



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
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Local Government Engineering Department (LGED)
Agargaon, Sher-E-Bangla Nagar, Dhaka-1207

Final Report on Study-03
‘My Village -My Town’ -Technical Assistance Project
“Feasibility Study for Rural Connectivity including Multi-Modal Transport
System in Char and Haor Areas”

Fulchari, Gaibandha



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GLOSSARY

Hard-to-reach Villages mean in the Study those villages that are not connected by any paved road with the respective Upazila HQ and/or Union Parishad, and to the nearest economic activity hub and social service centres. The following explanations is important for the concept of hard-to-reach villages.

- In haor areas, Village connected with submersible roads dry season and connected with riverine/haor routes in monsoon season has been considered as accessible and excluded from hard-to-reach villages.
- Within Upazila, Villages that needs a bridge to connect has not considered as hard-to-reach villages.
- In case of island Upazilas, villages that are accessible with paved roads from Upazila HQ has been considered as accessible and excluded from hard-to-reach villages.
- In case of villages that are connected with HBB (Herring-Bone-Bond) or Brick flat soling routes has been considered as hard-to-reach villages

Mauza is normally the geographical expression of a unit of landmass for revenue settlement and revenue collection, whereas, the village is a human settlement within a Mauza with strong social bond. Within a Mauza there could be more than one village.

Union Bangladesh has 3-tiers local government system: District, Upazila and Union. Union is the lowest level of local government below Upazila Parishad

Upazila Sub-District; the third level of government administration below division and District.

Hat Synonym of bazar or market

Walking Trail mean in the Study the village pathway or access used for walking by commuters, in the most cases do not have gazetted or established or commonly used alignment, and to the most, passable by bi-cycle or motor bike. These village trails are not passable by motorized jeep or mini truck or emergency service vehicle or not even by any three wheelers.

Unpaved Roads have no pavement or surface material. They are usually the earthen roads.

Vulnerability is the human dimension of risk that is defined as conditions determined by physical, social, economic, environmental, political, cultural and institutional factors or processes which increases the likelihood of an individual or a community to the impacts of shocks and hazards.

Climate-Resilience is expressed as the ability of a community to resist, absorb, adapt to and recover better from the impacts of disaster like flood and landslides in a sustainable way.

ABBREVIATION

ADB	– Asian Development Bank
BBS	– Bangladesh Bureau of Statistics
BC	– Bitumen Carpeting
DatEx	– Data Expert (Pvt.) Limited
DECL	– Delight Engineers and Construction Ltd.
DoE	– Department of Environment
DPHE	– Department of Public Health Engineering
DPP	– Development Project Proposal
FGD	– Focus Group Discussion
GIS	– Geographic Information System
GOB	– Government of Bangladesh
HBB	– Herring-Bone-Bond
HQ	– Headquarter
HTRV	– Hard-to-Reach Village
JV	– Joint Venture
KII	– Key Informant Interview
LGD	– Local Government Division
LGED	– Local Government Engineering Department
LGI	– Local Government Institute
MVMT	– My Village My Town
NGO	– Non-Government Organization
PD	– Project Director
PMO	– Project Management Office
RCC	– Reinforced Concrete
RHD	– Roads & Highways Department
SDGs	– Sustainable Development Goals
TA	– Technical Assistance Project
UE	– Upazila Engineer
UNDP	– United Nations Development Programme
UNO	– Upazila Nirbahi Officer
UNR	– Union Road
UP	– Union Parishad
UPZ	– Upazila Road
VRA	– Village Road A
VRB	– Village Road B

BACKGROUND

Context of the Project

The Government of Bangladesh made massive plans to ensure equitable development around the country. Under this development philosophy, the GoB requirements are to reduce rural-urban divide to foster developmental benefits for all citizens. As part of this, the government declared an election manifesto on the eve of the national parliament election 2018 uniting the theme **Bangladesh on the March Towards Prosperity** aiming at transforming Bangladesh into a developed nation by 2041. Under this, villages have been considered the basic unit of prosperity for building a developed nation.

This firm commitment was declared following the light of the philosophy of the Father of Nation Bangabandhu Sheikh Mujibur Rahman to build ‘Sonar Bangla’ (Golden Bangla) through inclusiveness, balanced and development for all.

Following the philosophy of the Father of the Nation, the government declared election manifesto 2018 titled ‘My Village-My Town’- Extension of Modern Civic Amenities in Every Villages. The Local Government Division under the Ministry of Local Government, Rural Development and Cooperatives has prepared a comprehensive work plan to make this election commitment a reality. The Local Government Division with its two agencies, Local Government Engineering Department (LGED) and Department of Public Health Engineering (DPHE) has undertaken a technical assistance project named ‘My Village-My Town’- Technical Assistance Project. Under this project, 36 studies and 30 guidelines are being developed on eight thematic components related to mandate of Local Government Division. The eight thematic components are Rural Communications, Growth Centre and Hat bazar, Rural Water Supply and Sanitation, Rural Waste Management, Community Space and Recreation Facilities, Upazila Masterplan, Rural Housing and Capacity building of Upazila and Union Parishad. Besides this, a coordination framework is being developed among the other ministries involved in implementation of My Village-My Town election manifesto. It is notable to mention that a coordination committee has been formed comprising 21 ministries to implement the program in a coordinated way under the leadership of the Minister of Local Government, Rural Development and Co-operatives.

Context of the Report

This report is a part of study of the component ‘Rural Connectivity’. Rural connectivity is the basic of all amenities in the villages. Rural connectivity works as the conduit that can supply a number of bare necessities such as access to market, health, education, employment etc. In general Bangladesh has remarkable progress in rural connectivity. Instead of this, a number of regions of the country are geographically sensitive where rural connectivity is not easy and has lot of challenges. These regions are -Haor, Beel, Hills, Chars, Islands etc. The people residing in these regions has considerably low access to civic amenities compared to other villages of the country. Therefore, study and plan development of improvement of rural connectivity is one of the important assignments of the technical assistance project. The project undertook Upazila based special study on the villages of these geographically sensitive regions that are mentioned before.

This report contains rural connectivity status and priority plan of the **Fulchari** Upazila of **Gaibandha** District.

1 DESCRIPTION OF THE UPAZILA

1.1 GEOGRAPHY AND DEMOGRAPHY

The geographical area of Fulchari Upazila is 314.03 square kilometers and has 7 Unions, 80 mouzas and 85 villages. The Upazila is 15 km away from District headquarters of Gaibandha. There are 3 rivers flowing over the Upazila- Jamuna, Brahmaputra & Manash. The total population of the Upazila is approx. 1,65,000 of which half are male and half female, total number of households are 40,489 and average household size is 4.08 with a population density of 526 (*as per BBS, population census 2011*).

