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Exploration Study of Char Dwellers Issues in Malda-Murshidabad region West Bengal on the Stretches of Ganga River for Policy Interventions and Community Resilience

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Abstract

Ganga flooding and erosion due to course changing behaviour has led to unstable housing and livelihood issues surrounding Char land dwellers in West Bengal. Malda-Murshidabad region in West Bengal such as Samsherganj, Parlalpur, Dhuliyan, Maheshpur Farakka are affected by river bank erosion since Commissioning of Farakka Barrage and sedimentation in Ganges has immensely affected fishing and agriculture. However, displaced community have gradually become the force of resilience occupying the Char lands. Amidst a cycle of devastation and recovery, they persist, adapt, rebuild, and embrace alternative solutions to secure their future. To understand the catastrophe and resilience methods adopted by Char land dwellers, a social and scientific diagnosis was carried out by SKECT Women Water Worriers .Jalsanjivani (WWW.Jalsnajivani) & Jalbiradari NGO, in collaboration with local NGOs, grampanchayat members, govt. administration and other stakeholders. Outcome of the study revealed that there are several NGOs and organizations working for the cause of rehabilitation for a long time, and making efforts for creating an impact for bringing back aviralta-nirmalta (purity and incessant flow) of the river Ganges and to assist displaced people, but meagrely any impact could be observed. To bridge this gap and share scientific knowledge of the river characteristics (site specific and from its origin to confluence) with the focus of its relationship with soil, forest, and human health, which is very crucial for developing a holistic perspective and reorientation of engineering infrastructure development, that Ganga Sadbhavana Yatra was planned in 2017. Not much was known or discussed about the constant threat faced and challenges of the displaced people for livelihood and basic needs. Also it was pertinent to find scope through the interventions of disaster management policies to support them. This project was an attempt to create awareness and strengthen Indigenous knowledge system, save cultural heritage and explore the traditional practices, by engaging stakeholders through participatory approach in social and scientific mapping activity. The overall intentions were to initiate scientific communication with authorities and provide inputs to develop a sensible National River Policy Framework in the country, which is missing. Study recommended that for any river restoration process connecting with historical, geographical, political, environmental, socio-economic status and philosophical background along with the local people experiences is decisive.

Introduction

Water is very important for existence of life. However, water scarcity across the globe has opened up debates for its management and conservation, along with the rehabilitation of rivers. At the time of Independence of India drinking water was unavailable to only 232 villages and after 75 years this number has increased to 8700 villages. Earlier drought affected regions use to be 3% (Karnataka, Rajasthan and Maharashtra) and today it is 62% with 365 districts and 17 States drought prone. Similarly, at the time of independence 1% land (Bihar, Bengal, Odisha) use to be flooded and now 30% land gets flooded. The adverse effects of anthropogenic activities and

climate change on water resources could be only neutralized with good governance policies. Food prices spikes caused by droughts can influence latent conflicts and drive migration. Economic growth impacted by erratic rainfalls and episodes of droughts and floods have generated waves of migration and rise in violence within the countries. Climate- resilient economies require better planning of water, resources allocation, adoption of incentives for increasing water efficiency and investments in right infrastructures for more secure water, supplies and availability.

SKECT's WWW Jalsanjeevani, NGO propagates Water governance through Convergence schemes and mission 'Every day for sustainability' to intensify nature conservation work. The overall idea is to reach out to each individual of this country, make them sensible and engage them to evolve leadership qualities and trusteeship skills to resolve issues of water crisis (equity, equality, quality of water), droughts and floods across the nation. They work in collaboration with gram panchayats and Panchayat samitees, Government departments, Unnat Bharat Abhiyan schemes, Community based research participation of UG and PG students of Higher Education Institutions, collaborate with NSS Programs and schools for stewardship and sensitize stakeholders (authorities and public) to orient and engage them proactively for the involvement in the social mapping for nature resource management, forest conservation, improve soil biodiversity, cleaning of waterbodies and river rejuvenation initiatives.

