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"

Tahirpur Upazila, Sunamganj

July, 2022

CONTENTS

List of Figures

List of Tables

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 present 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 parliamentary election in 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 threshold of prosperity for building a developed nation.

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

To realize the commitment 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 incorporating six thematic areas i.e., Rural Communications, Growth Centre and Hatbazar, Rural Water Supply and Sanitation, Rural Waste Management, Community Space and Entertainment, and Upazila Masterplan. Development of Capacity and Increasement of Human Resources of Upazila and Union Parishad, Use of Modern Digital Technology in Education, Health Care and Power Energy and Security Sectors, Rural Compact Housing, and Development of Village Project are also addressed with great importance. My Village-My Town Technical Project has started in January 2021 and is scheduled to end in September 2022

Under the technical project, a total number of 36 studies are conducted and 30 policy/frameworks are under preparation. Meanwhile, three databases have been developed on Upazila, union, and village incorporating data of population, agriculture, poverty, income & expenditure, etc. that help uniquely to prepare development plans and make suitable decisions.

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 Local Government Division.

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 **Tahirpur** Upazila of **Sunamganj** District.

1 DESCRIPTION OF THE UPAZILA

1.1 GEOGRAPHY AND DEMOGRAPHY

The geographical area of Tahirpur Upazila is 315.33 square kilometers and has 7 unions, 122 mauzas, and 243 villages. The Upazila is 36km away from the district headquarters of Sunamganj. Tahirpur is partly covered by 8 haors/ wetlands and there exist 4(four) rivers flowing over the Upazila. The total population of Upazila is 215200 of which 110555 are male and 104645 females, the total number of households are 37931 and the average household size is 5.59 with a population density of 682 (as per population census 2011).

1.2 EDUCATION FEATURES

According to the information of the relevant local government offices, there are 57 government & 71 non-government primary schools in the Upazila. On the other hand, Tahirpur has 14 non-government with only one government high schools, 2 privet colleges, and 5 madrasahs. The literacy rate for the Upazila is 30.4% 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 Tahirpur 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 Tahirpur is 213.58 km and out of which, 113.02 km are paved and 205.34 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 Tahirpur. There are 69807 acres of arable land in Upazila. In the fiscal year 2010-11, the Rice production was 6874 & 46005 metric tons for Aman & Boro seasons respectively. The Upazila also produced 33 metric tons of Potato 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, Tahirpur has 18770 Acre of haor, pond & dighee that produced huge metric tons of fish.

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

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 15 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

Tahirpur Upazila of Sunamganj district in the North-Eastern part of the country. The location has been shown on the map. The Upazila is situated at the foothill of the Indian border and causes flash floods during monsoon coming from uphill Meghalaya where is Cherrapunji, the wettest place on earth, 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.

