



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”

Derai Upazila, Sunamganj



July, 2022

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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 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 **Derai** Upazila of **Sunamganj** District.

1 DESCRIPTION OF THE UPAZILA

1.1 GEOGRAPHY AND DEMOGRAPHY

The geographical area of Derai Upazila is 420.93 square kilometers and has 9 unions, 137 mauzas, and 232 villages. The Upazila is 40 km away from the district headquarters of Sunamganj. Derai is partly covered by 11 haors/ wetlands and there exist 24 (Twenty-four) rivers flowing over the Upazila. The total population of Upazila is 243690 of which 122636 are male and 121054 females, the total number of households are 45040 and the average household size is 5.4 with a population density of 579 (as per population census 2011).

1.2 EDUCATION FEATURES

According to the information of the relevant local government offices, there are 96 government & 65 non-government primary schools in the Upazila. On the other hand, Derai has 22 non-government with no government high schools, 3 private colleges, and 6 madrasahs. The literacy rate for the Upazila is 37.1% 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 Derai 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 Derai is 474.08 km and out of which, 239.69 km are paved and 234.39 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 Derai. There are 99148 acres of arable land in Upazila. In the fiscal year 2010-11, the Rice production was 10983 & 10251 metric tons for Aman & Boro seasons respectively. The Upazila also produced, 95 metric tons of Potato, and 75 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, Derai has 3729 Acre of haor, pond & dighee that produced huge metric tons of fish. There also exist 33 poultry & 5 dairy farms.

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

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 20 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

Derai Upazila of Sunamganj district in the North-Eastern part of the country. The location has been shown on the map. The Upazila is situated just below the 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.

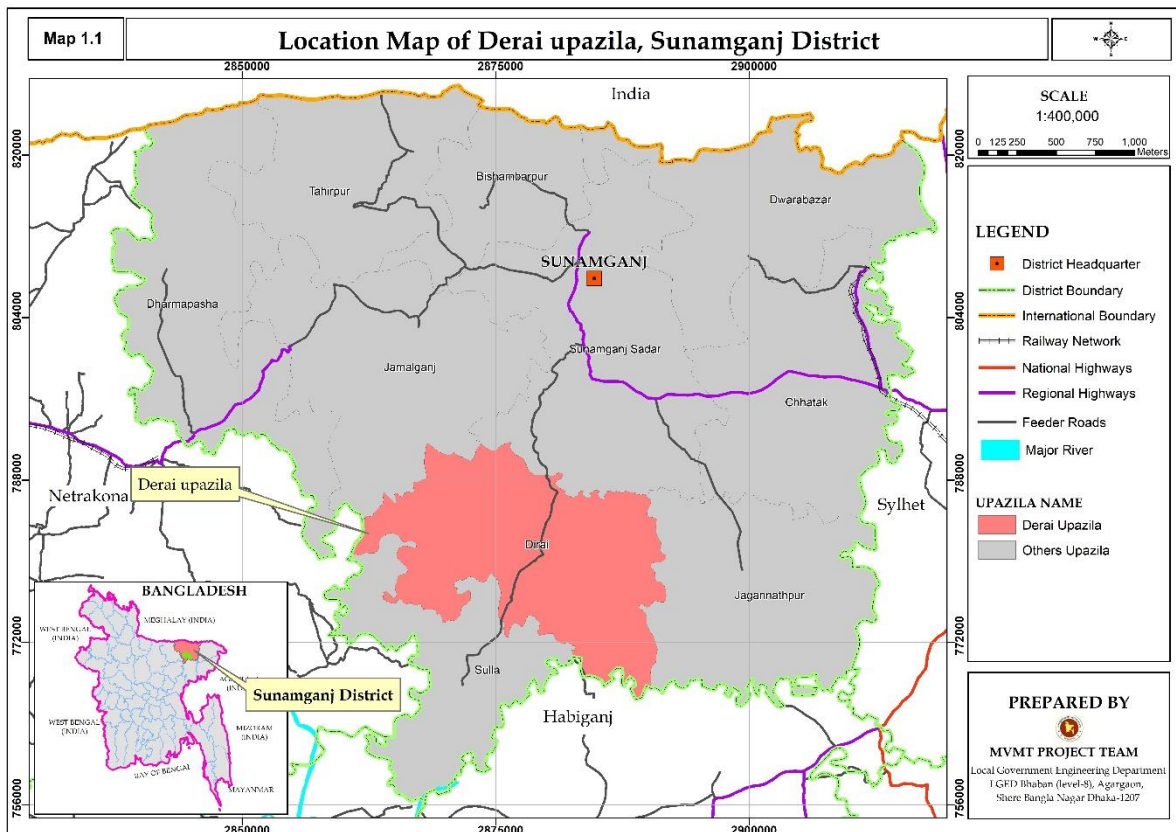


Figure 1: Upazila Location Map

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.