River Ganga is the most revered and sacred river in the world. Geographic expands of ganga outflow from Gangotri Himalaya flowing through 11 States in India and end in Bay of Bengal. One part flows to Bangladesh. The Gangetic plains 2525 km long is nurturing the Indian civilization since ages. Its geomorphology is characterized by numerous ever-changing shapes, sizes and location of Char lands, Ox-bow lakes and massive flood plains along natural banks on either side. Char lands in river are the part of riverine dynamics (Naha and Paul, 2021). There are number of factors associated in Char land formation, such as meandering course, slope, gradient, braided nature, amount of sediment load, etc. all cumulatively facilitate the process of Char formation and their impermanence nature, location change and size are very critical (Momin and Chakraborty, 2023). Dayal and Pattanaik and (2012) have mapped the bank line shifts characterised by erosion and sediment deposition along the Ganga banks and Milliman and Meads (1983) reported how the rain-bearing winds of south-west monsoon characterised its rate, frequency and total precipitation in the catchment areas are responsible for the volume discharges. These kinds of geomorphological characteristics and erratic erosions have led to disturbances in the lives of people in Bihar and West Bengal regions living on Diaras or Char lands. SKECT Jalsnajeevni NGO members involved students and other stakeholders to participate in the dialogues regarding sedimentation issues in Ganga from Bhagalpur in Bihar to Farakka barrage in West Bengal in the year 2016 and conducted an aerial survey for visual glimpses. There was water shortage in Bihar State and Farakka Barrage decommissioning was emphasized due to the Diara formation, bank erosion and transboundary issues of water distribution between the two States. This Barrage of 109 gates and 1 fish lock gate was Commissioned in 1975 to maintain navigability of the Bhagirathi-Hooghly river system in Malda & Murshidabad districts and preserve the Kolkata port along with improving water flow necessary for navigation and share water as per the water sharing treaty between Bihar (40%), WB and Bangladesh (60%). However, due to the architectural fault in engineering infrastructure development of the Dam and lack of timely structural review, that tonnes of sediment piling up and shifting of river course causing bank erosion in the region. There are very few studies conducted regarding the sedimentation issues, life style and challenges of the displaced people (Donde, 2018, Donde, 2020, Ghosh et.al., 2020, Burman and Bokht, 2024).

In 2018-19 Ganga Sadbhavana Yatra was organized for 12 days in Farakka, Atreyi river in Balurghat dist in North Dinajpur, Malda, Baharampur, Ranaghat dist Nadia, Anjana River Krishnagar, Shantipur, Kalyani, Nadia dist, Barrakpore 24 North Pargana dist, Aadi Ganga in Kolkata, Sundarban, Ganga sagar, to understand the Char land dwellers issues and causes of frequent flooding, erosion and sediment deposition in Ganga. As this was necessary to resolve the long persisting issues of the community affected by Farakka barrage infrastructure development in 1975, and struggling for very long for their rehabilitation and livelihood along with other basic needs. Displacement, loss of property, land degradation, limited access to resources including healthcare and education have disrupted lives. Malda- Murshidabad affected regions in West Bengal was identified for exploration study, as it was in the broader interest to bring attention of authorities and stakeholders towards both survival and struggle of destitute due to the frequent bank erosions and

sedimentation in Ganges. A preliminary survey provided idea that, for generations villagers have depended on fishing, farming and honey collection practices that had become increasingly precarious due to the sedimentation and changing climate. Most of them were forced to do Bidi making for earning and TB cases were rising. Soil erosion threatened the community's way of life and reduction in volume flow of water due to sedimentation and erosion impacted fisher folks with huge loans.

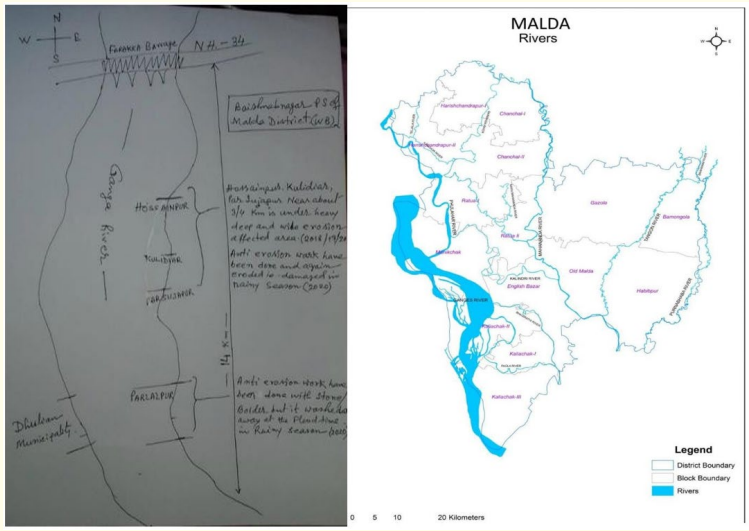
Hence Ganga Sadbhavna yatra plans was made to connect with public, research institutes experts, Farraka Barrage authorities and engineers to open up dialogues to find solutions and conduct study of historical, social, ethical, philosophical, environmental aspects and economic losses. As well as to explore indigenous knowledge system implied by the locals to adapt to the situation and face complications to their lives caused continuously, due to faulty Farakka barrage architectural design, lack of cooperation from the various government departments and gaps in government policies.

