



MACH

Management of Aquatic Ecosystem
through Community Husbandary

Supported by USAID



*Rapid Rural Appraisal
for
Matigheo-Upper Kangsha River basin
June, 2000*



Prepared by

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NAKLA
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Executive Summary
Upper Kangsa-Maljihee River Basin
Rapid Rual Appraisal

I. Introduction/Background

The floodplains of Bangladesh form one of the world's most important wetlands. Home to hundreds of species of unique plants, fish, birds and other wildlife, critical habitat for thousands of migrating birds and most importantly a source of income and nutrition for millions of people in Bangladesh. The people of Bangladesh as well as the government, and others have long recognized that these habitats are in decline. Alarming, the inland fisheries and floodplain catch of Bangladesh, as well as the overall plant and animal bio-diversity within the floodplains, continue to decline.

Recognizing the need for new approaches to floodplain and wetlands resource management, the Governments of Bangladesh and the United States of America have jointly developed a program called Management of Aquatic Ecosystems Through Community Husbandry (MACH). An agreement to implement this program was signed between the Governments of Bangladesh and the United States in May 1998. Based on USAID procedure, an international request for proposals was solicited later that month. In July 1998, a selection committee with representation from the MoFL choose the international organization, Winrock International (Winrock International Institute For Agriculture Development), based in Morrilton, Arkansas USA as the grantee. Winrock's proposal included three national partner organizations - namely, Caritas Bangladesh, the Centre for Natural Resource Studies, and the Bangladesh Centre for Advanced Studies.

II. Program Goal and Purpose

The goal of the MACH program is to promote environmentally sound management of wetland resources (fish and other wetland products) for the sustainable supply of food to the poor of Bangladesh.

The major purpose of this project is to demonstrate to communities, local government and policy-makers the viability of community and watershed based approaches to resource management and habitat conservation in Bangladesh over a number of representative wetlands. The 'community' includes all of those people dependent either economically or nutritionally on the floodplain and its products. The program will emphasize and work with poorer groups, particularly fisher communities, but must include local government as well as the local elite if the program is to be truly sustainable.

MACH shares with other community-based fisheries programs the eventual goal of establishing environmentally sustainable management of natural resources through co-management (communities and government).

MACH differs from other community-based fisheries projects in taking a holistic watershed-based approach that identifies and attempts to address the real problems of the wetlands. MACH is concerned with all wetlands resources- water, fish, plants, wildlife and others- over *entire* floodplain ecosystems (beels, seasonal floodplains, rivers) not just single water bodies. Additionally, recognizing that the reduction of fishing pressure is likely to be a critical part of reviving the floodplain fisheries, MACH has included supplemental income-generating activities that will be focused on fishers and others directly dependent on fishing.

III. Rapid Rural Appraisal Upper Kangsa-Maljihee River Basin

This RRA was conducted by the MACH-CNRS team based on visits to the Malijee Wetland and the surrounding area. The purpose of RRA is to obtain an overview of the area through rapid rural appraisal. RRA concentrates on the wetlands, streams and water ways along with the biological productivity and user interactions. Based on collected maps and images staff sought the opinions and conducted village 'courtyard' meetings with local fishers and farmers, meet with Government of Bangladesh personnel at the District and Upazilla level including the individuals from the Ministry of Land and Department of Fisheries. Additionally elected Members and Chairpersons of the various Union Parishads provided assistance and help in understanding local issues. All major physical features of the areas- rivers, streams, khals and associated scour holes or 'kurs', beels and deeper parts of beels called 'mandas', were visited.

IV. SITE DESCRIPTION

Site Selection

MACH sites are selected by the Project Steering Committee based on information collected by MACH project staff. In March 1999, the PSC selected two sites Hail Haor and the Upper Turag-Bangshi Basin as MACH sites. Additionally the project was to explore the possibility of receiving additional financing to allow expansion to the Upper Kangsa-Malijee Basin (Sherpur) site. In April 2000, the PSC agreed to allow the MACH project to fully expand activities to the Sherpur site.¹

The Sherpur site was selected based on the decision matrix developed by MACH in 1998 for this purpose.

In general the site area follows the Malijee River Basin starting with the Dohli beel complex of Jhenigati Upazilla down to the Malijee River Bridge on the Nokla, Nalitabari Road. Apart from the Dohli Beel complex, which lies just northwest of Tinanni Bazaar, the area is bounded: on the north by the Tinanni Bazaar Nalitabari Road, on the east by the Nalitababri-Nokla Road, on the south by the Nokla-Sherpur Road and on the West by the Sherpur-Tinanni Bazaar Road. If the situation warrants it is possible that the project will work in the watersheds of the Shameswari, Maroushi, Malijhee or Chelekhali Rivers.

Political Boundaries and Population

The area selected falls within the boundaries of Sherpur District and includes portions of Jhenaigati, Nalitabari, Nokla and Sherpur Sadar Unions (See Appendix 10 Map). Unions with the potential for activities include the following:

Jhenaigati

¹ MACH. Steering Committee Minutes March 1999 and April 2000.

MACH Upper Kangsa-Malijee Basin

Site Upazillas, Unions, Beels and Beel Area

Upazillas	Unions	Population ²	Fishing Households ³ (Under Project Area)	Beel Number	Beel Area ⁴ (hec.)	Khas Area (hec.)
Jhenigati	Maljihikanda	20,144	1,027	8	410.93	1.21
	Hatibanda	14,014	125	1	21.05	
	Dhanshail	40,986	913	3	244.94	39.68
	Jenaigati	27,261	622	5	260.70	
Nalitabari	Jogania	28,879	925	9	450.20	81.78
	Bagber	16,584	340	2	60.73	
	Kalashpar	34,906	6,720	11	663.97	56.68
	Rajanagar	25,562	2,135	5	311.74	12.96
Nokla	Nokla	16,344	1,415	4	94.74	21.86
	Ganapaddi	20,975	3,387	9	562.75	66.50
Sherpur Sadar	Kamaria	27,831	262	3	7.29	
	Pakuria	30,539	3,170	9	420.24	61.94
	Bajitkhila	19,741	145	2	20.24	
	Gajirkhmar	18,975	944	4	158.70	
	Dhala	16,637	1,195	11	105.26	36.44
Total		3,59,375	23,325	86	3834.01	401.29

Physical & Hydrological (See Map- Appendix 10)

This MACH Sherpur site lies in Bangladesh's portion of the upper drainage of the Kangsa River Basin. The land slopes generally from the west to east and drains the south facing portions of the Garo Hills in India and Bangladesh. Water from these areas eventually flows into the Syhlet Haor Basin and makes up a portion of the Meghna River.

Those areas to the south of Sherpur town, on a line running east-west, drain towards the old Bhramaputra River. Areas North by Northwest of the town drain towards the Kangsa and the Syhlet Basin. Relief is limited in the area with an elevation fall of 5-10 feet (2-3 meters) or less over a distance of approximately 15 kilometers, according to GoB contour maps. They show an elevation of 50 ft near the Dholai Beel of Jhenigati Upazilla and an elevation of 44-48 feet in the Goramari Khal (Nokla/Nalitabari Upazilla) near the river outfall at the Malijee River Bridge on the Nokla-Nalitabari Road.

River-Streams

Like the rest of Bangladesh, most water of this region arises from the hills in India. Several streams flow out of the Garo Hills into Malijee Wetlands. Starting from the west major streams that make up the Malijee system include the *Someswari* and *Malijee*, which flow into the Dohli Beel complex. They are joined by the *Mouroushi* River at Pagla Ghat after which the river flows past Tinanni Bazaar into the main wetland basin. The

² BBS 1991.

³ Fishing house hold include all type of fishing HH of 61 villages out of 98 villages. Whole Upazilas area are not under the project area (CNRS Survey)

⁴ Beel area are not the true area at present but collected from GOB and RRA.

Chelakhali River, which is the largest source of silt in the system, drains into the *Malijee* approximately 10 km below Tinanni Bazaar at Balughat. The *Malijee* then flows through the deepest wetland areas of the area and through Goramara, Biharee and Pekua Beels and then out through the Kapasia and Baitkamari Bridges to the Bugai River and then the Kangsa River.

All of these streams, are reported by villagers, to have had perennial flows as recently as 10 years ago. None of these rivers now carries dry season flows. Deep scour holes or 'kurs' do contain water in the dry season and are the critical feature for fish biodiversity and production in the region. There is an almost complete lack of riparian vegetation along rivers and khals. Fishing pressure in these streams and 'kurs' is very high in the dry season.

Beels

The total number of beels identified to date, as shown above, is 86 with a total estimated area of 9,470 acre (3834 ha.). The wet season area in the basin exceeds 10,000 ha. The total numbers of perennial beels (in a year of normal rainfall) are 24, however the interviewed community claimed that there were more than 50 perennial beels in the area till early 1980's. Only eight of the beels in this area are leased by the government. The number of unleased khas areas is not known at this time. Fishing pressure on all beels and the deep holes known as 'mandas' is high in both the wet and dry seasons. Encroachment and siltation are reported by villages to be major problems in all beels.

V. Social Issues

The total population of the area as shown in the above table amounts to 359,378 based on the 1991 BBS survey.

The estimated number of households in the impact area amounts to over 28,000. Of these, approximately 90% of the households are involved at some level in fishing. The majority amounting to 51% are subsistence fishers, 30% are seasonal professional fishers with 9% of the households involved in full time professional fishers. Local people report that many formerly full time fishers have stopped fishing professionally due to scarcity of fish and water.

VI. Site Problems

Again, it appears that a lack of dry season water in the local rivers and beels is a major problem followed by heavy siltation. The siltation and lack of water are both a result of upper watershed deforestation. Water from the upper catchment drains in to the wetland along with silt load. The entire wetland is ringed by roads and a road bisects the middle of the wetland. Drainage congestion and subsequent flooding of boro rice is a result, at least in part, by the LGED roads that bisect the area. Early monsoon flows back up in the wetland this year (2000) causing the loss of 40%- 50% or more of the boro crop in some areas.

1. Introduction

The Management of Aquatic Ecosystem through Community Husbandry (MACH) Program started its implementation in two different floodplain areas since October 1998 with the approval from GoB and financial assistance from USAID. The project activities have been implemented by Winrock International with CNRS, BCAS and CARITAS as partners. The project already started in two floodplain areas namely *Hail Haor* at *Moulvibazar* and *Turag-Bangshai* floodplain at *Gazipur* and *Tangail* districts, as recommended and approved by PSC held on March 1999. The third site has been selected in *Kongsha-Malijhee* basin at *Sherpur* for its unique watershed. Accordingly, initial program initiatives have been started since April 2000. The program will be continued for four years.

The focus of the project is to uplift the biological production including fish production and conservation of fish species, aquatic vegetation and wildlife. The approach of the project is to address all activities through participation of the community at all stages.

The RRA activities have been started in the *Kongsha-Malijhee* basin since the first week of April 2000 to collect primary information of the site considering the objectives of the project. During RRA activities CNRS staff visited *beels*, canals and rivers located in *Kongsha-Malijhee* basin. The watershed and the villages around the water bodies has been intensively explored to gather overall perception and information regarding bio-physical and socio-economic profile of the watershed. The information has been collected from various sources of the project area, viz. the resource users of the watershed, Union Parishad (UP) Chairman and Members, UNO, *Upazila* Fisheries Officer, AC Land, RDC, NDC and other relevant government officials.

This report includes description of the site, diversity of the water bodies, fisher community, Biological Productivity NGO activities, potential interventions and other relevant information, which may help to carryout future activities of the project.

2. Objectives

The specific objectives of the RRA activities are as follows-

- Gather knowledge and information on the *Kongsha-Malijhee* river system, their connectivity, flow pattern and flow direction
- Collect information on the seasonal and perennial water bodies including their connectivity through rivers, canals and overland flow and seasonality of inundation

- Collect information on the settlements around the water bodies, accessibility to the water bodies and infrastructure within the project area
- Collect information on the *Jalmohals*, leased/non-leased water bodies and land tenure and management systems, wetlands in particular
- Biological productivity (qualitative) and biodiversity (indicative) along with the present and previous status of fish, aqua-vegetation and wildlife diversity of the project area
- Socio-economic profile and agricultural cropping pattern of the resource users and of the population of the watershed at large.
- Selection of potential intervention sites

3. Methodology

In order to understand the *Kongsha-Malijhee* river system that governs the hydrological regime of the project area, RRA followed the Maroshi, *Malijhee*, Chellakhali river systems from where it enters in to the territory of Bangladesh to the ending point of the proposed project area. Several discussions were made with the local people at different points of the watershed (at the vicinity of the *beels*, river confluence, near by villages, market places and road corners). The focus of the discussion followed checklist that includes the flow pattern, silts, fishery, plantation, aqua-vegetation, wildlife and water use pattern in the area. Siltation, water logging and reduction of biological production were given priority by the local people in most of the discussion sessions.

The focus of the RRA discussion was connectivity, water retention capacity, productivity and importance of the *beel* as fish recruitment source for the floodplain. The trend of fisheries production, causes of habitat degradation and impact of these degradations on the ecosystem and on the resource users were discussed. How wetland productivity and species diversity could be enhanced was also discussed that refers to the possibility of imposing software (management) and hardware (physical) interventions at various scale, intensity and locations.

During RRA, discussion with the community around the *beels* was made about the present situation of aquatic vegetation, wildlife, bird, reptiles and mollusk. The trends of abundance and or changes were also addressed. The environmental problems those are noticed by the participants were shared and discussed. Possible solution has been suggested by them in some instances. In gatherings, the people from different professions like fishers, farmer, student, service holder, labuorer and rickshaw pullers took part. Discussion was made on the roadside of the village, shadow of trees, corner of the villages and at *uthans. Beel* adjacent villages, villagers near the confluence of the river and locations around water bodies were selected to conduct RRA.

Information has been collected about sand and stone mining from the leaseholder, sub leasee and from the people living in the vicinity, the impact of sand/stone mining on ecology and on people have been discussed. Influence of *Jharas* in confined site and water source of canal and river were also discussed. Information sources for the wildlife and forestry were explored during RRA.

4. Description of the Project Area

The study area is located in *Malijhee-Kongsha* basin of *Sherpur* district, the north-central part of Bangladesh. The defined area is in 4 *Upazilas* namely *Sherpur*, *Nokla*, *Nalitabari* and *Jhenaigati* covering an estimated area of 53,902 acre. The proposed boundary line is *Sherpur* to *Nokla*, *Nokla* to *Nalitabari*, *Nalitabari* to *Sherpur* via *Jhenaigati*. The communications among *Upazilas* are well enough.

The landscape of the watershed has a characteristic feature. The upper hilly area that drains in to the wetlands of the area, dhalibeel-complex in specific. This complex is the northern most lowest pocket of the watershed. The eastern ridge of the watershed follows from north to south from the territory boundary to the *Sherpur* town. eastern valley of this ridge drains water to the old *Brammaputra*, i.e. another watershed. Western valley that drains to and is the *Malijhee* watershed boundary. *Sherpur* - *Nakla* road is the southern ridge of the watershed. The water ways out of the watershed are through the eastern side, *Nakla-Nalitabari* road. There are few outlets. Within this frame of the watershed boundaries, there are distinct low pockets that follow north to south line. The lowest pockets as mentioned starts at the *Dhali beel* complex to *Dharabasia* complex than a shift to east to *Khuski* complex followed by *Balughat* to *Ghoramara* and through *Pekua*.

A total of 86 *beels*, 70 interconnected canals and 3 rivers (two are major) are the main water bodies. Besides floodplain area, *Kur* and *Manda* are also wetland habitat for fish and other aquatic flora and fauna. In monsoon, floodplain area becomes inundated with the monsoon rain and surface runoff. Most of the water bodies are seasonal. However, water retained year round in most of the *mandas* and *kurs*. These are located mainly in the canals and *beels*. The proposed project area and its watershed shown in the map, which is prepared from the *thana* base maps (Appendix-10).

4.1. Watershed (*Kongsha-Malijhee*)

The area can be defined as the watershed of *Malijhee* River system where several *Jharas* and canals fed the river in different places. The watershed comprises of different types of habitat such as Hill slope, Rivers and streams (*Jhara*), Lower pockets (*beels*) and floodplain habitats (Appendix- 12). The hill slope habitat was covered with *Shal* and other hill species and was a wonderful grazing land for birds and other wildlife species like elephant, deer, tiger, monkey etc. After destruction of those natural forests, Department of Forestry has taken initiative and made artificial *eucalyptus* forest through the boarder line. Several *jharas* passed through this area and blessed the area by creating number of suitable wetland habitats for wetland flora and fauna. However, the

habitats are degrading day by day through natural and manmade interruptions like deforestation, sand and stone mining, use of harmful gears etc.

