



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”

Jamalganj Upazila, Sunamganj



July, 2022

CONTENTS

GLOSSARY	i
ABBREVIATIONS	ii
Background	iii
1 Description of the Upazila	1
1.1 Geography and Demography	1
1.2 Education Features.....	1
1.3 Rural Road Communications.....	1
1.4 Agriculture, Food Production, and Fisheries	1
1.5 Growth Centre and Hatbazar.....	1
2 Location of the Upazila	3
3 Approach & Methodology	4
2.1 Study Team Composition.....	4
2.2 Study Area.....	4
2.3 Database Review and Analysis	4
2.4 Prioritization Criteria of Sub-projects	5
2.5 Weightage Distribution for Prioritization.....	5
2.6 Mapping Hard-to-reach Villages & Population.....	6
2.7 Wrap Up Meeting.....	6
2.8 Validation Workshop.....	6
2.9 National Workshop.....	7
4 Description of Wetlands	8
3.1 Distribution of the Haors/ Wetlands.....	8
3.2 Haor/ Wetland Category.....	9
3.3 Bio-Ecological Characteristics	10
5 Rural Road Connectivity to the Villages	11
4.1 Summary of the Village Connectivity.....	11
4.2 Villages and their connectivity – Union level.....	12
4.3 Map of Hard-to-Reach Villages & Proposed Roads.....	17
6 Data Collection & Analysis	18
5.1 Proposed Roadway for Hard-to-Reach Villages:.....	18
5.1.1 Proposed Submersible Routes:.....	18
5.1.2 Proposed Roads for Hard-to-Reach Villages Having No ID:	19
5.1.3 Priority for Road Development	19
7 Conclusion & Recommendations	20
Annexure - 1	21
Annexure - 2	23

List of Figures

Figure 1: Upazila Location Map	3
Figure 2: Prioritization indicators & their weightage values	6
Figure 3: Haor Distribution Map	8
Figure 4: Haor Category Map.	9
Figure 5: Bio Ecological Characteristics Map.....	10
Figure 6: Upazila Map	17

List of Tables

Table 1: Total villages in the unions and their connectivity.....	11
Table 2: Union-wise connected & Hard-to-Reach Villages and their population.....	12
Table 3: Summary of the rural roads in the Upazila.....	18
Table 4: Proposed submersible roads in the Upazila	18
Table 5: Proposed roads for Hard-to-Reach Villages having No ID.....	19
Table 6: Considered weightage values for the prioritization.....	19

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 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

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 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 **Jamalganj** Upazila of **Sunamganj** District.

1 DESCRIPTION OF THE UPAZILA

1.1 GEOGRAPHY AND DEMOGRAPHY

The geographical area of Jamalganj Upazila is 309.38 square kilometers and has 5 unions, 97 mauzas, and 192 villages. The Upazila is 25km away from the district headquarters of Sunamganj. Jamalganj is partly covered by 10 haors/ wetlands and there exist 14(fourteen) rivers flowing over the Upazila. The total population of Upazila is 167260 of which 84612 are male and 82648 females, the total number of households are 29935 and the average household size is 5.57 with a population density of 541 (as per population census 2011).

1.2 EDUCATION FEATURES

According to the information of the relevant local government offices, there are 63 government & 61 non-government primary schools in the Upazila. On the other hand, Jamalganj has 10 non-government with no government high schools, 1 privet colleges, and 6 madrasahs. The literacy rate for the Upazila is 32.5% 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 Jamalganj 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 Jamalganj is 302.85 km and out of which, 149.36 km are paved and 153.49 km earthen.

1.4 AGRICULTURE, FOOD PRODUCTION, AND FISHERIES

Though the aggregate (coarse sand, stone chips & stone) business is the main source of income for the inhabitants, agriculture too has major importance for the economy of the people of Jamalganj. There are 83668 acres of arable land in Upazila. In the fiscal year 2010-11, the Rice production was 5890 & 57995 metric tons for Aman & Boro seasons respectively. The Upazila also produced 33 metric tons of Wheat, 1710 metric tons of Potato, and 22 metric tons of Oil seed 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, Jamalganj has 7322 Acre of haor, pond & dighee that produced huge metric tons of fish. There also exist 147 poultry & 23 dairy farms.

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

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 16 Hatbazar and 4 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

Jamalganj Upazila of Sunamganj district in the North-Eastern part of the country. The location has been shown on the map. The Upazila is situated on the west side of Sunamganj Sadar Upazila. It causes flash floods during monsoon coming from uphill Meghalaya, resulting in waterlogging within the haor basin. Flash floods induce severe impacts on both the built and the natural environment. The effects of flash floods can be catastrophic and show extensive diversity, ranging from damages to buildings and infrastructure to impacts on vegetation, human lives, and livestock.

