



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH  
MINISTRY OF LOCAL GOVERNMENT, RURAL DEVELOPMENT AND CO-OPERATIVES  
**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”

**B. Baria Sadar Upazila, B. Baria**



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## GLOSSARY

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**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 are important for the concept of hard-to-reach villages.

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

**Mauza** 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 a strong social bond. Within a Mauza there could be more than one village.

**Union** Bangladesh has 3-tiers local government systems: 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** means in the Study the village pathway or access used for walking by commuters, in most cases does not have gazetted or established or commonly used alignment, and to the most, passable by bicycle or motorbike. These village trails are not passable by motorized jeeps or mini trucks or emergency service vehicles or not even any three-wheelers.

**Unpaved Roads** have no pavement or surface material. They are usually 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 that increase 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 disasters like floods and landslides in a sustainable way.



## ABBREVIATIONS

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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

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### 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 the 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 the 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 its election manifesto 2018 titled ‘My Village-My Town’- Extension of Modern Civic Amenities in Every village. 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, the 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 the mandate of the 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 the implementation of the 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 the 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 the 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 a lot of challenges. These regions are -Haor, Beel, Hills, Chars, islands etc. The people residing in these regions have considerably low access to civic amenities compared to other villages of the country. Therefore, the study and plan development of improvement of rural connectivity is one of the important assignments of the technical assistance project. The project undertook an Upazila-based special study on the villages of these geographically sensitive regions that are mentioned before.

This report contains the rural connectivity status and priority plan of the **Brahmanbaria Sadar** Upazila of **Brahmanbaria** District.



# **1 DESCRIPTION OF THE UPAZILA**

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## **1.1 GEOGRAPHY AND DEMOGRAPHY**

The geographical area of Brahmanbaria Sadar Upazila is 237.34 square kilometers and has 11 unions, 103 mauzas, and 146 villages. Brahmanbaria Sadar is partly covered by one haor/wetland area and there exist Titas River flowing over the Upazila. The total population of Upazila is 522000 of which 258000 are male and 263000 females, the total number of households are 95802 and the average household size is 5.40 with a population density of 1420 (as per population census 2011).

## **1.2 EDUCATION FEATURES**

According to the information of the relevant local government offices, there are 148 government & 70 non-government primary schools in the Upazila. On the other hand, Brahmanbaria Sadar has 23 non-government with 3 government high schools, 1 school & college, 2 government colleges, 4 private colleges, and 7 madrasahs. The literacy rate for the Upazila is 53.4% as per BBS 2011.

## **1.3 RURAL ROAD COMMUNICATIONS**

Bangladesh scored in the rural accessibility index at around 87 percent among South Asian and some other African countries. Generally, the people of Bangladesh get all-weather within 2 kilometers adjacent to their living places. But the feature of rural road communications in Brahmanbaria Sadar Upazila is contrasted. There are many villages, disconnected from the developed paved road network that brings huge suffering for the people of the villages. The total rural road network of Brahmanbaria Sadar is 430.13 km and out of which, 255.57 km are paved and 174.57 km earthen.

## **1.4 AGRICULTURE, FOOD PRODUCTION, AND FISHERIES**

The driving force of Brahmanbaria's economy is largely dependent on Haor and agriculture. Abundant fish are available in Haor which can meet the country's demand to a large extent. Besides, jute, paddy and many other vegetables are produced in Kishoreganj which meet the needs of the country and are exported abroad. There are 81519 acres of arable land in Upazila. In the fiscal year 2010-11, the Rice production was 4207, 46688 & 110643 metric tons for Aus, Aman & Boro seasons respectively. The Upazila also produced 38 metric tons of Wheat, 612 metric tons Jute, 376 metric tons oil seed, and 4501 metric tons of Potato in the same fiscal year 2010-11. A notable quantity of vegetables is also produced here in this Upazila.

According to the BBS (2011) data, Brahmanbaria Sadar has 6208.58 Acres of haor, pond & dighee that produced 10245 metric tons of fish. There also exist 29 poultry & 93 dairy farms.

All the agricultural products are adequate to meet the demand of the Upazila and surpluses are sold outside of Brahmanbaria Sadar.

## **1.5 GROWTH CENTRE AND HATBAZAR**

Growth Centre and Rural Hatbazar are one of the main centers of the rural economy. Hatbazar is like the heart of the development of the rural economy. Rural Hatbazar plays a role in increasing production and creating employment impacting the supply chain of agriculture and non-agriculture products. There are 13 Hatbazar and 1 growth centers in Upazila. The structural development of Hatbazar and its growth is pivotal to boosting the rural economy. Details of the growth center & hatbazar of the Upazila have been attached in **Annexure-1**.

## 2 LOCATION OF THE UPAZILA

Brahmanbaria Sadar Upazila of Brahmanbaria district in the Eastern part of the country. The location has been shown on the map. The Upazila is situated near the foothill of the Indian border and causes flash floods during monsoon, resulting in waterlogging within the haor basin.