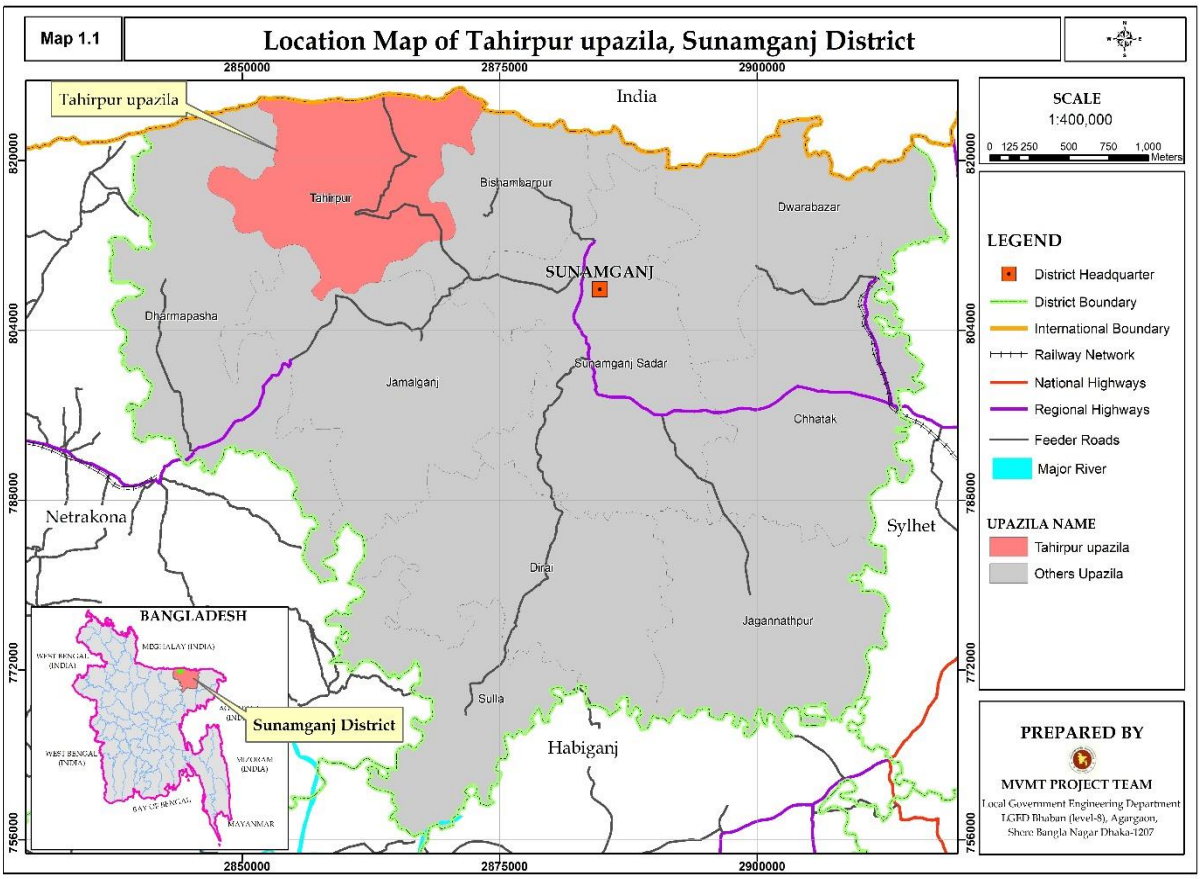

Figure 1: Upazila Location Map

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.

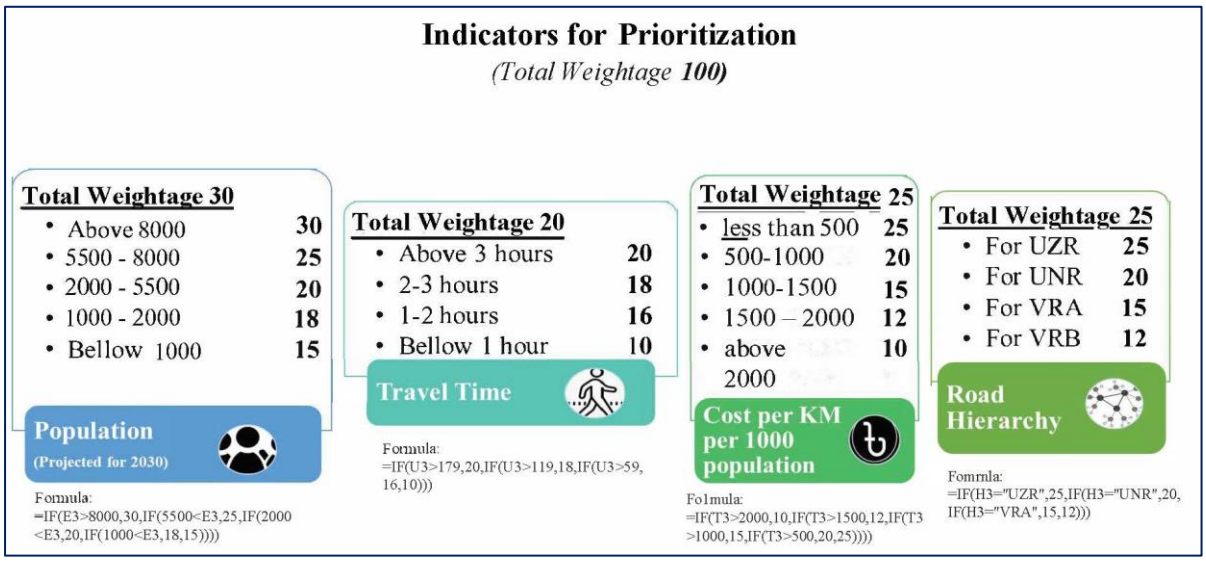

Figure 2: Prioritization indicators & their weightage values

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 60-70% 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.