1.2 EDUCATION FEATURES

According to the information of the relevant local government offices there are 62 government, 46 registered, 4 non-government primary schools, 58 NGO schools & 13 kindergarten schools. On the other hand, Fulchari has 32 non-government high schools with an only school & college (operating jointly), 4 private colleges, and 46 madrashas. The literacy rate for the Upazila is 39.6% as per BBS 2011.

1.3 RURAL ROAD COMMUNICATIONS

Bangladesh scored in the rural accessibility index at around 87 per cent among South Asian and some other Africa countries. Generally, the people of Bangladesh get all weather within 2 kilometers adjacent to their living places. But the feature of rural roads communications in Fulchari Upazila is contrasted. There are many villages, disconnected from the developed paved road network that brings huge sufferings for the people of the villages. The total rural road network of Fulchari is 251.04 km and out of which, 74.58 km paved and 176.46 km earthen.

1.4 AGRICULTURE, FOOD PRODUCTION AND FISHERIES

Agriculture has a major importance for the economy of the people of Fulchari. There are 42,023 acres of arable land in the Upazila. In the fiscal year 2010-11 the Rice production was 56, 15250 & 30916 metric tons for Aus, Aman & Boro seasons respectively. The Upazila also produced 6439 metric tons of Jute, 1078 metric tons of Sugarcane, 4724 metric tons of Potato and 311 metric tons of Oilseed in the same fiscal year 2010-11. A notable quantity of fruits, vegetables & fishes are also produced here in this Upazila. There also exists only 63 poultry & 42 dairy farms.

1.5 GROWTH CENTRE AND HATBAZAR

Growth Centre and Rural Hatbazar is one of the main centres of the rural economy. Hatbazar is like the heart for the development of the rural economy. Rural hatbazar plays a role in increasing production and creating employment impacting on the supply chain of agriculture and non-agriculture products. There are 25 hatbazar and 3 growth centers in the Upazila. The structural development of hatbazar and growth is pivotal to boosting up the rural economy. A details of the growth center & hatbazar of the Upazila has been attached in the [Annexure-1](#).

2 LOCATION OF THE UPAZILA

Fulchari Upazila is located in the Northern Bangladesh under Gaibandha District in Rangpur Division. The location has been shown in the map. It is surrounded by Gaibandha Sadar Upazila on the north, Saghata and Islampur Upazila on the south, Dewanganj Upazila on the east, Gaibandha Sadar and Saghata Upazilas on the west. The Upazila is located within the **Brahmaputra River Basin**. The river, Brahmaputra is a trans-boundary river which flows through Tibet (mountains), India (Arunachal Pradesh & Assam), and Bangladesh and is the 9th largest river in the world by discharge. The river is prone to catastrophic flooding in the summer & monsoon (March – October) when the Himalayan snow melts along with the heavy rainfall occurs in Meghalaya, India. During monsoon, the Brahmaputra discharges a large volume of water coming from upstream and at the same time brings in huge amounts of sediments. The entire lower Brahmaputra (*i.e., the part inside Bangladesh, known as **Jamuna River***) consists of a vast network of channels, that are dry in the pre & post monsoon but are submerged during the monsoon. It has numerous islands due to the heavy sedimentation that are locally known as chars and the ‘Fulchari’ is a Upazila with plenty of such chars. The huge amount of water Jamuna River carries during monsoon, overflows its carrying capacity and inundates the northern part of the country within its basin as well as the Upazila. The effects of flooding can be devastating and cause significant damage to crops and households, serious bank erosion with consequent loss of structures, land, and loss of many lives and livestock.