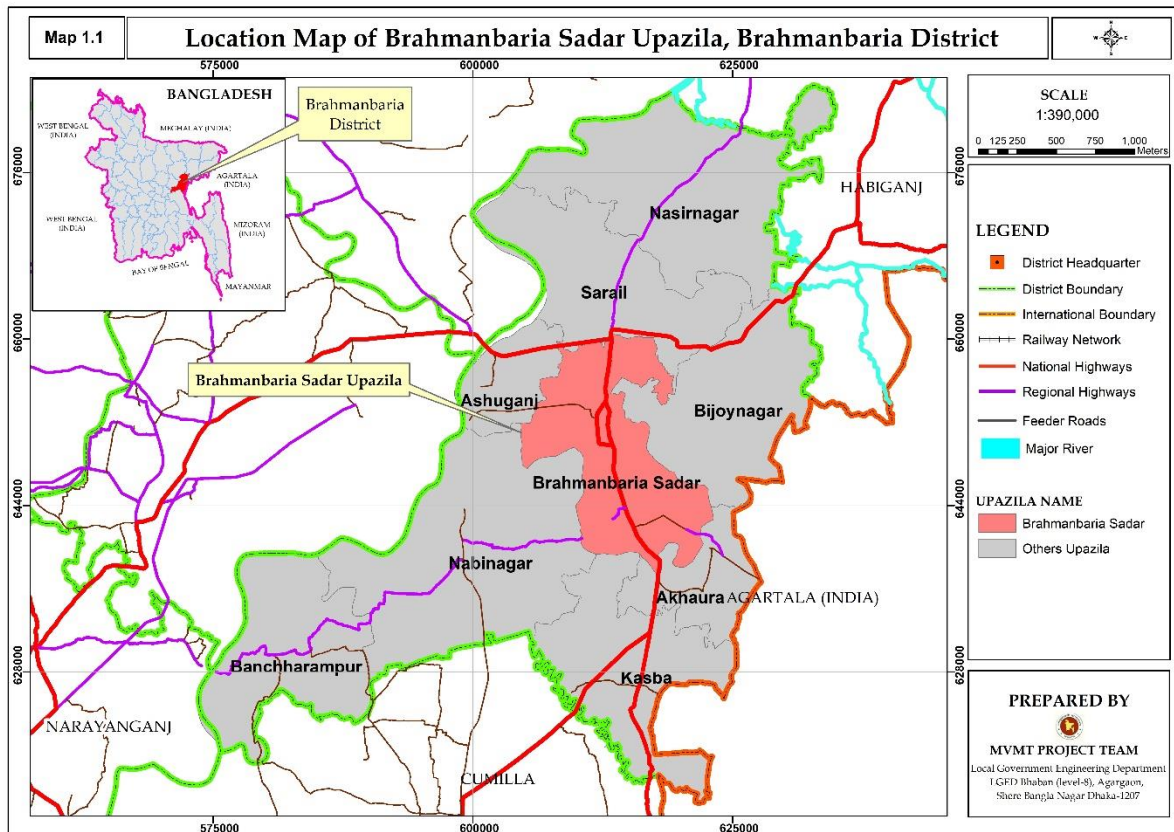


Figure 1: Upazila Location Map

## 3 APPROACH & METHODOLOGY

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### 3.1 STUDY TEAM COMPOSITION

A team consisting of Senior Rural Road Infrastructure Specialist, Associate Rural Infrastructure Specialist, and Assistant Engineer engaged by the 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. A 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, and priority needs were identified and mapped working together with the LGI representatives and LGED technical team. LGED and LGI representatives surveyed each Upazila for the 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, the PMO team conducted the study in 50 Upazilas of Haor areas, and the rest of the Upazilas of Haor, Beel, Char, and Island areas are conducted by the 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 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 fieldwork) and quantitative (structured and semi-structured interviews) approaches and methods in reviewing and conducting fieldwork 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 fieldwork were:

- Key Informants Interview (KII)
- Focus Group Discussion (FGD)
- Case Study for authentication check and individual sub-project feasibility study.

- ❖ Review the Hard-to-reach village database at the ‘Stakeholder consultation meeting’ participated by local government representatives such as the 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, teachers, local farmers, traders, and students depending on 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 the MVMT project.
- ❖ Survey with GPS machine and Google apps in collecting Hard-to-reach village locations, landmarks, chainage at gaps, village road at sections 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 a higher population and travel time get higher weightage;
- Priority is given to roads, ghats, and collection points that will facilitate agricultural diversification, reduce transportation costs, ensure a fair price and create a farm and non-farm employment and income;
- Priority is given to roads development and inland waterways dredging that will enable year-round mobility of the 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 with 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 demands and local needs are reflected in the prioritization which was

determined by the Study, working together with LGI representatives and LGED field-level technical staff at the stakeholder consultation meetings held in each Upazila.