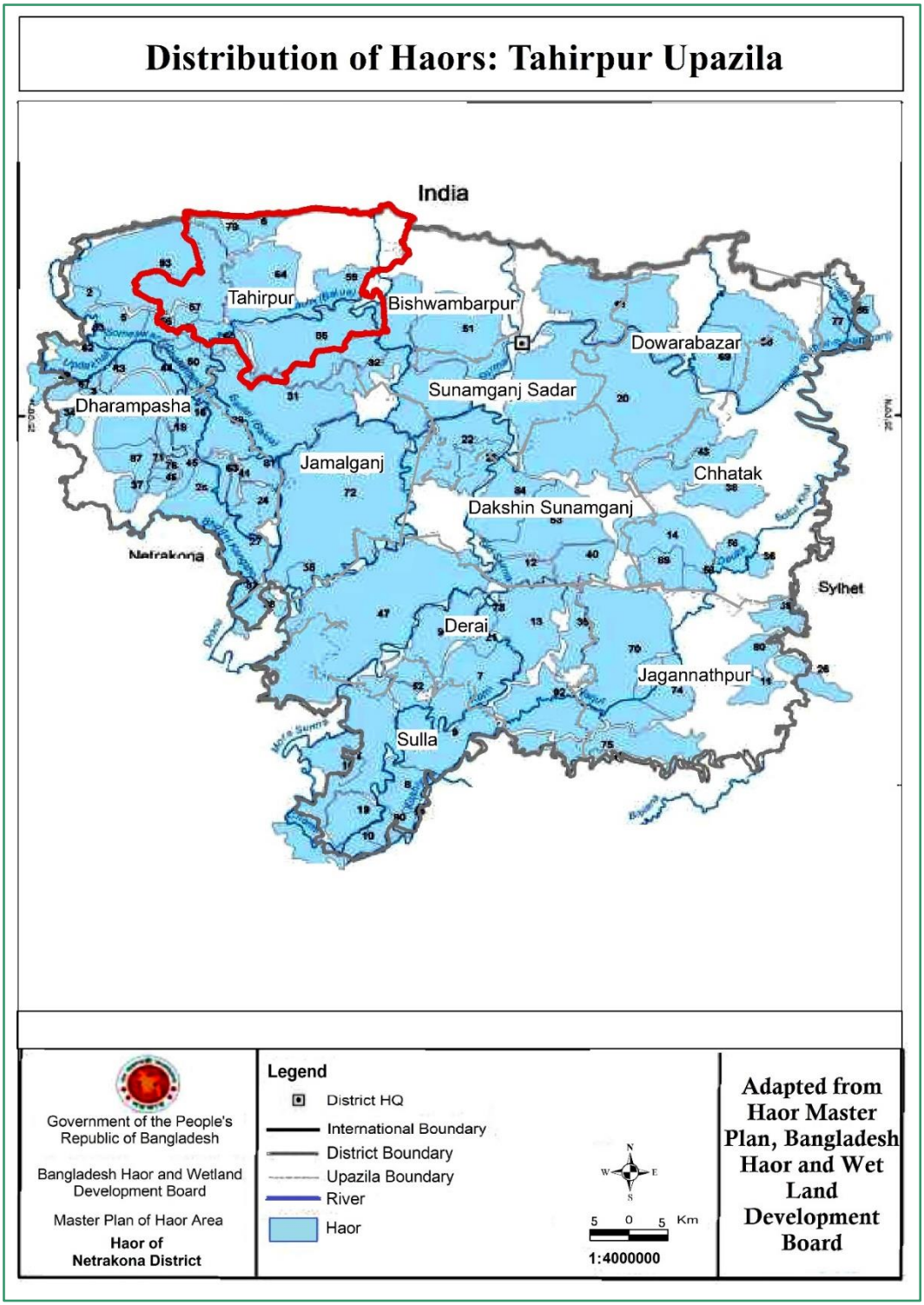

Figure 3: Haor Distribution Map

3.2 HAOR/ WETLAND CATEGORY

However, in the north of the Upazila, it is Foot Hill and most of the Upazila is within deep haor range. Therefore, road or other infrastructure development in this Upazila have several major environmental consequences.

