1 bloc, when Khisma village panchayet agriculture practice on riverbed, unscientific agriculture etc.
- Based on points the research has been conducted agriculture practice on river bed some selected places Khisma, Majhdia, Shibnivas, Hanskhali etc. As a result the Churni river the highly polluted by both natural and manmade source like chemicals used in agriculture section. So we should be admonish to the riverside villagers and secretary under village panchayet.

River damage by darsana sugar mill

- Industrial pollution is another impact. The upper stretchers of the churni received discharger of sugar mill effluents from the Darshana sugar mill factory (Keru) situated in Bangladesh and ultimately reach the watch of the Hooghly and gets speedin the entire area during floods. Several unorganized small scale industries located alongside the river released their untreated effluents in them increasing the contamination level futures.
- Industrial waste pollutant from Bangladesh keru company sugar mill factory entires the river Mathabhanga. At Pabakhali (Majhdia) Mathabhanga river divided two parts. One part is Ichhamati flows Bangaon, Basirhat. Onother part is Churni, flows Majhdia, Hanskhali, Ranaghat, Pyradanga. Now time Ichhamati river is died. There has many sediment piles, wastages effluents etc. So, waste pollution of Mathabhanga entnires some of Ichhamati river. Then waste effluents and sedimentation of Ichhamti river

flow in the Churni rivers. As a result the Churni river has been polluted.

- Based on points, immediate action should be taken for churni river. Churni is an international river. So, india government and bangladesh government meet each another and take decided to action for river churni. If we inform the river commissioner for check river pollution in monthly.

Illegal construction alongside on the churni river

- Illegal migrations entire alongside the churni river bank. Settlement have strung up alongside the river. Huge amount of sewage is regularly released into the river causing sewage pollution.
- Based on 3 points, should be taken action and informed the secretary of river commissioner. As a result, stopped falling pollutant and we get back our river churni.

Conclusion: In this preliminary study i have timed to measure the depth of water of churni river which flows about 56 km in some specific selected places, measure socio-cultural aspect-vulnerable culture and pollution- impact of pollution of churni river and riverside villagers selected households. It has been found that the pollution has given rise to some major problems. River bank cultivation and cutting of soil alongside the riverbank transfer of soil mechanized boat to bricks-kilns among side the churni etc. As a result the river is melted slowly. The basic problem of the area is gradual degradation in river productivity. This only prevention of pollution and protective measures for the ecological diversity of the river only can be faithful to the problem.

Chapterization of proposed research work

- **Chapter- I:** Introduction - it will include the conceptual background, researches Problem, scope of the study, review of literature, aims and objectives of The study and methodology.
- **Chapter- II:** geographical profile _ it will give details about location and extent, Physical aspect: channel hydrology of churni river.
- **Chapter -III:** The vulnerability of cultural aspects it will comprises the impact of river side villagers in Nadia district about 56 km.
- Chapter – **IV:** The change of river bed _various action for control pollution on Churni river.
- Chapter -**V:** planning_ take various action for control pollution on churni river.
- Chapter- **VI:** conclusion

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