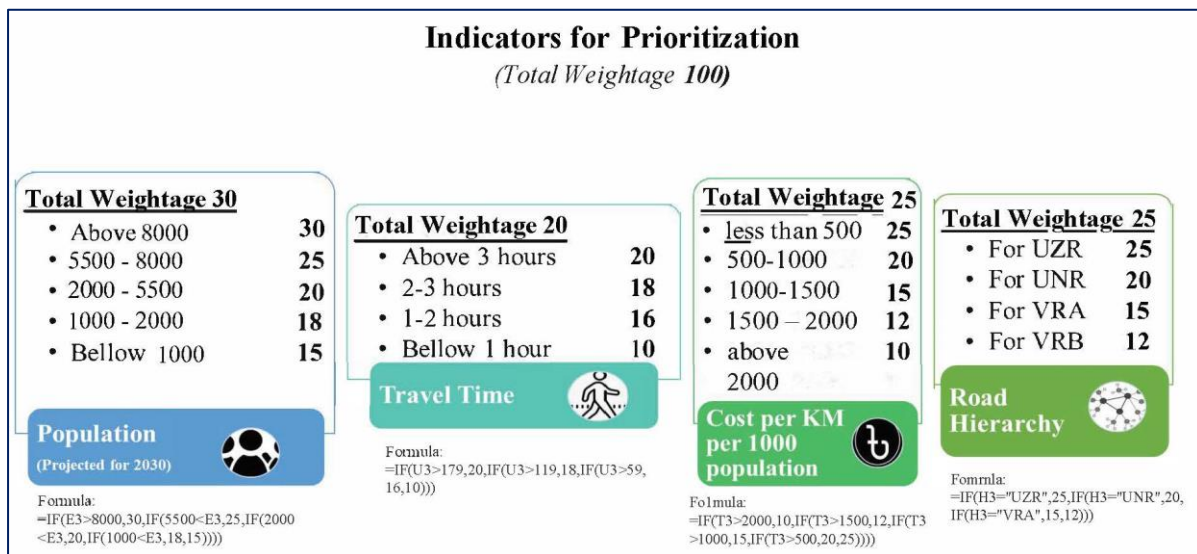


Figure 2: Prioritization indicators & their weightage values

### 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 the union Chairman and members who know the sub-project and are the best. This was not in scale but approximation was reached by triangulation. Then digitized on screen using GIS, 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 fieldwork 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. The 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 staff.



### **3.9 NATIONAL WORKSHOP**

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

## 4 DESCRIPTION OF WETLANDS

### 4.1 DISTRIBUTION OF THE HAORS/ WETLANDS

The Upazila has a small portion of flash flood zone that covers near 10-15% of its land area. The roads within the flood zone become inundated during monsoon, which requires attention to take relevant measures during road construction and maintenance.

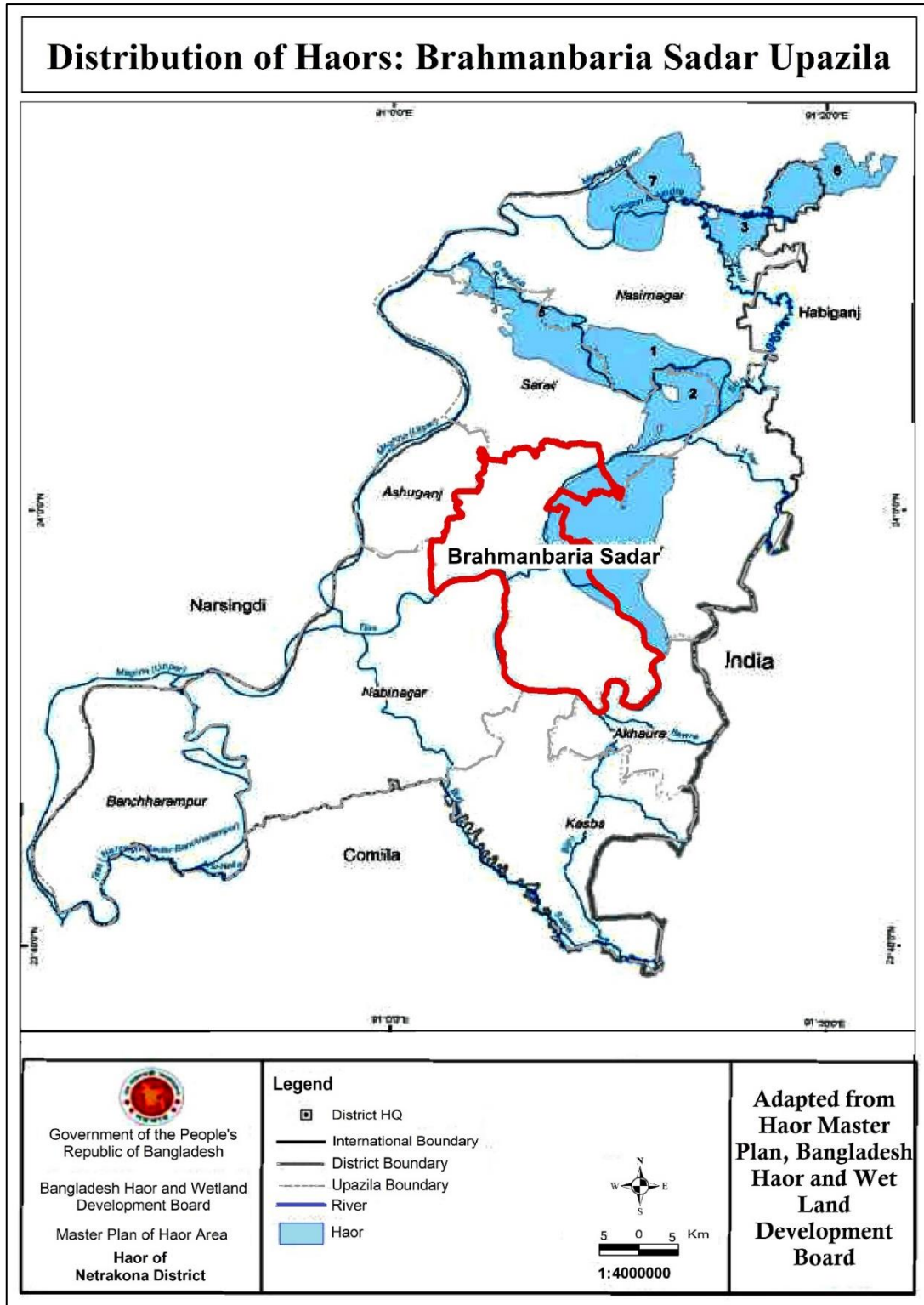


Figure 3: Haor Distribution Map

## 4.2 HAOR/ WETLAND CATEGORY

However, a small portion in the east of the Upazila, it is within floodplain range. Therefore, road or other infrastructure development in this Upazila does not have any major environmental consequences.