Methodology applied

Being a Coordinator of Goa, Gujarat, Madya Pradesh, Bihar, UP, Delhi, West Bengal & Tripura States under Indian River Basin Council (IRBC), author started first step by connecting with the people online from respective States to open dialogue with various stakeholders. Followed by virtual meetings (twice) with the local groups in WB, which included individuals, groups, NGO's, authorities, experts, students and staff of schools, colleges, etc. to build synergy towards the common goal to revive the water bodies and for sustainable environmental work. At second step, Whatsapp group was made area-wise and members were invited to share their brief profile along with information about the work done by them and their interest. This way dialogue initiated within the group and experiences shared to encourage open discussion. The Group comprised of heterogeneous group members (experts from legal, engineering, architecture, tribal etc.). Third step, virtual meetings twice on google meet started for each State, followed by Sunday common review meeting participation (forth step). Fifth step started with weekly discussion focused on only one issue (Char land issues/livelihood/ displacement/CRZ/mining/etc.). Sixth Step was physical visit to the places prioritizing the issues and systematic planning of visit schedule. Hence after preliminary understanding of the situations for the first time under IRBC we set out to visit West Bengal Malda area from 15th - 18th April 2017 with a team of 2 Scientists each from Zoological Survey of India (ZSI), Botanical Survey of India (BSI) and National Engineering and Environmental Research Institute (NEERI) in village Bangitola Kaliachak Block 2 and then in farakka Nurul Hassan college organized by Malda Murshidabad Covention by Farakka-Malda Ganga Bhangon Pratiraksha Committee. Indigenous wisdom and modern scientific tools were used to comprehensively study the issues. Also visited Char lands in Dhuliyan, Arjunpur, Chandpur, Nayansukh, Momrejpur, parlalpur and Panchanandapur. Another visit was conducted in Shamsherganj Dhuliyan Murshidabad, Farakka Jafarganj & Maheshpur (Baghmari river), Beernagar in Dhuliyan, Hossainpur Panchanandapur Malda, Parlalpur from 29th Dec 2018 to 12th jan, 2019 naming it as Ganga Sadbhavana Yatra for Char land areas exploration up to Sundarbans. Also River walk on Jalangi river at Nadia Dist. Shantipur was done to see the point and non-point sources of pollutions. Meetings were scheduled during the yatra with the authorities of Farakka Barrage, Scientist and Director, Central Inland Fisheries Research Institute, members of Ganga Sagar at Kapil Muni Ashram, Glass and Ceramics Research Institute, scientist of NEERI, ZSI & BSI. Meetings with authorities was conducted to get clarity of the situations and to make scope for resolving issues through collaborations.

The study area comprised of the almost 50 km for Char lands study and 400 km on the stretch upto Ganga Sagar. Below given is specifications of the locations and directions. A flow chart was made to travel on the erosion sites. And for data analysis GIS, Google earth imagery, Social mapping questionnaire and an Interview schedule tools were used.

S. No.	Location	G.P.S. Reading	Altitude	District
1.	Loharpur, P.S. Sikdarpur	24°38'34.90"N 87°59'41.78"E	75 feet	Murshidabad
2.	Parlalpur Ferry Ghat	24°41'10.59"N 87°57'57.67"E	63 feet	Malda
3.	Parlalpur Village	24°41'10.39"N 87°57'59.52"E	54 feet	Malda
4.	Maheshpur Village	24°41'41.30"N 87°56'41.04"E	92 feet	Murshidabad
5.	Maheshpur Village North	24°41'49.76"N 87°56'41.14"E	62 feet	Murshidabad
6.	Riverbed Maheshpur Village	24°41'55.80"N 87°56'42.94"E	59 feet	Murshidabad
7.	Mahadebnagar Gram panchayat	24°41'34.48"N 87°56'15.67"E	97 feet	Murshidabad
8.	Panchkuritola Village, Kaliachak-2	24°58'33.65"N 87°58'50.23"E	96 feet	Malda
9.	Bangitola, Near Panchkuritola Village, Kaliachak-2	24°58'46.37"N 87°59'32.88"E	106 feet	Malda



Communicating with local stakeholders (Focus group) on these islands and making them share their experiences of acquiring these virgin Char lands for agriculture, farming techniques and other related activities was the motive for a productive outcome. A questionnaire and interview schedule was prepared for collecting information on the perspectives of changing river ecosystem. Char lands were identified beforehand to conduct the case studies with regards to history, demography, displaced people settlements, and economy. The main intention was to procure quality inputs for policy framework and supporting with convergence schemes, if possible. The field visit was planned with the help of Action Aid members and few local people, so as to make the respondents comfortable to speak freely. Final day interactions were planned with River Jalangi river bank community in Nadia. Overall objectives of the study were to comprehend experiences of the Indigenous knowledge system applied for traditional solutions, climate resilience and Char land dwellers challenges of survival and livelihood. Social mapping with participatory approach was planned to give scope for exchange of views of stakeholders such as Politicians, retired teachers, grampanchayat samitees, fisherfolks, displaced community, SHG's etc, for sustainable solutions & river rejuvenation.