In the upper catchment of the *Malijhee* River system 5 *jharas* (streams, originated from *Tura* and *Garo* hills of *India*) flow about 9 km from north to south in the Bangladesh territory. These *jharas* join with *Dhali beel* complex (which comprises of 9 *beels*) near *Bogadubi* village and created a suitable habitat which was blessed with various aquatic vegetation, fishes, birds and other wetland diversities. *Bogadubi* canal originates from *Dhali beel* complex and joins with *Maroshi/Bandra* River, which enters in Bangladesh near *Shandhakura* village in between *Haldigram* and *Guinta* village and joins with *Malijhee* River near *Paglarmukh*. Then the flow named as *Malijhee* River and flows towards south to southeast direction through *Tinanibazar* of *Malijheekanda* union. On its way, it has connections with many canals, lower pockets (*beels*) and the river *Chellakhali* (near *Balughata bazar* of *Kalashpar* union) and the main flow of *Malijhee* River joins with *Bhugai* River near *Kunnagar* village of *Nalitabari Upazila*. The other branches of *Malijhee* River flows towards *Bhaitkamari khal* (through *Akkas Ali khal*, *Dona beel*, *Mora beel* and *Chepakuri beel*) and *Ghoramara* River. The flows ultimately join with the *Bhugai* and then with the *Kongsha* River in the downstream. However, there are trends of flood and consequently loss of boro crop.

The lower pockets (*beels*) contain 86 seasonal and perennial *beels*. These *beel* complexes are rich in fish, mollusks, bivalve shells, snails, birds and other aquatic vegetation. In the *Kharip-2* (July-October) season, *amon* is cultivated in the higher lands of the *beels*. In the *Rabi* (November-February) season, *Boro* is cultivated in high, medium and low lands of the *beels*. During the dry season agriculture (*Boro*), people generally use shallow and deep tube wells for irrigation and no scarcity of ground water in the area was reported. As the land of this area is very fertile, agricultural production is satisfactory and people of the proposed project area mostly depend on *boro* crop for their livelihood. However, there are threats of flash flood and consequently loss of *boro* crop.

There were sand and stone mining centers in the upstream areas of the watershed. Thousand of people were involved in this profession to meet their livelihood expenses. Considering the harmful impact of stone mining, the govt. decided to stop stone mining from 1996. Though the attempt seems environmentally positive, many of the people become jobless and they are now meeting their livelihood expenses destroying the forest. Because of this pressure on the environment, sometimes elephant and other beast coming out in the locality and disturbing nearby people.

People living in and around this watershed are very crucial for its management and conservation initiatives. They are involved in various professions like fishing, agricultural farming, day labour, service, sand mining,

rickshaw-van pulling, fuel wood collection etc. Though, they are involved in various professions for their livelihood expenses, they are the resource users of this watershed. Therefore, they are the prime factor for the conservation and management of the whole watershed.

4.2. Hydrology

The Sherpur project site is a flash flood prone area. The farmers of the site suffer repeated heavy damage of their crops by the flooding from Shomeswari, Malijhi and Chellakhali rivers. Flash flood occurs in these rivers more than once per year and spill over a large portion of the project area.

Flash flood discourages the use of the intensive pond aquaculture in the area. Continued flood damage to the monsoon crop will force farmers to shift to dry season boro. The resulting increase in abstraction of surface water and groundwater for irrigation will cause damage to wetlands and environment during the dry season.

Diversity of water bodies in the watershed is river, canal, *beel*, *kur*, *manda*, flood plain area, roadside ditch (borrow pit) and pond. MACH project has given emphasis on open water bodies. Directly or indirectly, these water bodies have connections to each others.

The major river networks of the project site includes the Shomeswary, Malijhi, and Chellakhali rivers.

4.2.1. Malijhee River System

The Malijhi River originates in the Meghalaya Hills (Tura Range) and has a catchment of 160 km² within India. After entering Bangladesh the Malijhi continues southwards, it receives inflow from several channels, the Shomeswari River (originates from Darong Hills) and Maroshi River and virtually increase flow of the Malijhi River by many fold.

The *Maroshi/Bandra* River originates from the Garo hills of India flows to south, and enters in to the territory of Bangladesh in between the *Haldigram* and *Guinta* villages near the *Sandhakura*. The *Maroshi* River flows to the south and receives *Rangti Jhara*, which comes from *Garo* hills through *Rangtia* forest of *Nolkura* Union and receives *Bogadubi* canal near *Bogadubi* village. The *Maroshi* coming from the same sources also joins with *Malijhee* River near *Paglar Mukh* Bridge. From this point onward, the river is named as *Malijhee*.

The water sources of *Bogadubi* and *Malijhee* are from up stream *gharas* and rivers. Two *gharas* namely *Mongal (Dudhnui) Jhara*, *Shiljhara* join with each other near *Bankakur*, *Kangsha* Union. *Mala* and *Kalakusha Jhara* join near *Chapabara* of *Jhenaigati* Union and named as *Nagshi Jhara*. Then the *jhara* named as *Shahati Jhara* in the same union. *Kala Kusha* and *Shahati* ultimately falls in the *Dholi beel* complex.

Two streams of *Shammeshawri* River that originates from *Kharamar* (Darong hill of India) and named as *Shammeshawri*, and falls into *Dholi beel* complex passing through *Vaoakucha*, *Aynapur bazar*, *Dupuria* villages and crossed the *Gajamari* canal. On the way from *Aynapur* to downward, it splits into 5 streams and they again join with each other at *Bager vita* village and then joins with *Kalakhusha Khal* of *Dhanshail* Union.

Malijhee enters the proposed project area at *Tinanibazar* Bridge. The *Dhali beel* complex that discharge through the *Malijhee* River, receives flow from *Mala Jhara, Kalakusha Jhara, Shil Jhara, Mongal Jhara* and *Sameswari* River (All originates at *Garo* hills of *India*). The *Malijhee* River on its way from *Tinanibazar* flows southeasterly and bends southwesterly directions near *Malijheekanda* union. At this point the river system receives *Dakur* River that comes from the *Sreebardi Upazila* (we haven't explored) and flows across the *beel* complex of the *Malijheekanda*. The general flow of the system from this point onward is to south and southeast directions. The *Malijhee* River system bifurcates and fed to different *beel* complexes. It also receives *Chellkhali* River, bifurcates again at *Gahlajani* of *Kalashpar* union and ultimately flows out of the project area at two different outlets. On the way, it is highly silted from *Balughata* to *Piposhor* about one and a half kilometers. So, there create a blockage against water flow system. One outlet is at eastern side, through the *Kapashia* area and joins with *Bhugai* at *Kunnagor, Nalitabari*. Another outlet is at the southeastern corner of the project area to the *Bhugai* river system.

In *Malijhee* River system, water flow from north to southeast round the year. Villagers construct temporary dams on different points to use surface water for *Boro* cultivation. People living in *Malijheekanda* union and downward do not have surface water for irrigation due to those temporary dams.

4.2.2. *Chellakhali*

The *Chellakhali* River originates from *Tura* hills of *Meghalaya* and has a catchment of 175 km² in *India*. Before enters *Bangladesh* its name is *Talang*. The entering point of *Bangladesh* is *Khalchanda* village. It crosses *Andharupara* to *Tinanibazar* metal Road near *Nunni* north village of *Nunni* union. An embankment is under construction from *Tajurabad, Nunni* to South *Nagshi* by *Bangladesh* Water Development Board. The river becomes rough in the monsoon due to strong current. Before entering proposed project area, there is a 36-vent sluice gate at *Shannashi vita, Bagber*. The river *Chellakhali* carries high silt and siltation is high on the adjacent canals.

It crosses the project boundary at *Shannashivita* and two streams come out at *Ranigaon, Kalashpar*. The *Malijhee* River receives one of the flows at *Balughata, Kalashpar* and another outlet flows to south direction. Passing a little distance, it again divided into two streams. One of the branches joins *Malijhee* River near *Balughata* Bridge and another outlet to the *Malijhee* River at *Kapashia, Jogania* through *Gollar beel* and ultimately *Malijhee* falls into *Bhugai* at *Kunnagor, Nalitabari*. Water flows always from north to southeast.

On the way, it is highly silted up from south *Ranigaon* to *Gollarpar* (approx. 2.50 km.) Siltation of *Malijhee* River from *Balughata* to *Piposhor* (1.5 km) blames the silt of *Chellakhali* River. Raising of *beel* beds, canal blockage and siltation are also blamed to *Chellakhali*. The cultivable lands become very fertile due to siltation by *Chellakhali* River. In the proposed site, *Ghoramara* River flows through two unions namely *Jogania* and *Nokla* (2).

4.2.3 Shomeswari River

Shomeswari River originates from Darong Hills of Meghalaya Hill and has a catchment of 175 km². Actually Shomeswari is not a single river originating from Darong Hills, there are several channels of Darong Hills entering Bangladesh with different name like Shomeswari, Kalghosha Nodi, Mora Nodi etc but the combined flow is known as the Shomeswri River. The river passes through a series of beels to the north of Sherpur and then joins with Malijhi near Surihara Bazar north of Sherpur town.

4.3 Climate

There are no climatological station within the basin. Mymensing climatological station, though located outside the basin, is the nearest relevant station.

Temperature: Maximum temperatures in the area vary from about 29C to 30C with the highest temperatures experienced during the period between March and October. Minimum temperatures range between 16 C and 20 C. (Source BMD)

Rainfall: There is an increasing trend of rainfall from south to north of the area. The mean annual rainfall varies from 2800mm to 4400mm.

Evapotranspiration: Annual potential evapotranspiration as measured at Mymensing is 1506mm with the lowest monthly amount in December (87mm) and the highest monthly amount in April (162mm).

4.4. Canals (Khals)

A total of 69 canals have been recorded with in the proposed project site. The upstream area of *Kongsha-Malijhee* basin is located at the northern side of project site boundary (*Sherpur-Jhenaigati-Nalitabari* Road). Major four canals namely *Bhuittar*, *Dharar*, *Nager* and *Katakhali* flows from north to the project area.

4.4.1. Bhuittar Khal

It originates from *Tura* hills of *India*. At *Nakugaon* village, it crosses the international boundary (upstream of proposed project site). Water flows form *Bhugai* River to *Bhuittar khal* through a sluice gate located at *Simultoli*. Sluice gate is about 5 km north from *Nalitabari*. After crossing *Sherpur-Jhenaigati-Nalitabari* road, the canal becomes *Dugdhar Khal*. The sluice gate controll water flow mainly in the dry season for irrigation purpose. Water retained round the year in this canal and local people use water for irrigation using pump in the dry season. It falls into *Gollar beel*, *Kalashpar* union (South of *Sherpur-Nalitabari* Road). A sluice gate is under construction on *Dugdhar Khal* near *Golla* village to regulate water in the dry season. A small (perennial) stream from *Bhuittar khal* joins with *Malijhee* River at *Jogania, Nalitabari* before *Sherpur-Nalitabari* Road.

4.4.2. Nager khal

The canal flows from a floodplain area near *Kannadubi* village of *Nunni, Jhenaigati* (in the upstream). The *Nager khal* is said to be the old *Chellakhali* River that changed course at the upstream and the old stream is almost cut off from the source and become *Nager khal* eventually. Before enter in the project site it is named as *Morakhali*. On its way from *Kannabari* village, the canal passes through two floodplains namely *Nishchintapur* and *Amtoli*. It enters in the proposed project area near *Panchgaon* village of *Rajnagar* Union. It falls into *Malijhee* River at *Surjanagar* village of *Rajnagar* union through *Ghugrakandi* and *Bogadubi* village. It flows in the western side of *Chellakhali* River. The canal is seasonal.

4.4.3. Dharar Khal

It originates from flood plain area, 1 km north from upper boundary of project site. It crosses metal road on the east side of *Chellakhali* River. *Dharar Khal* was joined with *Gollar beel* 5/6 years past. However, it is silted up from South *Ranigoan* to *Gollar beel* (approx. 4 km.), *Kalashpar* union. *Chellakhali* is to blame for siltation of this seasonal canal.

4.4.4. Katakali Khal

It comes from *Barsh Bharala* village and cross *Sherpur-Jhenaigati-Nokla* Road at *Malijheekanda* union through *Kalidaha Sagor* area. In the project site, it falls into *Malijhee* River and crossed *Malijheekanda* Union through *Takinari Beel* and *Gomgigang*. This *Katakali khal* is also called *Dakur* River in this area and *Malijheekanda beel* complex is known as *Dakur Nadi Jolmohal*. It is a seasonal canal.

4.4.5. Boleshwar Khals

Boleshwar is one of the important canals in the project site. It started from where *Ghoramara* River and *Takimari beel* join at *Boroitar* village of *Nokla (2)* union. The canal flows from north to south and joins with *Pekua beel* through *Bihari, Shibbari* village and passed *Sherpur-Nokla* road near *Nokla Upazila* and falls into comparatively lower floodplain area (Appendix-1).

4.5. Beels

86 *beels* have been recorded in the proposed project site (Appendix-2). Only 24 *beels* are perennial, 58 *beels* are seasonal and rest of the *beels* have been silted up and turned into cultivable land. The total area under these *beels* are 3,834 hectors and there are 401.29 hectors *khass* lands. The area of the beel are defined as the area that

includes the lowest pocket as well as the surrounding shallow area. Dry season water retention area is however shrinking due to the encroachment and also vary year to year due to variation in the flooding. These *beels* could be delineated under a number of low pockets with a couple of *beels* that are referred here in after as *beel* complex. Following are the major *beel* complexes in the area.

4.5.1. Darabashia beel complex

There are 8 *beels* in this low pocket and 6 canals are connected with these *beels*. This complex is located in the *Malijheekandha* Union of *Jhenaigati Upazila*. All these *beels* have connections with each other and with the *Malijhee* River as well. *Darabashia* is only the perennial *beel* with 1 acre of *khas* land. All other *beels* in this complex retain water about 6-8 months in the year. An intervention like, sanctuary would be of immense good for the fishery in the whole complex area including floodplain.

4.5.2. Khushki beel complex

There is a *beel* complex in *Rajnagar* union with five *beels*. This complex has connections with three streams. These are *Nager khal*, *Bhangor Majhi khal* and *Malijhee* River. *Khushki* is the potential *beel* in terms of *khas* land and water retention through out the year and could be brought under intervention.

4.5.3. Bihari beel complex

There are 8 *beels* in this complex. These *beels* are located in the *Ganapaddi* union and have connections with 5 canals and *Ghoramara* River. *Behari beel* is perennial. Though 5 *beels* from this complex are used out, the total complex is suitable for potential interventions.

4.5.4. Kawta beel complex

There are 9 *beels* in this complex which are located in *Pakuria* union. Three *beels* are perennial. With this complex, 9 canals are connected and most of which are seasonal. *Mandamari beel* converted to cultivable land. Only *Bouli beel* has *khas* land. *Durungi beel* may be a potential sanctuary.

4.5.5. Dholi beel complex

It is a large *beel* complex with 9 *beels*. This complex is located partially in *Jhenaigati*, *Hatibandha* and *Dhanshail* unions of *Jhenaigati Upazila*. With this *beel* complex 15 different canals, rivers and *jharas* have

connections both in upper and lower catchment. This complex is huge and historically very important and potential area for aquatic biodiversity and birds.

Following are two single *beels* huge in size and function-

4.5.6. Aora Baora beel

This is one of the largest perennial *beels* of *Sherpur* district, located in *Sherpur pouroushabha*. People from different places come for fishing in this *beel*. There are *khas* lands in this *beel*. However, as reported by the local people the *beel* is not in leasing system for the last few years, considering their extent of dependence on the *beel*.

4.5.7. Pekua beel

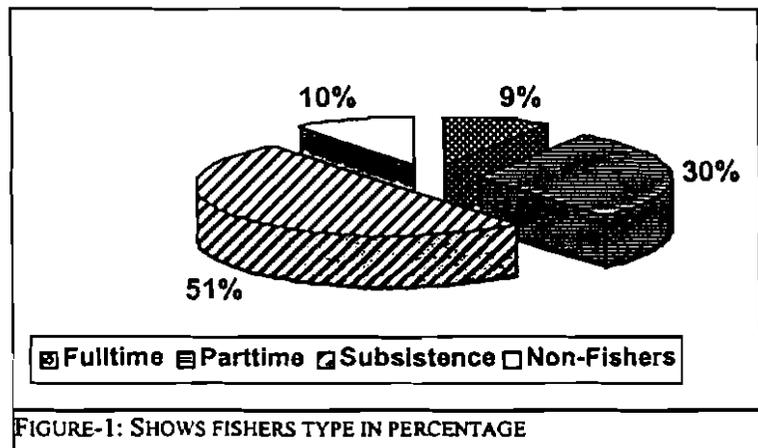
Pekua beel is one of the largest *beels* in *Ganapaddi* union and in *Nakla Upazila* as well. This *beel* is leased and managed by a fishermen community of *Nakla*. People from different unions and *Upazilas* come and fish in this *beel* round the year. This *beel* has connection with many *beels*, canals, rivers and floodplains of *Sherpur* district.