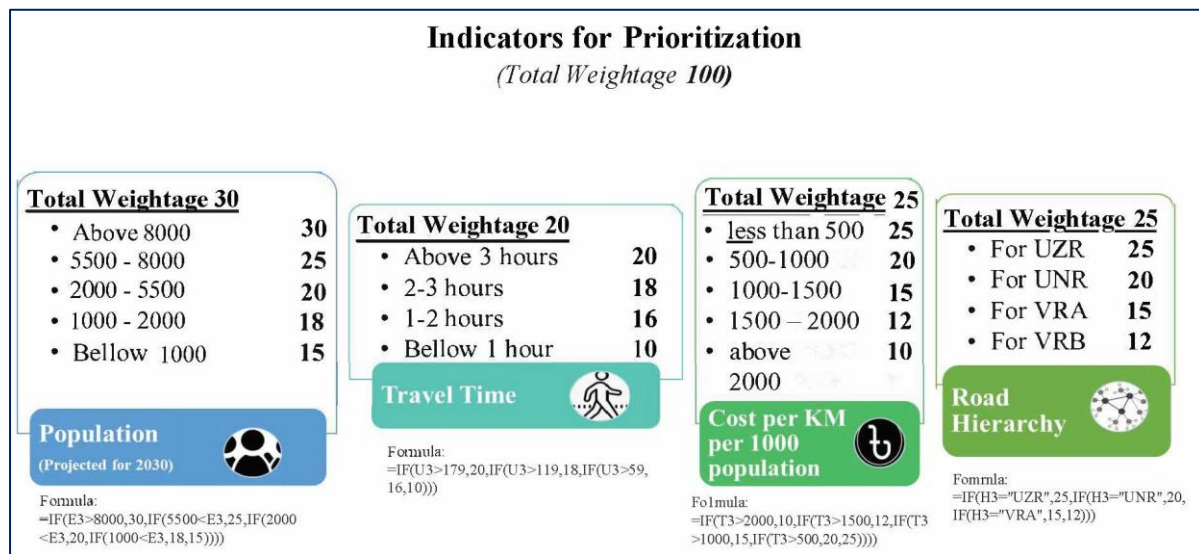


Figure 2: Prioritization indicators & their weightage values

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 all 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.