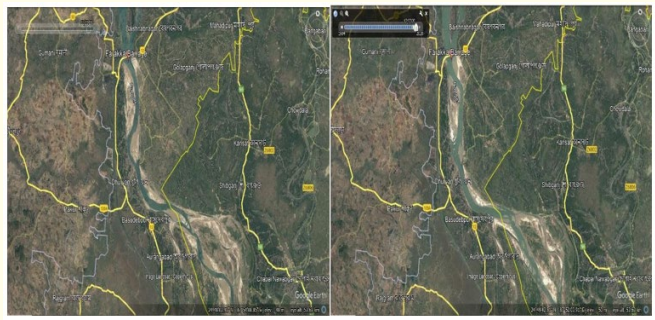
Hamlet II 3.0 computer-assisted text analysis, software was used to build on narratives and on Diction key words vocabulary to set the parameters. With Cluster analysis by building vocabulary and multidimensional scaling, this analysis was carried out during FDP in IIM Indore. By Inductive and Deductive mode, conceptualization for operationalization testing was done for the manifestation of theory and hypothesis building.

Results and discussion

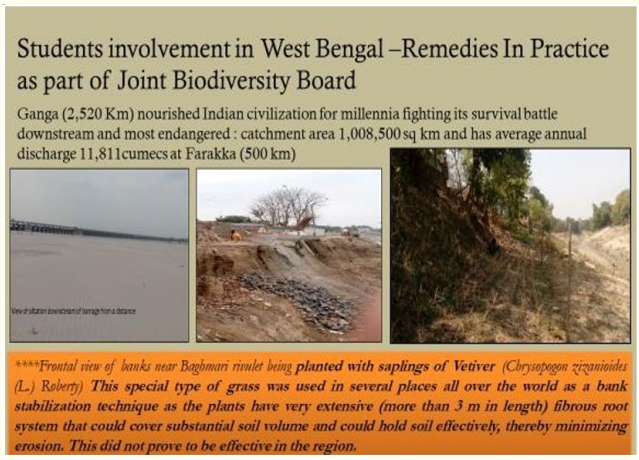
The field study initiated with the idea that Ganga river system transports vast amount of fluvial sediment. Farakka barrage natural flushing of the sediment has been obstructed. Hence a manifesto for the rivers were drafted first time voluntarily for river rejuvenation with the information generated through the survey tool created with river basin and holistic approach (River Philosophy, History, geological, environmental, socio-economic and cultural mapping, political) and documentation for government action and records. The pictorial glimpses of various programmes and field visits along with uniqueness of places and recommendations are explained below.

Experiences sharing and outcome

NEERI scientists helped to explore the causes of char land formation through the satellite images. Below given pictures shows time-series map of aggraded land areas showing an increasing trend of fluvial aggradation in the study area during 2002-2021 due to decreased flow of river Ganges. Difference in deposition in satellite imagery show how sediment deposition from left side have moved completely to right side in the downstream areas. Changing/shifting course of river disturbs life of people and keep them in threat. In a similar study performed by Tiwari et.al. (December 2020) where they have reported about deposition in river Sone and river Gandak in adjoining Diara region, while deposition is low when the flow of Ganges is high, as it is not conducive to the deposition of sediments.



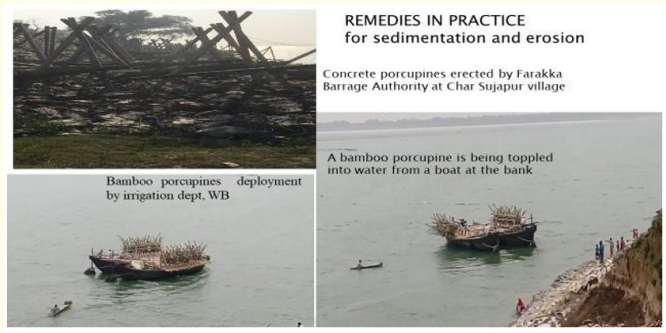
Satellite Imagery of 2019 & 2020 farraka barrage to downstream



During social mapping interactions locals revealed their plights and the number of time village had submerged due to untimely release of water from the dam without prior announcements to alert. The release of water from one side gates has added to the havoc, as release of water from one side impacts river bank more and erosion is common feature. Few places where stone embankments or pitching is done to curb bank erosion, is not strong enough and due to corruption in the work people are living with fear of erosion. Local people have also tried plantation of Vertiver for bank stabilization but it has failed to survive and grow. For reaching to places as roads collapsed due to river meandering, temporary bamboo bridges could be seen made by the locals to ease their life for travelling. Most of the places are Muslim community dominated areas and they believe that rescue or solutions do not reach as they are purposely ignored by the government.

Student interns are often engaged to study the remedies in practices, to learn from the Indigenous knowledge system and adaptation aspects. Also for their skill development such studies are beneficial, and to make them imagine for innovative ideas. Participatory approach is important as interacting with the native people provides information as they perceive by experiences. Anjuman Bibi Pradhan of Grampanchat Ashoktala narrated issues of school students as the only school in vicinity had submerged and how teachers arrange class under trees and struggle to get back students as many of them stop attending school. Education is thus affected and very few show interest to study upto SSC.

