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"

Jagannathpur, Sunamganj

datEx DATA EXPERTS
Data Experts (Pvt.) Limited

Delight Engineers & Consultants Ltd. (DECL)
Delight Engineers & Consultants Ltd.

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GLOSSARY

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

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

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

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

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

Hat Synonym of bazar or market

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

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

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

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

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
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
UNDP – United Nations Development Programme
UNO – Upazila Nirbahi Officer
UNR –Union Road
UP – Union Parishad
UPZ – Upazila Road
VRA – Village Road A
VRB – Village Road B

BACKGROUND

Context of the Project

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

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

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

Context of the Report

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

This report contains rural connectivity status and priority plan of the **Jagannathpur** Upazila of **Sunamganj** District.

1 DESCRIPTION OF THE UPAZILA

1.1 GEOGRAPHY AND DEMOGRAPHY

The geographical area of Jagannathpur upazila is 368.11 sq.km. It has 8 unions, 225 mouzas and 310 villages. Jagannathpur is around 39 km away from the district headquarters of Sunamganj. It is covered by 13 major haors and there exists 6 rivers flowing over the upazila in accordance with the UE office, Jagannathpur. The total population of the upazila is 2,59,490 of which 1,29,964 are male and 1,29,526 females. Total number of households is 42,866 and average household size is 6.05 with a population density of 705 (as per population census 2011).

1.2 EDUCATION FEATURES

According to the information availed from relevant local government offices, there are 121 govt. primary, 30 registered primary, only one non-government primary, 8 kindergarten & 2 NGO schools. On the other hand, Jagannathpur has 2 government high schools, 26 non-government high schools with 4 privet colleges, and 64 madrashas. The literacy rate for the upazila is 39.9% as per BBS 2011.

1.3 RURAL ROAD COMMUNICATIONS

Bangladesh scored in the rural accessibility index at around 87 per cent among South Asian and some other Africa countries. Generally, the people of Bangladesh get all weather within 2 kilometers adjacent to their living places. But the feature of rural roads communications in Jagannathpur upazila is contrasted. There are many villages, disconnected from the developed paved road network that brings huge sufferings for the people of the villages. The total rural road network of Jagannathpur is 504.69 km and out of that, 275.31 km is paved and 229.38 km earthen.

1.4 AGRICULTURE, FOOD PRODUCTION AND FISHERIES

As a haor upazila, Jagannathpur produces a lot fishes which are sold to different parts of the country. There are 15381 acres of haor/ wetlands/ pond/ dighee. A significant population of the upazila is involved in Pisciculture. Besides, a lot of food grains are produced here. That's why Agriculture too has a major economic importance for the people of Jagannathpur. There are 44644 acres of arable land in the upazila. In the fiscal year 2010-11 the Rice production was 135, 31405 & 70472 metric tons for Aus, Aman & Boro seasons respectively. The upazila also produced 446 metric tons of water melon in the same fiscal year 2010-11.

1.5 GROWTH CENTRE AND HATBAZAR

Growth Centre and Rural Hatbazr is one of the main centres of the rural economy. Hatbazar is like the heart for the development of the rural economy. Rural hatbazar plays a role in increasing production and creating employment impacting on the supply chain of agriculture and non-agriculture products. There are 29 hatbazars with 5 growth centres in the upazila. The structural development of hatbazar and growth is pivotal to boosting up the rural economy. A details of the growth center & hatbazar of the Upazila has been attached in the ***Annexure-1***.

2 LOCATION OF THE UPAZILA

Jagannathpur upazila is in the North-Eastern part of the country under Sunamganj district of Sylhet division. The location has been shown in the map. It is surrounded by Chhatak and Sunamganj Sadar upazilas on the north, Nabiganj upazila on the south, Bishwanath and Balaganj upazilas on the east, Derai upazila on the west. The upazila is mostly deep haor region within "Sylhet Haor Basin'. The hilly rivers coming down from the 'Khasi and Jaintia hills' in Meghalaya, India carry particularly high volumes of water during monsoon as they come from some of the rainiest places in the world, resulting flash flood at the foothills inside Bangladesh. Flood coming from uphill Meghalaya *(where there is Cherrapunji,* ***the wettest place on earth****)* during monsoon causes waterlogging within the haor basin for almost half the year. Flash floods induce severe impacts in both the built and the natural environment. The effects of flash floods can be catastrophic and show extensive diversity, ranging from damages in buildings and infrastructure to impacts on vegetation, human lives and livestock.