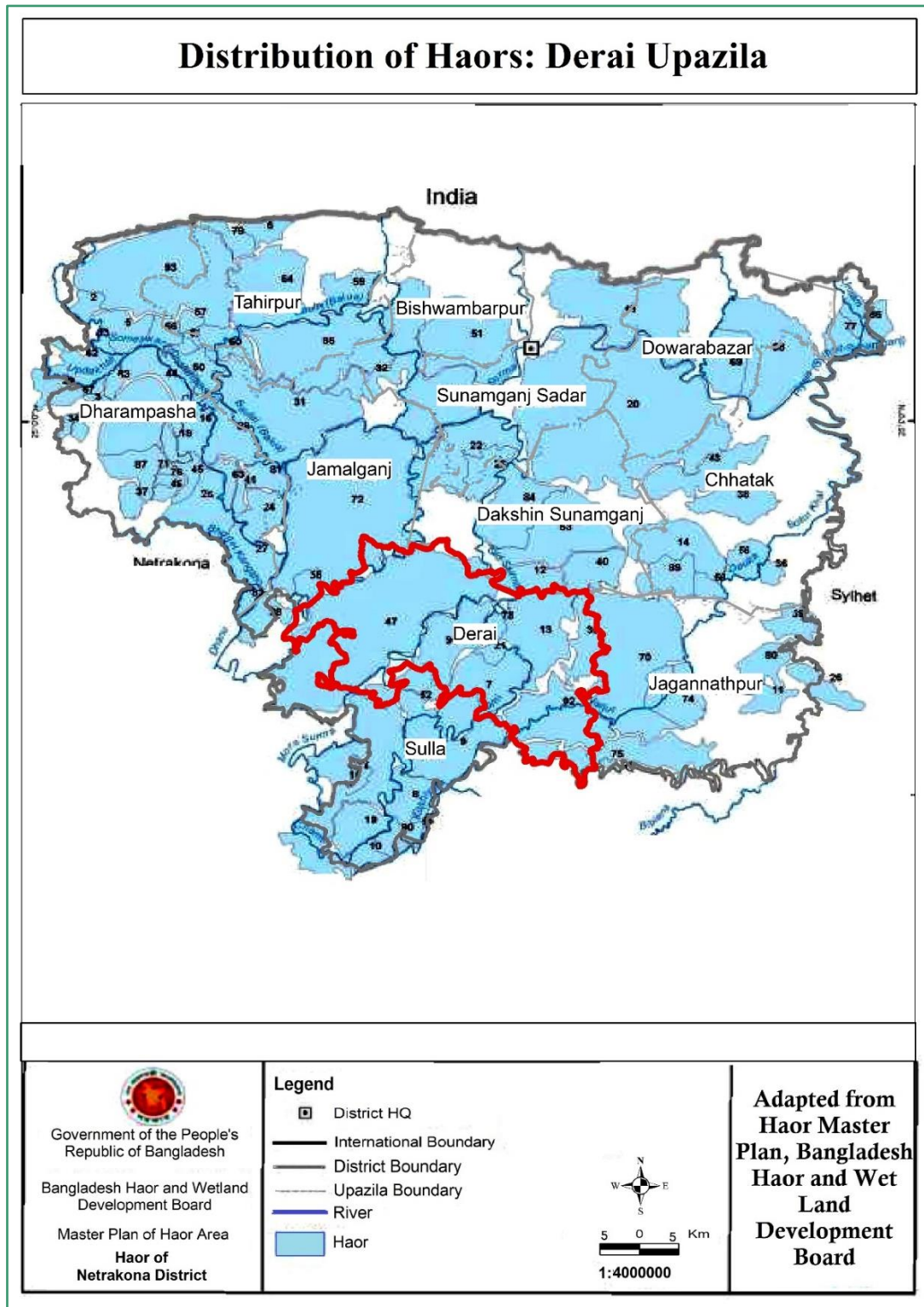


Figure 3: Haor Distribution Map

3.2 HAOR/ WETLAND CATEGORY

This Upazila is situated in the deep Haor range. Therefore, road or other infrastructure development in this Upazila have several major environmental consequences.

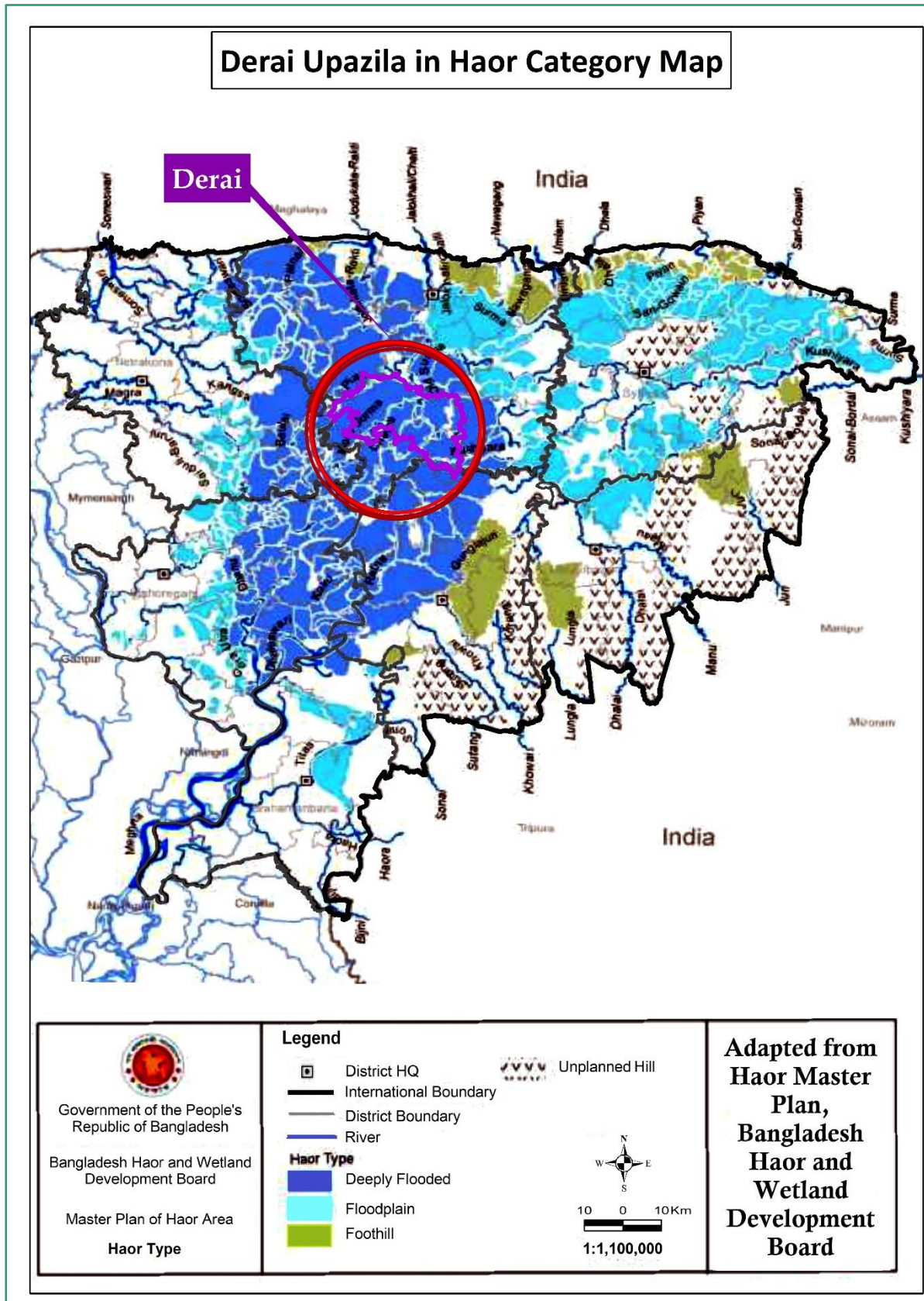


Figure 4: Haor Category Map.