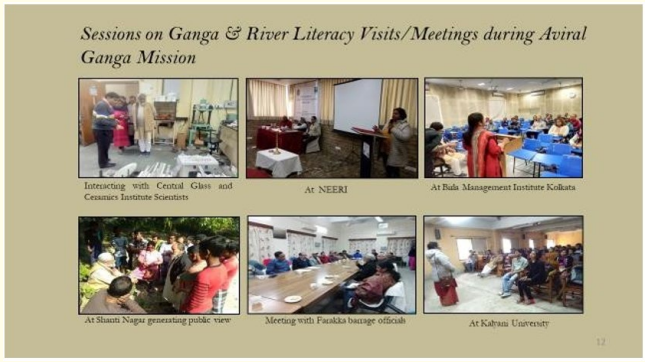
Another important observation was that the Central Govt. Farakka Barage authorities had installed concrete porcupines to arrest the sedimentation and bank erosion. Whereas State govt. department used Bamboo porcupines for the mitigation measures. Although concrete porcupines had reduced sedimentation and erosion and Bamboo porcupines rotted and could not stand the force of water, but Sate govt waste was not keen on adopting result oriented practices and thus adverse impact on affected people continued.



The accumulated sand was unlawfully transported by goons and brick furnaces established, this added to the catastrophe. Locals expressed that Instead of illegal transportation, govt could have allowed sand removal by fixing royalty to generate revenue for developmental work in the affected areas.

Murshidabad and Krishnanagar in Nadia District in West Bengal- Issues of Ganga erosion, pollution and encroachment (27th & 29th Jan, 2018).

Meeting with stakeholders such as the teachers, NGO's, individuals, retired engineers and govt. officers to validate the observations, and discussions regarding the continuous losses happening due to the Ganga river bank erosion in the region and families becoming homeless. From the interactions it was clear that no aid has reached of any kind either from State or Central Government constructively nor any serious attempts have been made to give relief to the displaced people. Glimpses of the meetings, filed visits and interactions with experts are given below.



Since Farakka Barrage (112 gates dam) was commissioned in 1972 at Indo-Bangladesh border 20km along river bank, shifting of char land is observed to be due to bank erosion in Malda- Murshidabad district, in right side Dhuliyan and down Samserganj, Ghanshyampur, Jangipur Maya, Lalgola, Bhagobangola, Kalukhali, Katakhali, Jalangi Hariharpara. People are demanding permanent protection of Ganga River bank at Hossainpur -Kulidiar-Parsujapur, Golab Mandal para, Parlalpur Ferry ghat which are situated at the downstream of farakka barrage within its 14 kms. These places are dangerously affected by erosion. Important places are Sujapur market, Parlalpur Swami Vivekanand Market, Doulet Hat market. Mango and Lichhi are cultivated in these areas but are affected presently. Upstream of farakka Barage left of bank about 40kms from Barrage to Raajmahal (Jharkhand) there is no erosion. At upstream of farakka Barage to Manikchak of Malda Dist. erosion affected areas fall within 6 kms are Birnagar, Chainabazar, Sarkartola, azimtola. These are densely populated areas. Char islands are formed in the middle due to siltation in Ganga and thus accelerated erosion on the banks. Samserganj area people are suffering more and 100 families had become homeless in 2017. Land mafia are doing brick furnace business in the area using the silt illegally and carbon emission is high in the region. Thermal power plant ash spread all over on the river bank and fly ash was in the air. Almost 1 Lakh people in Farakka Malda- Murshidabad region are displaced and rehabilitation is not even discussed. No relief was given under disaster management policy, as erosion was not being considered as impact of climate disaster and there is no policy formulated across the nation to provide relief to people affected by river bank erosion. Fishermen are worst affected due to siltation and untreated sewage discharge pollution in Ganga. Hilsha fish which were most relished in the region is almost extinct and variety, quality and quantity of fish catch is tremendously reduced. Fishermen are in debt as fish catch is reduced drastically and loans are high. These fishermen and erosion affected people are surviving on the livelihood as Bidi workers which is ultimately causing TB in large numbers. Arsenic pollution too has added to the turmoil of people in the region. Pukhurs (small natural ponds) are being covered up and concretization for constructions being done. Thus, affecting the ground water table, which has reduced immensely.

In Shantipur region the river ganga is flowing from north to south about 7 km, thereafter from east to west for about 20kms i.e. it is the western and southern side of Shantipur-Fulia. In the downstream the left side is erosion affected, drowning lands of residence and agriculture land of common people. Nearly one lakh 40 thousand population is affected by flood and erosion. Mainly arears like Kaldange, Chaoudhary para, Methirdanga, Guptiparab ghat, Streamer Ghat, Gabarchara, Boyra, Fulia (55653 population), Nrishinghapur (11336), Beharai (9584), Ghoralia (5268), Hariadi Bhatsala (4983) are erosion affected. The erosion is accelerated as the poachers lifting the top soil on ganga bank at night time, unscientifically. Some brick making fields are encroaching the right side of river and hindering the flow of river at Guptipara, Balasarh at Hoogly district. Natural siltation in river is also occurring. Sandbags are placed by Nadia District Authority which is not a right solution and hence erosion of bank continues. At Fulia Boyra and adjacent river bank are most affected. Repeated erosion occurring and 500 hundred families are homeless. Downstream left bank of Farakka Bragge lateral to Bangladesh Border this distance is 20 Km. Name of the places badly affected by erosion are Sujapur Market, Parlalpur Swami

Vivekanad market, Daulat Hat market and grampanchayats are Par Deonapur Sovapur GP, Bakharabad GP, Krishnapur GP and partially Arjunpur GP, Nayansukh GP and Benuyagram GP.