Detail information about nine potential *beels* are attached in Appendix – 3

5. Fishers Villages

There are 92 villages situated around *beels*. Some villages are located within the vicinity of more than one *beels*.

Information about 86 *beels* were collected from 61 villages. These 61 villages are within 15 unions (including *Sherpur pouroushabha*) and 4 *Upazilas* of *Sherpur* district. In 61 villages 28,416 HHs were listed. Out of them 2,434 HHs are full time, 8,475 HHs are part time and 14,257 HHs are subsistence fishermen and rest of 3,250 are non fishers (Appendix-4). Fishers reported that, there are not enough resources for



fishing round the year and consequently they are to change their profession. Here in Appendix-4 mentioned the name of the villages from where the informations have been collected.

5.1. Fishers Community/para

Most of the villages have no specific area for fishing community. The fishers households are scattered. Only 17 fishing *paras* were found out of 61 villages (Table 1). Due to changing fish habitats from perennial to seasonal, fishers also gradually converting to part time from full time. Mainly such type of community resides near to fish habitat. The traditional business practice of fishing is under threat.

At present, the fishers work as a labourer or a rickshaw puller during lean season. However, there are 9 % fulltime fishers, 30 % part time and 51% subsistence fishers (figure-1).

Table 1: Villages and Corresponding Fishers para by Union

Name of Unions	Name of Villages	Fishers Para
1. Gagirkhamar	Kuruliakanda	Kuruliakanda
2. Dhala	Chandernagar	Ghoramara Jelepara
3. Jogania	Kapasia	Uttar Kapashia Jelepara South Kapashia Jelepara West Kapashia Jelepara
4. Kalashpar	Ranigaon	South Ranigaon Jelepara
5. Kalashpar	Nagshi	Bakerkanda, Shimulpara, South Nagshi
6. Kalashpar	West Kalash Hatkhola	West Kalash Hatkhola Jelepara
7. Rajnagar	Baradubi	Baradubi Jelepara
8. Rajnagar	Dhohalia	Dhohalia Jelepara
9. Nakla-2	Uttar Nokla	Dakaitakanda West para Jelepara
10. Ganapaddi	Ganapaddi	Ganapaddi Jalpara
11. Ganapaddi	Biharirpar	Biharirpar Jalpara
12. Jhenaigati	Dorikalinagar	Dorikalinagar Jelepara
13. Pakuria	Pakuria Khamarpara	Pakuria Khamarpara Jelepara

5.2. Fishing Ground and Access to fishing

There are various kinds of fishing habitats such as river, canal, *beel* floodplain, ditch, *kur*, *manda* (Appendix-5). Total of 86 small and large *beels* have been recorded in the project area. People from the villages around *beels* and also from other villages fish to these *beels*. Local people have common access except leased *beels*.

Only 8 *beels* are leased out. The system to access varies from *beel* to *beel*. In each *beel* subsistence does not pay any tax to lease holder. Access system to leased *beels* for full time and part time fishers are:

(1) they give a certain amount of fish for consumption to the leaseholder, (2) they paid Tk. 2/thela ja/ day or 200-300/ber ja/month or Tk. 5-20/day varies by gear type. The payment from the scoop net are however, found in the Pekua beel during March when part time professional fisher fish with scoop net.

Specially, Pekua beel is a year round fishing habitat and hundreds of people fish round the year.

There are number of *Mandas* in each seasonal beel. *Manda* are established by the adjacent landowners. During RRA 13 *kurs* have been identified and recorded in the *Malijhee* River system. Besides *Malijhee*, *kur* lies in *Gaimara* canal, *Kalash Gang* and *Chaua khal* (South Nagshi). These are perennial and average depth in dry season is 18-20 feet. People of adjacent villages have common access to *kur* but major fishing held by professional fishers. If some one hire a professional fisher to fish in a *kur* then the contact with owner is 50% share (Table 2).

Table 2: Number of *Kurs* and their Locations

Name of Water Bodies	Village	Union
A. Dainnar Didgha Kur	Malijheekanda	Malijheekanda
B. Dainnar Kur	Malijheekanda	Malijheekanda
C. Bahar Ali Kur	Malijheekanda	Malijheekanda
D. Habibur Rahaman Barir Kur	Malijheekanda	Malijheekanda
E. Fajarer Barir Kur	Malijheekanda	Malijheekanda
F. Mosque Kur	Malijheekanda	Malijheekanda
G. Kalashpar Primary School Kur	Kalash Gang	Kalashpar
H. Char Ganger Kur	Paikha Khal, Malijhee River, Gaimara Khal	KalashPar
I. Suryanagar Kur	Malijhee River	KalashPar
J. Singmari Kur	Paikkha Khal	KalashPar
K. Gaimara Kur	Gaimara/Chua Khal	KalashPar
L. Chuar Kur	Chua Khal	KalashPar
M. Kala Munshir Kur	Baleshowr Khal	KalashPar

In river and canal people have common access. Three rivers namely *Malijhee*, *Chellakhali* and *Ghoramara* are free for fishing. Professional and non-professional fishers have fix up the brush piles in different canals or rivers. However, the practice is more often among non-professional fishers and they are fixing up *khatas* along their houses or land.

5.4.2. Gear

Various types of gears are used in the project site. These are *Thela, Chai, Dharma, Musuri, Current, Jhaki, Hoke, Burung* etc. Among these, some are used seasonally and some of them use year round. *Thela, Jhaki, Musuri, Chal* are used year round. All other gears are used in monsoon. At the peak dry season, dewatering is the means of fishing (Appendix-5). Following table shows the local names, common english names of the common gear used in the area;

Table 3: List of commonly used gears

Sl. No.	Local name	Common English name	Sl. No.	Local name	Common English name
1	Thela Jal	Scoop net	6	Jhaki Jal	Cast net
2	Chai	Trap	7	Borshi	Hook
3	Dharma Jal	Lift net	8	Ber Jal	Sein net
4	Musuri Jal	Fine mesh net	9	Koch	Harpoon
5	Current Jal	Gill net	10	Khathi Jal	Modified sein (Small)

5.4.3. Species

Villagers reported that some fish species are extinct and some are endangered during last 5/6 years. Over fishing and degradation of habitat is blamed. List of extinct and endangered species are given below:

Extinct: *Dhisha, Pabda, Shol, Gajar, Foli, Chela, Guji, Rani, Batia, Khoisha.*

Endangered: *Boal, Shing, Magur, Koi.*

6. Siltation

Last 10 to 15 years, most of the *beels* became seasonal. The average siltation in *beels* or floodplain area is 3-4 feet. Due to silt 3 *beels* namely *kailla Kuri* at *Kamaria* Union, *Jailka* at *Bajitkhila* Union, *Mandamari* at *Dhala* Union converted to crop fields.

All the canal beds are totally or partially raised due to siltation and created blockages and disrupted normal water flow.

The river *Chellakhali* silted up from *Balughat* to *Gollar beel* and the *Malijhee* River silted up from *Balughat* to *Piposhor*. *Darger khal* is partially dead. *Chua* and *Boleshwar* canals (which are at *Panjorbhanga* village, *Dhala*

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The river *Chellakhali* silted up from *Balughat* to *Gollar beel* and the *Malijhee* River silted up from *Balughat* to *Piposhor*. *Darger khal* is partially dead. *Chua* and *Boleshwar* canals (which are at *Panjorbhanga* village, *Dhala* & *Pakuria* union) are silting up rapidly. Whole canal system fails due to silt. The stream network is not fully functional, specially during dry season, resulting in water congestion.

7. Suggestions

As reported by the local people they are eager to conserve the natural resources. Their opinion is to increase fish production, stop different harmful gear and take an intervention to enhance water in canal year round (Table 4).

Table 4: Suggestions of the villagers for conservation of Natural Resources

Name of Upazila	Union/ Pourashava	Stop Fry fishing	Stop Current Jal	Stop Karcha /Musur (Ber) Jal	Stop De-watering	Establish Sanctuary	Stop bird Hunting	Tree Plantation	Re-excavation Beel/Khal	Stop Brood Fish catch	Control Fishing at early monsoon
Serpur	Pourashava	-	✓	✓	-	-	-	✓	-	✓	-
	Kamaria	✓	✓	✓	✓	-	-	-	✓	-	-
	Pakuria	✓	✓	✓	-	✓	✓	✓	✓	-	✓
	Bajitkhila	-	-	✓	-	-	-	✓	-	-	-
	Dhala	-	-	-	-	-	✓	✓	✓	-	-
	Gajirkhamar	-	✓	✓	-	✓	-	✓	-	-	-
Jhenaigati	Malijheekanda	✓	✓	✓	-	-	✓	✓	✓	-	-
	Hatibandha	✓	✓	✓	✓	✓	-	✓	✓	✓	✓
	Dhanshail	✓	✓	✓	✓	✓	-	✓	✓	✓	✓
	Jhenaigati	✓	✓	✓	✓	✓	-	✓	-	✓	✓
Nalitabari	Jogania	✓	-	✓	-	-	-	✓	-	-	-
	Kalashpar	-	✓	✓	-	-	✓	✓	✓	-	-
	Rajanagor	-	-	✓	-	-	-	✓	✓	-	-
	Bagber	✓	✓	✓	-	-	✓	✓	-	-	-
Nakla	Nokla(2)	-	-	✓	-	-	✓	✓	✓	-	-
	Ganapaddi	-	-	✓	-	-	✓	✓	✓	-	-

8. Local NGO and their Activities

In Malijhee-Kongsha Basin there are different NGOs working in the area. Fisher Shomobay Shamity have been formed in Pekua beel area (which manage the Pekua beel) and Dholi beel area (Appendix-6).

9. Alternative Income Generating Activities (AIGA)

People living in this basin mainly depend on agriculture (paddy) as their income source. Only 9% people live on fishing round the year and 30% live on fishing partly. There are adequate bamboo resources, so most of the peoples' focused to make baskets and to poultry for additional income (Table 5).

Table 5: Suggestions by the villagers for their alternative income generating activities

Name of Upazila	Name of Union / Pourashava	Farm (Cattle & Goat)	Poultry	Handicrafts	Nursery	Sewing	Tailoring	Plantation	Fish Culture /Manda Management	Money Landing Business	Service	Day Labour	Vegetation	Others
	Pourashava	✓	✓	-	-	-	-	-	-	-	-	-	-	-
	Kamaria	-	-	✓	-	✓	-	-	-	-	-	-	-	✓
Serpur	Pakuria	✓	✓	✓	✓	✓	-	✓	✓	-	-	-	✓	✓
	Bajitkhila	-	-	✓	-	-	-	-	-	-	-	-	-	-
	Dhala	-	-	-	-	✓	-	✓	✓	-	-	-	✓	-
	Gajirkhamar	✓	✓	-	-	✓	✓	-	-	✓	✓	-	-	-
Jhenaigati	Malijheekan da	✓	-	✓	✓	✓	✓	-	-	-	-	✓	-	-
	Hatibandha	✓	✓	-	-	-	-	-	-	-	-	-	✓	-
	Dhansail	✓	✓	-	-	✓	-	-	-	-	-	-	✓	-
	Jhenaigati	✓	✓	-	✓	✓	-	✓	-	-	-	-	✓	✓
	Jogania	✓	✓	-	-	✓	-	-	✓	-	✓	-	✓	✓
Nalitabari	Kalashpar	-	-	-	-	✓	-	-	-	-	-	-	✓	✓
	Rajanagor	✓	✓	-	✓	✓	✓	-	✓	-	-	-	-	-
	Bagber	✓	✓	✓	-	✓	-	-	-	-	-	-	-	-
Nakla	Nokla(2)	✓	-	-	✓	-	-	-	-	-	-	-	-	-
	Ganapaddi	-	-	-	-	✓	-	-	-	-	-	-	✓	-

Others: Bee, Road develop, Boiler house, Vegetable Trading, Money landing business, Day labour

10. Agriculture Practice in Beel

During the survey, it was reported that the paddy is the main crop in this basin. The area is suitable for two crops namely *Boro* and *Amon*. Local people cultivate *boro*. *Amon* can be transplanted on comparatively high land. Seedbed is also prepared on high lands. Only 2.33% *beels* are under *khairp-1*, 52.33% are under *kharip-2* crops, 98.84% are under *Boro* crops and 22.09% are under seed bed. People who have adjacent own cultivable land

can cultivate *khas* land of *beel* bed. In the dry season, surface and ground water can be used for irrigation of *boro* crops (Appendix-7).

11. Aquatic Vegetation and Wildlife

Reported by the local people, 15-20 years back there was abundance of Aquatic vegetation, wild animals, Birds, Snakes and Mollusks. Most of these types have been lost due to degradation of habitats, over harvesting and changing in overall environment. The people are eager to return these resources (Table 6).

Table 6: List of Aquatic Vegetation, Wildlife, Bird, Reptiles and Mollusk

Types	Name
Aquatic Vegetation	Futki, Water hyacinth, Paowta (Kasta), Water lily, Dhol Komli, Water arum, Water fruit, Lotus, Vat, Singra, Makna, Mama kala, Helencha, Komli, Bish Katal, etc.
Wild Life	Fox, Udh, Gui shap, Beji, Guil, Futka, Khtash, Nail
Bird	Pati Hash, Salik, Mas Ranga (King fisher), Hargila, Bali Hash, Pan Koiri, Sersaira, Dahuk, Kalim, Kora, Sarosh, Pecha, Kajali Raj Hash, Chandana, Meoa Pipi, Guju Holo, Makna, Moyna, Oak, Sundary, Horitel, Dhaneshawri
Reptiles	Darash, Maita, Gokhra, Dhura, Frog, Jok, Mascha, Crab
Mollusk	Samuk, Jhinuk

12. Trees

RRA findings reveal that most of the trees along the streams and *beels* have already been lost. Few trees both in species diversity and abundance survived (Table 7).

Table 7: Name of some different Existing and Disappeared Trees on the Banks of Canals and *Beel* Edges

Union/ <i>Pouroshabha</i>	Existing trees	Lost/Disappeared of trees
<i>Gajir Khamar</i>	<i>Bash jhar</i> , Banana, <i>Khatal</i> , Mango trees.	<i>Bash jhar</i> , Banana trees.
<i>Dhala</i>	<i>Dholkolmi</i> , <i>Korai</i> , Mango, <i>Khatal</i> , Banana, Coconut, <i>Bash jhar</i> , <i>Shemul</i> , <i>Zegar</i> Trees etc.	<i>Shewra</i> , <i>Gamari</i> , <i>Bot</i> , <i>Gamari</i> trees
<i>Malijheekanda</i>	<i>Khoshka</i> , <i>Jhap</i> , <i>Bish katali</i>	<i>Bot</i> , Mango, <i>Bish Katali</i> , <i>Jal kochu</i> , <i>Jam</i> , <i>Golpata</i> , <i>Soan</i> , <i>Jhoshka</i> , <i>Jhop</i> , <i>Beth</i> , <i>Boan</i>
<i>Hatbandha</i>	<i>Hijol</i> , <i>Shimul</i> , Mango, Bamboo	<i>Jam</i> , <i>Palut</i>
<i>Dhanshail</i>	-	-
<i>Jhenaigati</i>	<i>Bot</i>	<i>Shimul</i> , Mango, <i>Tetul</i> , <i>Shewra</i> , <i>Jam</i> , <i>Gab</i>
<i>Jogania</i>	-	<i>Shewra</i> , <i>Bot</i> , <i>Jhap</i> , <i>Pahari</i> & <i>Bideshi gash</i>
<i>Bagber</i>	-	<i>Jhap</i> , <i>Bot</i> tree, <i>Shewra</i> tree
<i>Kalashpar</i>	<i>Soan</i> , <i>Mandar</i> , <i>Kendar</i> , <i>Boan</i> , <i>Bish katal</i> , <i>Dhol kolmi</i> , <i>Zigar</i> , <i>Binna Shimul</i> , Bamboo, <i>Jhop</i> , <i>Joshka</i> , <i>Zegar</i> .	<i>Hizal</i> , <i>Bot</i> , <i>Kodom</i> , <i>Shewra</i> , <i>Saten</i> , <i>Shemul</i> , <i>Mandar</i> , <i>Kendar</i> , <i>Gegar</i> , Mango, <i>Jhop</i> , <i>Agra</i> , <i>Kochu</i> .
<i>Rajnagar</i>	<i>Boan</i> , <i>Soan</i> , <i>zegar</i> , <i>Bish katal</i>	<i>Bote</i> , <i>Jhope</i> , <i>Soan</i> , <i>Boan</i> , <i>Bishkatal</i> , <i>Goal pata</i> , <i>Tut gash</i> , <i>Shimul</i> , <i>Moyna</i> , <i>Borie</i>
<i>Nokla</i>	<i>Shewra</i> tree	<i>Shewra</i> tree, <i>Zegar</i>
<i>Ganapaddi</i>	<i>Jam</i> , Mango, <i>Khathal</i> , Coconut, <i>Gamari</i>	<i>Jam</i> tree, <i>Pit raj</i>

13. Problem Statement

Few years back, the *Kongsha-Malijhee* basin was a wonderful habitat for wetland biodiversities. However, due to some natural and manmade interruptions, this habitat is degrading day by day and the biological production and biodiversity are decreasing rapidly. People living in and around the project area facing several types of problems regarding natural resource conservation issues. These are as follows-

- Siltation
- Habitat degradation
- Water congestion
- Deforestation
- Loss of aquatic vegetation
- Loss of biological production and biodiversity

13.1. Siltation

Siltation is one of the major problems for this watershed. Due to siltation most of the low pockets (*beels*) have been silted up and degrading the habitat. Canals and riverbeds are raising gradually and losing their connections with other water bodies. However, the farmers are not so worried about this problem. Because, due to siltation lands are raising and the farmers are having more lands for agriculture.