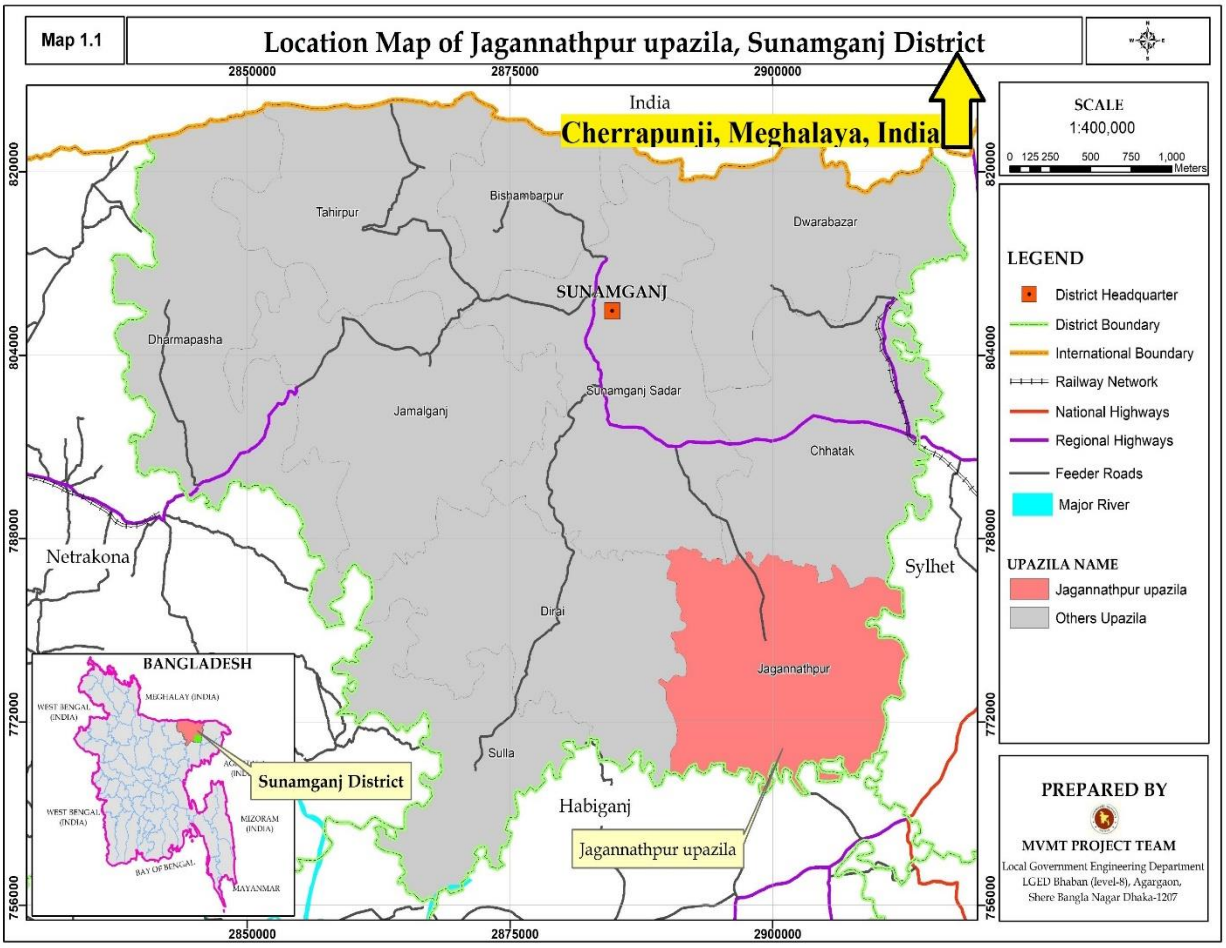

Figure 1: *Upazila Location Map.*

3 APPROACH & METHODOLOGY

3.1 STUDY TEAM COMPOSITION

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

Stakeholder Consultation Meeting

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

3.2 STUDY AREA

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

3.3 DATABASE REVIEW AND ANALYSIS

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

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

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

3.4 PRIORITIZATION CRITERIA OF SUB-PROJECTS

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

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

3.5 WEIGHTAGE DISTRIBUTION FOR PRIORITIZATION

The approaches and methodologies of the Study for reviewing database and prioritization are synthesized in the diagrams below, noting that the proposed sub-projects of roads in the databases