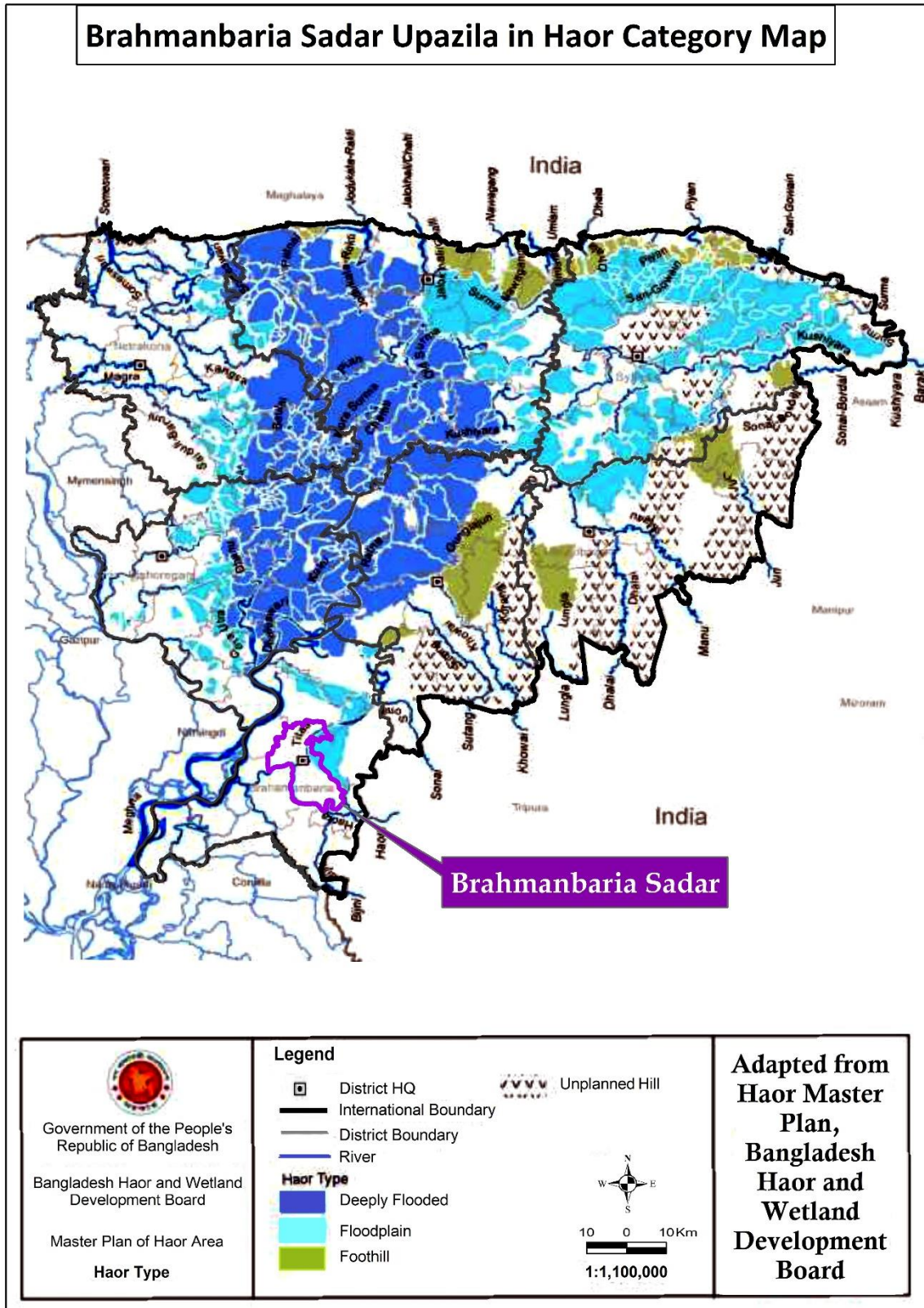


Figure 4: Haor Category Map.

### 4.3 BIO-ECOLOGICAL CHARACTERISTICS

The Bio-ecological characteristics map of the Upazila has been shown below. The map shows that it is mostly within the Meghna Floodplain zone and partially a haor basin. Therefore, adequate openings for the road and road structures should be maintained.