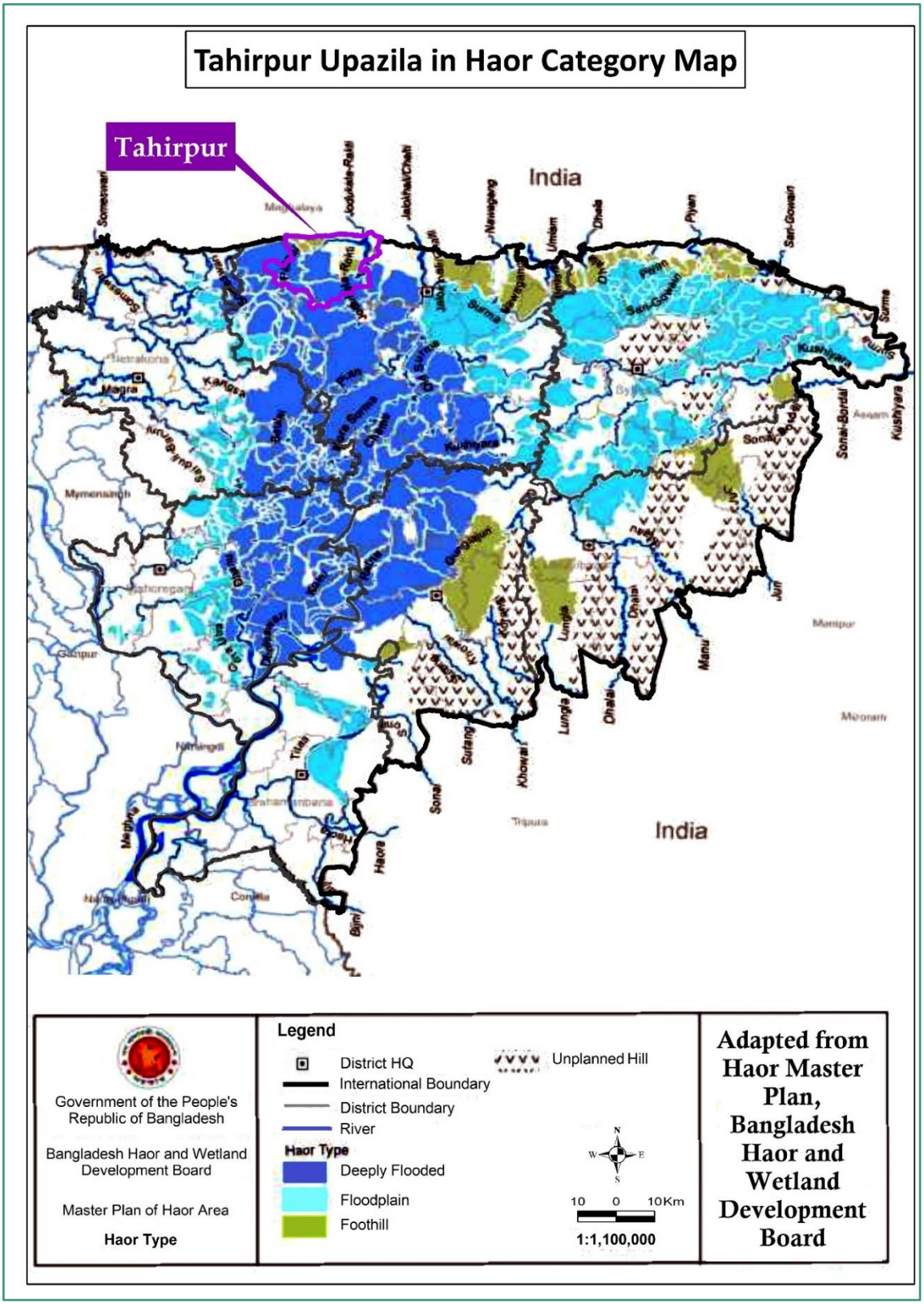

Figure 4: Haor Category Map.

3.3 BIO-ECOLOGICAL CHARACTERISTICS

The Bio-ecological characteristics map of the Upazila has been shown below. The map shows that it is mostly Haor Basin & is partially a part of Himalayan Piedmont Plain. Therefore, adequate openings for the road and road structures should be maintained.

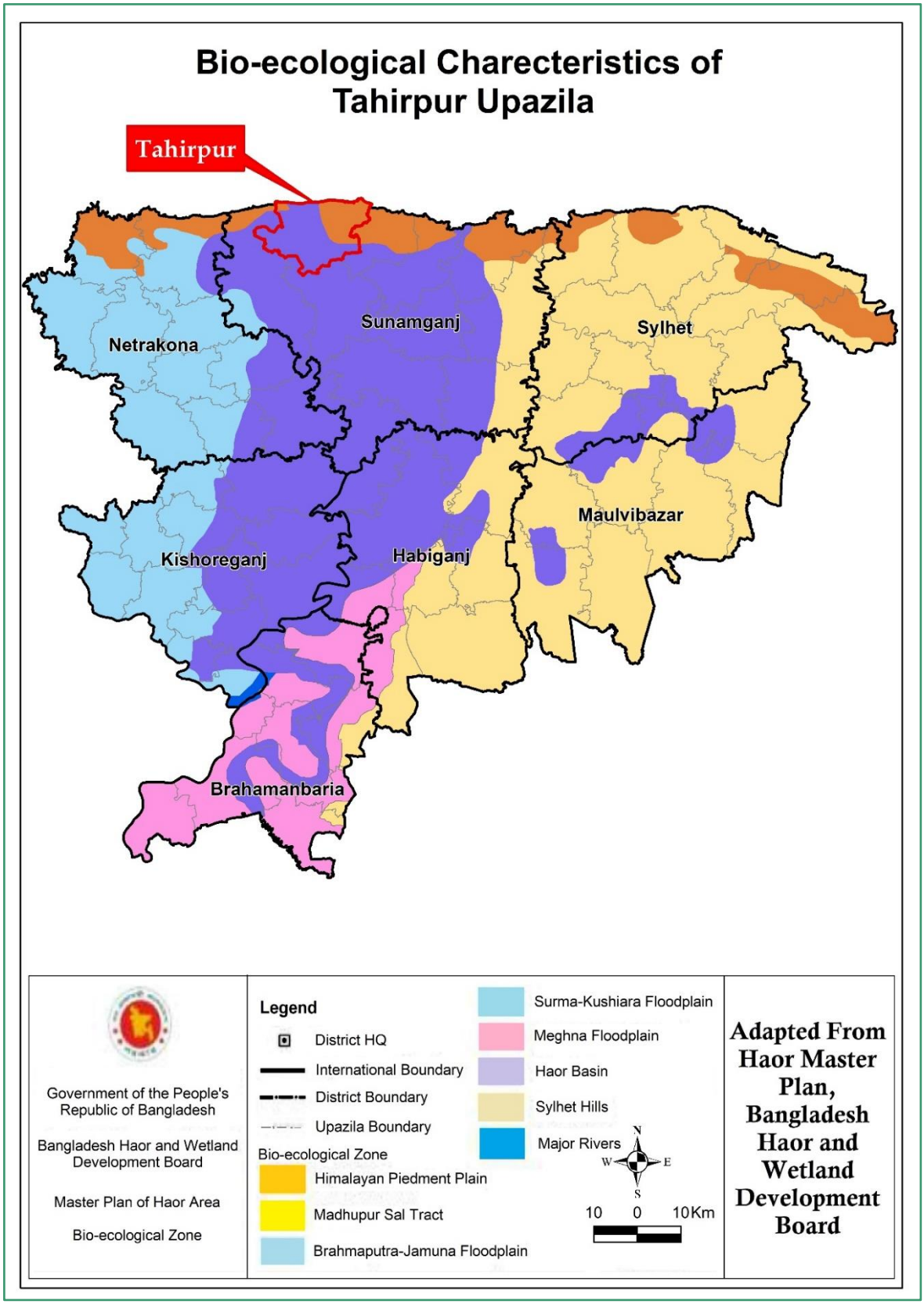

Figure 5: Bio Ecological Characteristics Map

5 RURAL ROAD CONNECTIVITY TO THE VILLAGES

4.1 SUMMARY OF THE VILLAGE CONNECTIVITY

The feature of rural road communications in Sunamganj Sadar Upazila is contrasted. Out of 232 villages, 10 are disconnected from the developed paved road network which brings huge suffering for the people of those villages. The total rural road network of Tahirpur is 213.58 km and out of which, 113.02 km are paved and 205.34 km earthen.