In the area crops harvested are Maize, Mustard, banana, flowers, mango orchards, vegetables, jute, sugar cane, lichi etc. as it is very fertile land, but wheat and paddy is reduced to a large extent. However, continuous erosion has badly affected economy and prosperity in the region. Erosion can be seen in pictures below.

Pic: Erosion happening dangerously upto 14 km Hossianpur, Kuli Diar, Par Sujapur, Golab mandal para, Parlalpur Ferry ghat. Flood affected people are almost 50,000.

Pic: Social Assessment near Farakka Barrage at Char land on Sujapur & Parlalpur.

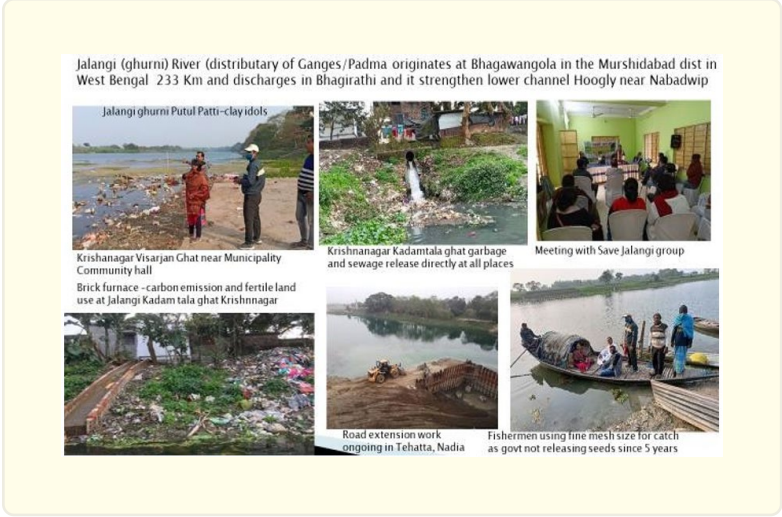
Erosion-induced displacement has left the inhabitants with meagerly any choice and rarely anyone to adress the plight of communities residing on the reverine Char areas. Barman and Bokth (2019) have very aptly reported with participatory observations, oral interviews about the socio-cultural and economic impact of erosion on liveihoods and vulnerebility of Char dwellers. In another study by Choudhary et.al, (2019), they have suggested use of GIS as reliable techniques to prepare comprehensive inventory of land use pattern of an area and measures for sustainable agriculture in Diara land in Bhagalpur, Bihar with mono-crop productivity. Diara and Charlands are mainly formed due to meandering and course changing behaviour of the river. In Malda Murshidabad region Maize cultivation was prominantly observed. However, there is missing factor such as lack of involvement of holistic management strategy by Block or district Agriculture officer for monitoring soil characteristics for cropping pattern and training or facilitaing farmers in general or in Char lands in the Malda-Murshidabad region. Malda locals say mainly erosion starts when flood recedes.

Not much remarkable area shift towards Bangladesh presently observed. Form the place of Farakka Barrage to Indo-Bangladesh border is 20 kms along river bank. But some shifting happens due to erosion in July -August flood time towards Bangladesh in Murshidabad District, for which detailed study needs to be carried out. These shifted area are situated within about 200 kms. Those places are like Jangipur Maya, Lalgola, Bhagobangola, Kalukhali, Katakhali, Jalangi Hariharpara etc. People residing in Char and other lands want permanent protection from Ganga River bank erosion at Hossainpur -Kulidiar - Parlalpur which is situated at downstream of Farakka Barrage within only 14 kms.

Upstream of Farakka Barrage left bank of river Ganges about 40 kms from Farakka Barrage to Rajmahal (Jharkhand) almost there is no erosion, some erosion is present in the middle Ganges river that is called char/island. At the upstream of Farakka Barrage to Manikchak PS of Malda District 40 kms right bank of river Ganga. This 40 kms long areas are erosion affected remarkable places like Birnagar chinabazar, Sarkartola , azimtola . These areas are situated within only 6 (six) kms distance from the Farakka Barrage. It is densely populated area. First time in 2018 ZSI and BSI members joined us to explore flora and funa status in the areas. Such research institutions must come forward and frequently carry out survey and create repositary.