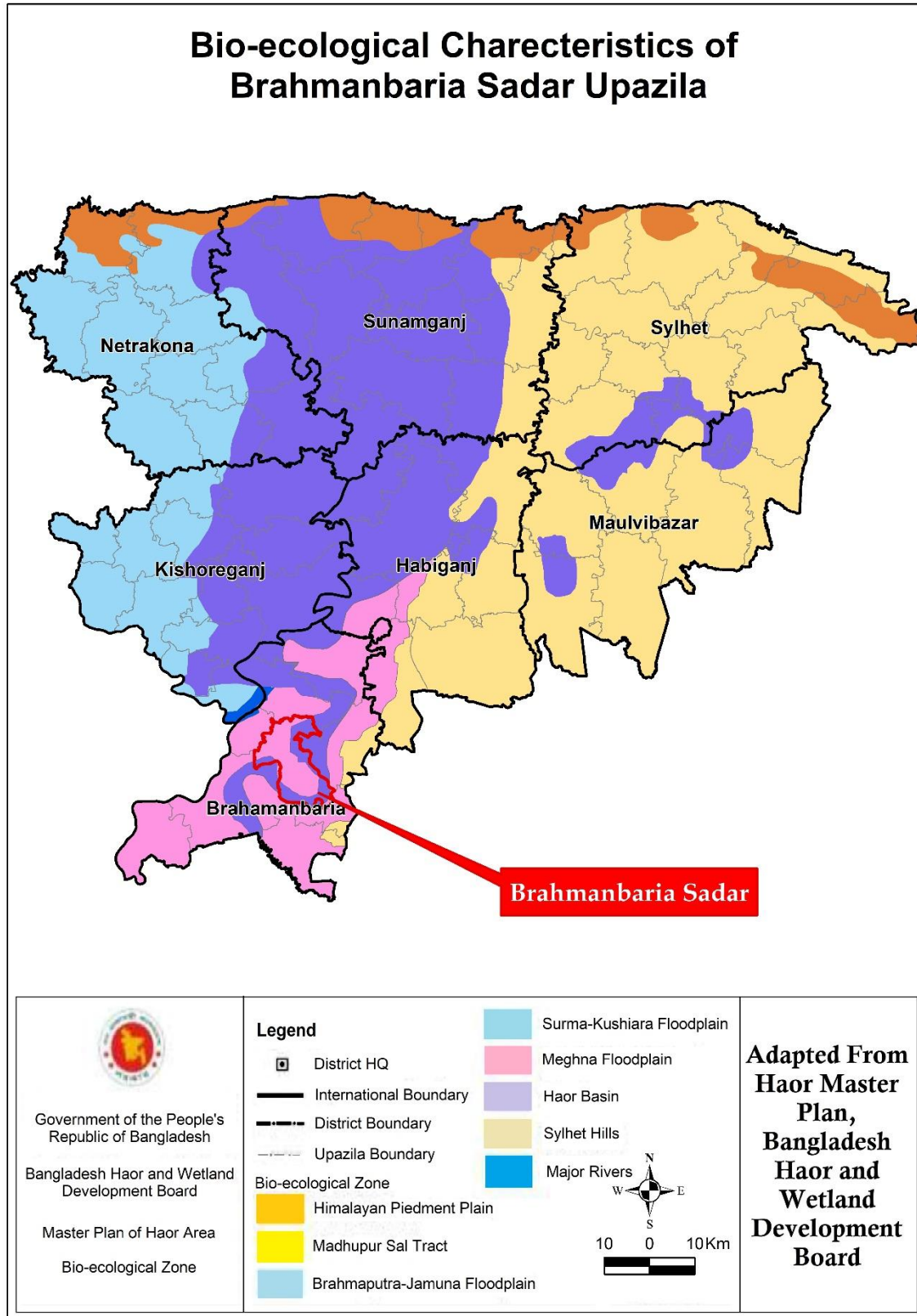


Figure 5: Bio Ecological Characteristics Map

## 5 RURAL ROAD CONNECTIVITY TO THE VILLAGES

### 5.1 SUMMARY OF THE VILLAGE CONNECTIVITY

The feature of rural road communications in Brahmanbaria Sadar Upazila is contrasted. Out of 163 villages, 8 are disconnected from the developed paved road network which brings huge suffering for the people of those village. The total rural road network of Brahmanbaria Sadar is 430.13 km and out of which, 255.57 km are paved and 174.57 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	Basudeb	15	12	3
2	Budhal	10	10	0
3	Dakshin Ichhapur	18	18	0
4	Dakshin Natai	9	9	0
5	Shuhilpur	25	23	2
6	Machhihata	18	18	0
7	Majlishpur	14	12	2
8	Purba Talsahar	7	7	0
9	Ramrail	13	13	0
10	Sadekpur	8	8	0
11	Sultanpur	15	15	0
12	Uttar Natai	10	10	0
<b>Total</b>		<b>163</b>	<b>155</b>	<b>8</b>