Table 1: Total villages in the unions and their connectivity

SL No	Union	No of Villages	Connected Villages	Disconnected Villages
1	Balijuri	26	26	0
2	Dakshin Badal	22	21	1
3	Dakshin Sreepur	39	35	4
4	Tahirpur	16	16	0
5	Uttar Badaghat	47	47	0
6	Uttar Badal	30	27	3
7	Uttar Sreepur	52	50	2
	Total	232	222	10

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)
Balijuri	1	Anwarpur	2036		
	2	Anwarpur Bazar	231		
	3	Balijuri	2556		
	4	Balijuri Bazar	14		
	5	Bara Khale	1395		
	6	Dakshinkul	1995		
	7	Fazilpur	89		
	8	Hsenpur	416		
	9	Kala Para	817		
	10	Lama Para	897		
	11	Lohachura	969		
	12	Lubar Haor (Pirojpur)	845		
	13	Madhabpur	1321		
	14	Mangpur	332		
	15	Mangpur Chak	33		
	16	Menjargaon	1324		
	17	Nayahat	317		
	18	Nayahata	571		
	19	Patari	216		
	20	Puran Barunka	1287		
	21	Purba Jamalpur	173		
	22	Raghunathpur	100		
	23	Ramnagar	325		
	24	Sifatnagar	95		
	25	Shundharpur	239		
	26	Tiyar Jalal	745		
		Sub Total	**19338**		
Dakshin Badal	1	Bagbari	581	Rasulpur	1290
	2	Baradal Nayanpatti	1920		
	3	Baradal Puranpatti	1696		
	4	Binarband	1276		
	5	Chaturbhujpur	1260		
	6	Dakshin Puranghat	1533		
	7	Gobindpur	154		
	8	Halhalia	1804		
	9	Halhalia Chak	1808		
	10	Hapania	454		
	11	Jamlabad	454		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	12	Kamarkandi	492		
	13	Ledarband	1116		
	14	Matikata	1483		
	15	Naliarband	169		
	16	Puran Khalash	1482		
	17	Sadarkhala	688		
	18	Sonatala	197		
	19	Surantar Chak (Paglapur)	367		
	21	Tekatukia	852		
	22	Thkergaon	377		
		Sub Total	**20163**		**4470**
Dakshin Sreepur	1	Balaikandi	154	Chalirghat Chak (Umedpur)	60
	2	Bhabanipur	219	Gopinather Noagaon	357
	3	Bhander Chapar	142	Manik Khila	1199
	4	Cholemanpur	1123	Rajdharpur	152
	5	Dumal	640		
	6	Durlabhpur	1055		
	7	Ekrampur	155		
	8	Gorergaon	62		
	9	Hukumpur	488		
	10	Jagadishpur	167		
	11	Jalalpur	138		
	12	Janjail	197		
	13	Joysree	596		
	14	Kamdebpur	336		
	15	Lamagaon	1953		
	16	Latifpur	147		
	17	Mahmudpur	807		
	18	Marala	625		
	19	Moazzampur	249		
	20	Noagaon	306		
	21	Noanagar	726		
	22	Nurpur			
	23	Paindub	703		
	24	Parabekai	516		
	25	Patabuka	1892		
	26	Purba Nischintapur	388		
	27	Ramjibanpur	821		
	28	Ramsinghpur	620		
	29	Sahaganj	375		
	30	Sahebnagar	348		
	31	Santoshpur	282		
	32	Sarifpur	207		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	33	Shibpur	127		
	34	Sreepur	1685		
	35	Uktiyargaon	248		
		Sub Total	**18497**		**1768**
Tahirpur	1	Bhari Jamalgar	934		
	2	Bhati Tahahirpur	1909		
	3	Birshnagar	973		
	4	Chiksha	2719		
	5	Dhumta	536		
	6	Gajipur	515		
	7	Gobibdasree	1563		
	8	Joynagar	559		
	9	Laxmipur	823		
	10	Madhaya Tahirpur	3005		
	11	Ratan Sree	1987		
	12	Surjergaon	1013		
	13	Tahirpur Bazar	114		
	14	Thakurhati	440		
	15	Ujan Jamalgar	563		
	16	Ujan Tahirpur	1324		
		Sub Total	**18977**		
Uttar Badaghat	1	Badaghat	737		
	2	Badaghat Bazar	849		