13.2. Habitat Degradation

Due to siltation, deforestation, changing of land use practice and use of harmful gears in fishing wetland habitats are losing their quality. Consequently, production of fish, birds and wildlife species are decreasing. Birds, wildlife and fishes are losing their habitats and spawning grounds and species diversities are also decreasing.

13.3. Water Congestion

Encroachment of land, unplanned settlements and siltation are the causes water congestion. Lack of connectivity and siltation of the waterways is also responsible for water congestion. Water congestion mainly affects agriculture.

13.4/ Deforestation

Deforestation is one of the main causes of siltation. Due to this problem, the soil erosion increases and bird and wildlife species are losing habitats as well.

13.5/ Lose of Aquatic Vegetation

Due to siltation, land encroachment, changing of land use practices and uses of fine meshed nets aquatic vegetation are decreasing gradually. Fishes and other aquatic fauna are losing their shelters, habitats and spawning grounds.

13.6/ Lose of Biological Production and Biodiversity

The biological production has reduced substantially during last couple of decades. The connectivity has been disrupted due to siltation of the canals and rivers, resulting in loss of fish movement and recruitment of riverine species to the *beel*- floodplain complex. This phenomenon ultimately led to loss of biodiversity.

14. Potential Interventions

During RRA several discussions were done with the people regarding natural resource based issues and problems they are facing. Siltation of rivers, canals and *beels*; lose of connectivity and fish ways; loss of aquatic vegetation and wildlife biodiversity and reduction of biological production are the major problems as they mentioned. Intensive visit in the area, explore the watershed, effective discussion and sharing with stakeholders in the area and in order to reach the goals and objectives of the project, following activities/initiatives could be taken-

- Awareness generation, Resource Management group formation and capacity building
- Establish sanctuaries for fish and aquatic live forms at different scale
- Reestablish connectivity by desiltation
- Regeneration of Riparian vegetation
- Road side plantation

The watershed of the area covers four *Upazilas* of *Sherpur* district. All these four *Upazilas* comprise of number of rivers, canals and potential lower pockets with perennial *beels*. There are opportunities to take initiatives to minimize the problems and enhance the biological production. Awareness generation, resource management group formation and capacity building might be needed for all the four *Upazilas* within the project area. However, a brief description on possible interventions is discussed below (Table 8). The possible interventions has been shown on map in Appendix 11.

Table 8: Proposed Potential Interventions in the Project Area

Name of Upazila	Establish sanctuaries for fish and aquatic live forms at different scale	Reestablish connectivity by desiltation	Regeneration of Riparian vegetation	Road side plantation	Rationales:
<p>Jhenaigati Upazila:</p> <p>Jhenaigati Upazila is located in the northern part of proposed project site and in the upper catchment of the watershed. The main stream of the site, the Malijhee River system including all other streams that fed this system are in this Upazila and following south and southeast over the project area.</p>	<p>Establish sanctuary at Darabashia beel of Malijheekanda union implementing both Software (management interventions) and Hardware (physical interventions).</p> <p>Establish sanctuary at Dhali beel of Dhanshail union implementing both Software and Hardware (National sanctuary).</p> <p>Establish sanctuary at Gajarmari beel of Jhenaigati union implementing both Software and Hardware</p> <p>Establish sanctuary at Baila beel of Jhenaigati union implementing both Software and Hardware</p>	<p>Re-excavation of Dhali beel bed (2 hac)</p> <p>Re-excavation of Gajarmari beel bed (2 hac)</p> <p>Re-excavation of river from Bogadubi bridge to Tinanibazar (2 km)</p> <p>Re-excavation of Shomeshwari River from the entrance point of Bangladesh to Gajarmari beel (Total length of approximately 10 km. re-excavation of 5 km. sporadic would be workable).</p> <p>Re-excavation of Darabashia beel bed (1 acre)</p>	<p>Regeneration of riparian vegetation along Bogadubi canal.</p> <p>Regeneration of riparian vegetation along Malijhee River from Dhali beel to Paglarmukh (about 2 km).</p>	<p>CARE-IFFD constructed road from Bottali bus stand to Tinanibazar about 5 km road side plantation</p> <p>Tinanibazar to Surjanagar about 7 km plantation</p> <p>Other internal roads of the Upazila.</p>	<p>The area is being blessed with flows of several jharas, rivers and canals. There are number of perennial beels that creates a favourable condition for aquatic ecosystem. However, unwise use of natural resources, siltation and lack of awareness degraded this unique habitat is being degraded. Various types of fishes and many species of aquatic vegetation are almost extinct in this area. Through RRA it is revealed that the area enjoyed better environment and yielded more biological productivity and biodiversity in the past. It is possible to remove the constrains of the ecosystem and try to bring the system into natural harmony. Through restoration and enhancement of habitat.</p>
<p>Nalitabari Upazila:</p> <p>Nalitabari Upazila is located in the east side of Jhenaigati Upazila. Both upper and lower catchment of some important canals and river of the proposed project site flow over this Upazila. These are Chellakhali, Dharar khal, Nager khal, Dugdher khal etc.</p>	<p>Establish sanctuary at Khushki beel of Rajnagar union implementing both Software and Hardware</p> <p>Management of Nagshi khal Kur (Chuar beel to Nagshi village)</p> <p>Establish sanctuary at Surjanagar Kur implementing both Software and Hardware</p> <p>Establish sanctuary at Gaglajant Kur implementing both Software and Hardware</p> <p>Establish sanctuary at Chua beel implementing both Software and Hardware</p>	<p>Desiltation of Malijhee River from Gaglajant to Pipashar village (about 3 km)</p> <p>Desiltation of Chellakhali River from Golla beel to Balughata bazar (about 2 km)</p> <p>Desiltation of Khushki beel bed (about 1 acre)</p>	<p>Regeneration of riparian vegetation along the Chellakhali River</p>	<p>Nalitabari to Nakla road (about 14 km)</p> <p>Kapashia to Jaurarpar newly constructed road (about 2 km)</p> <p>Other internal roads of the Upazila</p>	<p>This area receives several canals and rivers. There are number of lower pockets with perennial beels, which are suitable habitat for various species of aquatic flora and fauna. However, people of this area mentioned about the problems of severe siltation by the Chellakhali River, reduction of biological production and loss of habitat. There are opportunities to minimize the problems and constrains through the initiatives mentioned above and would be the step towards sustainable management of natural resources of this area.</p>
<p>Nakla Upazila:</p>	<p>Establish sanctuary at Pekua beel of</p>	<p>Re-excavation of Boleshwar khal (about 3 km)</p>	<p>Regeneration of riparian</p>	<p>Pekua beel to Shibbari More</p>	<p>There are numbers of perennial beels in this Upazila. Pekua, and Bihari are important among</p>

Name of Upazilas	Establish sanctuaries for fish and aquatic live forms at different scale	Reestablish connectivity by desiltation	Regeneration of Riparian vegetation	Road side plantation	Rationales:
<p><i>Pekua beel</i>, one of the important and renowned <i>beels</i> of <i>Sherpur</i> district located in this <i>Upazila</i>. Besides this, there are some other lower pockets with perennial <i>beels</i> and flows of important canals and rivers are situated in this <i>Upazila</i>.</p>	<p>Ganapaddi union implementing only Software and bring into same management system like Aora Baora beel of Sherpur Pourashava Establish sanctuary at Bihari beel of Nakla union implementing both Software and Hardware Establishment of new sanctuary within the bed of Ghoramara River near Baraiter village</p>		<p>vegetation along the <i>Ghoramara</i> River Regeneration of riparian vegetation along the <i>Baleshwar</i> River</p>	<p>(about 2 km) <i>Baraitar</i> to <i>Baleshwar</i> along the newly constructed road (about 5 km) Other internal roads of the project area</p>	<p>them. During RRA people told about the degradation of natural habitat, reduction of fish production and biodiversities and loss of aquatic vegetation are the major problems. However, people are very much interested to take some initiatives to enhance the total biological production for sustainable management of natural resources of this area.</p>
<p><i>Sherpur Upazila</i>: <i>Sherpur sadar Upazila</i> is important for its position in the project area. There are number of <i>beels</i> in this area. Specially, there is an exceptionally managed Aora Baora <i>beel</i>. There are notable amounts of khas land in this <i>beel</i> but not leased. The people around the village mentioned that considering the dependence of the villagers the authority had taken the step.</p>	<p>Establish sanctuary at Durungi <i>beel</i> of Pakuria union implementing both Software and Hardware Establish sanctuary at Dhala <i>beel</i> of Dhala union implementing both Software and Hardware</p>	<p>Re-excavation of canal from Gawa to Durungi <i>beel</i> (about 4 km)</p>	<p>Regeneration of riparian vegetation along Mandakhali khal</p>	<p>Pochar Dokan to Shekherhati (about 10 km) Shimultali to Bot Toli (about 10 km) Other internal roads of the project area</p>	<p>Plenty of lower pockets with perennial <i>beels</i> and several important canals blessed this area. Reestablishment of connectivity among the lower pockets may enhance the biological production and biodiversity of the project area as discussed by the community. Even the local govt. is also interested to cooperate in this connection.</p>

List of Canals location and connectivity in Kongshaw-Malijhi Basin Site

Name of Canal	Location	Connectivities
1. Mandakhali	Tatalpur, Gunai Barua	Connects Aora Baora beel with Gawa beel
2. Kamaria	Kamaria	Connects Kamaria beel with floodplain
3. Chakhar	Chandernagar	Chakkar beel with Kuri beel
4. Katakhali	Tirsa, Bakerkanda	Kawta beel with Shialkhali khal
5. Pathor Guna	Tirsa	Durungi beel with Kawta
6. Neti	Bakerkanda	Durungi beel with Neti beel
7. Biri Khal	Badateghoria, Dhalakanda	Badi beel with Dhala beel
8. Beki	Taraghar Bekirpar	Beki beel with floodplain
9. Gobarjani Tilkandi	Pakuria	Rouha beel with Durungi beel
10. Bamunkandi	Bamunkandi	
11. Dorga	Tirsa	Kaitari beel with kawta beel
12. Lokai	East Kumri, Kharkhaira	Tilkuri beel with Buriar beel
13. Tilkuri	Kumri	Tilkuri beel with Jhailka beel
14. Buriar	Kharkhaira, Teghoria	Buriar beel with Rouha beel
15. Dorga	Kuruliakanda	Rouha beel with Malijhi River
16. Kharaghat	Gojaria (Khoraghat)	Nijla beel with Khailla beel
17. Shealkhali	Bakerkanda, Chandernagar	Dubthail beel with Chakkar beel
18. Ghoramara	Ghoramara	Bouli beel with Ghoramara River
19. Helur	Bairra Chhara	Baitra Chhara beel with Dubla beel
20. Bouli	Panjarbhanga	Dubla beel with Bouli beel
21. Bochar	Beharirpar, Baraitar	Bihari beel with Tekan beel
22. Gujumuri	Bakerkanda	Baker beel with floodplain
23. Singair	Dhalakanda, Kamaria	Dhala beel with Bouli beel through floodplain
24. Ghagra Marua	Hasligaon	Halia beel with Charalia beel
25. Hasli Khal	Hasligaon	Hasli beel with Halia beel
26. Darabashia	Hasligaon	Darabashia beel with Hasli beel
27. Gomgigang	Baniapara, Dargha	Takimari beel with Malijhi River
28. Shmbura	Batiagaon	Choto Hasli beel with floodplain
29. Dharar	Shannashi vita, Ranigaon	Shannashi vita floodplain with Ranigaon floodplain
30. Dugdhar	Nalitabari, Gollar	Bhuittar khal with Gollar beel
31. Chutakhali	Kapashia	Changtola beel with Malijhi River
32. Chotbila	Kapashia	Changtola beel with floodplain
33. Baitkamari	Donakusha	Dona beel with Kalagang
34. Hare Khali	Baitkamari	Dubthail beel with Malijhi River
35. Akkas Ali	Baitkamari	Dubthail beel with Malijhi River
36. Nowtana	Baitkamari	Hichatola beel with Ghoramara River through Damhari beel
37. Shingmari	Kalashpar	Khailla beel with Koya beel
38. Paikkha	Kalashpar	Malijhi River with Gaimari canal through Paikkha beel
39. Gaimara	Kalashpar	Gaimara canal with Chuar beel
40. Chua	Kalashpar	Gaimara canal with Chua khal
41. Nagshi	Nagshi, Kalashpar	Chua beel with Boalmari beel
42. Digdari	Nagshi	Houli-digdair beel with Boalmari beel
43. Ghoramara	Nagshi	Suarkuri beel with Ghoramara River through Boalmari beel
44. Shannashikuri	Baradubi	Shuarkuri beel with Khushki beel
45. Vangormajhi	Baradubi	Khushki beel with Malijhi River
46. Nager	Nunni, Panchgaon, Baradubi	Nunni floodplain with Malijhi River through Panchgaon Bridge

Name of Canal	Location	Connectivities
47. Baleshowr	Boroitar, Biharirpar, Khaura Moura	Takimari beel with Pakua beel through Tekan beel
48. Katkhula	Donakusha, Katkhola	Mora beel with Chepakuri beel
49. Dubithoil	Donakusha, Gunapara	Tekan beel with Baikamari beel between Dubihail & Dhola beel
50. Cehpakuri	Shatrakona, Dughulia	Chepakuri beel with Kalagang
51. Jhaouri	Biharirpar, Kharjan	Shinga beel with Jhaori beel
52. TeldingiGajaria	Gajaria	Pekua beel with floodplain
53. Subarnakhali	Nokla	Pekua beel with Kongshaw River
54. Baila Khal	Dori Kalinagor	Balila beel with floodplain
55. Katakhal /Malishi Khal	Paikra	Baila beel with Malishi River
56. Kakilakuri Khal	Dariarpar, Dori Kalinagor	Kaikla kuri with floodplain
57. Batpura Khal	Dariarpar, Dori Kalinagor	Kaikla kuri with floodplain
58. Dariear Khal	Dariarpar	Kaikla kuri with floodplain
59. Mala Jhara	Nokshi	Fall into Gajarmari beel through Shahati khal
60. Kalakusha Jhara	Nokshi	Fall into Gajarmari beel through Shahati khal
61. Shil Jhara	Bara Gojni	Meet with Kalakusha River through Mongala Jhara
62. Mongal Jhara	Chuta Gojni	Meet with Kalakusha River and ultimately fall into Dholi complex
63. Rangtia Jhara	Noya Rangtia, Barabachra, Chuta Rangtia, Bara Rangtia	Originates from Garo hills and join with Maharoshi river at bara Rangtia.
64. Shahati Jhara (Chapa Jhara)	Dephlai, Phulari, chapajhara	Malajhara with Gajari beel
65. Gojarmari Khal	Dharapar	Dholi beel with Gajarmari beel
66. Bogadubi Khal	Kalinagor	Dholi beel with Malijhi River
67. Pikorar Khal	Kalinagor, Kanduli	Shunaikuri beel with Dholi beel
68. Gurguri Khal	Kalinagor, Kanduli	Shunaikuri beel with Dholi beel
69. Kanduli Modhapara	Kanduli	Polashia beel with floodplain

BEEL FACT SHEET

Basic Information	
1. Name of <i>Beel</i>	Aoura Boura
2. Location of <i>Beel</i>	The <i>Beel</i> is located in Pourashava, <i>Sherpur Sadar Thana</i> , <i>Sherpur District</i> .
3. Areas (acre) Approximate total and khas areas	About 101 acre. in monsoon as reported by the local people. Khas area is only 14.14 acre
4. Connections with rivers or floodplains (canals and floodplains)	Two canals namely Mondakhali and Kamaria link the <i>Beel</i> with the river Vogai and Brahmmaputra.
5. Physical Status of <i>Beel</i> and duration of water retention	The <i>Beel</i> is Perennial. But it is increasingly silted up.
6. Reasons for <i>Beel</i> siltation	The monsoon rainwater fall into this <i>Beel</i> with silt (soil erosion is for rainfall) and garbage from Pourashava and adjacent village. Decomposed of aquatic vegetation/weed also to contribute increase the rate of siltation.
7. Rate of Siltation During last 10 years	1.5 feet
8. Management System Common access Leased or non-leased Control by land owner	Local people have Common access in the <i>Beel</i> . Non-leased Does not arise
9. If leased, leased value of leased	Does not arise
10. Lease period	Does not arise
11. Agriculture practices	Boro is the major crops. Aman is transplanted in high land. The high land also used Seedbed of Aman.
12. Water use in the dry season	In the dry season both surface and ground water used for irrigation of boro crops.
13. Who cultivate boro Lease or non-leasee	In the Khas area boro crop also cultivate by local people.
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	15-20 years ago aquatic vegetation such as Futki, water hyacinth, Paowta (kasta), water lily etc. was available.
15. The environmental problems	<i>Beel</i> bed raised, Some species of fish and aquatic vegetation have disappeared. Fish production decreased use of harmful gears inducing current jal and small mashed net is detrimental to fish production.
16. Existing Development project(s)	No
17. What are the solutions for the problems (local people's Suggestions)	Stop the use of harmful net and Protect brood fish. Re-excavation of <i>Beel</i> is needed.
Any other information: People Around of this <i>Beel</i> use it as a fishing ground and paddy cultivable land. They use of gears namely Thela, Chai, Dharma, Musurijal, CurrentJal, Jhaka etc. gear. Lost of fish species are Shol, Gajar, Pabda, Dhaisha/Veda, Foli etc. on participation by local people.	