are prioritized based on weightage calculated on the set criteria (as shown in the diagram). People's demand and local need are reflected in the prioritization which were

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

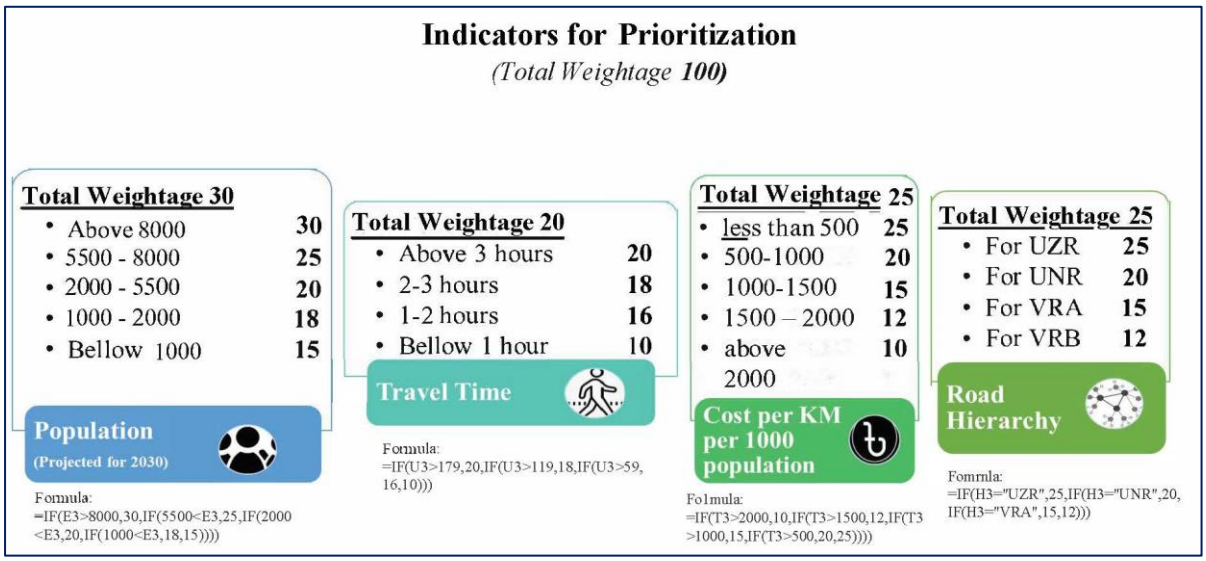

Figure 2: *Prioritization indicators & their weightage values*

3.6 Mapping Hard-to-reach Villages & Population

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

3.7 Wrap Up Meeting

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

3.8 Validation Workshop

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

3.9 NATIONAL WORKSHOP

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

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4 DESCRIPTION OF WETLANDS

4.1 DISTRIBUTION OF THE HAORS/ WETLANDS

The upazila has a large portion of flash flood zone that covers almost 60% of its land area. Rest of the area is highlands that doesn't submerge.