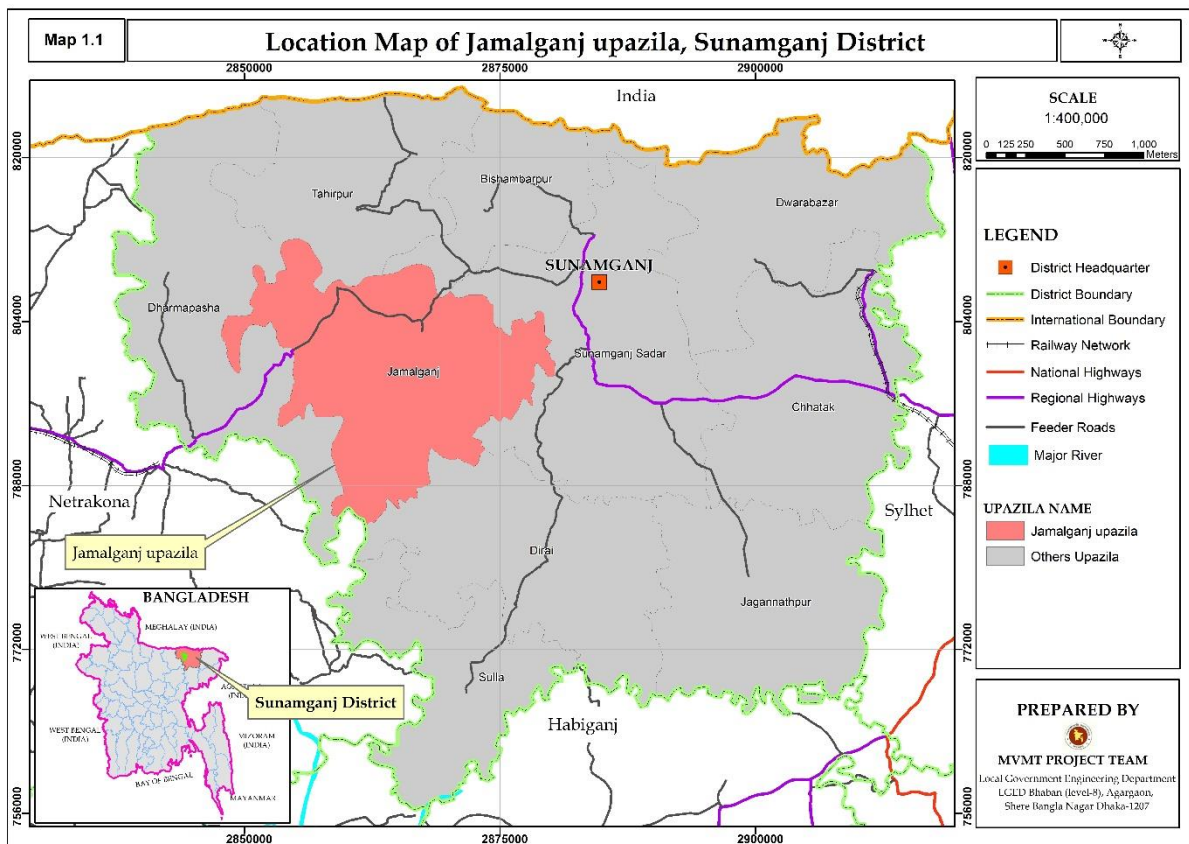


Figure 1: Upazila Location Map

3 APPROACH & METHODOLOGY

2.1 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

2.2 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.

2.3 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.

2.4 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.

2.5 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.

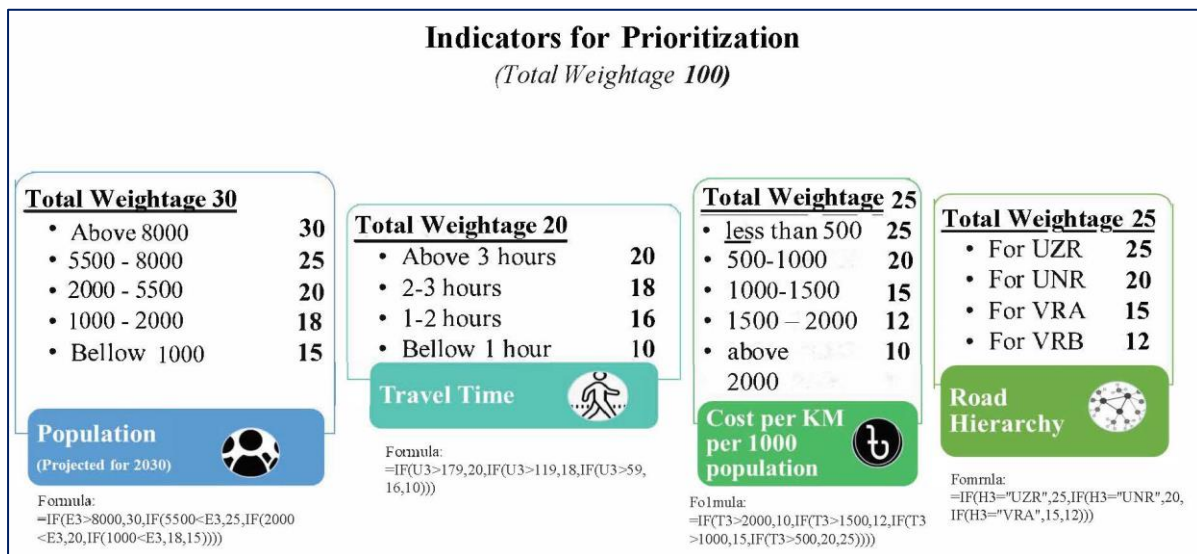


Figure 2: Prioritization indicators & their weightage values

2.6 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.

2.7 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.

2.8 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.