Basic Information	
1. Name of <i>Beel</i>	Durungi
2. Location of <i>Beel</i>	Located in Pakuria Mouza, Union Pakuria, thana Sadar, Sherpur district
3. Areas (acre) Proximate total and <i>khas</i> areas	About 200 acre. in monsoon. However <i>khas</i> area is only 100 acre.
4. Connections with rivers or floodplains (canals and floodplains)	Gobarkandi Canal, link the <i>Beel</i> with the Rouha <i>Beel</i> and also it is adjacent with Koawta <i>Beel</i> and fall into the Brammahaputra river through kamaria Canal.
5. Physical status of <i>Beel</i> and duration of water retention.	The <i>Beel</i> is Seasonal. Water retained for a period of eight months June to February. <i>Beel</i> is completely dried up March.
6. Reasons for <i>Beel</i> siltation	The monsoon rainwater comes from up stream through different way (northern flood plain of it) and carryout hill soil and sand, water stand two to four month and hence <i>Beel</i> silted gradually. On the other hand soil erosion in monsoon and decomposed of aquatic vegetation of this <i>Beel</i> to contribute the increase of <i>Beel</i> siltation.
7. Rate of Siltation During last 10 years	One foot
8. Management System Common access Leased or non-leased Control by land owner	Local people have common access in the <i>Beel</i> . Non-leased Does not arise
9. If leased, leased value of leased	Does not arise
10. Lease period	Does not arise
11. Agriculture practices	Only boro can transplant in this <i>Beel</i> .
12. Water use in the dry season	In the dry season from surface and ground water for irrigation of boro crops.
13. Who cultivate boro Lease or non-leasee	Local people cultivate boro in their own land.
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	Before 15-20 years, aquatic Vegetation namely water hyacinth, Paowta (<i>kasta</i>), water lily, Aram, Dhol Kamli, Gaja, Kaichha etc. are available and even now.
15. The environmental problems	Aquatic vegetation and fish production gradually reduce for use small meshed net, Current Jal. <i>Beel</i> dried up gradually. Bird hunting also harmful for our Environment
16. Existing Development project(s)	No
17. What are the solutions for the problems (local people's Suggestions)	Stop the use of harmful net, to forbade fry fishing and hunting bird. Re-excavate silted <i>Beel</i> .
Other information: People Around of this <i>Beel</i> use it as a fishing ground and paddy cultivable land. They use Thela, Chai, Dharma, Musurijal, CurrentJal, Jhaka etc. gear. Lost of fish species are Shol, Gajar, Pabda, Dhaisha/Vada, Foli etc. on participant by local people.	

Basic Information	
1. Name of <i>Beel</i>	Darabashia
2. Location of <i>Beel</i>	Located in Haslibatia Mouza, Union Malijhikanda, Thana Jhenaigati of <i>Sherpur</i> District.
3. Areas (acre) Proximate total and khas areas	About 200 acre reported by local people. Has no khas area.
4. Connections with rivers or floodplains (canals and floodplains)	Darabashia Canal, link the <i>Beel</i> with the Hasli <i>Beel</i> and also it is adjacent with Gomgi Gang, which is connected with Malijhi river.
5. Physical status of <i>Beel</i> and duration of water retention.	The <i>Beel</i> is Seasonal. Water retained of ten months during the period from May to February. <i>Beel</i> is completely dried up in February (Late).
6. Reasons for <i>Beel</i> siltation	In monsoon water comes from up stream through different way (northern flood plain, connected canal of it) and carry out hill soil and sand, water stand two to four month and hence <i>Beel</i> silted gradually. On the other hand soil erosion in monsoon and rotting of aquatic vegetation of this <i>Beel</i> plays for siltation.
7. Rate of Siltation During last 10 years	One foot (App.)
8. Management System Common access Leased or non-leased Control by land owner	Local people have common access in the <i>Beel</i> . Non-leased Does not arise
9. If leased, leased value of leased	Does not arise
10. Lease period	Does not arise
11. Agriculture practices	Agriculture practices are Amman and Boro. Amman transplanted comparatively in high land.
12. Water use in the dry season	Water use in the dry season from <i>Beel</i> and shallow pump for irrigation of boro crops.
13. Who cultivate boro Lease or non-leasee	Local people cultivate boro in their own land.
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	<u>Aquatic Vegetation</u> : Water Aram, Futki, water hyacinth, Paowta (kasta), water lily, Dhol Komli etc. Now, have Water Aram and Dhol Kolmi.
15. The environmental problems	Loss of aquatic vegetation and some fish species for use small meshed nit, Current Jal. <i>Beel</i> and Khal silted gradually, so fish production is to be reduced.
16. Existing Development project(s)	No
17. What are the solutions for the problems (local people's Suggestions)	Stop those harmful net and immature fishing Re-excavate silted <i>Beel</i> and khal.
Other information: People Around of this <i>Beel</i> use it as a fishing ground and paddy cultivable land. They use Thela, Chai, Dhanna, Musurijal, CurrentJal, Jhaka etc. gear. Loss of fish species are Shol, Gajar, Pabda, Dhaisha/Vada, Foli etc. on participant by the local people.	

Basic Information	
1. Name of <i>Beel</i>	Khuski
2. Location of <i>Beel</i>	Located in Boradubi Mouza, Union Rajnagar, Thana Nalitabari of <i>Sherpur</i> District.
3. Areas (ha) Proximate total and khas areas	About 15 acre (202.43 acre. in monsoon) reported by local people. Has only 2 acre khas area.
4. Connections with rivers or floodplains (canals and floodplains)	Two Canals namely Vangor Majhi and Shannashi Khal, link with the malijhi river and Khailla <i>Beel</i> respectively. This <i>Beel</i> also connected with Nagor Khal through Vangor Majhi.
5. Physical status of <i>Beel</i> and duration of water retention.	The <i>Beel</i> is Seasonal. Water retained of eight months during the period from May to December. <i>Beel</i> is completely dried up December (Late).
6. Reasons for <i>Beel</i> siltation	In monsoon flood water comes from up stream through different way (northern flood plain, connected canal of it) carry out hill soil and sand, water stand two to four month and hence <i>Beel</i> silted gradually. On the other hand soil erosion in monsoon and rotting of aquatic vegetation of this <i>Beel</i> plays for siltation.
7. Rate of Siltation During last 10 years	
8. Management System Common access Leased or non-leased Control by land owner	Local people have common access in the <i>Beel</i> . Non-leased Does not arise
9. If leased, leased value of leased	Does not arise
10. Lease period	Does not arise
11. Agriculture practices	Agriculture practices are Amman and Boro. Amman transplanted comparatively in high land.
12. Water use in the dry season	Water use in the dry season from <i>Beel</i> and shallow pump for irrigation of boro crops.
13. Who cultivate boro Lease or non-leasee	Local people cultivate boro in their own land. In the khas area local people also cultivate boro crops.
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	Aquatic Vegetation: Water Aram, Futki, water hyacinth, Paowta (kasta), water lily, Dhol Komli etc.
15. The environmental problems	Loss of aquatic vegetation and some fish species for use small meshed nit, Current Jal. <i>Beel</i> and Khal silted gradually, so fish production is reduceing. Deforestation is another environmental problem.
16. Existing Development project(s)	No
17. What are the solutions for the problems (local people's Suggestions)	Stop those harmful net and immature fishing Re-excavate silted <i>Beel</i> and khal. Tree plantation is one of the
Any other information: People Around of this <i>Beel</i> use it as a fishing ground and paddy cultivable land. They use Thela, Chai, Dharma, Musurijal, Current Jal, Jhaka etc. gear. Loss of fish species are Shol, Gajar, Pabda, Dhaisha/Vada, Foli etc. on participant by the local people.	

Basic Information	
1. Name of <i>Beel</i>	Dholi <i>Beel</i>
2. Location of <i>Beel</i>	Village: North: South Dariarpar, South : Konagaon and Bailagaon, East: Kalinagar, West: Kanduli Mouza: Kalinagar and Dariarpar, Union: Jhenaigati and Dhanshail
3. Areas (acre) Approximate total and khas areas	Total area: 500 acre, Khas land: 20 acre
4. Connections with rivers or floodplains (canals and floodplains)	Gajarmari, Bogadubi, Paikrar khal and Gurguri canals are connected with this <i>Beel</i>
5. Physical Status of <i>Beel</i> and duration of water retention	Perennial. Water retained in 10 acre land round the year and the whole <i>Beel</i> retained water round the year 15 years ago.
6. Reasons for <i>Beel</i> siltation	Siltation by the Someshwari River
7. Rate of Siltation During last 10 years	About 5 feet
8. Management System Common access Leased or non-leased Control by land owner	Leased.
9. If leased, leased value of leased	Lease Value: Tk.28,000/=
10. Lease period	One year only
11. Agriculture practices	One crop (boro)
12. Water use in the dry season	Surface water irrigation to the vicinity of the deeper <i>Beel</i> . Other area use shallow tube well.
13. Who cultivate boro Lease or non-leasee	Cultivation both by owns and shares cropping (50-50 % cost and production sharing). Seed given by the land owner.
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	Jingra kata, Padma kata, Jhama, Pauta Shapla, Kachuri pana , Dhainna dama, , Bok, Gangani, Pankoiri, , Dahuk, Kura, Panishap, Udd, Shamuk, Jinuk.
15. The environmental problems	Scarcity of fish, Fish disease, Use of kheta jal
16. Existing Development project(s)	Govt. project: Primary School and construction of road; BRAC- School and Credit;
17. What are the solutions for the problems (local people's Suggestions)	Protect small fish harvesting, Stop use of kheta jal and re-excavation of <i>Beel</i> .
Other information: People Around of this <i>Beel</i> use it as a fishing ground as well as paddy land and others fishing ground. They use gears namely current jal, kheta jal, net jal, toura (Jhaki) jal, kachal jal, Baita, Thela jal, Diar etc. Soal, Gojar, Daishsha, Pabda, Sarputi Banspata etc. almost extinct.	

Basic Information	
1. Name of <i>Beel</i>	Biri <i>Beel</i> (Bihari <i>Beel</i>)
2. Location of <i>Beel</i>	Located in Ganopaddi Union, Nakla Thana, East-South corner of Biharipar village.
3. Area (App.)	32 ha. (All are khas land)
4. Connection with rivers or floodplains	Two canals named Baleshawr khal at east side and Bachar khal at west side connected with the <i>Beel</i> .
5. Physical status of <i>Beel</i> and duration of water retention	It is perennial <i>Beel</i> . Water depth in monsoon App. 18-20 ft and in dry season about 6 ft. But the <i>Beel</i> gradually silted up.
6. Reason for siltation	Rainwater fall in to this <i>Beel</i> with silt (soil eroded by rain fall at upper stream). Adjacent earthen road eroded in monsoon and the soil depositd in the <i>Beel</i> . Natives cut down earth for leveling the high lands due to extention of cultivation area, for this soil croded more and silted in the <i>Beel</i> .
7. Rate of siltation	1 ft.
8. Management system	A fishermen organization taking lease every year (leaded by Mr. Hzrat Ali)
9. If leased, lease value	Lease value Tk. 3000/,
10. Lease period	1 year
11. Agriculture practice	Boro planted in comparatively high land.
12. Water use in dry season	For irrigated Boro(Irri) crop mainly used underground water. A few area of land irrigated by <i>Beel</i> (surface) water by DON.(A local irrigation equipment)
13. Who cultivated boro lease or non lease	Adjacent land worrier's of higher edge of <i>Beel</i> extended their boro crop area with the social strength.
14. Status of wetland vegetation, forestry, wildlife, birds, reptiles and mollusks 15-20 years back	15-20 years ago aquatic vegetation such as. Futki, water hyacinth, paowta (Kasta), water lily, Dhol kalmi etc was available. Most of the aquatic vegetation disappeared now. Dhol kalmi become prominent. wildlife, birds, reptiles all are become rare. A small quantity of mollusks were found compare to back .
15. Environmental problem	Natural resources are declining. Aquatic vegetation lost in a lot. some fish species all ready extinct. Many of the rest are declining. Fish availability of the area reduced.
16. Existing development projects	Road (earthen) development work done by CARE Bangladesh in mid march- mid April' 2000.
17. What would be the suitable solution	Stop use of harmful fishing gear and immature fishing. Re excavate silted <i>Beel</i> and khal.
Other information: People Around of this <i>Beel</i> use it as a fishing ground and paddy cultivable land. They use of gears namely Thela, Chai, Dharma, Musurijal, CurrentJal, Jhaka etc. gear. Lost of fish species are Shol, Gajar, Pabda, Dhaisha/Veda, Foli etc. on participation by local people.	

Basic Information	
1. Name of <i>Beel</i>	Pekua
2. Location of <i>Beel</i>	The <i>Beel</i> is located in Ganapaddi Union, Nakla Thana, <i>Sherpur</i> District. It is very adjacent to Mymensingh- <i>Sherpur</i> Road.
3. Areas (ha) Approximate total and khas areas	The area of the <i>Beel</i> is about 1012 ha. in monsoon and 200 ha. in post monsoon as reported by the local people. Khas area is only 25.50 ha. (1 ha. = 2.47 acre) as reported in official document.
4. Connections with rivers or floodplains (canals and floodplains)	One Canal namely Baleshowar. It is connected with the Jhaori <i>Beel</i> through this Canal.
5. Physical Status of <i>Beel</i> and duration of water retention	The <i>Beel</i> is Perennial. But it is increasingly silted up.
6. Reasons for <i>Beel</i> siltation	The monsoon rainwater fall into this <i>Beel</i> with silt (soil erosion is for rainfall) and garbage adjacent village. In monsoon flood water comes from up stream through different way (northern flood plain, connected canal of it) and carry out hill soil and sand, water stand two to four month and hence <i>Beel</i> silted gradually. On the other hand soil erosion in monsoon and decomposed of aquatic vegetation/weed also to contribute increase the rate of siltation.
7. Rate of Siltation During last 10 years	
8. Management System Common access Leased or non-leased Control by land owner	Local people have Common access in the <i>Beel</i> . Non-leased Does not arise
9. If leased, leased value of leased	Does not arise
10. Lease period	Does not arise
11. Agriculture practices	Boro is the major crops. Aman is transplanted in high land.
12. Water use in the dry season	In the dry season both surface and ground water used for irrigation of boro crops.
13. Who cultivate boro Lease or non-leasee	Local people cultivate boro in their own land. In the Khas area boro crop also cultivate by local people.
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	15-20 years ago aquatic vegetation such as Futki, water hyacinth, Paowta (kasta), water lily, Dhol Kolmi etc. was available. Most of the aquatic vegetation have disappeared. Dhol Kolmi becomes prominent.
15. The environmental problems	<i>Beel</i> bed raised, Some species of fish and most of the item of quatic vegetation have disappeared. Fish production decreased use of harmful gears inducing current jal and small mashed net is detrimental to fish production. Fish production of also reduced due to <i>Beel</i> bed raised.
16. Existing Development project(s)	No
17. What are the solutions for the problems (local people's Suggestions)	Stop the use of harmful net and Protect brood fish. Re-excavation of <i>Beel</i> is needed.
Any other information: People Around of this <i>Beel</i> use it as a fishing ground and paddy cultivable land. They use of gears namely Thela, Chai, Dharma, Musurijal, CurrentJal, Jhaka etc. gear. Lost of fish species are Shol, Gajar, Pabda, Dhaisha/Veda, Foli etc. on participation by local people.	