3.3 BIO-ECOLOGICAL CHARACTERISTICS

The Bio-ecological characteristics map of the Upazila has been shown below. The map shows that all the areas of Derai are characterized as Haor Basin. Therefore, adequate openings for the road and road structures should be maintained.

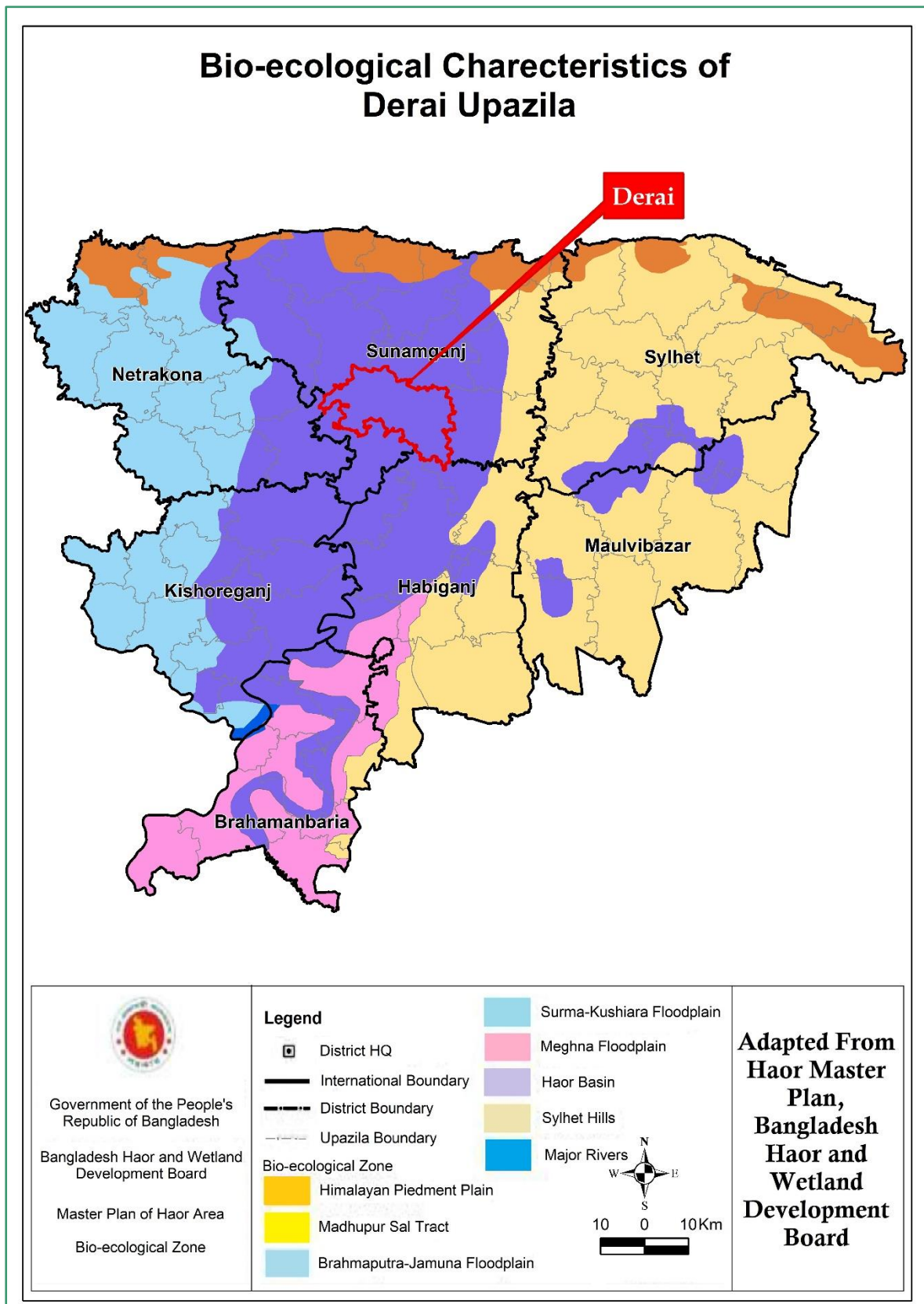


Figure 5: Bio Ecological Characteristics Map

5 RURAL ROAD CONNECTIVITY TO THE VILLAGES

4.1 SUMMARY OF THE VILLAGE CONNECTIVITY

The feature of rural road communications in Derai Upazila is contrasted. Out of 225 villages, 15 are disconnected from the developed paved road network which brings huge suffering for the people of those villages. The total rural road network of Derai is 474.08 km and out of which, 239.69 km are paved and 234.39 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	Bhati Para	15	11	4
2	Charnar Char	23	22	1
3	Derai Sarmangal	16	16	0
4	Jagaddal	38	34	4
5	Karimpur	24	23	1
6	Kulanj	26	25	1
7	Rafinagar	29	29	0
8	Rajanagar	31	30	1
9	Taral	23	22	1
Total		225	212	13