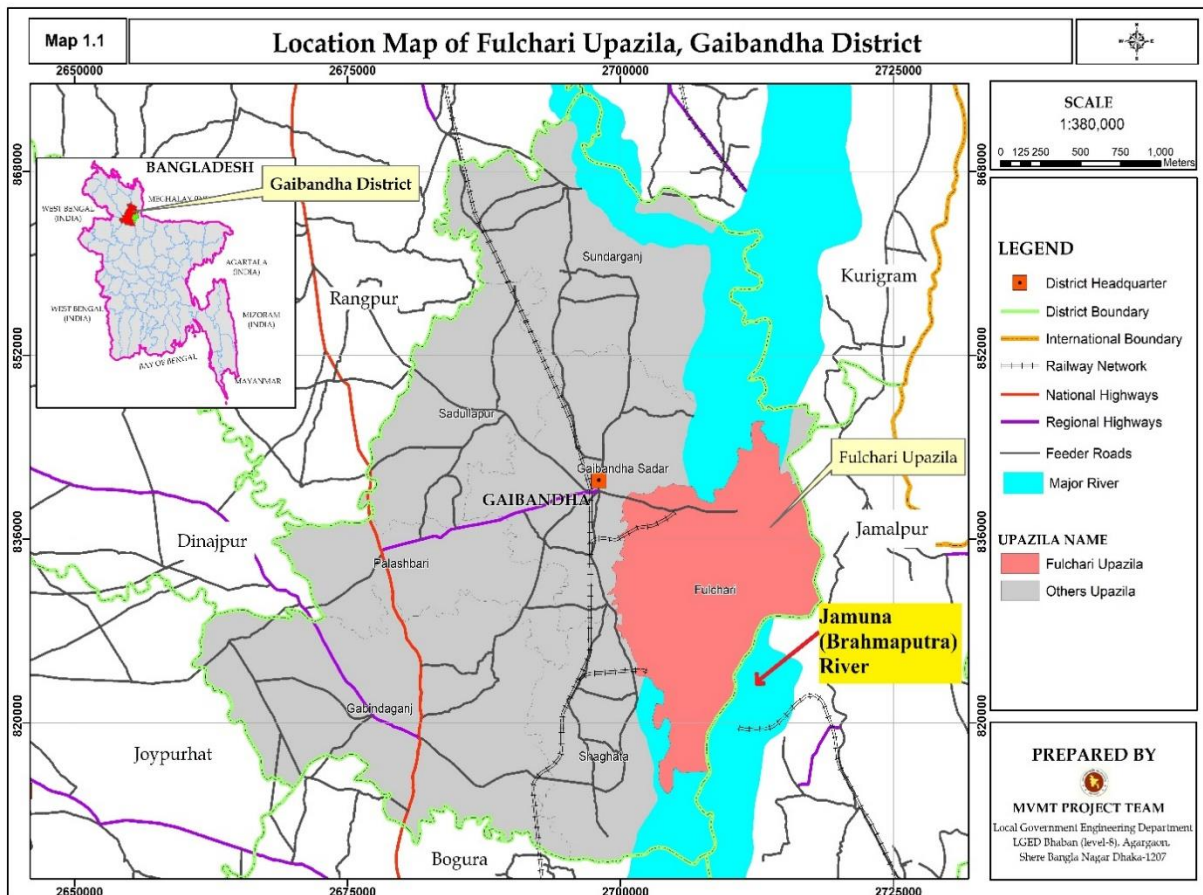


Figure 1: Location Map of the Upazila

3 APPROACH & METHODOLOGY

3.1 STUDY TEAM COMPOSITION

A team consisting of Senior Rural Road Infrastructure Specialist, Associate Rural Infrastructure Specialist, Assistant Engineer engaged by Project Management Office (PMO) conducted the study. On the other hand, A team consisting of Deputy Team Leader cum Rural Infrastructure Engineer, Junior GIS expert and Junior Engineer engaged by consulting firm (datEx & DECL JV) conducted the study. Participatory approach to review the database and identify priority transport infrastructure needs ('sub-projects') was instrumental. At the stakeholder consultation meeting held in each District, the database was reviewed, priority needs identified and mapped working together with the LGI representatives and LGED technical team. LGED and LGI representatives were surveyed each Upazila for collection of detailed observations and validations of the proposed priority needs.

Stakeholder Consultation Meeting

- Hard-to-reach Village Database and database of sub-projects reviewed
- Prioritization of sub-projects for each Upazila with LGI and LGED representatives
- Hard-to-reach villages and priority sub-projects mapped in the LGED GIS Map

3.2 STUDY AREA

The Study was conducted in 72 Upazilas of haor areas, 3 Upazilas of Beel areas, 8 Upazilas of Char areas, and 4 Upazilas of Island areas during the period from December 2021 to June 2022. Apart from this, PMO team conducted the study in 50 Upazilas of Haor areas and rest of the Upazilas of Haor, Beel, Char and Island areas are conducted by consulting firm team. The Upazila technical staff of LGED supported in organizing stakeholder consultation meetings and in database review and mapping the Hard-to-reach villages and population during this study period. They also supported in the field work and authentication check by visits to the sub-projects in their respective Upazila, and looking at the feasibility of some proposed sub-projects from technical, social and environmental perspectives.

3.3 DATABASE REVIEW AND ANALYSIS

The Study applied both qualitative (e.g., focused group discussions and in-depth case study field work) and quantitative (structured and semi structured interviews) approach and methods in reviewing and conducting field work in all the haor areas to understand the need and impact of rural accessibility in remote village contexts. The most applied methods in the reviewing and conducting field work were:

- Key Informants Interview (KII)
 - Focus Group Discussion (FGD)
 - Case Study for authentication check and individual sub-project feasibility study.
- ❖ Review Hard-to-reach village database at the 'Stakeholder consultation meeting' participating by local government representatives such as UP chairman and members, Upazila chairman, vice-chairman, and UNO.

- ❖ FGD and KII were conducted using a checklist. Composition in the FGD included local community people: male and female, teacher, local farmer, trader, and student depending on the availability.
- ❖ KIIs of Union Chairman, Upazila chairman, UNO male and female, and teacher depending on availability.
- ❖ Authentication and feasibility check by visits to the sub-projects reviewed and listed for the 40 selected case study Unions under MVMT project.
- ❖ Survey with GPS machine and Google apps in collecting Hard-to-reach village location, landmark, chainage at gaps, village road at section vulnerable to land erosion damage, narrow existing width or sharp slope location.

3.4 PRIORITIZATION CRITERIA OF SUB-PROJECTS

Prepare a priority list of sub-projects by Upazilas that includes gazette ID roads and non-gazette roads (No ID) with attributes like name and number of villages and population. The criteria used in the prioritization are described below.

- Population, travel time needed from the remotest villages to the Upazila HQ, road type and cost per km per 1000 population are the indicators weighted giving a value in a formula.
- Priority is given to single connection with no alternative transport road and multi-modal transport route to connecting the villages with Upazila HQ and Union Parishad, growth centre and important markets and social service centres; villages with higher number of population and travel time get higher weightage;
- Priority is given to roads, ghats and collection points that will facilitate agricultural diversification, reduce transportation cost, ensure fair price and create farm and non-farm employment and income;
- Priority is given to roads' development and inland waterways dredging that will enable year-round mobility of general public and villagers in particular, health workers, teachers and students, and tourists to facilitate tourism development, quality education and better health service in the district and region;
- Special priority is given to sub-projects of roads, riverine routes/inland waterways that will mainstream deprived communities living in the hard-to-reach villages;
- Identified sub-projects more cost-effectiveness than others using per km per 1000 population cost for each sub-project;
- Every sub-project(s) is to be climate-resilient, sustainable and cost-effective.

3.5 WEIGHTAGE DISTRIBUTION FOR PRIORITIZATION

The approaches and methodologies of the Study for reviewing database and prioritization are synthesized in the diagrams below, noting that the proposed sub-projects of roads in the databases are prioritized based on weightage calculated on the set criteria (as shown in the diagram). People's demand and local need are reflected in the prioritization which were determined by the Study, working together with LGI representatives and LGED field level technical staff at the stakeholder consultation meetings held in each Upazila.