Basic Information	
1. Name of <i>Beel</i>	Baila <i>Beel</i>
2. Location of <i>Beel</i>	Village: North and South:Dariarpar, Paikra, East:Dari Kalinagar and, West:Balia Chandi Mouza: Kali Nanar and Kalia Chandi, Union: Jhenaigati
3. Areas (ha) Approximate total and khas areas	Total area: 100 acre, Khas land : 20 acre
4. Connections with rivers or floodplains (canals and floodplains)	Baila khal and Katakhal khal
5. Physical Status of <i>Beel</i> and duration of water retention	Perennial
6. Reasons for <i>Beel</i> siltation	Not silted up
7. Rate of Siltation During last 10 years	Not silted
8. Management System Common access Leased or non-leased Control by land owner	Jhenaigati Motsha Shomobai Samity manage the <i>Beel</i> . Not accessible for others.
9. If leased, leased value of leased	Non response
10. Lease period	Present lease time: 1999-2001
11. Agriculture practices	One crop (boro)
12. Water use in the dry season	Surface water irrigation to the vicinity of the deeper <i>Beel</i> . Other area use shallow tube well. No embankment.
13. Who cultivate boro Lease or non-leasee	Cultivation both by owns and shares cropping (50-50 % cost and production sharing).
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	Khaira, Bok, Balihash, Pankoiri, Kingfisher, Dahuk Kura Dubalu, Guishap, Darash, Panishap, Singara.
15. The environmental problems	Scarcity of fish, lack of aquatic vegetation, use of current jal, Fine mesh net.
16. Existing Development project(s)	No govt. project; BRAC- School and Credit; GRAMEEN BANK-Credit; Jhenaigati Motsha Samiti
17. What are the solutions for the problems (local people's Suggestions)	Stop current jal, fine mesh net, stop new born fish destruction
Other information: People Around of this <i>Beel</i> use it as a fishing ground as well as paddy land. They use gears namely current jal, kheta jal, net jal, toura jal, kachal jal etc. Air, Pabda, Dhaisha/Veda, Sarputi, Guji, Chela etc. almost extinct.	

Basic Information	
1. Name of <i>Beel</i>	Gajarmari <i>Beel</i>
2. Location of <i>Beel</i>	Village: North:North Dariarpar, South : South Dariarpar, East: Kalinagar, West: Kanduli (Bagher Bhita) Mouza: Kalinagar, Union: Jhenaigati
3. Areas (ha) Approximate total and khas areas	Total area: 338.20 acre, Khas land : There are khas land in this <i>Beel</i> , but the volume is unknown.
4. Connections with rivers or floodplains (canals and floodplains)	River: Someshwari and Chapa Jora River flow through the <i>Beel</i>
5. Physical Status of <i>Beel</i> and duration of water retention	Seasonal. It was perennial 15-16years ago. Waterretaintion period: Baishakh to Magh
6. Reasons for <i>Beel</i> siltation	Siltation by the Someshwari River
7. Rate of Siltation During last 10 years	About 5 feet
8. Management System Common access Leased or non-leased Control by land owner	Leased. Leaseholder: Md Abul Hossain, Village: Dori Kalinagar, Samagra Jhenaigati Motsha Samity.
9. If leased, leased value of leased	Lease Value: Tk.28,000/=
10. Lease period	One year
11. Agriculture practices	One crop (boro)
12. Water use in the dry season	Surface water irrigation to the vicinity of the deeper <i>Beel</i> . Other area use shallow tube well.
13. Who cultivate boro Lease or non-leasee	Cultivation both by owns and shares cropping (50-50 % production sharing). All cost bears by the sharecropper
14. Status of <i>Beel</i> 15-20 years back Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	Khaira, Bok, Balihash, Pankoiri, Kingfisher, Dahuk Kura Dubalu, Guishap, Darash, Panishap, Gokhra sap, Singara, Shamuk, Jhinuk, Kalmi, Dam, Vat, Makna, Shaluk.
15. The environmental problems	Scarcity of fish, <i>Beel</i> siltated up, Canal silted up
16. Existing Development project(s)	No govt. project; BRAC- Sewing, School and Credit; GRAMEEN BANK-Credit; CARITAS: Credit; Bhai Bhai Grameen Samiti
17. What are the solutions for the problems (local people's Suggestions)	Re-excavation of River from Bogadubi Bridge to Tinanibazar. Re-excavation of <i>Beel</i>
Other information: People Around of this <i>Beel</i> use it as a fishing ground as well as paddy land. They use gears namely current jal, kheta jal, net jal, toura (Jhaki) jal, kachal jal, Bichon jal, Thela jal, Diar etc. Soal, Gojar, Daishsha etc. almost are extinct.	

List of 86 beels, Area, Physical Status and Connected Canal

Union/ Pourashava	Beel Name (Code)	Area (Acre)	Khas (Acre)	Water Retention	Connected Canals	Village around Beel
Sherpur						
Pourashava	Aoura Boura (01)	100	34.92	Perennial	Mondakhali, Kamaria	E- Tatalpur , W- Sonabarkanda ,N- Tatalpur , S- Tatalpur , Pakuria
Kamaria	Kamaria (02)	14	-	Seasonal	Kagarna, Chakhar	Arrounding Kamaria
Kamaria	Khaia (07)	4	-	Seasonal	Katakhali	E- Tarakandi, W- Baragharia, N- Katakhali Khal, S- Main Road.
Kamaria	Khaila Kuri (08)	Converted to cultivable land				
pakuria	Goawa (09)	150	-	Perennial	Mondakhali, Neti	Fakirpara, Badapara, Khamarpara, Sonarpara, Ramkhila, Gunaibarua.
pakuria	Badi (09.1)	60	-	Perennial	Birikhal	E- Badate Gharia, W-Chailankhila,N-Taraghar, S-Badha Ram Khila,
pakuria	Beki (10)	80	-	Seasonal	Beki	Taraghar, Panjorvanga, Bekirpar
pakuria	Rouha (11)	350	-	Seasonal	Gobarjani, Bamunkandi	Around Pakuria
pakuria	Duringi (12)	200	100	Seasonal	Gobarjani,Manda	E- Tisra Pashchim , W- Pakuria, N- Pakuria , S- Haowra Niz & Flood Plain Area.
pakuria	Neti (13)	35	Non response	Seasonal	Neti Khal	E- Tisra Pashchim , W- Pakuria ,N- Badate Ghonia, Bakerkanda, S- Tilkandi.
pakuria	Kaitari (14)	38	3	Seasonal	Dorga	E-Tirsha, W-Howra Niz,N-Moinari & Durungi Beel, S-Surjadee & SreeRampur,
pakuria	Moyhari (15)	40	Non response	Seasonal	Adjacent Kaitari Beel	E- Tirsha, W-Howra Niz,N-Pakuria, S-Nakla Sherpur Road,
pakuria	Kowta (16)	85	50	Seasonal	Katakhali	E-Tirsa, W-Tilkandi,N- Bakerkanda, S- Suryjadi,
Bajitkhila	Jailka (17)	Converted Cultivable land				
Bajitkhila	Tilkuri (17.1)	50	-	Seasonal	Lokai, Tilkuri	Kumri
Gajirkhamar	Buriar (18)	32	Non response	Seasonal	Lokai, Buriar	E-Buriar, W-Chak Kumri,N-Kharkhaira, S-Nayar Par,
Gajirkhamar	Rouha (19)	100	Non response	Perennial	Dorga Khal, Buriar	E- Kuruliakanda, W- Teghoria, Baniapara, N- Kuruliakanda, S- Kaowbechi
Gajirkhamar	Fulpaira(19.1)	100	Non response	Perennial	Adjacent Rougha Beel	E- Kuruliakanda, W- Kuruliakanda, N- Baniapara, S- Kaowbechi
Gajirkhamar	Nijala (26)	160	-	Seasonal	Kharaghat	Gajaria
Dhala	Kuri (03)	Non response	-	Seasonal	Chakhar, Bochar Khal	E- Medirpar, W- Kamaria, N- Chander Nagor, S- Piprikandi,
Dhala	Dubthoil (04)	30	Non response	Perennial	Shealkhali Khal	E- Kamaria, W- Bakerkanda,N-Koya, Bakerkanda, S- Purba Kamaria,
Dhala	Mandamari (05)	Converted Cultivable land				
Dhala	Chakhar (06)	25	Non response	Seasonal	Shealkhali Chakhar Khal	E- Piprikanda, W- Bakerkanda, N- Chander Nagor, S- Kamaria,
Dhala	Bouli (20)	90	90	Seasonal	Buchar, Goramara Khal	E- , W- ,N- , S-
Dhala	Baitrachara (21)	7	-	Seasonal	Helur Khal	E-Polo Vanga, W- Kuakanda,N- Panjorvanga, S- Baitrachara,

Union/ Pourashava	Beel Name (Code)	Area (Acre)	Khas (Acre)	Water Retention	Connected Canals	Village around Beel
Jogania	Matihata (38)	20	Non response	Seasonal	Has no Khal	E-Kapashia, W- Dugdha Khal, N- Kapasia, S- Kapashia,
Jogania	Gollar (38.1)	200	Non response	Seasonal	Challakhalil/ Dharar Khal	E-Vognara, W- Balughatal, N-Gollarpar, S- Gollar Southpara,
Jogania, Bagber	Kaia Kuri (39)	15	2	Perennial	Dugdhar Khal, Gollar beel	E- Sitpara, W- Kapasia, N- Kalinagar, S- Kapasia,
Jogania	Tilkuri (40)	100	-	Seasonal	Bitkamari Khal ?	E- Kandapara, W- Baitkamari, N- Jogania Purbapara, S- Baitkamari,
Jogania	Dobthoil (40.1)	200	100	Seasonal	Hare Khali & Dobthoil	E-Bathuarkanda, W- Gharkura, N- Baitkamari, S-Teken
Jogania	Hisatola (40.2)	200	Non response	Seasonal	Nowtana Khal and Adjacent with Dobthoil beel	E- Dhanakusa, W- Damhari beel, Ghuramara River, Boroitar, N- Kuttamara, S- Boroitar
Jogania	Damhari (40.3)	275	100	Seasonal	Nowtana Khal	E-Hisatola beel, Dhanakusa, W- Ghuramara River, Boroitar, N- Tarakandi, S- Nowtana canal, Teken beel.
Bagber	Kawakuri (39.1)	150	-	Perenni	Dugdhar Khal	E- Kalinagar (Kharkaira), W- Ranigaon, N- Choyanipara, S- Ranigaon ,
Kalashpar	Borbila (41)	50	30	Seasonal	Malijhi River	E- surya Nagar, W- surya Nagar, N- Gonaria para, S- Ghorakandi
Kalashpar	Khaila (42)	250	-	Seasonal	Kharaghat, Shing Mari	E- Kalaspar, W- ,N- Nama Golla, S- Main Road
Kalashpar	Paikha (43)	420	20	Seasonal	Paikha, Malijhi, Kalash Gang	E- Kalash Purbapara, W-Kalash Gang, N- Kalash Gang, S- Kalashpar,
Kalashpar	Kasti (44)	120	8	Seasonal	Gilmara, Chua	E- Gaglajani, W- Kalashpar, N-Surayja Nagor, S- Kalashpar,
Kalashpar	Keya (45)	240	15	Seasonal	Kalash Gang, Gaimara	E- Purba Kalashpar, W- Kalash Hatkhola, N- Kalashpar Safanipara, S- Kalashpar,
Kalashpar	Gollar (46)	300	50	Seasonal	Near Malijhi Canal	E- Nama Golla, W- Gollarpar, N- Golla, S- Nama Golla,
Kalashpar	Houli-digdari (47)	50	2	Perennial	Digdari, Nagshi Khal	E-Pipelashowr, W- South Nagshi, N- Uttar Nagshi, S- South Nagshi, Ghuramaramara, Boroitar.
Kalashpar	Barapukur (47.1)	40	Non response	Seasonal	Nagshi Khal	E- Nagshi, W- Nagshi Pipuleshowr, N-Balughata , S- Ghoramara (R) , Boroitar.
Kalashpar	Boalmari (47.2)	150	15	Seasonal	Digdari & Nagshi Khal	E- Ghuramara, W- South Nagshi, N- Nagshi Simul Nagar, S- Nagshi Takimari,
Kalashpar	Suar Kuri (47.3)	20	-	Seasonal	Ghuramara Khal	E- Nagshi, W- Nagshi, N- Nagshi, S- Nagshi
Kalashpar	Chua (48)			Seasonal	Chua, Nagshi	E- Chua, W- Nijala, N- Main Road, S- Nagshi
Rajanagor	Kuski (49)	15	2	Seasonal	Adjacent with Naraila beel & Yangar Malji Khal.	E-Baradubi, W-Baradubi, N- Baradubi, S- Vangormajhi Khal, Baradubi
Rajanagor	Khawilla (50)	500	6	Perennial	Shannashi Kuri Khal	E- Baradubi, W- Ichamaripara, N- Dohalia, S- Baradubi ,
Rajanagor	Naraila (51)	45	4	Seasonal	Adjacent with Kuski beel &	E- Baradubi, W- Baradubi, N- Baradubi, S- Baradubi,

RRA Findings

Kongshaw-Malijhi site, Sherpur

Union/ Pourashava	Beel Name (Code)	Area (Acre)	Khas (Acre)	Water Retention	Connected Canals	Village around Beel	
					<i>Yangar Mahji Khal.</i>		
<i>Rajanagor</i>	<i>Bockchrua (52)</i>	150	15	Seasonal	Adjacent with <i>Nager Khal</i>	<i>E- Chand Gaon, W- Rajnagar, N- Main Road, S- Baradubi,</i>	
<i>Rajnagar</i>	<i>Satkuri (52.1)</i>	60	5	Seasonal	<i>Shannashi Kuri Khal</i>	<i>E-Dohalia , W- Dohalia, N- Main Road, S- Baradubi,</i>	
					<i>Nokla</i>		
<i>Nakla (2)</i>	<i>Teken (53)</i>	100	40	Seasonal	Nowatana , Bareshwar	<i>E- Dakatiakanda, W- Biharipar, N- Nowtana River, Damhari, S- Dakatiakanda</i>	
<i>Nakla (2)</i>	<i>Mora (54)</i>	64	6	Seasonal	KatKhula Khal	<i>E- Dhanakusha, W-Dakallakanda, N- Dana beel, S-Dhanakusha (Kathkhola),</i>	
<i>Nakla (2)</i>	<i>Dana</i>	50	-	Seasonal	Dubthoil, Baitkamari Khal	<i>E- Dhanakusha (Danarpar), W- Doubthoil, N- Baitkamari, S- Dhanakusha,</i>	
<i>Nakla (2)</i>	<i>Chepakuri</i>	20	8	Seasonal	Chapakuri Khal	<i>E- Satrakona, Dugulia, W- Dakatia, Dhanakusha, N-Dhanakusha, S- Dakatiakanda,</i>	
<i>Ganapaddi</i>	<i>Jhaouri (55)</i>	100	2.49	Seasonal	Boleshwar Khal	<i>E- Biharipar, W- Kharjan, N- Madipar, Singa beel, S-</i>	
<i>Ganapaddi</i>	<i>Roshnai (56)</i>	50	9.54	Seasonal	Adjacent with Biri Beel.	<i>E- Bihari beel, Biharipar, W- Medi beel, Medirpar, N- Medirpar, S- Jhaouri</i>	
<i>Ganapaddi</i>	<i>Singa (57)</i>	15	12	Seasonal	Jhaouri Khal & Adjacent with Jhaouri Beel.	<i>E- Biharipar, W- Medirpar, N- Medirpar, S- Kharjan,</i>	
<i>Ganapaddi</i>	<i>Medi (57.1)</i>	50	7.79	Seasonal	Adjacent with Jhaouri Beel.	<i>E- Biharipar, W- Noyapar, N- Biharipar, S- Kharjan,</i>	
<i>Ganapaddi</i>	<i>Khaia (58)</i>	Converted Cultivable Land					
<i>Ganapaddi</i>	<i>Pekua (59)</i>	960	90.73	Perennial	Teldingi Gajaria, Bareshwar, SubarnaKhali	<i>E- Feowra, Maowra, W- Chakkakanda, Ganapaddi N- Bangajaira, S- Jalalpur, Ganapaddi.</i>	
<i>Ganapaddi</i>	<i>Biri/Bihari River(60)</i>	80	6.71	Perennial	Bochar & Boleshwar Khal	<i>E-Biharipar, W- Noyapara, N- Biharipar, S- Medirpar,</i>	
<i>Ganapaddi</i>	<i>Takimari (60.1)</i>	35	15	Seasonal	Bochar Khal & Ghuramara River	<i>E- Ghuramara River, Hisatola beel, W- Boroitar, N-Damhari beel, S- Beki Beel, Biharipar</i>	
<i>Ganapaddi</i>	<i>Beki (60.2)</i>	100	20	Seasonal	Boleshwar Khal & Ghuramara River	<i>E- Ghuramara River, Hisatola beel , W-Boroitar, N- Takimari beel, S- Biharipar,</i>	
Total		9,470	991.18				

No. of HHs and their distributions on the basis of fishers by 61 villages.