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)
Bhati Para	1	Bhati Para	3491	Alinagar	2356
	2	Dhul Kutub	976	Chatalpar	453
	3	Dhulpashi	464	Dattagaon	1356
	4	Kamalpur	415	Islampur	960
	5	Kuchirgaon	788		
	6	Mathurapur	1994		
	7	Nurnagar	767		
	8	Pangaon	425		
	9	Sharifpur	3284		
	10	Sutargaon	397		
	11	Urdhanpur	1739		
	Sub Total		14740		5125
Charnar Char	1	Alipur	389	Manikdah	1053
	2	Along Jore	620		
	3	Baktarpur	611		
	4	Charner Char Chak 2	1482		
	5	Daulatpur	1300		
	6	Gopalpur	995		
	7	Hasnabad	1001		
	8	Joypur	593		
	9	Kamalpur Chak 1	2605		
	10	Kanupur	385		
	11	Kartikpur	2274		
	12	Lasimpur	480		
	13	Lawlar Char	2254		
	14	Mytia	1301		
	15	Noagaon	1881		
	16	Noar Char	1099		
	17	Perua	1934		
	18	Santipur	449		
	19	Satyanandapur	514		
	20	Shaymar Char	2125		
	21	Shaymar Char Bazar	579		
	22	Sherpur	440		
	Sub Total		25311		1053

Union	Sl.No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
Derai Sarmangal	1	Bangalpara	439		
	2	Chandipur	1140		
	3	Chandrapur	942		
	4	Chitalia	1060		
	5	Dhanpur	1290		
	6	Douz	551		
	7	Durgapur	467		
	8	Durgarpur	467		
	9	Hajipur	408		
	10	Hasimpur	1134		
	11	Jabania	1238		
	12	Mahatabpur	1238		
	13	Naruttampur			
	14	Noagaon	769		
	15	Rangamatia	551		
	16	Sarmangal	1144		
	Sub Total		12838		
Jagaddal	1	Atbari	535	Bhatirgaon	664
	2	Atparia	581	Kadamtali	257
	3	Baksiarkati	442	Kaladhar	1122
	4	Bara Nagdipur	992	Rajnagar	1347
	5	Barakapon	451		
	6	Basuri	688		
	7	Chandpurya	401		
	8	Chayra	106		
	9	Daulatpur (Chharaya)	997		
	10	Ektiyrpur	196		
	11	Garma	600		
	12	Hossenpur	1451		
	13	Jagaddal	2418		
	14	Kaliakapon	1254		
	15	Kamribich	1265		
	16	Kandagaon	403		
	17	Kawajuri Noyagaon	559		
	18	Kushi Jagddal	2348		
	19	Matargaon	893		
	20	Mitapur	387		
	21	Nagdipur	1350		
	22	Narayankuri	915		
	23	Naya Para Daulatpur	269		
	24	Noaditpur (Nagdipur)	405		
	25	Nurpur	605		

Union	Sl.No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	26	Panch Kahania	329		
	27	Pukidar	664		
	28	Rajnao	1503		
	29	Roybangali	929		
	30	Rupai Jagddal	379		
	31	Sarangpasa	396		
	32	Sikandarpur	2248		
	33	Singnath	931		
	34	Sitahran	472		
	Sub Total		28362		3390
Karimpur	1	Badalpur	702	Kajaura	609
	2	Bangalgaon	614		
	3	Chandpur (Part)	3821		
	4	Gobindapur	1010		
	5	Halimpur	1258		
	6	Kachua			
	7	Kajua (Naogaon)	1714		
	8	Karimpur	1127		
	9	Matiapur	1878		
	10	Muksedpur	2183		
	11	Nashirpur	623		
	12	Nagergaon	762		
	13	Natun Karnagaon	1050		
	14	Nayahati	505		
	15	Puran Karnagaon	856		
	16	Rajnagar	391		
	17	Sakitpur	1905		
	18	Sree Narayanpur	1228		
	19	Tajpur	587		
	20	Tanakhali Bazar	130		
	21	Tukderai	1308		
	22	Uttar Dhitpur	949		
	Sub Total		24601		609
Kulanj	1	Ananandanagar	79	Nachni (Part)	1159
	2	Bara Bausi	441		
	3	Baraitiyar	631		
	4	Bhaitgaon	1006		
	5	Dakshin Dhitpur	1360		
	6	Dakshin Nagargaon	435		
	7	Dakshin Suriarpur	1037		
	8	Dhaipur	1378		
	9	Galisal	848		