2.9 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

3.1 DISTRIBUTION OF THE HAORS/ WETLANDS

The Upazila has a large portion of flash flood zone that covers almost 90% 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.

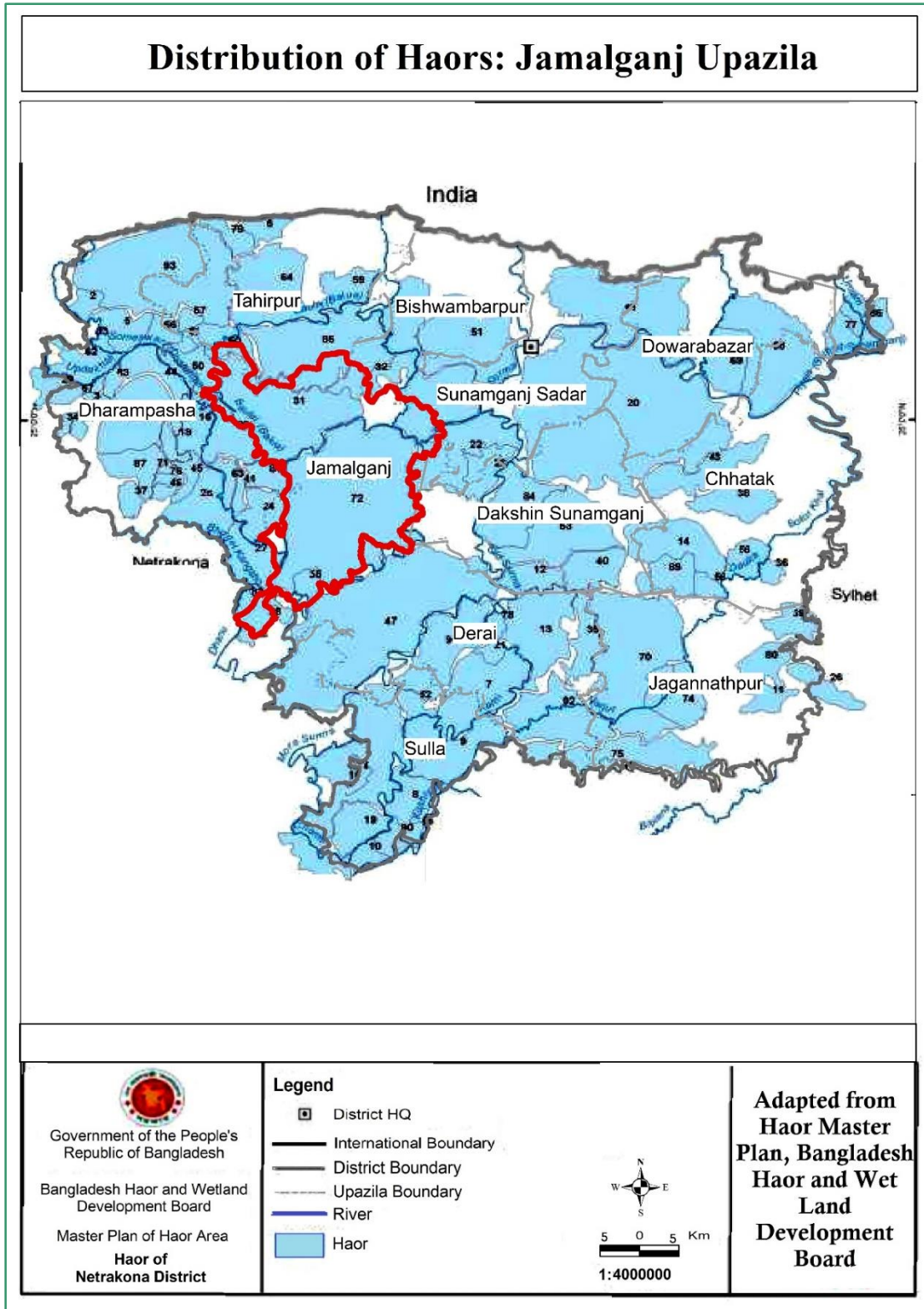


Figure 3: Haor Distribution Map

3.2 HAOR/ WETLAND CATEGORY

All the Upazila is within Deep Haor range. Therefore, road or other infrastructure development in this Upazila have numerous major environmental issues.