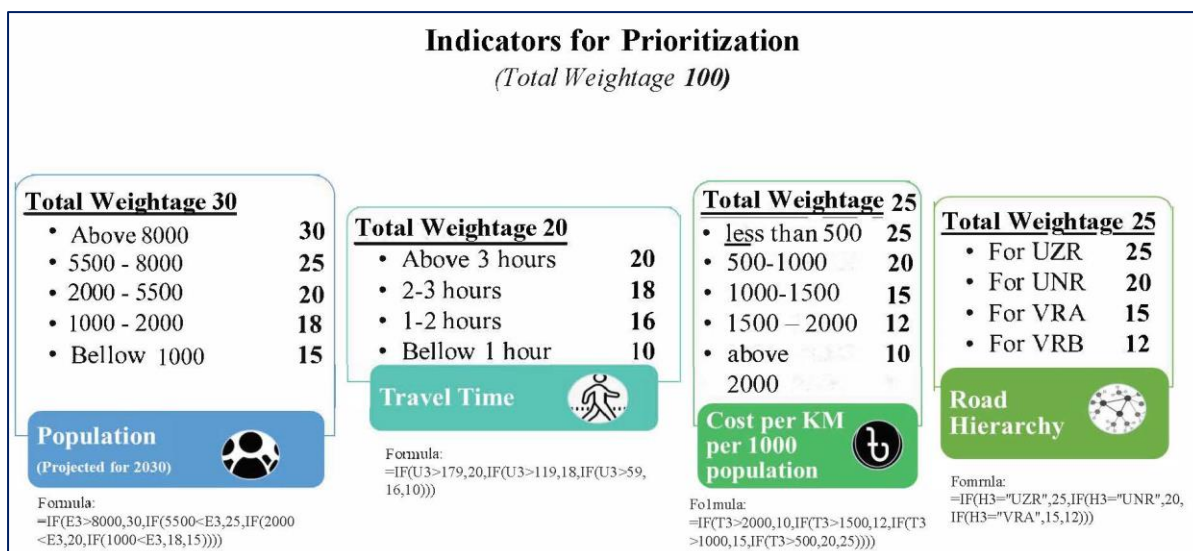


Figure 2: Prioritization indicators & their weightage values

3.6 MAPPING HARD-TO-REACH VILLAGES & POPULATION

- With the active support of LGED technical staff, first, draw every priority listed MVMT roads and Hard-to-reach villages on the LGED GIS map in presence of Union Chairman and members who knows the sub-project and area the best. This was not in scale but approximation was reached by triangulation. Then digitized on screen using GIS, and validate with Google map and checked with data and information on important features and points collected using GPS during field visits.
- There were challenges in deciding on starting node and/or zero chainage of the non-gazette (No ID) road, because not all non-gazette sub-projects were visited and surveyed by the Study team.

3.7 WRAP UP MEETING

Wrap up the field work progress at each District holding a meeting chaired by the Executive Engineer, LGED and participated by all Upazila engineers of the respective District. On completion of the fieldwork, this was conducted to share issues and updates to the District Executive Engineer for feedback and action, as necessary.

3.8 VALIDATION WORKSHOP

On completion of data analysis and drafting of the database and mapping, the Study outputs were shared with the respective Districts and Upazilas for final review. Later validation workshop was held at the respective District on the Draft Report to share and validate the findings. This was participated by the LGED Division, District and Upazila officials and technical staffs.

3.9 NATIONAL WORKSHOP

The Draft Report is finalized, incorporating comments received from the validation workshop, LGED head office staff and PMO office. A National Level workshop was held at LGED HQ for sharing and disseminating the results of the Study.

4 RURAL ROAD CONNECTIVITY TO THE VILLAGES

4.1 SUMMARY OF THE VILLAGE CONNECTIVITY

Fulchari is an Upazila with plenty of Chars. The rural road communication is quite poor here. Out of 93 villages, 28 are disconnected from the developed paved road network that brings huge sufferings for the people of those villages. The total rural road network of Fulchari is 251.04 km and out of which, 74.58 km paved and 176.46 km earthen.

Table 1: Total villages in the Unions and their connectivity

SL No	Union	No of Villages	Connected Villages	Hard-to-Reach Villages
1	Erendabari	16	13	3
2	Fazlupur	18	15	3
3	Fulchhari	16	12	4
4	Gazaria	14	5	9
5	Kanchi Para	13	10	3
6	Udakhali	11	8	3
7	Uria	5	2	3
Total=		93	65	28

4.2 VILLAGES AND THEIR CONNECTIVITY – UNION LEVEL

The consultant arranged a meeting at Upazila conference room with and all the UP Chairmen & their secretaries. The team interviewed representative of each the Union and collected data about the HTRV.

Table 2: Union wise connected & Hard-to-Reach Villages and their population

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Hard-to-Reach Villages	Population 2021 (Based on BBS 2011)
Erendabari (16)	1	Anandabari	1413	Algar Char	3579
	2	Bhatia Para	2195	Dakatiar Char	2950
	3	Bulbulir Char	269	Ghatua	176
	4	Char Chaumohan	1460		
	5	Char Harichandi	1535		
	6	Harichandi	6983		
	7	Jigabari	3144		
	8	Kismat Dhali	213		
	9	Magrighat	477		
	10	Paglar Char	2031		
	11	Patadhua Dhali	398		
	12	Sanyasir Char	5305		
	13	Tinthopa	1185		
Sub Total=		26608		6705	

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Hard-to-Reach Villages	Population 2021 (Based on BBS 2011)
Fazlupur (18)	1	Baje Telkupi	336	Chikirpatal	649
	2	Chandaneshwari	231	Khatiamani	15117
	3	Char Krishnamani	990	Nischintapur	2269
	4	Chaumohan	573		
	5	Debarpatal	269		
	6	Guptamani	227		
	7	Helencha	265		
	8	Kauabada	1171		
	9	Kochkhali	469		
	10	Manikor	275		
	11	Manoharpur	304		
	12	Pukhariabari	341		
	13	Rahamatpur	687		
	14	Tanarghat	270		
	15	Uzalerdanga	1426		
		Sub Total=	7834		18035
Fulchhari (16)	1	Chaubhagia	686	Baje Phulchhari	1760
	2	Deluabari	2951	Kholabari	1132
	3	Gabgachhi	2630	Sadhin Market	2310
	4	Gharbhanga	542	Tengrakandi	2854
	5	Jamira	1280		
	6	Jhapjhapia	217		
	7	Kalur Para	408		
	8	Khancha Para	1132		
	9	Nikti Mandaler Para	1434		
	10	Parul	3636		
	11	Pipalia	1817		
	12	Sekh Para	1154		
		Sub Total=	17887		8056
Gazaria (14)	1	Baraikandi	807	Banka Gram	1719
	2	Baushi Para	5905	Bhajandanga	1154
	3	Jhanjhair	1036	Dhakin Katlamari	1375
	4	Katakachha	763	Galna	2201
	5	Purba Gazaria	1429	Jiadanga	1530
	6			Kalir Kesh	1948
	7			Purba Katlamari	3649
	8			Nilkhuti Majhipara	2521
	9			Paschim Katlamari	3665
		Sub Total=	9940		19762

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Hard-to-Reach Villages	Population 2021 (Based on BBS 2011)
Kanchi Para (13)	1	Bhasar Para	2466	Boali	3437
	2	Chhatar Kandi	695	Chandia	3420
	3	Dhanar Para	1528	Rojarvita	1719
	4	Gholdaha	2144		
	5	Hardanga	639		
	6	Hossainpur	2620		
	7	Jorabari	330		
	8	Kanchi Para	12499		
	9	Madaner Para	3529		
	10	Rasulpur	1141		
	Sub Total=			27591	
Udakhali (11)	1	Dakshin Kathur	1884	Dakshin Burail	3831
	2	Haripur	2396	Kalir Bazar	1413
	3	Paschim Chhalua	2850	Purba Chhalua	2278
	4	Paschim Udakhali	3460		
	5	Purba Udakhali	3697		
	6	Sinria	2516		
	7	Uttar Burail	2471		
	8	Uttar Kathur	3609		
	Sub Total=			22833	
Uria (5)	1	Kabilpur	2129	Poschim Ratanpur	1891
	2	Kalasona	2742	Uria	10088
	3			Char Purba Ratanpur	1111
	Sub Total=			4871	