Union	Sl.No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	10	Hatia	3031		
	11	Islampur	823		
	12	Jalia	809		
	13	Kulanj	1725		
	14	Mostafapur	379		
	15	Pitambarpur	754		
	16	Radhanagar	587		
	17	Rarail Bramanchand	889		
	18	Rasulpur	387		
	19	Ratanpur	518		
	20	Saliargaon	666		
	21	Suatior	544		
	22	Tangar	1831		
	23	Tarapasha	1280		
	24	Tetaiya	2308		
25	Uttar Suriarpar	3474			
	Sub Total		27220		1159
Rafinagar	1	Adampur	1140		
	2	Alipur	381		
	3	Balanpur	1273		
	4	Bangla Bazar	593		
	5	Baraghar	527		
	6	Basha Kharach	758		
	7	Beora	79		
	8	Dakshin Rafinagar	2500		
	9	Durlavpur	344		
	10	Gajiargaon	378		
	11	Hasnabad	397		
	12	Jaganathpur	523		
	13	Khagaura	1737		
	14	Kittagaon			
	15	Kurigaon	230		
	16	Masimpur	1979		
	17	Meghna	888		
	18	Mirzapur	1808		
	19	Noagaon	448		
	20	Nowagaon	751		
	21	Paschim Anwarpur	681		
	22	Purandarpur	364		
	23	Ramjibanpur	800		
	24	Sadirpur	539		
	25	Sajanpur	1559		

Union	Sl.No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	26	Samipur	430		
	27	Sunampur	91		
	28	Suranjtnagar	140		
	29	Uttar Rafinagar	2680		
	Sub Total		24018		
Rajanagar	1	Anantapur	763	Madhupur	1235
	2	Begampur	440		
	3	Bhargaoon	325		
	4	Chiriyar Char	407		
	5	Dhalua	777		
	6	Dhapki (part)	257		
	7	Dhapkia	1483		
	8	Fatemanagar	524		
	9	Gachia	1649		
	10	Haoria Haranpur	363		
	11	Harinagar	152		
	12	Harnagar	707		
	13	Jagaranchar	785		
	14	Jakinagar	887		
	15	Janpur	1762		
	16	Jatichar	603		
	17	Kadamtali	1122		
	18	Kaima	704		
	19	Kajaura	468		
	20	Kajuabad	710		
	21	Kalinagar	601		
	22	Kejaura	1672		
	23	Kurar Goan	42		
	24	Mirjapur	575		
	25	Modhupur Rari	102		
	26	Nuton Kandi Hati	771		
	27	Purbo Anwarpur	742		
	28	Rajanagar	1318		
	29	Ranarchar	1607		
	30	Umednagar	923		
	Sub Total		23241		1235
Taral	1	Amirpur	759	Dayirgaon	591
	2	Banait	361		
	3	Bausi	1159		
	4	Bhanga Daharchak	1388		
	5	Burhanpur	283		
	6	Dhal (Bhati Dhal)	1767		

Union	Sl.No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	7	Islam Pur	621		
	8	Jalalpur	236		
	9	Kadirpur	678		
	10	Kalidram	345		
	11	Noagaon	1878		
	12	Paschim Asram	1201		
	13	Purba Asram	1459		
	14	Rajnagar	166		
	15	Rampur	172		
	16	Ranabhumi	887		
	17	Saraltoba	1372		
	18	Sontoshpur	362		
	19	Talbausi	1505		
	20	Tral	997		
	21	Ujandhal	1136		
	22	Vzhara Out	1330		
	Sub Total		20062		591