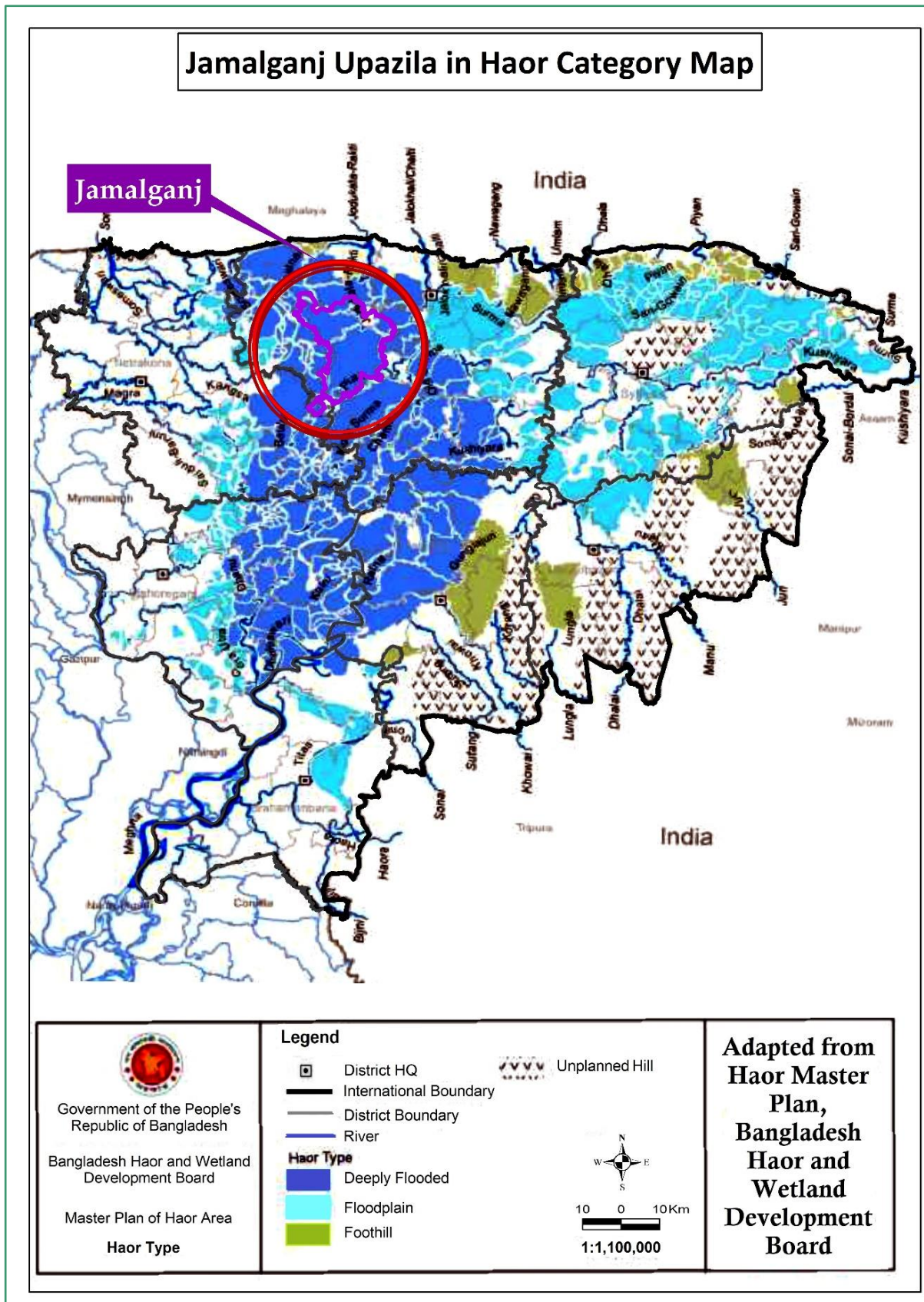


Figure 4: Haor Category Map.

3.3 BIO-ECOLOGICAL CHARACTERISTICS

The Bio-ecological characteristics map of the Upazila has been shown below. The map shows that all the Upazila is under Haor Basin range. Therefore, adequate openings for the road and road structures should be maintained.