## 5.2 VILLAGES AND THEIR CONNECTIVITY – UNION LEVEL

The consultant arranged a meeting at the Upazila conference room with and all the UP Chairman & their secretaries. The team interviewed a representative of each 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)
Basudeb	1	Barishal	4599	Aharand	2435
	2	Basudeb	2207	Baishnabpur	717
	3	Bhatsala	539	Shyamnagar	809
	4	Chandi	4792		
	5	Dataisar	770		
	6	Dubla	803		
	7	Ghatiara	7216		
	8	Jarailtala	671		
	9	Kodda	3317		
	10	Korabari	1117		
	11	Purba Paik Para	2719		
	12	Ujanisar	3162		
			<b>Sub Total</b>	<b>31912</b>	
Budhal	1	Betbaria	1286		
	2	Budhal	4591		
	3	Chandiara	3312		
	4	Chhatian	2705		
	5	Chhota Nischintapur			
	6	Janglisar	665		
	7	Khatihata	1640		
	8	Malihata	4923		
	9	Nandanpur	3374		
	10	Sutiara	3019		
		<b>Sub Total</b>	<b>25515</b>		
Dakshin Ichhapur	1	Bade Haria	661		
	2	Barirband	7		
	3	Bhabanipur			
	4	Bhairabari			
	5	Fatehpur	1196		
	6	Garargaon	773		
	7	Gopalpur	385		
	8	Jamalpur	568		
	9	Jamalpur Khola			
	10	Khude Haria	1315		
	11	Masimpur	557		
	12	Nurpur	880		
	13	Petujuri	880		
	14	Rajapur	149		
	15	Ramchandrapur	1166		
	16	Satirpara	4219		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Hard-to-Reach Villages	Population 2021 (Based on BBS 2011)
	17	Sonabarishi Para	990		
	18	Tan Garargaon	550		
	<b>Sub Total</b>		<b>14296</b>		
<b>Dakshin Natai</b>	1	Bara Haran	4214		
	2	Bara Kalisima	6066		
	3	Bil Kenduai	2599		
	4	Chhota Haran	2286		
	5	Gachhtala	1545		
	6	Narasingheswar	4979		
	7	Payag	2193		
	8	Salgaon	2788		
	9	Sindurura	3126		
	<b>Sub Total</b>		<b>29796</b>		
<b>Machhihata</b>	1	Alakpur	782		
	2	Atla	2957		
	3	Bhadeshwara	1771		
	4	Bhat Para	830		
	5	Chandpur	3643		
	6	Chapair	3571		
	7	Chinaiar	5427		
	8	Dakshin Jagatsar	3808		
	9	Fulbaria	939		
	10	Gazaria	1702		
	11	Kachait	5051		
	12	Kanchanpur	1359		
	13	Kazirkhola	556		
	14	Kheoai	1662		
	15	Machhihata	1122		
	16	Paghachang	1960		
	17	Radhika	1674		
	18	Uttar Jagatsar	1695		
	<b>Sub Total</b>		<b>40509</b>		
<b>Majlishpur</b>	1	Anadapur	1419	Char Kharampur	870
	2	Bara Bakail	2393	Chhota Haripur*	3208
	3	Chandpur	408	Shampur	652
	4	Chhota Bakail	1376		
	5	Chhota Nischintapur	757		
	6	Darma	4028		
	7	Fatehpur	775		
	8	Jafarganj	1050		
	9	Kharampur	870		
	10	Maind	7902		
	11	Majlishpur	6185		
	12	Makdampur	442		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Hard-to-Reach Villages	Population 2021 (Based on BBS 2011)
	<b>Sub Total</b>		<b>27605</b>		<b>4430</b>
Purba Talsahar	1	Ashtagram	8065		
	2	Chandpur	844		
	3	Dhansar	1457		
	4	Mohanpur	1845		
	5	Poothai	3423		
	6	Sonasar	1643		
	7	Telinagar	8069		
	<b>Sub Total</b>		<b>25346</b>		
Ramrail	1	Bholachang	1173		
	2	Bialiswar	1462		
	3	Bijeshwar	5736		
	4	Gangihatha	5146		
	5	Jatrabari	7620		
	6	Magurura	619		
	7	Ramrail	2918		
	8	Senda	5817		
	9	Sohata	1655		
	10	Sreerampur	950		
	11	Suriakhola	520		
	12	Ulcha Para	5070		
	<b>Sub Total</b>		<b>38686</b>		
Sadekpur	1	Adampur	1686		
	2	Alokpur	2244		
	3	Birampur	3677		
	4	Chilokut	5687		
	5	Damchail	1663		
	6	Khagchail	1658		
	7	Rajakha	1807		
	8	Sadepkur	4300		
	<b>Sub Total</b>		<b>22722</b>		
Shuhilpur	1	Ahairkaoir	734	Simrailkandi (Part)	1061
	2	Alpara	608	Sitanagar	2086
	3	Dakshin Ghatara	5225		
	4	Dakshin Kendubaria	801		
	5	Gautam Para	2400		
	6	Gopinathpur	736		
	7	Haria	1232		
	8	Harinadi	1180		
	9	Hindu Para	4624		
	10	Kalamuri	1375		
	11	Kashinagar	1750		



Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Hard-to-Reach Villages	Population 2021 (Based on BBS 2011)
	12	Katbaria	301		
	13	Khola Para	726		
	14	Mahij Para	1221		
	15	Naobari	924		
	16	Parulia Para	814		
	17	Pathan Para	842		
	18	Sutarmura	992		
	19	Tale Para	1469		
	20	Talukdarbari	224		
	21	Uttar Ghatara	4326		
	22	Uttar Kendubaria	950		
	23	Uttar Sunilpur	3930		
<b>Sub Total</b>			<b>37384</b>		<b>3147</b>
Sultanpur	1	Birampur	4749		
	2	Dakshin Sultanpur	3342		
	3	Hablauchcha	2254		
	4	Halkata	580		
	5	Ishan Nagar	523		
	6	Mahiuddinnagar	1666		
	7	Patairhata	681		
	8	Rajhrishnapur	408		
	9	Shahapur	1426		
	10	Silaura	3860		
	11	Sitashar	517		
	12	Tangarpar	635		
	13	Ursiura	3208		
	14	Uttar Jangal	1463		
	15	Uttar Sultanpur	4847		
<b>Sub Total</b>			<b>30159</b>		
Uttar Naitai	1	Behair	3020		
	2	Bhat Para	6431		
	3	Bhultara	466		
	4	Birasar	4420		
	5	Chhota Brahmanbaria	3862		
	6	Natai	7090		
	7	Noapara	600		
	8	Rajghar	5094		
	9	Tale Para	628		
	10	Thaliara	2795		
<b>Sub Total</b>			<b>34406</b>		