4.1 MAP OF HARD-TO-REACH VILLAGES & PROPOSED ROAD

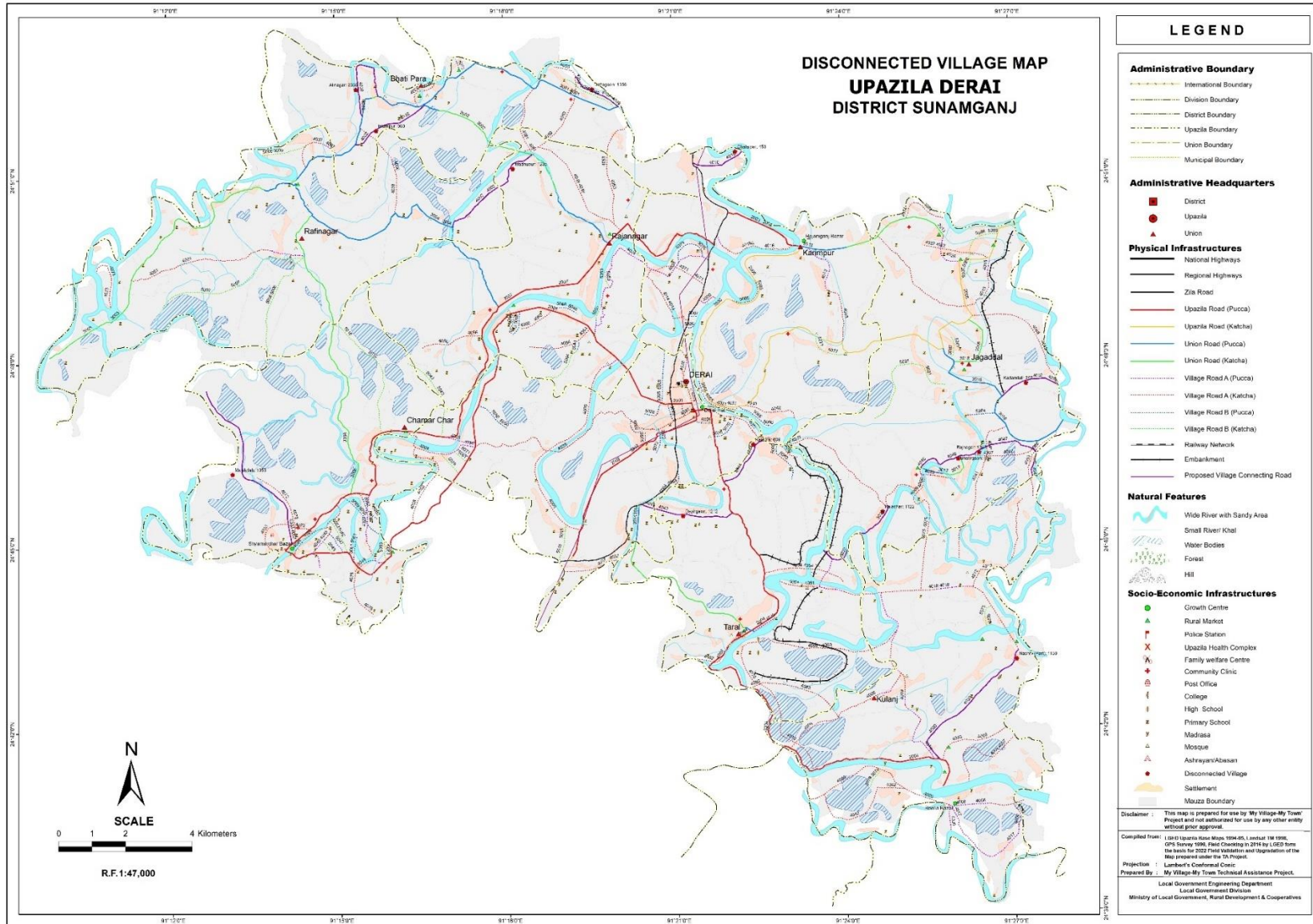


Figure 6: Upazila Map

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)
474.08	239.69	234.39	41.30

5.1.1 PROPOSED SUBMERSIBLE ROUTES:

There are 13 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	Bhatipara-Alinagar via Nurnagar road	690294036	Submersible	1.55
2	Bhatirgaon Ferryghat to Matargaon WDB Road via Matargaon Primary School	690294046	Submersible	1.5
3	Pangaon-Sharifpur Ferryghat via Chatolpar, Kandahati road	690294010	Submersible	5.15
4	Pangoan-Dattagram village road	690294039	Submersible	1.5
5	Derai Dhal- Noagaon road via Bhangadahar	690294043	Submersible	4.05
6	Bhatipara bazar-Kuchirgaon via Islampur village road	690294032	Submersible	2.75
7	Atpuria-Kadamtali via Bashuri road	690294052	Submersible	2.78
8	Chandipur-Kajaura village road	690294044	Submersible	3.5
9	Kaldhor to Sauderkona Road	690295023	Submersible	1.75

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
10	Madhupur to Meghna Ferryghat Road	690294002	Submersible	3.65
11	Daudpur-Manikda Village Road	690294003	Submersible	1.75
12	Akilshah bazar-Nasni bazar road	690294020	Submersible	2.25
13	Garma Ferryghat-Rajnagar via Atbari village road	690294047	Submersible	3.55

5.1.2 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 5: 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

- Derai Upazila is located within the deep Haor range. Derai is partly covered by 11 haors/ wetlands and there exist 24 (Twenty-four) 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 13 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 Derai 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	Bhati Para	Bhatipara bazar	HB	No	0	0	7	0	0.00	0	0.00	0.71	0.00	0	0
2	Bhati Para	Mathurapur shahajalal bazar	HB	No	0	0	7	122	0.61	0	0.30	1.34	0.00	0	0
3	Charnar Char	Shymar char bazar	GC	Yes	General Market	Retail	7	24	0.12	38	0.44	0.96	0.00	218000	482000
4	Charnar Char	Charnerchar bazar	HB	Yes	General Market	Wholesale	7	150	0.75	0	0.03	1.66	0.00	0	45000
5	Charnar Char	Laluarchar notun bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
6	Jagdhal	Kaliar kapon bazar	HB	Yes	General Market	Wholesale	7	0	0.00	0	0.00	0.00	0.00	0	2500
7	Jasdhal	Hossenpur bazar	HB	Yes	General Market	Retail	7	22	0.11	61	0.07	1.11	0.00	58000	55000
8	Jasdhal	Nogdepur bazar	HB	Yes	General Market	Wholesale	7	122	0.61	0	0.00	0.00	0.61	0	0
9	Jasdhal	Jogdal bazar	HB	Yes	General Market	Retail	7	0	0.00	0	0.00	0.00	0.00	6500	6300
10	Jasdhal	Ratangonj bazar	HB	Yes	General Market	Wholesale	7	190	0.95	0	0.40	0.00	0.00	0	0
11	Jasdhal	Coliairkapon bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
12	Karimpur	Tanakhali bazar	GC	Yes	General Market	Wholesale	7	34	0.17	0	0.67	0.82	0.00	100000	85000
13	Karimpur	Rajaniganj bazar	GC	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
14	KULANJ	Tarapasha bazar	HB	Yes	General Market	Wholesale	7	4	0.20	0	0.04	0.60	0.24	0	6050
15	Kulanja	Boyalia bazar	GC	Yes	General Market	Retail	7	386	1.93	0	0.81	2.35	0.00	0	10800
16	Kulanja	Akilsha bazar	HB	Yes	General Market	Wholesale	7	0	0.00	0	0.00	0.00	0.00	580	5500
17	Kulanja	Milongonj bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
18	Kulanja	Nasnec bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
19	Kulanja	Raroil bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
20	Rafinagar	Bangla bazar	HB	Yes	General Market	Retail	7	0	0.00	272	0.00	0.00	0.00	248826	209000
21	Rajanagar	Razanagar bazar	HB	Yes	General Market	Wholesale	7	228	1.14	0	0.10	1.69	0.00	132000	127500