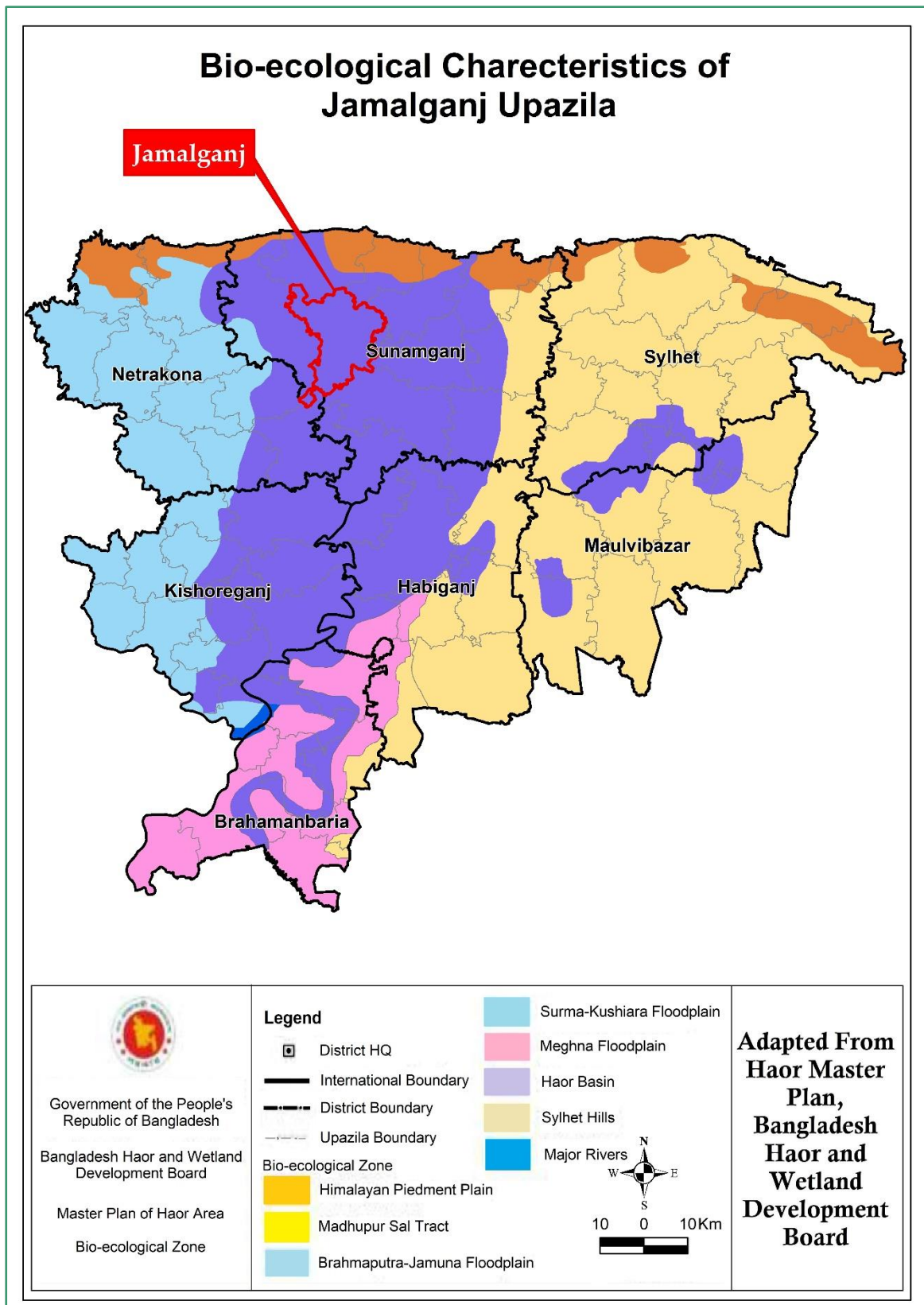


Figure 5: Bio Ecological Characteristics Map

5 RURAL ROAD CONNECTIVITY TO THE VILLAGES

4.1 SUMMARY OF THE VILLAGE CONNECTIVITY

The feature of rural road communications in Jamalganj Upazila is contrasted. Out of 183 villages, only 12 villages are disconnected from the developed paved road network which brings huge suffering for the people of those village. The total rural road network of Jamalganj is 302.85 km and out of which, 149.36 km are paved and 153.49 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	Beheli	39	35	4
2	Bhimkhali	37	33	4
3	Fenarbak	45	42	3
4	Jamalganj	38	37	1
5	Sachna Bazar	24	24	0
Total		183	171	12

4.2 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)	Disconnected Villages	Population 2021 (Based on BBS 2011)
Beheli	1	Badarpur	1006	Achhanpur	725
	2	Bagani	286	Harinakandi	1414
	3	Behali	847	Islampur	1464
	4	Behali Alipur	882	Madnakandi	159
	5	Behali Chak	187		
	6	Boalia			
	7	Chandipur	399		
	8	Chinamara	383		
	9	Durgapur	251		
	10	Gopalpur	445		
	11	Harinagar	729		
	12	Haripur	166		
	13	Hijla	225		
	14	Horiakandi	52		
	15	Inathnagar	616		
	16	Jatindrapur	475		
	17	Kumaria	120		
	18	Mohalia (Nowa Para)	147		
	19	Mohammedpur	615		
	20	Moshalghat	233		
	21	Nymoshalghat	1151		
	22	Paschim Alipur	405		
	23	Prakashnagar	243		
	24	Putia	239		
	25	Radhanagar	1811		
	26	Rahimapur	674		
	27	Rajabaj			
	28	Rajapur	228		
	29	Shadevpur	95		
	30	Shibpur	568		
	31	Solakura	465		
	32	Sundarpur	167		
	33	Tilkey	125		
	34	Ulukandi	790		
	35	Umedpur	533		
	Sub Total		15558		3762
	1	Bahadurpur	654	Chandernagar	5577