### 5.3 MAP OF HARD-TO-REACH VILLAGES & PROPOSED ROADS

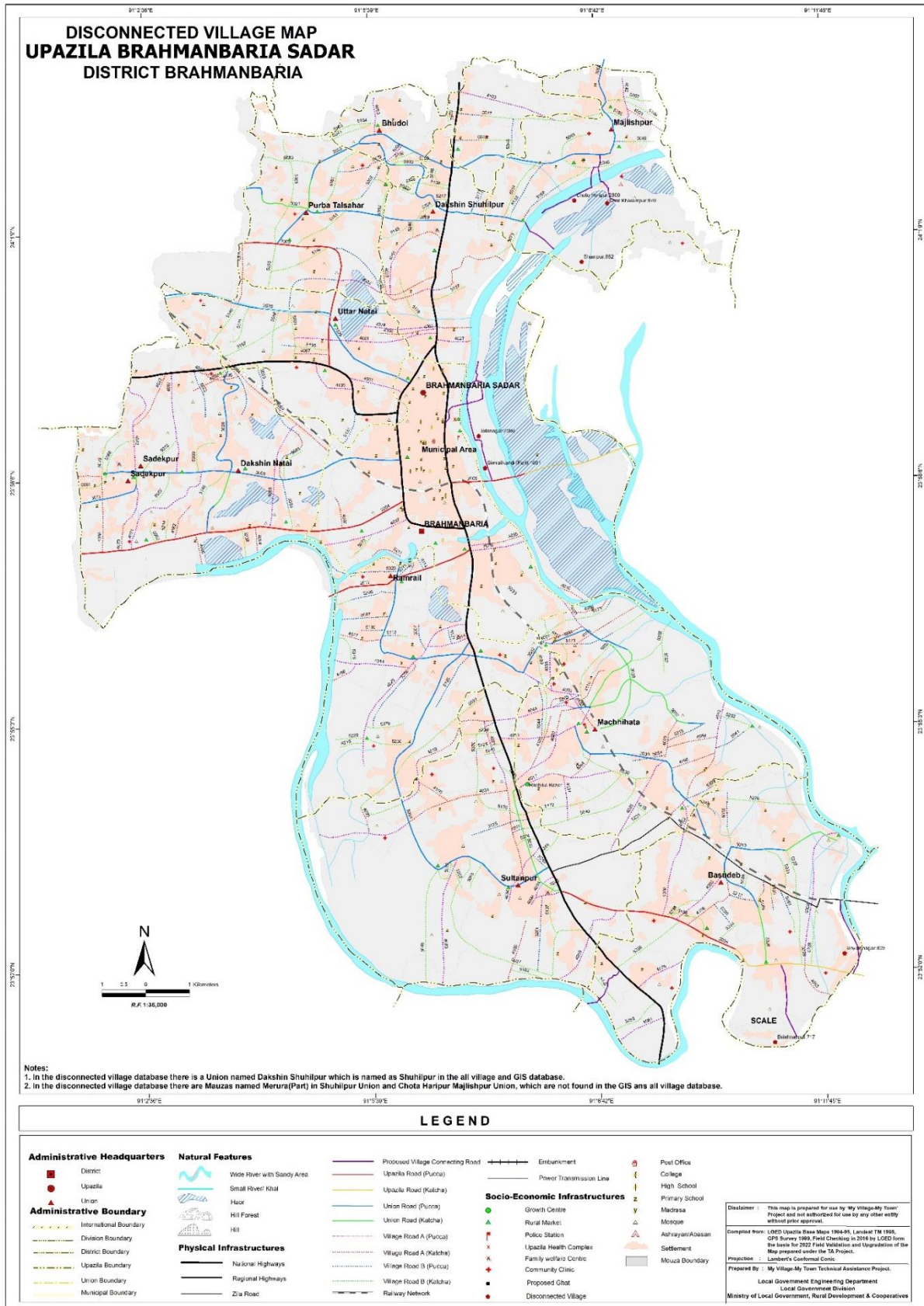


Figure 6: Upazila Map

## 6 DATA COLLECTION & ANALYSIS

The consultant team collected data from the field on Hard-to-Reach Villages. Data were collected from those villages including population, road alignment information (*type, length, condition*), travel time, a structure required on the alignment, potential Riverine routes that can be used for a multi-modal transport system etc. The data were then analyzed, categorized, and finally used to obtain a priority list along with a map (*Figure:5*) 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 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 road communication effective.

*Table 3: 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)
430.13	255.57	174.57	12.00

#### 6.1.1 PROPOSED ALL-WEATHER ROUTES:

There are 7 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 4: Proposed all-weather roads in the Upazila*

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
1	Goalnagar Bridge - Boishnabpur village road	No ID	All weather	2
2	Amirpara - Char kharampur road	No ID	All weather	1
3	Mojlishpur bazar - Char Haripur via Amirpara GPS & Anandapur	No ID	All weather	2
4	Modhupur- Mulgram (Kasba) Connected Road	No ID	All weather	1
5	Bakail - Shampur road	No ID	All weather	1
6	Akhaura Bora bazar BGB Camp - Shymnagar village road	No ID	All weather	2
7	Kashinagar - Bhadughar road via Shimrailkandi	No ID	All weather	3

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

There are 7 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 5: Proposed roads for Hard-to-Reach Villages having No ID*

Sl. No	Road Name	Road ID	Unpaved length (Km)	
1	Goalnagar Bridge - Boishnabpur village road	No ID	All weather	2
2	Amirpara - Char kharampur road	No ID	All weather	1
3	Mojlishpur bazar - Char Haripur via Amirpara GPS & Anandapur	No ID	All weather	2
4	Modhupur- Mulgram (Kasba) Connected Road	No ID	All weather	1
5	Bakail - Shampur road	No ID	All weather	1
6	Akhaura Bora bazar BGB Camp - Shymnagar village road	No ID	All weather	2
7	Kashinagar - Bhadughar road via Shimrailkandi	No ID	All weather	3

### 6.1.3 PRIORITY FOR ROAD DEVELOPMENT

Considering resources constraint, benefited a group of people, the 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 6: Considered weightage values for the prioritization*

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

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

## 7 CONCLUSION & RECOMMENDATIONS

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- Brahmanbaria Sadar Upazila is located within the *Middle Meghna Flood Plain zone*. There exist Titas River that dominate the ecosystem, and transport system of the Upazila. During monsoons, this river carries a huge volume of flood water. Though the Upazila has a number of small Rivers, Riverine transport is available only along the Titas River.
- As the Upazila is heavily flooded during monsoon, rural roads and structures are highly vulnerable in this Upazila.
- The Upazila has a total number of 08 Hard-to-Reach Villages. To develop rural connectivity, there are proposals for both all-weather and 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 disasters. Due to climate change, vulnerability is getting intense. The year 2022 has shown catastrophic flood that was not seen over the last 18 years (*last in 2004 similar to 1998 & 1988*). Therefore, it is highly recommended to study the road alignments before going for investment.
- Case-by-case design of roads in this Upazila considering different aspects such as exposure to floods, erosion etc. is highly recommended. A special study regarding the road and structure design of the Brahmanbaria Sadar in Brahmanbaria district is highly recommended.