4.3 MAP OF HARD-TO-REACH VILLAGES & PROPOSED ROADS

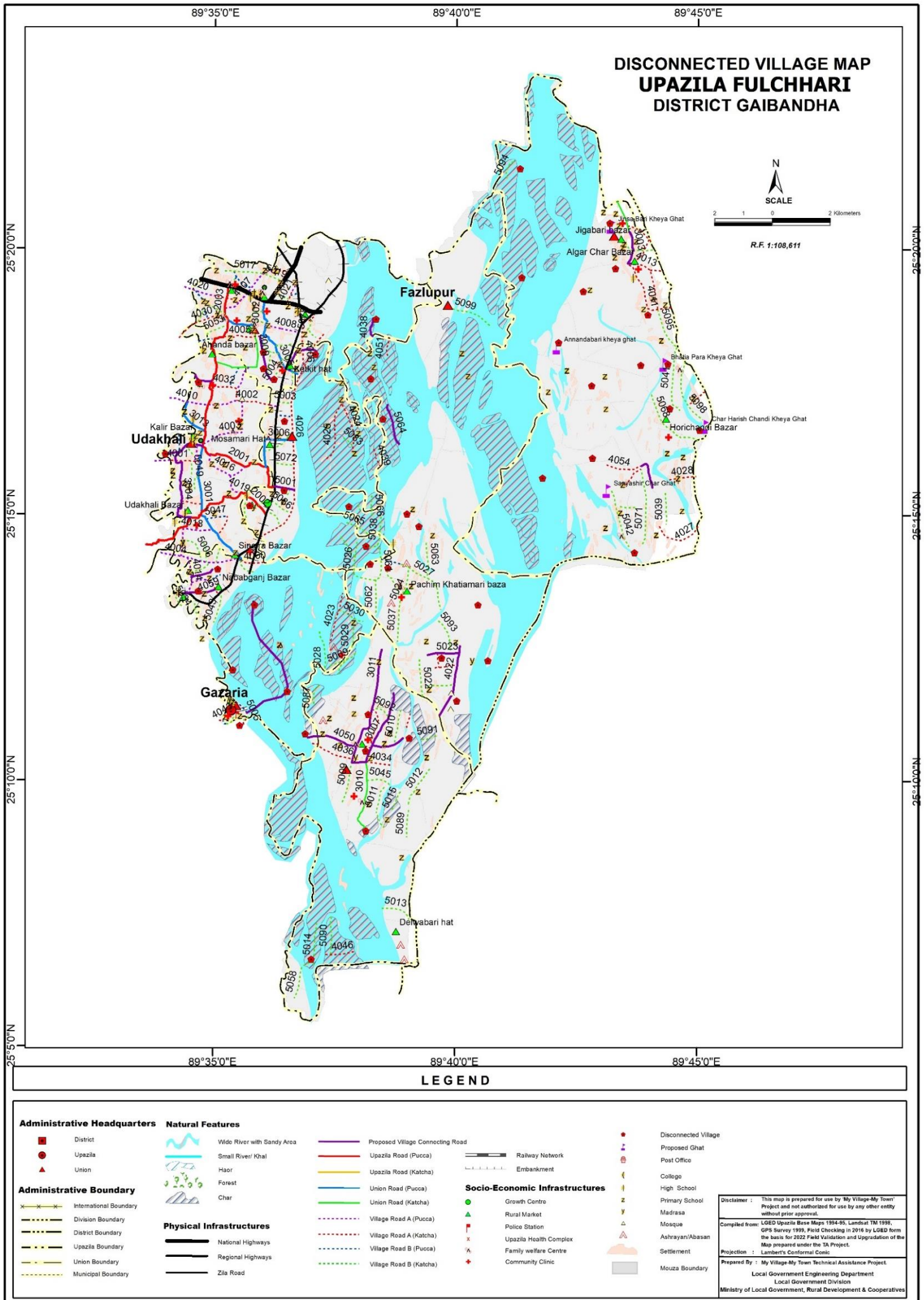


Figure 3: The Upazila Map

5 CONSULTATION MEETING & FIELD VISIT

5.1 UPAZILA LEVEL MEETING

The consultant arranged a meeting at Upazila conference room with the support of the UE office, Fulchari that was participated by UNO, UE and all the UP Chairmen & their secretaries. During the meeting, consultant team briefly discussed about the project and instructed the UP Chairmen and UE office for the database correction along with mapping procedure. The team worked on both the database and Upazila map and obtained the necessary outputs subsequently.

5.2 VISIT TO CASE STUDY UNION

The consultant visited “Moshamari Bazar WAPDA - Choudhaory Para Kheya Ghat via Kabilpur Govt. Primary School Road” in Uria Union. The road was selected for the site visit considering the beneficiary population, educational institutes along the road and the recommendations of the UE Office as the road has a priority within the Union.

The consultant observed and collected necessary information for the study discussing inhabitants and UE office. Team recorded GPS data, interviewed road users and took photos of the alignment condition.



Figure 4: Condition of the visited road alignment at Case Study Union



Figure 5: Condition of the visited road alignment at Case Study Union



Figure 6: Condition of the visited road alignment at Case Study Union



Figure 7: Condition of the visited road alignment at Case Study Union

The length of this village road is 2 km that is completely earthen and connects a major village in the neighborhood known as Madhya Uria having the total population of approx. 3000. People living here doesn't have any good road network with the Upazila HQ due to having unpaved road communication. During monsoon, the road gets submerged and unusable for any sort of a vehicle.

6 DATA COLLECTION & ANALYSIS

The consultant collected data from the field on hard to reach/ Hard-to-Reach Villages. Data were collected of those villages including population, road alignment information (*type, length, condition*), travel time, structure required on the alignment, potential riverine routes that can be used for multi-modal transport system etc. The data then analyzed, categorized and finally used to obtain a priority list along with a map (*Figure:3*) showing prioritized roads and Hard-to-Reach Villages. The proposed riverine & road connectivity by the UE office have been discussed in this section.