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
Bhimkhali	2	Bara Ghagtia	631	Hararkandi	286
	3	Bichhna	186	Hogali	699
	4	Bisana	1621	Malinagar	1026
	5	Chandabari	1526		
	6	Choto Ghagtia	1303		
	7	Fakaul Mahamudpur	1071		
	8	Faridpur	270		
	9	Gazipur	134		
	10	Golamipur	602		
	11	Hasnabaj	931		
	12	Jangalbari	157		
	13	Kalipur	569		
	14	Kalkatka	2731		
	15	Kamlabaj	757		
	16	Kandagaon	559		
	17	Kirtenpur	171		
	18	Mahamudpur	1967		
	19	Makharkhala	464		
	20	Mallikpur	2390		
	21	Manigaon	819		
	22	Mirjapur	413		
	23	Noagaon	1985		
	24	Puran Chandabari	373		
	25	Rajabaje	316		
	26	Salaya	1161		
	27	Sontoshpur			
	28	Sreepur	915		
	29	Taranagar			
	30	Ujjalpur	745		
	31	Uttar Jamlabad	1541		
	32	Vhada	1059		
	33	Vhimkhali Bazar	290		
		Sub Total		28311	Bhimkhali Total
Fenarbak	1	Alipur	1527	Amanipur	589
	2	Amanipur		Benajura	956
	3	Badarpur	286		
	4	Bisnupur	1311		
	5	Bhati daulatpur	386	Hatamara	1047
	6	Bhutiarpur	663		
	7	Bijoyagar	281		
	8	Chayahara	589		
	9	Dakshin Jamalabad	1007		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)	
	10	Dakshin Laximipur	1561			
	11	Dakshin Rampur	1372			
	12	Enayetnagar	626			
	13	Fazilpur	253			
	14	Fenarbak	1650			
	15	Ganga Dharpur	922			
	16	Gojaria	3253			
	17	Josomantopur	377			
	18	Kadarpur	1996			
	19	Kashipur	175			
	20	Khujargaon	691			
	21	Krishnapur	153			
	22	Lakshmipur Natun Para	871			
	23	Lalpur	316			
	24	Matargaon	524			
	25	Morulpur	603			
	26	Nazimnagar	1576			
	27	Nidhipur	584			
	28	Rafinagar	363			
	29	Rajapur	1797			
	30	Rajendrapur	361			
	31	Rasulpur	548			
	32	Saidnagar	282			
	33	Santirpur	1426			
	34	Sharifpur	1884			
	35	Sherpur	184			
	36	Shukdebpur	296			
	37	Sujjatpur	1194			
	38	Tazpur	270			
	39	Tegharia	233			
	40	Tuyabnagar	516			
	41	Udoypur	613			
	42	Ujan daulatpur	334			
			Sub Total	33854	Fenarbak Total	2592
	Jamalganj	1	Alipur	738	Sharifpur	556
		2	Aburhati	966		
		3	Bhatilalpur	1556		
		4	Bhurhati	503		
		5	Chandpur	1896		
		6	Dakshin Kamlabaje	1987		
		7	Danuakhali	1035		
		8	Durgapur	278		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)	
	9	Gulahati	544			
	10	Hindu Kalipur	279			
	11	Hossainpur	1012			
	12	Insenpur	261			
	13	Jamalghar Aburhati	590			
	14	Jamalgongj	1010			
	15	Kadamtali	762			
	16	Kalaguja	748			
	17	Kalibari	1128			
	18	Kalipur	2263			
	19	Kaminpur	1621			
	20	Kashipur	1875			
	21	Lambabagh	3868			
	22	Laxmipur	3596			
	23	Mominpur	1092			
	24	Noyahalot	3918			
	25	Paratali Hati	526			
	26	Sachna	2536			
	27	Saderbaj	915			
	28	Sampadpur	1165			
	29	Saratpur	787			
	30	Shahapur	984			
	31	Sonapur	1254			
	32	Telia				
	33	Ujan Lalpur	1265			
	34	Umedpur	873			
	35	Uttar Kamlabaj	2608			
	36	Uttar Kshnipur	834			
	37	Uttar Rampur	673			
		Sub Total		47946		556
	Sachna Bazar	1	Brammangaon	162		
		2	Dakshin Fatepur			
		3	Durlavpur	3034		
		4	Falakpur	784		
		5	Fatepur			
		6	Fazilpur	1122		
		7	Hariharpur	675		
8		Haripur	459			
9		Jamalbagh	579			
10		Kandagaon				
11		Kukriparshi	939			
12		Mafiz Nagar	702			

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	13	Najatpur	627		
	14	Noya Sudebpur	1027		
	15	Nurpur	608		
	16	Palak	1458		
	17	Rangamati	1150		
	18	Rupabali	1014		
	19	Sachna Bazar	829		
	20	Sharifpur	418		
	21	Sher Mastapur	1288		
	22	Sudebpur	1269		
	23	Sujatpur	1272		
	24	Uttar Lalpur	2339		
			Sub Total	21755	