	3	Badlarpara	540		
	4	Bholakhali	325		
	5	Binnakuli	1393		
	6	Dakshin Muksedpur	604		
	7	Dakshin Puranghat	593		
	8	Dalarpar	953		
	9	Dharunda	705		
	10	Dighirpar	1219		
	11	Ghagtika	1831		
	12	Gharkati	392		
	13	Ichhabpur	1194		
	14	Islampur	1132		
	15	Jaitapur	894		
	16	Jangal	560		
	17	Jaspratap	153		
	18	Kalipur	425		
	19	Kamalpur	206		
	20	Kamraband	2843		
	21	Kika Para	606		
	22	Konaihat Chora	1156		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	23	Kunaihat	472		
	24	Lama Para	525		
	25	Lamashorm	1372		
	26	Laurgar	3091		
	27	Lohajuri Shararpar	613		
	28	Mallikpur	635		
	29	Mollah Para	1166		
	30	Mudigaon	1231		
	31	Nagarpur	1142		
	32	Nanai	1001		
	33	Noagaon	451		
	34	Nowa Para	830		
	35	Patargoan	848		
	36	Pathan Para	722		
	37	Puran Laur	2375		
	38	Purba Noagoan	192		
	39	Purba Nurpur	554		
	40	Purbo Dail	267		
	41	Rana Para	134		
	42	Saidabad	1215		
	43	Sonapur	734		
	44	Suhala	792		
	45	Sundra Pahari	774		
	46	Uttar Muksedpur	1245		
	47	Yunuspur	1437		
		Sub Total	**43128**		
Uttar Badal	1	Ambaria	1970	Alipur	698
	2	Badarpur	135	Paschim Barakhara	1357
	3	Baragok	1692	Puranghat	1933
	4	Barahal	2079		
	5	Bit Pailanpur	172		
	6	Brahmangaon	2381		
	7	Chandpur	1381		
	8	Chandrapur	626		
	9	Chargaon	1236		
	10	Chargaon	477		
	11	Chikarkandi	1337		
	12	Dighalbak	695		
	13	Fakirnagar	234		
	14	Gutila	2520		
	15	Jalalpur	404		
	16	Karaigara	96		
	17	Madhuar Char	324		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	18	Maharam	2375		
	19	Manigaon	2684		
	20	Pailanpur	1482		
	21	Rajai	753		
	22	Rajaini Lain	1911		
	23	Ramesherpur	475		
	24	Shantipur Chararpar	2822		
	25	Shimultala	1611		
	26	Sonapura	560		
	27	Uttar Puranghat	629		
		Sub Total	**33061**		**3988**
Uttar Sreepur	1	Amritapur	1372		
	2	Balighat	172		
	3	Baniagaon	172	Kamalpur Chak	1757
	4	Bara Chhar	3408	Lakha	1202
	5	Bashtala	1173		
	6	Betagara	341		
	7	Bhuraghat	575		
	8	Bhurunga Chhara	1195		
	9	Binodpur	306		
	10	Birendra Nagar	1771		
	11	Charagoan	3763		
	12	Chiriargaon	408		
	13	Dalirgaon	1084		
	14	Dudherauta	1085		
	15	Golakpur	150		
	16	Gulabari	209		
	17	Indrapur	707		
	18	Islampur	528		
	19	Jamalpur	788		
	20	Jangalbari	1444		
	21	Joypur	354		
	22	Kachunali	301		
	23	Kadamtali	299		
	24	Kalagaon	3823		
	25	Kamalpur	217		
	26	Keshabpur	16		
	27	Khalishajuri	1157		
	28	Kismat Maindata	59		
	29	Lakma	4977		
	30	Lalghat	1587		
	31	Lamakata	540		
	32	Madanpur	212		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	33	Mahiajuri	290		
	34	Maindiata	795		
	35	Mantala	279		
	36	Matiain	545		
	37	Nababpur	346		
	38	Nayabad	642		
	39	Paniakhali	62		
	40	Putiamari	412		
	41	Putimara	90		
	42	Ranga Chhara	941		
	43	Shibrampur	240		
	44	Sonapur	489		
	45	Sundarpur	281		
	46	Tahirpur	571		
	47	Takurghat	806		
	48	Tarang	1611		
	49	Teligaon	1600		
	50	Uttar Sreepur	148		
		Sub Total	**44341**		**2959**