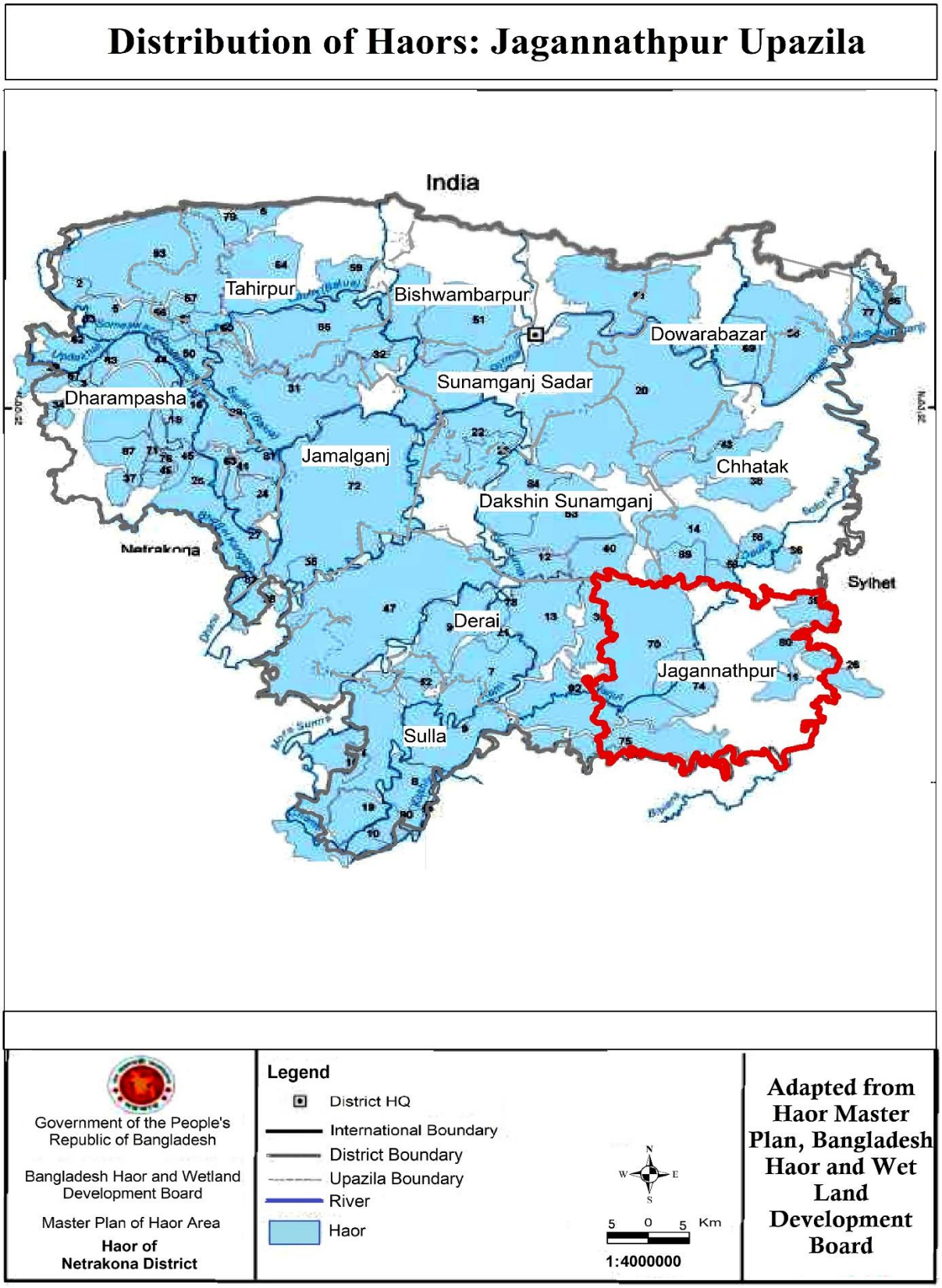

Figure 3: *Haor Distribution Map*

4.2 HAOR/ WETLAND CATEGORY

However, most of the portion of the upazila is within deeply flooded zone. Therefore, road or other infrastructure development in this Upazila has major environmental consequences.