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

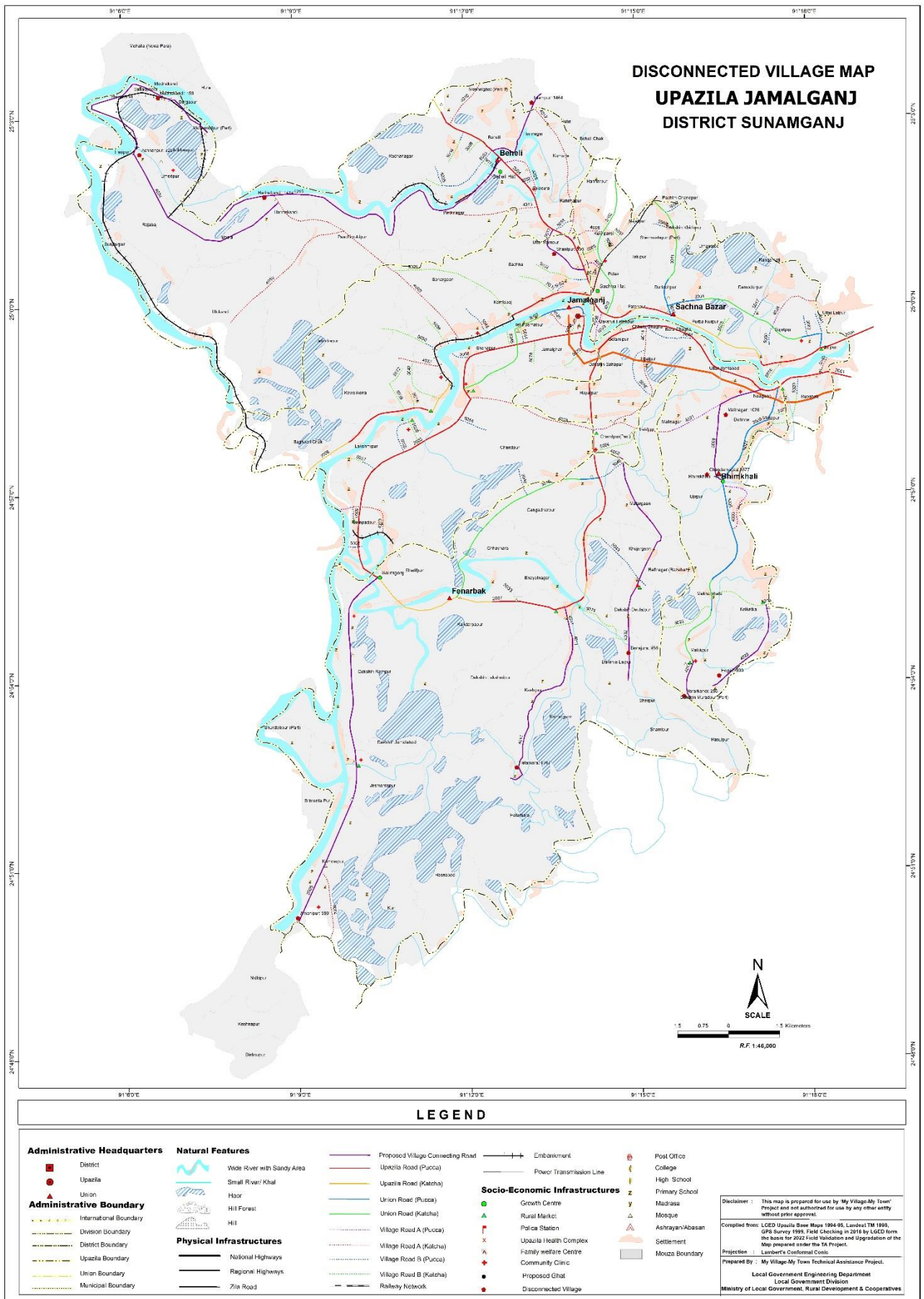


Figure 6: Upazila Map

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.

5.1 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)
302.85	149.36	153.49	57.00

5.1.1 PROPOSED SUBMERSIBLE ROUTES:

There are 12 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 4: Proposed submersible roads in the Upazila

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
1	Teranagar -Buinajura Road.	690504002	Submersible	7
2	Aminipur to Nidhipur Road	690504004	Submersible	2
3	Laxipur to Hatamara Road.	690504011	Submersible	5
4	Makhorkhala to Sontospur road.	690504017	Submersible	7
5	Kalkhatkha-Hogli road	690504022	Submersible	6
6	Harinakandi-Ashanpur Road	690504024	Submersible	3
7	Sachna Alipur Sharif pur Road.	690505017	Submersible	5
8	Lalbazar to Chandernagar Road	No ID	Submersible	3
9	Badarpur to Horinakandi Road	No ID	Submersible	5

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
10	Beheli to Islampur Road	No ID	Submersible	2
11	Chandbari to Malinagar Road	No ID	Submersible	3
12	Asanpur to Modnakandi Road	No ID	Submersible	5

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

There are 5 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	Lalbazar to Chandernagar Road	No ID	3
2	Badarpur to Horinakandi Road	No ID	5
3	Beheli to Islampur Road	No ID	2
4	Chandbari to Malinagar Road	No ID	3
5	Asanpur to Modnakandi Road	No ID	5

5.1.3 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
Total=	100

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

- Jamalganj Upazila is located within completely deep haor basin. Jamalganj is partly covered by 10 haors/ wetlands and there exist 14(fourteen) rivers flowing over the Upazila that dominate the ecosystem, and transport system of the Upazila. During monsoons, these Rivers carry a huge volume of flood water.
- 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 12 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 Jamalganj Upazila in Sunamganj 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 Collection BDT (2020)	Lease/ Khas Collection BDT (2019)
											Toha	Khas	Private		
1	Beheli	Beheli bazar	GC	Yes	General Market	Wholesale	2	100	0.50	100	0.35	1.01	0.00	2200	1600
2	Bhimkhali	Noagaon bazar	HB	Yes	General Market	Both	2	200	1.20	200	0.28	2.53	5.80	54000	52000
3	Bhimkhali	Bhimkhali bazar	GC	Yes	General Market	Wholesale	1	50	0.25	50	2.50	2.15	2.00	2569928	2447000
4	Bhimkhali	Kalkatkha Bazar	HB	No	General Market	Wholesale	1	60	0.25	60	0.00	0.00	1.00	0	0
5	Bhimkhali	Lal bazar	HB	No	General Market	Wholesale	0	65	0.32	65	0.00	0.10	0.22	0	0
6	Bhimkhali	Mullikpur bazar	HB	No	General Market	Wholesale	0	30	0.15	30	0.00	0.00	1.00	0	0
7	Fenarbak	Gazaria bazar	HB	No	General Market	Wholesale	1	56	0.28	56	0.00	0.10	0.00	0	0
8	Fenarbak	Laxmipur bazar	HB	No	General Market	Wholesale	1	40	0.20	40	0.00	0.04	0.04	0	0
9	Fenarbak	Khojargaon bazar	HB	No	General Market	Wholesale	0	50	0.20	10	0.00	0.00	2.00	0	0
10	Jamalganj	Jamalganj bazar	HB	No	General Market	Both	0	100	0.56	100	0.00	2.28	0.75	0	0
11	Jamalganj	Selimganj bazar	GC	Yes	General Market	Both	2	72	0.32	72	0.00	0.62	0.46	25163	33355
12	Jamalganj	Lalpur bazar	HB	Yes	General Market	Wholesale	1	40	0.20	40	0.62	4.68	0.00	0	1000
13	Jamalganj	Laxmipur bazar	HB	Yes	General Market	Wholesale	2	51	0.25	51	0.00	0.00	0.60	0	1200
14	Jamalganj	Chanpur bazar	HB	No	General Market	Wholesale	1	110	0.50	110	0.00	1.10	1.00	0	0
15	Jamalganj	Kameni pur bazar	HB	No	General Market	Wholesale	0	4	0.05	4	0.00	0.00	2.50	0	0
16	Jamalganj	Mannangat bazar	HB	No	General Market	Wholesale	1	206	1.10	206	0.00	2.80	0.00	0	0