Map of Hard-to-Reach Villages & Proposed Roads

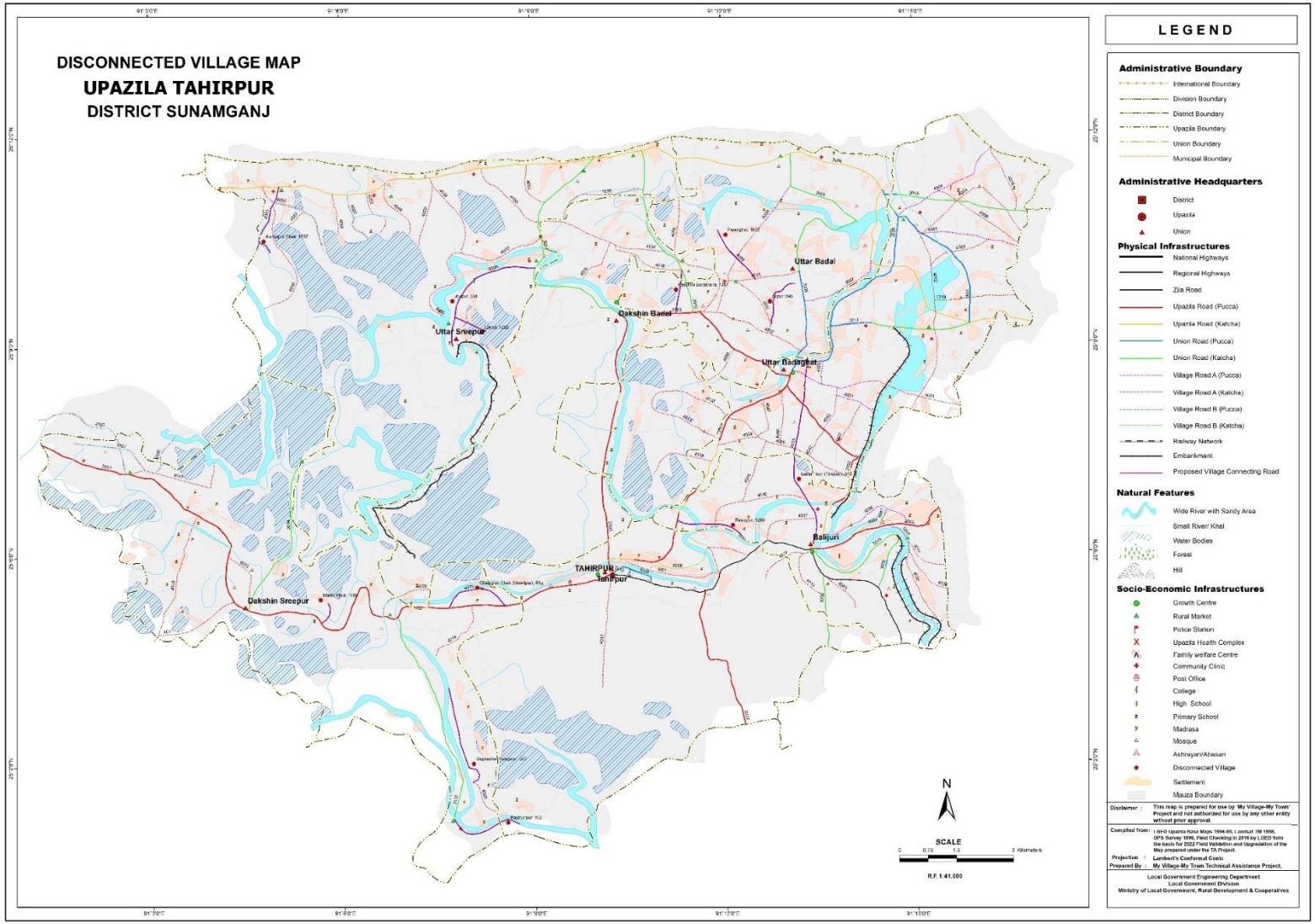

Figure 6: Upazila Map

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)
213.58	113.02	205.34	25.25

5.1.1 PROPOSED SUBMERSIBLE ROUTES:

There are 9 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 Type by Surface Condition	Unpaved length (km)
1	Alipur connecting road	No ID	Submersible	1.2
2	Ratansree-karertek Road	690924073	Submersible	2
3	Gopinather Noagaon connecting road	No ID	Submersible	2
4	Lakha connecting road	No ID	Submersible	4
5	Manik Khila connecting road	No ID	Submersible	0.45
6	Paschim Barakhara connecting road	No ID	Submersible	1
7	Modhuar char RNGPS to Puranghat west para via satota bazar	690924066	Submersible	3.6
8	Rajdharpur connecting road from Dakshin Sreepur Union Road	No ID	Submersible	6.5
9	Rasulpur connecting road	No ID	Submersible	3

5.1.2 PROPOSED ALL WEATHER ROUTES:

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

Table 5: Proposed All-Weather roads in the Upazila

SL No	Road Name	Road ID	Road Type by Surface Condition	Unpaved length (km)
1	Birandranagar-Barosharok-Indrapur Road	690924051	All Weather	1.50

5.1.3 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 6: Proposed roads for Hard-to-Reach Villages having No ID

Sl. No	Road Name	Road ID	Unpaved length (Km)
1	Alipur connecting road	No ID	Submersible
2	Gopinather Noagaon connecting road	No ID	Submersible
3	Lakha connecting road	No ID	Submersible
4	Manik Khila connecting road	No ID	Submersible
5	Paschim Barakhara connecting road	No ID	Submersible
6	Rajdharpur connecting road from Dakshin Sreepur Union Road	No ID	Submersible
7	Rasulpur connecting road	No ID	Submersible

5.1.4 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 7: 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