Name of Beel	Name of Village	Total No. of HHs.	Fisherman Types (No. of HHs)		
			Full Time	Part Time	Subsistence
<i>Shepur</i>					
<i>Aoura Boura</i>	<i>Purba Tatalpur</i>	800	-	30	750
<i>Kamaria</i>	<i>Gop Kamaria</i>	160	2	25	10
<i>Khaia</i>	<i>Baragoria Natunpara</i>	142	5		20
<i>Khaila Kuri</i>	Converted to Cultivable land.				
<i>Goawa</i>	<i>Fakirpara</i>	500	7	8	460
<i>Badi</i>	<i>Badate Gorla</i>	800	150	100	400
<i>Beki</i>	<i>Taraghar Bekipar</i>	200	5	22	165
<i>Rouha</i>	<i>Khamarpara</i>	1000	250	300	450
<i>Duringi</i>	<i>Pakuria purbapara</i>	250	3	50	195
<i>Neti</i>	<i>Bakerkanda (p)</i>	175	-	80	95
<i>Kaitari, Moynari</i>	<i>Howra Niz</i>	200	100	50	50
<i>Kawla, Gajaria</i>	<i>Tirsa</i>	420	65	320	10
<i>Jailka</i>	Converted to Cultivable land.				
<i>Tilkuri</i>	<i>East Kumri</i>	150	-	80	65
<i>Buriar</i>	<i>Korkharia</i>	500	-	20	250
<i>Rouha, Fulpaira</i>	<i>Kurulia</i>	200	10	100	40
<i>Nijala</i>	<i>Gajaria</i>	400	15	40	330
<i>Dubthoil, Baka</i>	<i>Bakerkanda Purbapara</i>	154	15	50	74
<i>Mandamari</i>	Converted to Cultivable land.				
<i>Chakhar, Kuri, Bouli, Biri/Bihari</i>	<i>Chandernagor</i>	500	100	80	320
<i>Baitrachara</i>	<i>Baittachara</i>	350	-	200	140
<i>Dubla, Sainga</i>	<i>Panjorvanga</i>	265	-	100	115
<i>Dhala</i>	<i>Dhala Kanda</i>	146	20	100	20
<i>Jhenaigati</i>					
<i>Halia</i>	<i>Malijhikanda Tinanipara</i>	160	20	30	65
<i>Hasli</i>	<i>Hasli gaon Madhapara</i>	160	20	30	70
<i>Darabashia</i>	<i>Hasli Gaon Southpara</i>	150	10	25	100
<i>Berbon</i>	<i>Hasli Gaon Westpara</i>	220	22	30	100
<i>Charalia</i>	<i>Hasli Gaon North Para</i>	150	10	20	100
<i>Ververi</i>	<i>Jolgaon Puschimpara</i>	425	25	150	200
<i>Takmari</i>	<i>Baniapara</i>	200	-	80	100
<i>Chutahasli</i>	<i>Batiagaon</i>	600	30	150	390
<i>Kaina</i>	<i>Beltoli Pashchimpara</i>	125	-	70	55

Name of Beel	Name of Village	Total No. of HHs.	Fisherman Types (No. of HHs)		
			Full Time	Part Time	Subsistence
<i>Dholi</i>	<i>Dashkin Dorarpar</i>	202	22	50	127
<i>Shonaikuri</i>	<i>Kanduli Dashkinpara</i>	120	7	30	87
<i>Polashia</i>	<i>Kanduli Madhapara</i>	600	100	100	390
<i>Baila, Kakilakuri, Noari</i>	<i>Dri Kalinogar</i>	230	20	160	30
<i>Seattor Kuri</i>	<i>Kalinagar Balurchar</i>	350	-	50	290
<i>Gojarmari</i>	<i>Sharai Kalinagar</i>	82	20	10	42
Nalitabari					
<i>Changtolal</i>	<i>Kapashia Purbapura</i>	200	20	25	150
<i>Chutbila, Matihata</i>	<i>Kapasia Uttarpara</i>	200	30	80	70
<i>Gollar</i>	<i>Bara Gollarpar</i>	150	8	30	92
<i>Kaia Kuri</i>	<i>Kaowaisha</i>	500	100	150	20
<i>Tilkuri</i>	<i>Jogania</i>	180	30	70	50
<i>Dobthoil, Dammari</i>	<i>West Baitkamari</i>	150	-	30	100
<i>Hisatola</i>	<i>West Dhonakusha</i>	750	-	550	200
<i>Kawakuri</i>	<i>South Ranigaon</i>	450	110	110	120
<i>Paikha, K hailla</i>	<i>West Kalash Hatkhola</i>	850	15	150	650
<i>Kasti</i>	<i>Kalash Satanipara</i>	700	15	230	450
<i>Keya</i>	<i>East Kalashpar</i>	700	20	210	420
<i>Gollar</i>	<i>Gollarpar</i>	1000	30	350	550
<i>Houli-digdari, Borbila, Barapukur, Boalmari, Suar Kuri, Chua</i>	<i>Nagshi</i>	4000	500	1000	2000
<i>Kuski, Naraila</i>	<i>Baradubi</i>	500	10	50	400
<i>Khawilla, Satkuri</i>	<i>Dohalia</i>	1000	25	200	450
<i>Bockchrua</i>	<i>Rajnagar</i>	1000	-	400	600
Nokla					
<i>Teken, ChepaKuri</i>	<i>Dakatiakanla</i>	1000	100	65	500
<i>Mora</i>	<i>Dhnakusha W. Gunapara</i>	750	-	550	200
<i>Dana</i>	<i>Dhanakusha Westpara</i>	150	12	45	100
<i>Jhaouri, Roshnai</i>	<i>Adampur</i>	400	-	10	350
<i>Singa</i>	<i>Kharjan</i>	500	-	300	190
<i>Medi</i>	<i>Medirpar</i>	300	-	200	90
<i>Khaia</i>	<i>Gajaria Tengerpur</i>	700	100	300	200
<i>Pekua</i>	<i>West Jalalpur</i>	450	200	150	100
<i>Biri/Bihari Beel</i>	<i>Biharirpar</i>	300	6	180	100
<i>Takimari, Beki</i>	<i>Boruitor</i>	450	50	300	100
Total		28,416	2,434	8,475	14,257

Information about Fishing ground, gear use of Villagers & loss of fish species

Name of Union	Fishing Ground	Uses Gear	Loss of Species
Pourashava	Beel : Aoura Boura Bill	Thela jal, Chai/Borong, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali
Kamaria	Beel : Kamaria, Gajaria, Baka, Kaowta, Pekua Kaiari, Moynari, Neti, durungi Rouha. Khal : kamaria, Katakhal, Shealkhal, Gaborjani Tilkandi, Dorga Tarakandi	Thela jal, Chai, Borshi Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha/Meni, Fali, Vangra, Chital, Khalisha,
Pakuria	Beel : Goawa, Beki, Rouha, Durungi, Neti, Kaitari, Moynari, Dhala, Singa, Badi, Kawta, Baka, Gajaria. Khal : Manda, Kamaria, Biri, Neti, Beki, Boleshowr, katakhal, Shealkhal, Gaborjani Tilkandi, Dorga .	Thela jal, Chai, Borshi Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal, Koch, Hatani	Shol, Gajar, Pabda/Pabu, Dhaisha/Meni, Fali, Chela
Bajitkhila	Beel : Burier, Rouha, Fulpaira, Tilkuri Khal : Lokai, Tilkuri, Dorga River: Malijhi	Thela jal, Chai, Borshi Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha/Meni, Feli
Dhala	Beel : Kuri, dubthoil, Mandamari, Chakhar, Pekua, Neti, Durungi, Kaowta, Singa, Baka, Gajaria. Bouli, Bailrachara, Dubla, Biri Canal: Chakhar, buchor, Shealkhal, Katakhal, Ghoramara, Helur, Bouli, Gujumuri, Singair.	Thela jal, Chai, Pain, Kai, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali, Vangra
Gajirkhamar	Beel : Nijala, Chua, Khailla, Kea, kasti, Paikha, Rouha, Fulpaira, Tilkuri Canal: Dorga, Chua, Baleshowr, Paikkha River: Malijhi, Kalash Gang, Kharaghat	Thela jal, Chai, Dhrama/chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali, Boal, Koi, Kalibous, Shing, Magur
Malijhikanda	Beel : Halia, Hasli, Darabashia, Berbon, Charalia, Ververi, Takmani, Chutahasi, Rouha, Fulpaira, Satkuri, Bochchura, Kuski, Naraila. Canal : Dhahaia. Ghagra Maria, Hasti, Darabasia, Katakhal, Gomfi Gang, Shambura. River : Malijhi	Thela jal, Chai, Kathi, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal, Koch, Borshi, Bana, Pollo, Puti jal, Pentii.	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali, Bataia, Goisha, Kalibous
Jogania	Beel : Changlotal, Tirkuri, Chutbila, Matihata, Gollar, Kaiakuri, Doubthoil, Hisatola, Dammani, Mora, Dona, Haoli Digdari, Boalmari, Barapulur, Teken. Canal: Chutakhal, Chutabila, Dugdhar, Dobthoil, Harekhal, Baitkamari, Nowtana, Akkaskhal, Nagshi, Bilkamari. River : Malijhi, Ghuramara.	Thela jal, Chai, Dhrama /Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal, Bana, Hatani	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali
Kalashpar	Beel : Khailla, Paikha, Kasti, Keya, Chua, Nijala, Borbilla, Gollar, Howli Digdari, Barapukur, Boalmari, Suarkuni, Kuski, Naraila, Bouli, Baitachara, Biri, Dubla. Canal: Chua, Kharaghat, Singmani, Paikkha, Gaimara, Ghuramara, Nagshi, Digdari, Dugdhar, Nager. River: Malijhi, Ghuramara, Chellakhal, Kalash Gang.	Thela jal, Chai, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal, Mol	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali
Rajanagor	Beel : Kuski Bill, Kaila, Naraila, Bockchura, Bugli, Satkuri, Gollar Khal : Nagar, Sannash Kuri River : Malijhi, Kalash Gang.	Thela jal, Chai, Bana, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali, Chital, Khalisha, Sharputi, Bataia, kalibous, Gulsha
Bagber	Beel: Kawakuri Canal: Dugdhar River: Malijhi	Thela jal, Chai, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali
Nokla(2)	Beel : Teken, Jhouni, Baleshor, Biri, Roshnaikuri, Pekua, Chepakuri, Takimari, Beki, Dona, Mora, Dammani, Hisatola, Dobthoil Canal: Boleshowr, Chepakuri, Baitkamari, Kalkhola, Dobthoil, Nowtana. River: Gkhuramara, Malijhi	Thela jal, Chai, Bana, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal, Borshi	Shol, Gajar, Pabda/Pabu, Dhaisha, Koi, Guja
Ganapaddi	Beel : Jhaour, Biri, Roshnaikuri, Singa Teken, Baleshor, Pekua, Chepakuri, Takimari, Beki, Khaia. Canal: Boleshowr, Nowtana, Jhaori, Teldingi Gajaria, Subamakhali, Bochar khal. River: Ghuramara	Thela jal, Chai, Dhrama/Chip jal, Musuri /Karcha/Ber jal, Current jal, Jhakijal	Shol, Gajar, Pabda/Pabu, Dhaisha, Fali

Note: In each union local people also use floodplain area as a fishing ground in monsoon.

Name of N.G.O. and their Activities in 61 Villages

Name of Village	BRAC				Gramme n Bank	Asha	Proshika	Others	
	Credit	School	Tree	Others	Credit	Credit	Credit	Credit	Others
Purba Tatalpurss	-	-	-	-	-	-	-	-	-
Gop Kamaria	-	-	-	-	✓	✓	-	✓	-
Baragoria Natunparass	-	-	-	-	-	-	-	-	-
Fakirpara	✓	✓	-	-	✓	-	-	-	-
Badate Gorla	✓	✓	-	✓	✓	✓	-	-	-
Taraghar bekipar	-	✓	-	-	✓	-	-	-	-
Khamarpara	-	✓	-	-	-	-	-	-	-
Pakuria purbapara	✓	✓	-	-	-	✓	-	-	-
Bakerkanda (P)	-	✓	-	-	✓	-	-	-	-
Howra Niz	✓	✓	✓	-	✓	✓	-	-	-
Tirsa	-	✓	-	-	✓	✓	-	✓	✓
East Kumri	✓	✓	-	-	✓	-	-	-	-
Korkharia	✓	✓	-	-	✓	-	-	-	-
Kurulia	-	-	-	-	-	-	-	-	-
Gajaria	✓	✓	-	✓	-	-	-	-	-
Chandernagar	✓	✓	-	-	✓	✓	-	-	-
Bakerkanda Purbapara	-	✓	-	-	-	-	-	-	-
Baittachara	✓	✓	-	✓	-	-	-	-	-
Panjorvanga	✓	-	-	-	-	-	-	-	-
Dhala Kanda	✓	✓	-	-	-	✓	-	✓	-
Malijhikanda Tinanipara	-	✓	-	✓	-	-	-	✓	-
Hasli gaon Madhapara	✓	✓	-	✓	✓	✓	-	✓	-
Hasli Gaon Southpara	✓	✓	-	✓	✓	✓	-	✓	-
Hasli Gaon westpara	✓	✓	-	✓	✓	✓	-	✓	-
Hasli Gaon North Para	✓	✓	-	✓	✓	✓	-	✓	-
Jolgaon Puschimpara	✓	✓	-	✓	✓	✓	-	✓	-
Baniapara	✓	✓	✓	✓	-	-	-	-	-
Baliagaon	✓	✓	✓	✓	✓	✓	-	✓	-
Dashkin Doriarpar	✓	✓	-	-	-	-	-	-	-
Kanduli Dashkinpara	✓	✓	-	-	-	-	-	-	-
Kanduli Madhapara	✓	✓	-	-	-	-	-	-	-
Dori Kalinogar	✓	✓	-	-	-	✓	-	-	✓
Kalinagar Balurchar	✓	✓	-	✓	✓	-	-	-	✓

Name of Village	BRAC				Gramme n Bank	Asha	Proshika	Others	
	Credit	School	Tree	Others	Credit	Credit	Credit	Credit	Others
Sharai Kalinagor	✓	✓	-	✓	✓	-	-	-	✓
Beltoli Pashchimpara	✓	✓	-	-	✓	-	-	-	-
Kapashia Purbaara	✓	-	-	-	-	✓	-	-	-
Kapasia Uttarpara	✓	✓	-	-	-	-	-	✓	-
Bara Gollarpar	-	-	-	-	✓	-	✓	-	-
Kaowaisha	-	-	-	-	-	-	-	-	-
Jogania	-	-	-	-	-	-	-	-	-
West Baitkamari	✓	-	-	-	-	-	-	-	-
West Dhonakusha	-	-	-	-	-	-	-	-	-
South Ranigaon	-	-	-	-	-	-	-	-	-
West Kalash Hatkhola	✓	-	-	-	-	-	-	-	-
Kalash Satanipara	✓	-	-	-	-	-	-	✓	-
East Kalashpar	✓	-	-	-	-	-	-	✓	-
Gollarpar	✓	-	-	-	-	-	✓	✓	-
Nagshi	✓	✓	-	-	-	-	✓	✓	-
Baradubi	✓	✓	✓	✓	-	✓	✓	✓	✓
Dohalia	✓	✓	✓	✓	✓	✓	-	✓	✓
Rajnagor	✓	-	-	-	-	-	-	-	-
Dakatiakanda	✓	✓	-	-	-	-	-	-	-
Dhnakusha West Gunapara	✓	-	✓	-	-	-	-	-	-
Dhanakusha Westpara	-	-	-	-	-	-	-	-	-
Adampur	✓	-	-	-	✓	✓	-	-	-
Kharjan	✓	✓	-	-	✓	-	-	✓	-
Medirpar	✓	✓	-	-	-	✓	-	✓	-
Gajaria Tengerpur	✓	-	-	-	-	-	-	-	-
West Jalalpur	✓	✓	✓	-	✓	✓	-	✓	-
Bihripar	✓	✓	-	✓	-	-	-	✓	-
Boruitar	-	-	-	-	-	-	-	-	-