6.1 PROPOSED RIVERINE ROUTES

Fulchari Upazila is located within ***Brahmaputra River Basin***. There are 3 rivers flowing over the Upazila known as Jamuna, Brahmaputra & Manash. According to the UE, Fulchari; there are 3 riverine routes that can be used for approximately half the year as multi-modal transport system. During this part of the year, many people use these riverine routes specially for carrying their goods. At monsoon large area of the Upazila gets inundated due to the overflow of Brahmaputra River. During this part of the year, Engine boats are readily available to transport community & commodity

The name of the riverine routes & the associated streams with types of water vehicle are as follows;

Table 3: Proposed riverine routes of the Upazila

Sl. No	Name of the Riverine Route	Name of the Stream	Type of the Stream	Types of Water Vehicle	Need of excavation
1	Upazila HQ - Puraton Fulchari Upazila Ghat - Pipuliya Ghat	Brahmaputra River	Intermittent (May - Oct)	Engine Boats	Yes
2	Upazila HQ - Balashi Ferri Ghat - Anandabari (Sonnasirchar Ghat)	Brahmaputra River	Intermittent (May - Oct)	Engine Boats	Yes
3	Upazila HQ - Puraton Fulchari Upazila Ghat (Katlamari Ghat) - Ziadanga (Janjhar Ghat)	Brahmaputra River	Intermittent (May - Oct)	Engine Boats	Yes

6.2 PROPOSED ROADWAY FOR HARD-TO-REACH VILLAGES:

At present, roads are the most dominant mode of transportation. Most of the structures were built on the rivers to make the road communication effective. Yet, 14 (fourteen) bridges are needed to fulfil the purpose.

Table 4: Summary of the rural roads in the Upazila

Total Road Length of the Upazila (KM)	Paved Length (KM)	Unpaved Length (KM)	Length of unpaved roads of Hard-to-Reach Villages (KM)
251.04	74.58	176.46	68.2

6.2.1 PROPOSED ALL WEATHER ROUTES:

There are 11 all-weather roads proposed to connect the HTRV within the Upazila. The road name, ID, road condition and the length of the unpaved roads are as bellow;

Table 5: Proposed all weather roads in the Upazila

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
1	Fulchori Shabek Baily Bridge Nilkhuti Majhipara to Bhorotkhali Hiway Road	132214044	All Weather	0.6
2	Nabab gonj Bazar-Kukrar Hat	132214059	All Weather	2
3	Katlamari Goljar Membar mil to Purbo Munshi para of the Bath	132215032	All Weather	1.1
4	Ratanpur Mouza H/O Jottin - H/O Saku Miya Ratanpur Mouza	132215059	All Weather	0.8
5	Bochar bazar community clinic- Boarder of Boali up	132215060	All Weather	2
6	Aijal mia House to Boali border	No ID	All Weather	4
7	Purba Salua Nazar Mor-Gunvori High School	No ID	All Weather	4.5
8	Chondia Health Complex to Hanif Para-Rail line	No ID	All Weather	3
9	Harun mia House to Rojar vita Ansar house.	No ID	All Weather	1
10	H/O Rezaul-Fulchhari Old Baily Bridge via Banka Gram	No ID	All Weather	3
11	Nabab gonj Bazar Jonakir Mor- Kalir Kesh H/O Rashid	No ID	All Weather	1

6.2.2 PROPOSED SUBMERSIBLE ROUTES:

There are 19 submersible roads proposed to connect the HTRV within the Upazila. The road name, ID, road condition and the length of the unpaved roads are as bellow;

Table 6: Proposed submersible roads in the Upazila

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
1	Fulchari UP H/Q - Kalurpara kheya ghat.	132213007	Submersible	4.5
2	Fulchari UP H/Q - Kalurpara kheya ghat via Parul govt. P/S	132213011	Submersible	2.5
3	Dhakin Katlamari H/O Noor hossain- (H/O Nasim uddin) Katlamari	132214022	Submersible	2.2
4	Fulchari mousa H/O Chan mia - H/O Nuruzzaman (Fulchari mouza)	132214047	Submersible	2.5
5	Purba Fulchari Notun Hat - Kheya ghat via Adarsa gram	132214050	Submersible	0.83
6	Moshamari Bazar WAPda - Choudhaory Para Kheya Ghat via Kabilpur Govt. Primary School	No ID	Submersible	2
7	Char Katlamari Ghat- Jiyadanga Bazar	No ID	Submersible	2.5
8	Bhajondanga Kheya Ghat - H/O Goni Member via Jiyadanga Govt. Primary School	No ID	Submersible	2.5
9	Ketkir Hat Bazar - Uttar Uria H/O Alima Member via Uria Govt. Primary School	No ID	Submersible	2.5
10	Banka Gram-Poschim Golan Via Miyar Bazar	No ID	Submersible	3
11	Sadek Khan Bazar Kheya Ghat - Char Purba Ratanpur Shapla Bazar	No ID	Submersible	3
12	Erandabari U.P H/Q-Algarchar bazar	132213003	Submersible	1.08
13	Udakhali UP H/Q-Udakhali bazar	132213004	Submersible	1.08
14	Algar char bazar-Vatiapara Kheya ghat via Dakatiarchar primary school	132214011	Submersible	2.5
15	Horichandi Bazar-H/O motin Mondol) Arandabari.	132214012	Submersible	2
16	Chikirpatal H/O Haider - Ujaldanga Kheyaghat	132214038	Submersible	2
17	Dhakin Khatiamari Govt. primary school - Dhakin Khatimari Hfizia Madrasa	132214053	Submersible	3.2

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
18	Dhakin Khatiamari Govt. primary school - Dhakin Khatimari Hfizia Madrasa	132214053	Submersible	3.2
19	Nichistapur H/O Kuran ali- (H/O Jamal) Nichistapur	132215064	Submersible	2.1

6.2.3 PROPOSED ROADS FOR HARD-TO-REACH VILLAGES HAVING NO ID:

There are 12 roads proposed to connect the HTRV within the Upazila that have no ID yet.

The road name, ID and the length of the unpaved part are as bellow;

Table 7: Proposed roads for Hard-to-Reach Villages having No ID

Sl. No	Road Name	Road ID	Unpaved length (Km)
1	Aijal mia House to Boali border	No ID	4
2	Purba Salua Nazar Mor-Gunvori High School	No ID	4.5
3	Chondia Health Complex to Hanif Para-Rail line	No ID	3
4	Harun mia House to Rojar vita Ansar house.	No ID	1
5	H/O Rezaul-Fulchari Old Baily Bridge via Banka Gram	No ID	3
6	Nabab gonj Bazar Jonakir Mor-Kalir Kesh H/O Rashid	No ID	1
7	Moshamari Bazar WAPda -Choudhaory Para Kheya Ghat via Kabilpur Govt. Primary School	No ID	2
8	Char Katlamari Ghat- Jiyadanga Bazar	No ID	2.5
9	Bhajondanga Kheya Ghat - H/O Goni Member via Jiyadanga Govt. Primary School	No ID	2.5
10	Ketkir Hat Bazar - Uttar Uria H/O Alima Member via Uria Govt. Primary School	No ID	2.5
11	Banka Gram-Poschim Golan Via Miyar Bazar	No ID	3
12	Sadek Khan Bazar Kheya Ghat - Char Purba Ratanpur Shapla Bazar	No ID	3