Amidst a cycle of devastation and recovery, Malda-Murshidabad people persist, adapt, rebuild, and embrace nature-based solutions to secure their future.

Visit to Krishnagar, West Bengal (29th Jan) on invitation by Save Jalangi Group



In Jalangi river stretches, several brick fields was seen extracting fertile top soil from agriculture fields, pollution by untreated sewage discharge and garbage dumping in the river are the major issues. Krishnagar Kadam Tala Ghat, Nadia District. Jalangi river – There is Save Jalangi Movement Shri Subhroto Biswas, Nadia Paribesh Manch coordinated for the movement. I was invited as Speaker for a Seminar on Jalalngi River hygiene at Krishnagar Bisarjan Ghat Municipality Community Centre. Met focus group which included Shri Anup Haldar (River expert) and other prominent river and environment activists.

At Karimpur village which is 80 km from Krishnanagar and 30 km from Jalangi origin in Padma river in Hoogly District, here temporary road construction is regularly done filling the place with the sand on River Jalangi. Also further plan is to carryout extension of NH 34 roadways. The District Magistrate was approached to work towards building the carrying capacity of the river rather than obstructing it to die.

At Rana ghat on stretch of Jalangi near Krishnanagar top fertile soil of the river is being used for brick furnace and this unscientific practices of removing of upper layer of fertile soil for brick making in the furnace is seen on the bank of river. Due to Clay and plaster of Paris statue making business for worldwide supply and its waste deposition along with regular immersion of idols is causing serious issue of water pollution.

At Char Shombhunagar, Puratan, at Raipukur Jalangi river overflow and cause flooding. Sugarcane is the major crop grown here. Anandabas, Satkuli and Jangalbas water of river Bhagirathi overflow and causes flood. Char lands are formed and river flow is reduced by the shallowness. Now there is no flood and crop pattern is changed and concrete houses has come up instead of temporary houses.

The analysis of narratives by Hamlet provides symbolic resonance. Analysis revealed that river erosion is influencing people mind.

River influencing memory of people- with geography of river rather than spiritual state. Natural geography curved due to inability to negotiate for the river. Constraints erupted due to development and causing cohabitation of river with the people only due to unnecessary human interventions. Assault on river impacting survival of river. River life need to be protected as living entity. Different States must engage in same to bring harmony around it. Country has not learnt harmony and creating disharmony. River boarder zones are assaulted and behaving disrespectful way with the nature and not able to read submergence. River marker of/language of boarder zone. Conceptualization of boarder of Bangladesh, Bihar, West Bengal. River eternal entity of universal nature, with longer history and guardian of nature. Thus respectful engagement is expected.

Citizens memory of river- men and women compare gender issue. Women has marginally empathetic memory. On the other hand, Man inspite of holi and spiritual feeling, rather than empathetic they think of livelihood.

Possibility of home- the pain of river and loss of home. Looking at river as living entity as human home.

God not being abstract- God protective and embodied in space. Regenerative energy is itself submerged/amnesia. God being emerging space future generation will not be able to connect to protection of river.

Composite cultural heritage – synchronise cultural heritage of river in trying to segregate other animosity and heritage. If river is allowed to die not having civilization value. Composite culture is forgotten and religion sublimated. River forges temple across imagination possible.

Damage to cultural heritage (Hindu Muslim) is on rise. Engage with nature and regulate society. River journey is from Himalaya to Bay of Bengal. Virtuously reinforce in its journey is governing rhythm, flood. River strong regulator of life. Governance of daily and eternal time are intersecting with river. So local native governance in tradition created. It needs to intersect. River signalling to merge unproductive conflict.

Treaty of Bangladesh- River has given enough for thousands of years to meet needs. We engage as sense of boarder whereas idea is sense of position and river converted as property and actually it is heritage also before nation was formed. Rather than looking as property a integrated solution, regional and national boundary should not come in the way and preserved as common heritage.

River status –policy needs to be drafted decentralized manner and with bottom up approach, for several perspectives with normal democracy. People reaching Loksabha, it has not yielded any result. Jan Samanya (common people) voices should be heard and process need to have constant dialogue. It is needed across nation to ensure holistic idea sustain. Usefulness for current and cohabitation to future generation. Hear the voices of women and senior citizen to craft a holistic policy to maintain Gangetic wisdom. Over the years the wisdom has come into existence and voiceless rivers cannot express issues. Since they are being lost in multiple consultations and supressed. Owing the policy of gangetic wisdom to be identified and integrated in substances. Senses pertaining to rivers needs to be carried out so that river senses to be different from regular nomadic pastoral settled. No permanent home pastoral home in nomadic terms. What is home methodology, in Adhar card it is there and tomorrow I am forced to travel.

Economic sense- livelihood has to be captured and reality of occupation, they are in senses to account for the story for children. Animals are affected. Malda mango impacted. All reality not only human head count. Nomadic life is reality.