- Tahirpur Upazila is located within deep haor basin. Tahirpur is partly covered by 8 haors/ wetlands and there exist 4(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 10 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 Tahirpur 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	Badaghat	Badhaghat bazar	GC	Yes	General Market	Both	2	520	18.75	518	3.94	5.21	7.60	415000	132500
2	Badaghat	Lawarerghor bazar	HB	Yes	General Market	Wholesale	1	117	2.05	113	0.37	2.56	0.00	0	9300
3	Badaghat	Binnakuli bazar	HB	Yes	General Market	Wholesale	1	40	0.27	40	0.21	0.21	0.51	0	0
4	Balijuri	Anowarpur bazar	GC	Yes	General Market	Wholesale	1	52	0.76	50	0.10	1.44	0.40	0	13400
5	Balijuri	Balizuri bazar	HB	Yes	General Market	Wholesale	1	65	0.95	64	0.03	1.20	0.08	0	0
6	Dakshin Baradal	Kawkandi hat	GC	Yes	General Market	Wholesale	2	62	0.53	60	0.01	0.00	0.93	0	170000
7	Dakshin Baradal	Akota bazar	HB	No	General Market	Wholesale	2	150	2.00	150	0.02	0.00	2.05	0	0
8	Dakshin Sreepur	Solamanpur Bazar	HB	Yes	General Market	Wholesale	1	37	0.40	37	0.03	0.00	0.61	39500	35000
9	Dakshin Sreepur	Lamagaonr bazar	HB	Yes	General Market	Wholesale	1	175	1.11	170	0.02	1.55	0.00	0	155000
10	Dakshin Sreepur	Pondop bazar	HB	No	General Market	Wholesale	1	50	0.70	50	0.03	0.18	3.54	0	0
11	Tahirpur	Tahirpur bazar	GC	Yes	General Market	Wholesale	1	150	3.41	150	1.44	3.12	1.73	0	55600
12	Uttar Baradal	Chanpur bazar	HB	Yes	General Market	Wholesale	2	115	0.72	101	0.08	1.25	0.00	0	3100
13	Uttar Baradal	Janata bazar	HB	No	General Market	Wholesale	1	40	0.35	40	0.02	0.12	0.31	0	0
14	Uttar Sreepur	Barachhara bazar	HB	Yes	General Market	Wholesale	1	80	1.37	79	0.20	0.45	0.96	23500	28500
15	Uttar Sreepur	Baliaghata bazar	HB	Yes	General Market	Wholesale	2	160	1.39	155	0.04	2.52	0.50	44200	40100
16	Uttar Sreepur	Kalagaon bazar	HB	Yes	General Market	Wholesale	2	150	3.91	148	0.03	4.16	0.00	16500	12500

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	Uttar Sreepur	Bagli bazar	HB	Yes	General Market	Wholesale	2	90	0.30	80	0.15	0.63	0.92	10500	7500
18	Uttar Sreepur	Sree pur bazar	HB	Yes	General Market	Wholesale	2	121	1.07	115	0.02	1.23	0.18	0	4700
19	Uttar Sreepur	Takerghat bazar	HB	No	General Market	Wholesale	1	35	0.60	33	0.00	1.60	0.00	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	Tahirpur	Uttar Badal	Puranghat	1933	2215	Modhuar char RNGPS to Puranghat west para via satota bazar	690924066	UNR	Submersible	3.60			3.60	3.60	3.60	648.00	15.00	135.00	783.00	615	353.54	54.00	20	10	25	20	75	1
2	Tahirpur	Uttar Sreepur	Lakha	1202	1377	Lakha connecting road	No ID	VRB	Submersible	4.00			4.00	4.00	4.00	480.00	15.00		480.00	344	348.53	60.00	18	16	25	12	71	2
3	Tahirpur	Uttar Sreepur	Kamalpur Chak	1757	2013	Birandranagar-Barosharok-Indrapur Road	690924051	VRA	All Weather	1.50			1.50	1.50	1.50	180.00	17.00	153.00	333.00	1342	165.42	22.50	20	10	25	12	67	3
4	Tahirpur	Dakshin Sreepur	Manik Khila	1199	1374	Manik Khila connecting road	No ID	VRB	Submersible	0.45			0.45	0.45	0.45	81.00	10.00		81.00	3053	58.96	6.75	18	10	25	12	65	4
5	Tahirpur	Uttar Badal	Paschim Barakhara	1357	1555	Paschim Barakhara connecting road	No ID	VRB	Submersible	1.00			1.00	1.00	1.00	180.00			180.00	1555	115.77	15.00	18	10	25	12	65	5
6	Tahirpur	Dakshin Badal	Rasulpur	1290	1478	Rasulpur connecting road	No ID	VRB	Submersible	3.00			3.00	3.00	3.00	540.00	35.00		540.00	493	365.35	45.00	18	10	25	12	65	6
7	Tahirpur	Uttar Badal	Alipur	698	800	Alipur connecting road	No ID	VRB	Submersible	1.20			1.20	1.20	1.20	216.00			216.00	666	270.09	18.00	15	10	25	12	62	7
8	Tahirpur	Dakshin Sreepur	Rajdharpur	152	174	Rajdharpur connecting road from Dakshin Sreepur Union Road	No ID	UNR	Submersible	6.50			6.50	6.50	6.50	780.00	20.00	180.00	960.00	27	5512.30	97.50	15	16	10	20	61	8
9	Tahirpur	Dakshin Sreepur	Gopinather Noagaon	357	409	Gopinather Noagaon connecting road	No ID	VRB	Submersible	2.00			2.00	2.00	2.00	360.00	12.00		360.00	205	880.12	30.00	15	10	20	12	57	9
10	Tahirpur	Dakshin Sreepur	Chalirghat Chak (Umedpur)	60	69	Ratansree-karertek Road	690924073	VRB	Submersible	2.00			2.00	2.00	2.00	360.00	0.00	0.00	360.00	34	5236.69	30.00	15	10	10	12	47	10

**** 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)*