6.2.4 PRIORITY FOR ROAD DEVELOPMENT

Considering resources constraint, benefited group of people, time required to travel & road hierarchy, a priority list has been developed (Annexure-2) for the HTRV (Hard to Reach Villages). The priority score has been determined according to following

Table 8: Considered weightage values for the prioritization

Criteria	Weightage
Population	30
Travel Time	20
Cost per 1000 Population	25
Road Type	25
Total=	100

It has been observed that, there are a number of roads that bear same score. At these cases, the minimum budget required for providing connectivity to thousand people- will get more priority compared to more budget required roads. The roads bearing ID will have the higher priority than the roads without ID

7 CONCLUSION & RECOMMENDATIONS

- Fulchari Upazila is located within the *Brahmaputra River Basin* that has plenty of chars, topographically low land in the dry season but submerged during monsoon. The Upazila has enormous agricultural potential due to highly fertile soil gains from heavy sedimentation. There exist 3 (three) rivers that dominates the ecosystem and transport system of the Upazila, that are Jamuna, Brahmaputra & Manash rivers Though the Upazila has a number of rivers, riverine transport is available in this Upazila only during May – October. Generally Small Boat, Engine Boat are used to transport community & commodity.
- The Upazila faces extensive flood and river erosion during monsoon, rural roads and structures are highly vulnerable in this Upazila.
- The Upazila has a total number of 28 Hard-to-Reach Villages. To develop rural connectivity, there are proposals for both all weather & submersible roads. This report contains a list of roads with their priority. The priority has been determined based on Population, Travel Time, Cost per KM/1000 people & Road Hierarchy.
- This Upazila is highly vulnerable to flood. Due to climate change, the vulnerability is getting intense.
- Case by case design of roads in this Upazila considering different aspects such as exposure to flood, erosion etc. is highly recommended. A special study regarding the road and structure design of the Upazila Fulchari in Gaibandha District is highly recommended.

ANNEXURE - 1

DETAILS OF GROWTH CENTER & HATBAZAR

Union	Market Name	Market Category (GC=Growth Center, HB=Hat Bazar)	Market Listed? (Yes/ No)	Market Category (General/ Special/ Collection center)	Market Category (Wholesale/ Retail/both)	Hat Day	Chandina Viti (Number)	Chandina Viti (Land)	Chandina Viti (Shop)	Land Area (Acre)			Lease/ Khas Collection BDT (2020)	Lease/ Khas Collection BDT (2019)
										Toha	Khas	Private		
Erendabari	Sannashir Char Hat	HB	Yes	General Market	Both	2	0		45		2.66	0.00	165000	60000
Erendabari	Algarchar Bazar	HB	Yes	General Market	Both	2	0		20		1.50	0.00	63200	70503
Erendabari	Jigabari azar	HB	Yes	General Market	Both	2	0		25		1.50	0.00	27000	44800
Erendabari	Paschim Bhati Para Hat	HB	Yes	General Market	Both	2	0		21		0.11	0.00	11500	10800
Erendabari	Harichandi Bazar	HB	No											
Fazlupur	Khathiamari Hat	HB	Yes	General Market	Both	2	0		35		0.66	0.00	3800	0
Fulchhari	Purba Fulchhari Hat	HB	Yes	General Market	Both	2	0	0.25	13	0.40	1.08	0.00	800	0
Fulchhari	Deluabari	HB	Yes	General Market	Both	2	0		7		2.55	0.00	0	7850
Fulchhari	Baje Fulchhari Bazar	HB	No											
Fulchhari	Pipulia Bazar	HB	No											
Gazaria	Fulchhari hat	GC	Yes	General Market	Both	2	0		150		0.00	2.30	7005101	6166100
Gazaria	Katamari Hat	HB	No											
Gazaria	Nawabganj Hat	HB	No											
Kanchipara	Academir Hat	HB	No											
Kanchipara	Chandia Bazar	HB	No											
Kanchipara	Kaiyar Bazar	HB	No											
Kanchipara	Ketkir Hat	HB	No											
Kanchipara	Madaner Bazar	HB	No											
Kanchipara	Rasulpur hat	GC	No											
Kanchipara	Somitir Bazar	HB	No											

Union	Market Name	Market Category (GC=Growth Center, HB=Hat Bazar)	Market Listed? (Yes/ No)	Market Category (General/ Special/ Collection center)	Market Category (Wholesale/ Retail/both)	Hat Day	Chandina Viti (Number)	Chandina Viti (Land)	Chandina Viti (Shop)	Land Area (Acre)			Lease/ Khas Collection BDT (2020)	Lease/ Khas Collection BDT (2019)
										Toha	Khas	Private		
Udakhali	Kalir Bazar	HB	Yes	General Market	Both	2	0		50		0.22	0.00	172500	182000
Udakhali	Ananda Bazar	HB	Yes	General Market	Both	2	0		20		0.28	0.00	0	0
Udakhali	Singria Bazar	HB	No											
Udakhali	Udakhali Bazar	HB	No											
Uria	Gunvari hat	GC	Yes	General Market	Both	2	0		10		0.25	0.00	0	1200
Uria	Moshamari Adarsha Bazar	HB	Yes	General Market	Both	2	0		17		0.47	0.00	0	0
Uria	Ratanpur Hat	HB	No											
Udakhali	Ananda Bazar	HB	Yes	General Market	Both	2	0		20		0.28	0.00	0	0