Other-s (NGO) : 1. Shishu Kallan 2. PSB 3. Shachha 4. SDS 5. Unnayan Songgha 6. Shownirvor, 7. Unay Sangstha 8. Saias, 10. PDS 11. Srinkhala 12. MPDS 13. Gajirkhamar Samiti 14. SSDS 15. Sisu Samity 16. Polli Bondhu 17. BDS 18. Islami Foundation 19. BRDB 20. Agro marketing 21. Srijon 22. CARE

Others (Activities) : 1. Poultry 2. Group Making (No Credit) 3. Cottage Industry 4. RDP 5. Primary Health Care 6. Pond Lease 7. Agriculture

Different Environmental Problem Faced by the Villagers In MACH-Sherpur Site

Name of Union	Environmental Problem Faced
<i>Pourashava</i>	Beel bed raised, Deforestation, Lost of aquatic vegetation, Fish production reduced, Lost of fish species, bird, wild animal.
<i>Kamaria</i>	Beel bed raised, Lost of aquatic vegetation, Fish production reduced, Lost of several fish, bird, wild animal species.
<i>Pakuria</i>	Lost of aquatic vegetation, Fish production reduced, Lost of several fish, bird, wild animal species, Beel bed raised, Disease of fish, Inadequate trees, Population explosion, Perennial beel converted to seasonal.
<i>Bajit Khila</i>	Canal blockage, Beel bed raised, deforestation, Lost of aquatic vegetation, Fish production reduced, Lost of fish species, bird.
<i>Gajirkhamar</i>	Single crop land, Flash flood area, Water logged due to inadequate canal, Deforestation, Lost of aquatic vegetation, Fish production reduced, Lost of fish species, bird, Local embankment on dorga canal, Canal blockage.
<i>Dhala</i>	Canal blockage; Beel bed raised; Deforestation; Lost of aquatic vegetation; Fish production reduced; Lost of fish species, bird; Fish disease; Rotten of beel water, Use of anti insecticide, Inadequate of bird habitat.
<i>Malijhikanda</i>	Lost of aquatic vegetation, Fish production reduced, Lost of several fish, bird, wild animal species, Beel bed raised, Disease of fish, Inadequate trees, Perennial beel converted to seasonal. Partially single cropped area; Aman paddy damaged due to regular flood; In down stream beel bed and cultivable land raised. Population explosion.
<i>Jogania</i>	Lost of aquatic vegetation, Fish production reduced, Lost of several fish, bird, wild animal species, Beel bed raised, Disease of fish, Inadequate trees, Perennial beel converted to seasonal; Erosion, Most of the Canal is going to be dried.
<i>Bagber</i>	Lost of aquatic vegetation, Fish production reduced, Lost of several fish, bird, wild animal species, Beel bed raised, Disease of fish, Inadequate trees.
<i>Kalashpar</i>	Beel bed raised, Deforestation, Lost of aquatic vegetation, Fish production reduced, Lost of fish species, bird, wild animal; Aman paddy and Alignment damaged due to regular flood, Canal blockage strongly.
<i>Rajnagar</i>	Canal blockage, Beel bed raised, Deforestation, Lost of aquatic vegetation, Fish production reduced, Lost of fish species, bird.
<i>Nokla(2)</i>	Fish production reduced, Lost of several fish, bird, wild animal species, Beel bed raised, Disease of fish, Inadequate trees, Perennial beel converted to seasonal. Lost of aquatic vegetation,
<i>Ganapaddi</i>	Perennial beel converted to seasonal; Fish production reduced, Lost of several fish, bird, wild animal species, Beel bed raised, Disease of fish , Inadequate trees, Lost of aquatic vegetation,

MACH – Sherpur Site

List of 86 Beels and Crop Practice within the project area

Name of Beel (Code)	Crops			
	Kharip-1	Kharip-2	Boya	Seed bed
Aoura Boura (01)	-	✓	✓	✓
Kamaria (02)	-	-	✓	-
Khaia (07)	-	-	✓	-
Khaila Kuri (08)	-	✓	✓	✓
Goawa (09)	-	✓	✓	-
Badi (09.1)	-	✓	-	-
Beki (10)	-	✓	✓	-
Rouha (11)	-	✓	✓	-
Duringi (12)	-	-	✓	-
Neti (13)	-	-	✓	-
kaitari (14)	-	✓	✓	-
Moynari (15)	-	✓	✓	-
Kowta (16)	-	-	✓	-
Jailka (17)	-	✓	✓	-
Tilkuri (17.1)	-	✓	✓	-
Buriar (18)	-	-	✓	-
Rouha(19)	-	-	✓	-
Fulpaira(19.1)	-	-	✓	-
Nijala (26)	-	✓	✓	-
Kuri (03)	-	-	✓	-
Dubthoil (04)	✓	✓	✓	✓
Mandamari (05)	✓	✓	✓	✓
Chakhar (06)	-	✓	✓	-
Bouli (20)	-	✓	✓	-
Bairachara (21)	-	✓	✓	-
Dubla (22)	-	✓	✓	-
Biri/Bihari (23)	-	✓	✓	-
Baka (24)	-	✓	✓	-
Gajaria (25)	-	-	✓	-
Dhala (25.1)	-	-	✓	-
Sainga (25.2)	-	-	✓	-
Halia (27)	-	✓	✓	-
Hasli (28)	-	✓	✓	-
Darabashia (29)	-	✓	✓	-
Berbon (30)	-	✓	✓	-
Charalia (31)	-	✓	✓	-
Ververi (32)	-	✓	✓	-
Takmari (33)	-	✓	✓	-
Chutahasli (35)	-	✓	✓	-
Kaina (35.1)	-	-	✓	✓
Dholi (35.2)	-	-	✓	✓
Shonaikuri (35.3)	-	-	✓	✓

ERA Findings

Kongchow-Mahiji site, Sherpur

Management of Aquatic Ecosystem through Community Husbandry (MACH) CNRS

Number/Bech(Code)	Source	Source	Year	Species
Polashia (35.4)	-	-	✓	✓
Baila (35.5)	-	-	✓	✓
Kakilakuri (35.6)	-	-	✓	✓
Noari (35.7)	-	-	✓	✓
Seattor Kuri (35.8)	-	-	✓	✓
Gojarmari (35.9)	-	-	✓	✓
Changtolal (36)	-	✓	✓	-
Chutbila (37)	-	✓	✓	-
Matihata (38)	-	✓	✓	-
Gollar (38.1)	-	✓	✓	✓
Kaia Kuri (39)	-	✓	✓	-
Tilkuri (40)	-	✓	✓	-
Dobthoil (40.1)	-	-	✓	✓
Hisatola(40.2)	-	-	✓	✓
Dammari (40.3)	-	-	✓	✓
Kawakuri (39.1)	-	✓	✓	-
Borbila (41)	-	✓	✓	✓
khaila (42)	-	-	✓	-
Paikha (43)	-	✓	✓	-
Kasti (44)	-	✓	✓	-
Keya (45)	-	✓	✓	-
Gollar (46)	-	✓	✓	-
Houli-digdari (47)	-	-	✓	-
Barapukur (47.1)	-	-	✓	-
Boalmari (47.2)	-	-	✓	-
Suar Kuri (47.3)	-	-	✓	-
Chua (48)	-	✓	✓	-
Kuski (49)	-	✓	✓	-
khawilla (50)	-	-	✓	-
Naraila (51)	-	-	✓	-
Bockchrua (52)	-	✓	✓	-
Satkuri (52.1)	-	✓	✓	-
Teken (53)	-	✓	✓	-
Mora (54)	-	-	✓	-
Dana	-	-	✓	✓
ChepaKuri	-	-	✓	-
Jhaouri (55)	-	-	✓	-
Roshnai (56)	-	-	✓	-
Singa (57)	-	-	✓	-
Medi	-	-	✓	-
Khaia (58)	-	✓	✓	-
Pekua (59)	-	✓	✓	-
Biri/Bihari River (60)	-	-	✓	-
Takimari (60.1)	-	-	✓	-
Beki (60.2)	-	-	✓	-

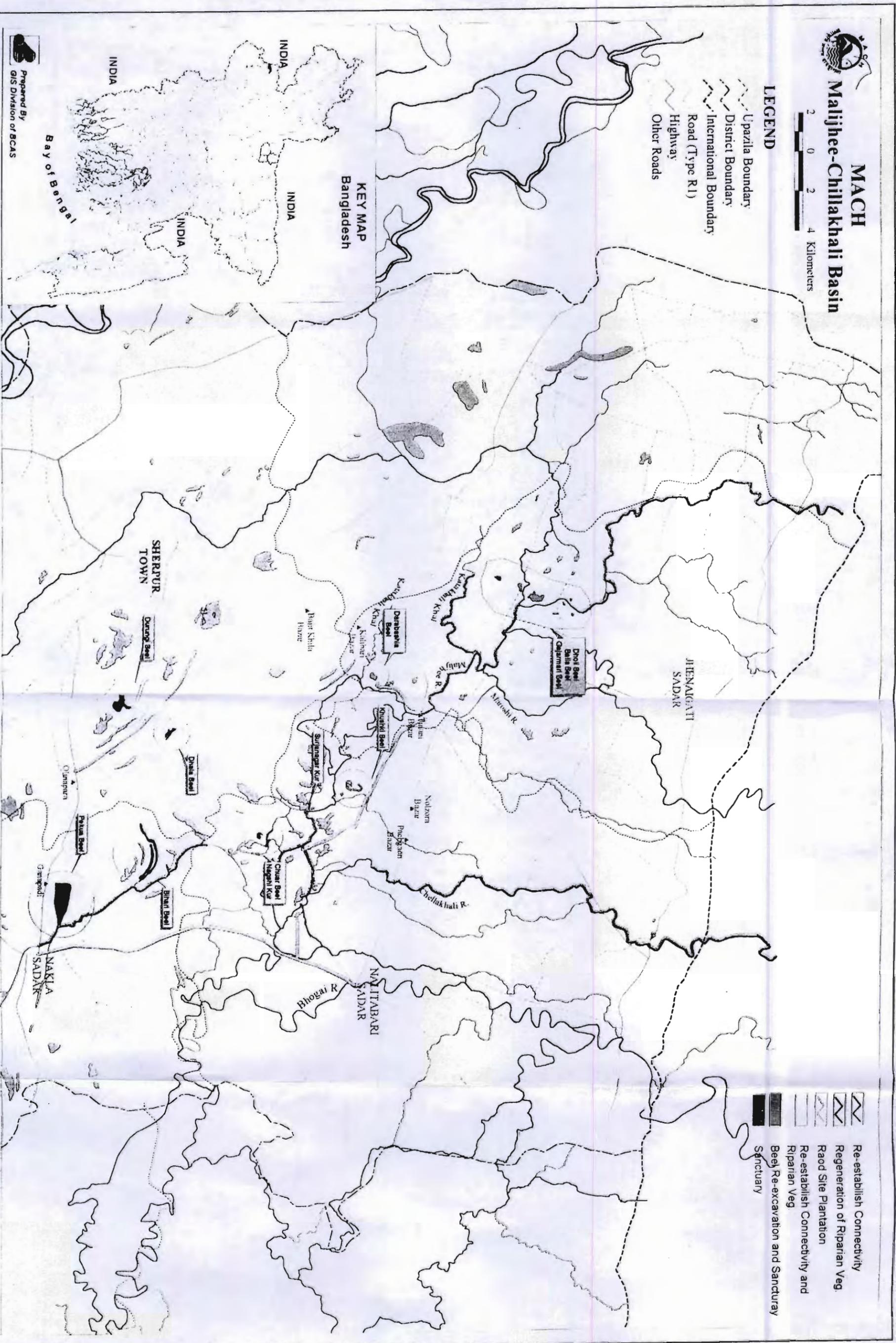
Bech Findings

Kongshou-Mahjin site, S507114

RRA Checklist

Name of <i>Beel</i>	
1. Location of <i>Beel</i>	
2. Areas (acre) Approximate total and khas areas	
3. Connecting canals, rivers and floodplains Location and physical status	
4. Physical Status of <i>Beel</i> and duration of water retention	
5. Reasons for <i>Beel</i> siltation	
6. Rate of Siltation During last 10 years	
7. Management System Accessibility Leased or non-leased Who Controls	
8. If leased, lease value and Lease period	
9. Agriculture practices	
10. Water use in the dry season	
11. Who cultivates boro	
12. Status of <i>Beel</i> 15-20 years back- On Aquatic vegetation & Wetland forestry Wildlife, birds, reptiles and Mollusks	
13. The environmental problems	
14. Existing Development project(s) (GO & NGO)	
15. What are the solutions for the problems (local people's Suggestions)	
16. Fish Production (10-15 years back). Present Species and Extinct Species	
17. Gear Use	
18. Existing and extinct trees beside canal, <i>Beel</i> , and river	
19. Name of fisher villages, if any.	
20. Number of fisher HH by type.	

Proposed Potential Intervention Sites





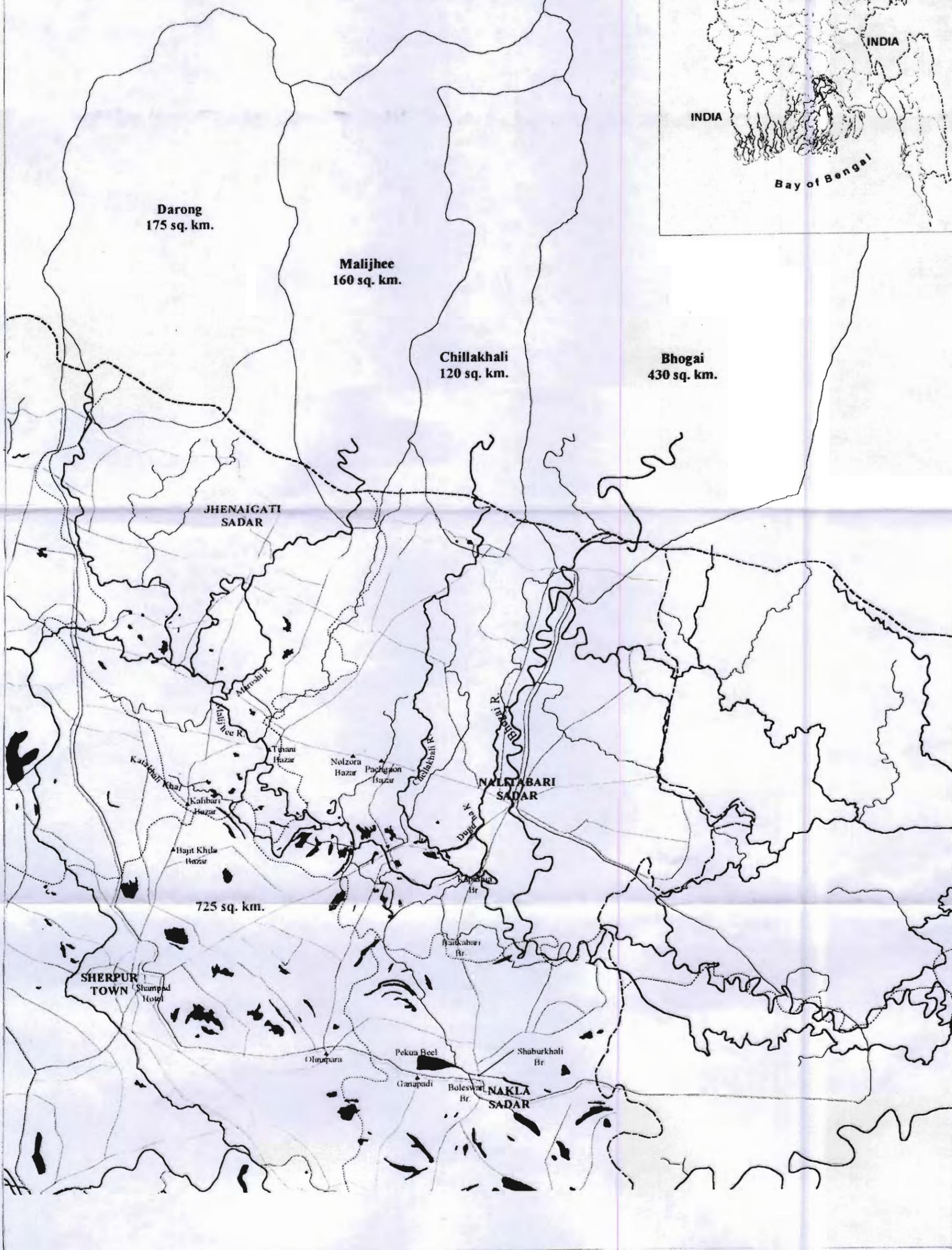
MACH
Malijhee-Chillakhali Basin

2 0 2 4 Kilometers

LEGEND

- Upazila Boundary
- District Boundary
- International Boundary
- Feeder Road
- Road (Type R1)
- Highway

KEY MAP
Bangladesh



BEST AVAILABLE COPY