## ANNEXURE - 1

### DETAILS OF GROWTH CENTER & HATBAZAR

Sl. 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 Collecti on BDT (2020)	Lease/ Khas Collecti on BDT (2019)
											Toha	Khas	Private		
1	Basudeb	Gatiaria bazar	HB	Yes	General Market	Wholesale	1	71	0.24	71	0.14	0.50	0.00	0	0
2	Basudeb	Basudeb bazar	HB	Yes	General Market	Wholesale	1	0	0.00	25	0.25	0.35	0.15	0	0
3	Machihata	Chandapur gorur bazar	HB	Yes	Collection Center	Wholesale	1	0	0.00	0	0.00	0.35	0.00	43100	41000
4	Machihata	Chandapur toha bazar	HB	Yes	General Market	Wholesale	1	36	0.22	36	0.21	0.48	0.14	22800	22000
5	Machihata	Chinir bazar	HB	Yes	Collection Center	Wholesale	1	61	0.45	61	0.55	1.23	0.39	21600	21000
6	Majlispur	Majlispur bazar	HB	Yes	General Market	Wholesale	1	40	0.20	40	0.38	0.89	0.00	16000	16000
7	Ramrail	Sendo bazar	HB	Yes	General Market	Wholesale	1	121	0.46	121	0.25	0.59	0.00	4500	11300
8	Ramrail	Ulchapara bazar	HB	Yes	General Market	Wholesale	1	35	0.35	35	0.25	0.00	0.00	4200	0
9	Shuhilpur	Shuhilpur gorur bazar	HB	Yes	Collection Center	Both	1	0	0.00	0	0.00	1.51	0.00	13000509	10200000
10	Shuhilpur	Shuhilpur toha bazar	HB	Yes	Collection Center	Wholesale	1	69	1.06	69	0.37	1.06	0.00	131000	157000
11	Sultanpur	Radhika bazar	GC	Yes	General Market	Wholesale	1	0	0.00	0	0.37	0.43	0.36	40000	18300
12	Sultanpur	Sultanpur bazar	HB	Yes	General Market	Wholesale	1	0	0.00	80	0.40	0.40	0.50	60600	75700
13	Talshahar purbo	Mohonpur bazar	HB	Yes	General Market	Wholesale	1	42	0.21	42	0.16	0.39	0.00	47100	51000

## ANNEXURE - 2

### PRIORITY LIST FOR ROAD DEVELOPMENT

SL No	Upazila	Connecting Union	Connecting Village	Village Population BBS 2011	Population 2021 (Based on BBS 2011)	Road Name	Road ID	Road Type	Road Type by Surface Condition	Total Road Length	Paved length (Km)	HBB Length (km)	Unpaved length (Km)	Total Road Length to be Developed	HBB + Unpaved in (km)	Approx. Cost of Road (Lac)	Structure/ Gap (Meter)	Cost of Structure (in Lac)	Total Cost (in lac) (Roads + Structures)	Population /KM	Tentative Budget/1000 Population (in lac)	Travel Time (in min)	Weightage for Population	Weightage for Travel Time	Weightage for Cost per 1000 Pop	Weightage for Road Type	Total Weightage	Priority
1	B. Baria Sadar	Basudeb	Modhupur (Aharand)	2435	2790	Modhupur- Mulgram (Kasba) Connected Road	No ID	VRB	All weather	1.00			1.00	1.00	1.00	120.00			120.00	2790	43.01	15.00	20	10	25	12	67	1
2	B. Baria Sadar	Dakshin Shuhilpur	Simrailkandi (Part), Sitanagar	4286	4911	Kashinagar - Bhadughar road via Shimrailkandi	No ID	VRB	All weather	3.00			3.00	3.00	3.00	360.00	0.00	0.00	360.00	1637	73.31	45.00	20	10	25	12	67	2
3	B. Baria Sadar	Majlishpur	Chhota Haripur	2800	3208	Mojlishpur bazar - Char Haripur via Amirpara GPS & Anandapur	No ID	VRB	All weather	2.00			2.00	2.00	2.00	240.00	0.00	0.00	240.00	1604	74.81	30.00	20	10	25	12	67	3
4	B. Baria Sadar	Majlishpur	Char Kharampur	870	997	Amirpara - Char kharampur road	No ID	VRB	All weather	1.00			1.00	1.00	1.00	120.00	0.00	0.00	120.00	997	120.38	15.00	15	10	25	12	62	4
5	B. Baria Sadar	Majlishpur	Shampur	652	747	Bakail - Shampur road	No ID	VRB	All weather	1.00			1.00	1.00	1.00	120.00	0.00	0.00	120.00	747	160.63	15.00	15	10	25	12	62	5
6	B. Baria Sadar	Basudeb	Shyamnagar	809	927	Akhaura Bora bazar BGB Camp - Shymnagar village road	No ID	VRB	All weather	2.00			2.00	2.00	2.00	240.00	0.00	0.00	240.00	463	258.92	30.00	15	10	25	12	62	6
7	B. Baria Sadar	Basudeb	Baishnabpur	717	822	Goalnagar Bridge - Boisnabpur village road	No ID	VRB	All weather	2.00			2.00	2.00	2.00	240.00	0.00	0.00	240.00	411	292.14	30.00	15	10	25	12	62	7

\*\*\* 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 per KM/1000 people= 25, Road Hierarchy= 25)