ANNEXURE - 2

PRIORITY LIST FOR ROAD DEVELOPMENT

Priority	Connecting Union	Connecting Village	Population 2021 (Based on BBS 2011)	Road Name	Road ID	Road Type	Road Type by Surface Condition	Total Road Length (10+11+12)	Paved length (km)	HBB Length (km)	Unpaved length (km)	HBB + Unpaved (11+12) in (km)	Approx. Cost of Road (lac)	Structure/ Gap (meter)	Cost of Structure (in Lac)	Total Cost (in lac) (Roads + Structures)	Population /KM (4-13)	Tentative Budget/1000 Population (in lac)	Travel Time (in min)	Weightage for Population	Weightage for Travel Time	Weightage for Cost per 1000 Population	Weightage for Road Type	Total Weightage (21+22+23+24)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	Fulchari	Baje Phulchhari, Tengrakandi	4614	Fulchari UP H/Q - Kalurpara kheyra ghat .	132213007	UNR	Submersible	4.5			4.5	4.5	810	0	0	810	1025	176	68	20	16	25	20	81
2	Fazlupur	Khatiamari	15117	Dhakin Khatiamari Govt. primary school - Dhakin Khatimari Hfizia Madrasa	132214053	VRA	Submersible	3.2			3.2	3.2	576		0	576	4724	38	48	30	10	25	15	80
3	Erendabari	Algar Char	3579	Erandabari U.P H/Q-Algarchar bazar	132213003	UNR	Submersible	3.33	2.25		1.08	1.08	194.4	10	90	284.4	3314	79	16	20	10	25	20	75
4	Udakhali	Kalir Bazar	1413	Udakhali UP H/Q-Udakhali bazar	132213004	UNR	Submersible	5.13	4.05		1.08	1.08	194.4	30	270	464.4	1308	329	16	18	10	25	20	73
5	Gazaria	Nilkhuti Majhipara	2521	Fulchori Shabek Baily Bridge Nilkhuti Majhipara to Bhorotkhali Hiway Road	132214044	VRA	All Weather	2.4	1.2	0.6	0.6	1.2	144		0	144	2101	57	9	20	10	25	15	70
6	Gazaria	Poschim Katlamari	3665	Nabab gonj Bazar-Kukrar Hat	132214059	VRA	All Weather	5	3		2	2	240		0	240	1833	65	30	20	10	25	15	70
7	Erendabari	Dakatiar Char	2950	Algar char bazar-Vatiapara Kheyra ghat via Dakatiarchar primary school	132214011	VRA	Submersible	2.5			2.5	2.5	450		0	450	1180	153	38	20	10	25	15	70
8	Fulchari	Sadhin Market	2310	Purba Fulchari Notun Hat - Kheyra ghat via Adarsa gram	132214050	VRA	Submersible	2		1.17	0.83	2	360	0	0	360	1155	156	12	20	10	25	15	70
9	Gazaria	Dhakin Katlamari	1375	Dhakin Katlamari H/O Noor hossain- (H/O Nasim uddin)Katlamari	132214022	VRA	Submersible	4.4	2.2		2.2	2.2	396		0	396	625	288	33	18	10	25	15	68
10	Fulchari	Kholabari	1132	Fulchari mousa H/O Chan mia - H/O Nuruzzaman (Fulchari mouza)	132214047	VRA	Submersible	2.5			2.5	2.5	450	0	0	450	453	398	38	18	10	25	15	68
11	Gazaria	Purba Katlamari	3649	Katlamari Goljar Membar mil to Purbo Munshi para of the Bath	132215032	VRB	All Weather	2.2	1.1		1.1	1.1	132		0	132	3318	36	17	20	10	25	12	67
12	Udakhali	Dakkin Burail	3831	Bochar bazar community clinic-Boarder of Boali up	132215060	VRB	All Weather	4	2		2	2	240		0	240	1916	63	30	20	10	25	12	67
13	Fazlupur	Nischintapur	2269	Nichistapur H/O Kuran ali- (H/O Jamal)Nichistapur	132215064	VRB	Submersible	2.1			2.1	2.1	378	20	180	558	1080	246	32	20	10	25	12	67
14	Uria	Poschim Ratanpur	1891	Ratanpur Mouza H/O Jottin - H/O Saku Miya Ratanpur Mouza	132215059	VRB	All Weather	1.6	0.8		0.8	0.8	96		0	96	2363	51	12	18	10	25	12	65
15	Fazlupur	Chikirpatal	649	Chikirpatal H/O Haider - Ujaldanga Kheyraghat	132214038	VRA	Submersible	2			2	2	360		0	360	324	555	30	15	10	20	15	60
16	Erendabari	Ghatua	176	Horichandi Bazar-H/O motin Mondol) Arandabari.	132214012	VRA	Submersible	2			2	2	360		0	360	88	2040	30	15	10	10	15	50
17	Uria	Uria	10088	Moshamari Bazar WAPda -Choudhaury Para Kheyra Ghat via Kabilpur Govt. Primary School	No ID	VRA	Submersible	2			2	2	360		0	360	5044	36	30	30	10	25	15	80
18	Uria	Uria	10088	Ketkir Hat Bazar - Uttar Uria H/O Alima Member via Uria Govt. Primary School	No ID	VRA	Submersible	2.5			2.5	2.5	450		0	450	4035	45	38	30	10	25	15	80
19	Kanchipara	Boali	3437	Aijal mia House to Boali border	No ID	VRA	All Weather	4			4	4	480		0	480	859	140	60	20	16	25	15	76
20	Udakhali	Purba Chhalua	2278	Purba Salua Nazar Mor-Gunvori High School	No ID	VRA	All Weather	4.5			4.5	4.5	540		0	540	506	237	68	20	16	25	15	76
21	Kanchipara	Chondia	3420	Chondia Health Complex to Hanif para Rail line	No ID	VRA	All Weather	3			3	3	360		0	360	1140	105	45	20	10	25	15	70
22	Gazaria	Galna	2201	Banka Gram-Poschim Golan Via Miyar Bazar	No ID	VRA	Submersible	3			3	3	540		0	540	734	245	45	20	10	25	15	70
23	Kanchipara	Rojarvita	1719	Harun mia House to Rojar vita Ansar house.	No ID	VRA	All Weather	2		1	1	2	240		0	240	859	140	15	18	10	25	15	68
24	Gazaria	Banka Gram	1719	H/O Rezaul-Fulchari Old Baily Bridge via Banka Gram	No ID	VRA	All Weather	3			3	3	360		0	360	573	209	45	18	10	25	15	68
25	Gazaria	Jiadanga	1530	Char Katlamari Ghat- Jiyadanga Bazar	No ID	VRA	Submersible	2.5			2.5	2.5	450		0	450	612	294	38	18	10	25	15	68
26	Gazaria	Bhajondanga	1154	Bhajondanga Kheyra Ghat - H/O Goni Member via Jiyadanga Govt. Primary School	No ID	VRA	Submersible	2.5			2.5	2.5	450		0	450	462	390	38	18	10	25	15	68
27	Uria	Char Purba Ratanpur	1111	Sadek Khan Bazar Kheyra Ghat - Char Purba Ratanpur Shapla Bazar	No ID	VRA	Submersible	3			3	3	540		0	540	370	486	45	18	10	25	15	68
28	Gazaria	Kalir Kesh	1948	Nabab gonj Bazar Jonakir Mor-Kalir Kesh H/O Rashid	No ID	VRB	All Weather	1			1	1	120		0	120	1948	62	15	18	10	25	12	65

*** Cost for Roads & Structures; (All Weather Rd= 120 lac/km, Submersible= 180 lac/km, Structure= 9 lac/m)
 *** Weightage Values; (Population = 30, Travel Time= 20, Cost per1000 people= 25, Road Hierarchy= 25)