After vocabulary note paste in note pad of Hamlet and joint frequencies for specific vocabulary inferences, efforts around policy as frequency was more and vocabulary test was agony. Policy frequency indicated that priority must be to create a National River Policy framework for its safety and protection. Core essence of the study is policy needed to address agony and needs. Strongest relationship indicated agony of river is related to or articulate to need of people. Agony and need is connected and hence decentralized policy framework is pertinent.

Conclusion and Recommendations

This research underscores the need of prioritizing holistic study for Char land dwellers sustainable development and community resilience and bridging the gaps. Erosion pattern findings were consistent with the fact that the monsoon period flushes the sediment and caused high bank erosions and water released without prior intimation caused damages and left fear in the mind of people with uncertainties about survival and livelihood. More than the starting of the monsoon, it is mid monsoon period and while the rain resided that erosion is frightening. Samserganj area Dhanghora, Kakudra, Pratapganj, Vasudev pur, Chachandia and few other villages in the vicinity are seriously prone to erosion. Broken roads, schools, buildings hanging etc. are regular observations. Struggle of displaced people continues and are disturbed as they are in huge debt of loans, since local and State government has not strategies permanent

solutions. In drier weather conditions sediment load initially enhances, aggradation in the areas prone to erosion are left with greater amount of sediments. Indigenous traditional practices of settling on Char land by surviving with farming and fishing activities are prominent but adequate policy interventions and strategic management can facilitate for vulnerable community resilience enhancement.

Disaster Management Act 2005 explicitly addressed river erosion and floods in disaster management framework which established institutional mechanisms for managing displacement due to coastal and river erosion. 2008 National Disaster Management Authority guidelines for taking relief measures during floods and XI plan Central Assistance to State government for river management, flood control, anti-erosion drainage development, flood proofing and restoration of flood management work is well received.

National Disaster Management Plan 2016 and 2019 prioritized measures for preventing and mitigating disaster risk, with focus on pre-disaster preparedness and resilience-building, including addressing river erosion and flood risks. The new draft policy in 2023 insisted mapping coastal and river erosion impacts and coming up with a database of diverse challenges confronted by affected and vulnerable habitations. Mapping of fallow areas for communities' acceptability is a well thought policy measure. The draft policy also insist assessment of vulnerability regions periodically headed by SDMAs in coordination with DDMAs.

Efforts made form 2015 onwards, to conduct social mapping and submission of reports time to time by SKECT in PMO followed by RTI application for addressing the demands to get relief for the displaced and their rehabilitation, has also contributed in getting Ganga river bank erosion under the ambit of Disaster management plan in 2019 (2009 NDM policy, 2016 first released National Disaster Management plan and updated in 2019 include Coastal areas and riverine regions). In 2021 15th Finance Commission drafted policy and carried out consultations with State and Centre, 24 focus groups, NGOs, 600 households in coastal riverine districts of Kerala, TN, AP, Odissa, Assam, WB, Bihar and UP. Feb 17, 2023 NDMA received inputs for first National policy for mitigation and rehabilitation of people affected by river and coastal erosion, ND Mitigation Fund (NDMF) approved 1500 Cr for 2021-2026 and 1000 Cr under NDRF (Relief fund) for resettlement of displaced people affected by erosion, with 25% share from States and 10% from North east, following timelines without delays. All these policies are enacted under DMA 2005. Recent such developments of intervention by including natural disasters and climate change impact with inclusiveness is a dynamic step by Government of India.

As disaster funds for rehabilitation is yet to be received, SKECT facilitated relief to the affected people by WB Social welfare department, through convergence scheme. Keeping in view the opinion generated and Hamlet programme analysis of vocabulary of the narratives following strategies are recommended for transformative change:

1. National River Management Policy be created for incessant flow of Ganges and other rivers.
2. Local Indigenous Knowledge System and Nature based solutions only be made compulsory for handling sewage, waste management and erosion disaster mitigation.
3. People affected due to River erosion as brought recently under the purview of District Disaster Management Plan for compensation, grant of Land patta must be speed up.
4. Rehabilitation measures be systematized for early settlements.
5. Strategy, workshops, training by Agriculture department be worked out for Sustainable agriculture practices on Char land and to control erosion.
6. Crop pattern on Char lands be planned as per the soil and submergence conditions.
7. Vertiver plantation with proper measures be taken for protection from flood and erosion.
8. Collaborative studies be carried out in combination with indigenous wisdom and scientific tools.
9. Central Research Institute like Central Glass and Ceramics institute, ZSI, BSI and NEERI must frequently carry out the survey and connect with community for resolving issues with sustainable solutions.
10. As Farakka Barrage is under Central govt. jurisdiction and coordination with the local government is negligible, affected people are suffering. Concrete and bamboo porcupine respectively used by these govt authorities to address sedimentation, shifting of

stream and erosion issues. Irrigation department and water resources department must work with integrated approach and concrete porcupine's deployment be encouraged.

11. Social welfare department with convergence schemes be implemented for effectively handling the livelihood and settling issues.

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