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 Collection BDT (2020)	Lease/ Khas Collection BDT (2019)
											Toha	Khas	Private		
17	Sachna Bazar	Sachna bazar	GC	Yes	General Market	Both	1	490	2.50	490	0.00	8.47	10.88	2525000	2057000
18	Sachna Bazar	Jamalganj kath bansh bazar	HB	Yes	Special Market	Both	1	100	0.51	100	0.23	1.49	0.00	1751000	1539000
19	Sachna Bazar	Durlovpur bazar	HB	No	General Market	Wholesale	1	50	0.22	50	0.00	2.21	1.21	0	0
20	Sachna Bazar	Ramnagar bazar	HB	No	General Market	Wholesale	0	45	0.22	45	0.00	0.00	2.00	0	0

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	Jamalganj	Bhimkhali	Chandernagar	5577	6390	Lalbazur to Chandernagar Road	No ID	VRB	Submersible	3.00			3.00	3.00	3.00	540.00	0.00	0.00	540.00	2130	84.51	45.00	25	10	25	12	72	1
2	Jamalganj	Beheli	Harinakandi	1414	1620	Badarpur to Horinakandi Road	No ID	VRB	Submersible	5.00			5.00	5.00	5.00	900.00	0.00	0.00	900.00	324	555.52	75.00	18	16	20	12	66	2
3	Jamalganj	Fenarbak	Hatamara	1047	1200	Laxipur to Hatamara Road.	690504011	VRA	Submersible	5.00			5.00	5.00	5.00	900.00	10.00	90.00	990.00	240	825.27	75.00	18	16	20	12	66	3
4	Jamalganj	Beheli	Islampur	1464	1677	Beheli to Islampur Road	No ID	VRB	Submersible	2.00			2.00	2.00	2.00	360.00	0.00	0.00	360.00	839	214.62	30.00	18	10	25	12	65	4
5	Jamalganj	Bhimkhali	Malinagar	1026	1176	Chandbari to Malinagar Road	No ID	VRB	Submersible	3.00			3.00	3.00	3.00	540.00	0.00	0.00	540.00	392	459.36	45.00	18	10	25	12	65	5
6	Jamalganj	Fenarbak	Benajura	956	1095	Teranagar -Buinajura Road.	690504002	VRA	Submersible	8.00	1.00		7.00	8.00	7.00	1260.00	0.00	0.00	1260.00	156	1150.32	105.00	18	16	15	12	61	6
7	Jamalganj	Bhimkhali	Hogali	699	801	Kalkhatkha-Hogli road	690504022	VRA	Submersible	7.00	1.00		6.00	7.00	6.00	1080.00	0.00	0.00	1080.00	133	1348.50	90.00	15	16	15	12	58	7
8	Jamalganj	Jamalganj	Sharifpur	556	637	Sachna Alipur Sharif pur Road.	690505017	VRB	Submersible	5.00			5.00	5.00	5.00	900.00	0.00	0.00	900.00	127	1412.78	75.00	15	16	15	12	58	8
9	Jamalganj	Fenarbak	Amanipur	589	675	Aminipur to Nidhipur Road	690504004	VRA	Submersible	3.00	1.00		2.00	3.00	2.00	360.00	0.00	0.00	360.00	337	533.45	30.00	15	10	20	12	57	9
10	Jamalganj	Beheli	Achhanpur	725	831	Harinakandi-Ashanpur Road	690504024	VRA	Submersible	4.00	1.00		3.00	4.00	3.00	540.00	15.00	135.00	675.00	277	812.59	45.00	15	10	20	12	57	10
11	Jamalganj	Bhimkhali	Hararkandi	286	328	Makhorkhala to Sontospur road.	690504017	VRA	Submersible	7.00			7.00	7.00	7.00	1260.00	0.00	0.00	1260.00	47	3845.12	105.00	15	16	10	12	53	11
12	Jamalganj	Beheli	Madnakandi	159	182	Asanpur to Modnakandi Road	No ID	VRB	Submersible	5.00			5.00	5.00	5.00	900.00	0.00	0.00	900.00	36	4940.27	75.00	15	16	10	12	53	12

*** 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)