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		
22	Rajanagar	Gochia bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
23	Sarmangal	Derai bazar	GC	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
24	Taral	Dhol bazar	HB	Yes	General Market	Retail	7	106	0.53	6	0.12	0.95	0.53	38000	48500

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	Derai	Bhati Para	Alinagar	2356	2699	Bhatipara-Alinagar via Nurnagar road	690294036	VRA	Submersible	2.55	1.00		1.55	2.55	1.55	279.00	0.00	0.00	279.00	1742	103.36	23.25	20	10	25	12	67	1
2	Derai	Bhati Para	Dattagaon	1356	1554	Pangoan-Dattagram village road	690294039	VRA	Submersible	1.50			1.50	1.50	1.50	270.00	0.00	0.00	270.00	1036	173.78	22.50	18	10	25	12	65	2
3	Derai	Jagaddal	Kaladhar	1122	1286	Kaldhor to Sauderkona Road	690295023	VRA	Submersible	1.75			1.75	1.75	1.75	315.00	0.00	0.00	315.00	735	245.03	26.25	18	10	25	12	65	3
4	Derai	Charnar Char	Manikdah	1053	1206	Daudpur-Manikda Village Road	690294003	VRA	Submersible	2.75	1.00		1.75	2.75	1.75	315.00	0.00	0.00	315.00	689	261.09	26.25	18	10	25	12	65	4
5	Derai	Jagaddal	Rajnagar	1347	1543	Garma Ferryghat-Rajnagar via Atbari village road	690294047	VRA	Submersible	3.55			3.55	3.55	3.55	639.00	0.00	0.00	639.00	435	414.04	53.25	18	10	25	12	65	5
6	Derai	Kulanj	Nachni (Part)	1159	1328	Akilshah bazar-Nasni bazar road	690294020	VRA	Submersible	4.25	1.00	1.00	2.25	4.25	3.25	585.00	0.00	0.00	585.00	409	440.53	48.75	18	10	25	12	65	6
7	Derai	Bhati Para	Islampur	960	1100	Bhatipara bazar-Kuchirgaon via Islampur village road	690294032	VRA	Submersible	2.75			2.75	2.75	2.75	495.00	0.00	0.00	495.00	400	450.03	41.25	18	10	25	12	65	7
8	Derai	Rajanagar	Madhupur	1235	1415	Madhupur to Meghna Ferryghat Road	690294002	VRA	Submersible	3.65			3.65	3.65	3.65	657.00	0.00	0.00	657.00	388	464.31	54.75	18	10	25	12	65	8
9	Derai	Jagaddal	Bhatirgaon	664	761	Bhatirgaon Ferryghat to Matargaon WDB Road via Matargaon Primary School	690294046	VRA	Submersible	1.50			1.50	1.50	1.50	270.00	0.00	0.00	270.00	507	354.90	22.50	15	10	25	12	62	9
10	Derai	Taral	Dayirgaon	591	677	Derai Dhal- Noagaon road via Bhangadahar	690294043	VRA	Submersible	4.35	0.30		4.05	4.35	4.05	729.00	0.00	0.00	729.00	167	1076.58	60.75	15	16	15	12	58	10
11	Derai	Karimpur	Kajaura	609	698	Chandipur-Kajaura village road	690294044	VRA	Submersible	3.50			3.50	3.50	3.50	630.00	0.00	0.00	630.00	199	902.88	52.50	15	10	20	12	57	11
12	Derai	Bhati Para	Chatalpar	453	519	Pangaon-Sharifpur Ferryghat via Chatolpar, Kandahati road	690294010	VRA	Submersible	5.55	0.40		5.15	5.55	5.15	927.00	0.00	0.00	927.00	101	1786.02	77.25	15	16	12	12	55	12
13	Derai	Jagaddal	Kadamtali	257	294	Atpuria-Kadamtali via Bashuri road	690294052	VRA	Submersible	3.65	0.87		2.78	3.65	2.78	500.40	0.00	0.00	500.40	106	1699.38	41.70	15	10	12	12	49	13

*** 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)