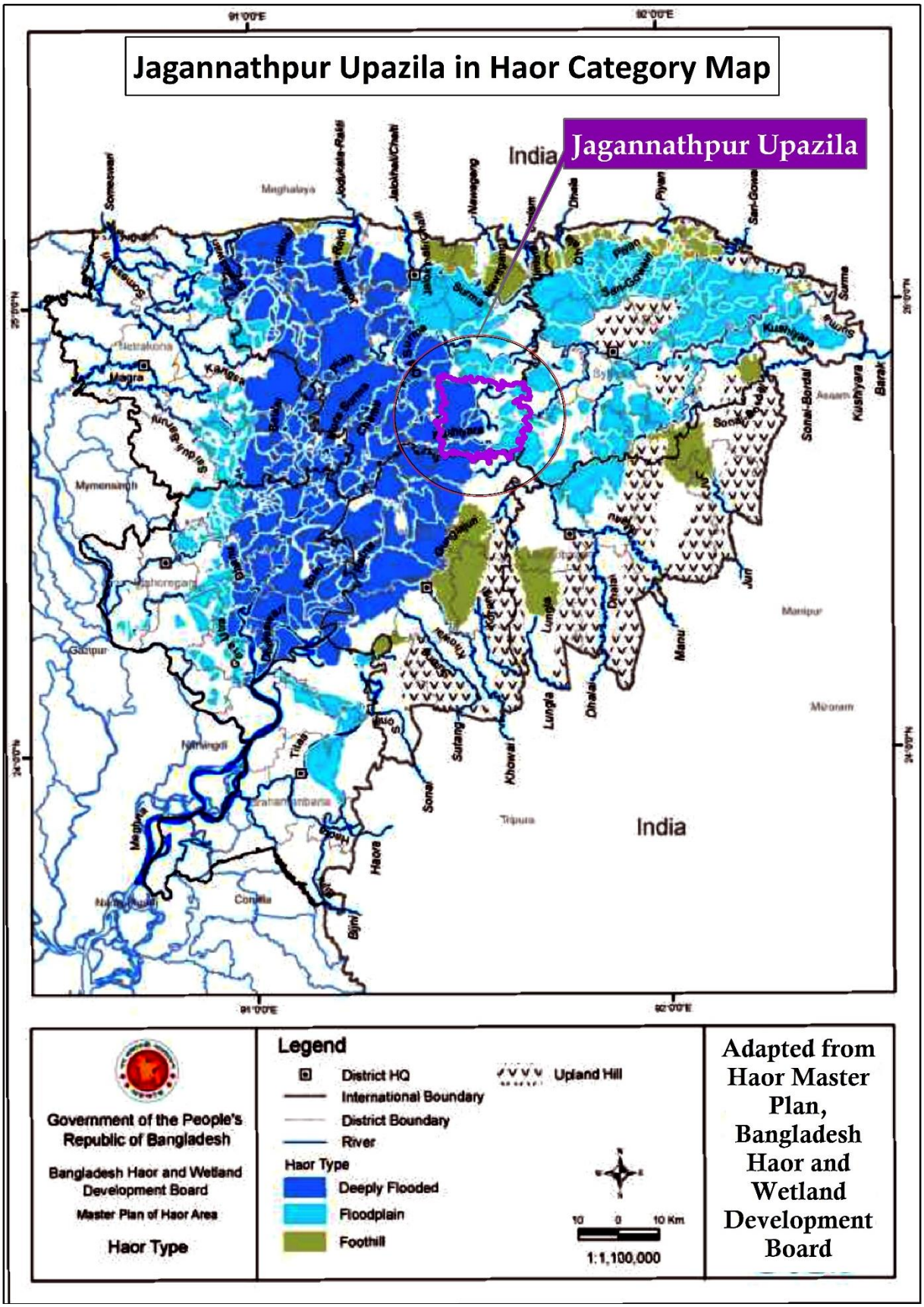

Figure 4: *Haor Catagory Map.*

4.3 BIO-ECOLOGICAL CHARACTERISTICS

The Bio-ecological characteristics map of the upazila has been shown below. The map shows that-it is mostly Haor Basin and partially Sylhet Hills. Therefore, adequate opening for the road and road structures should be maintained.

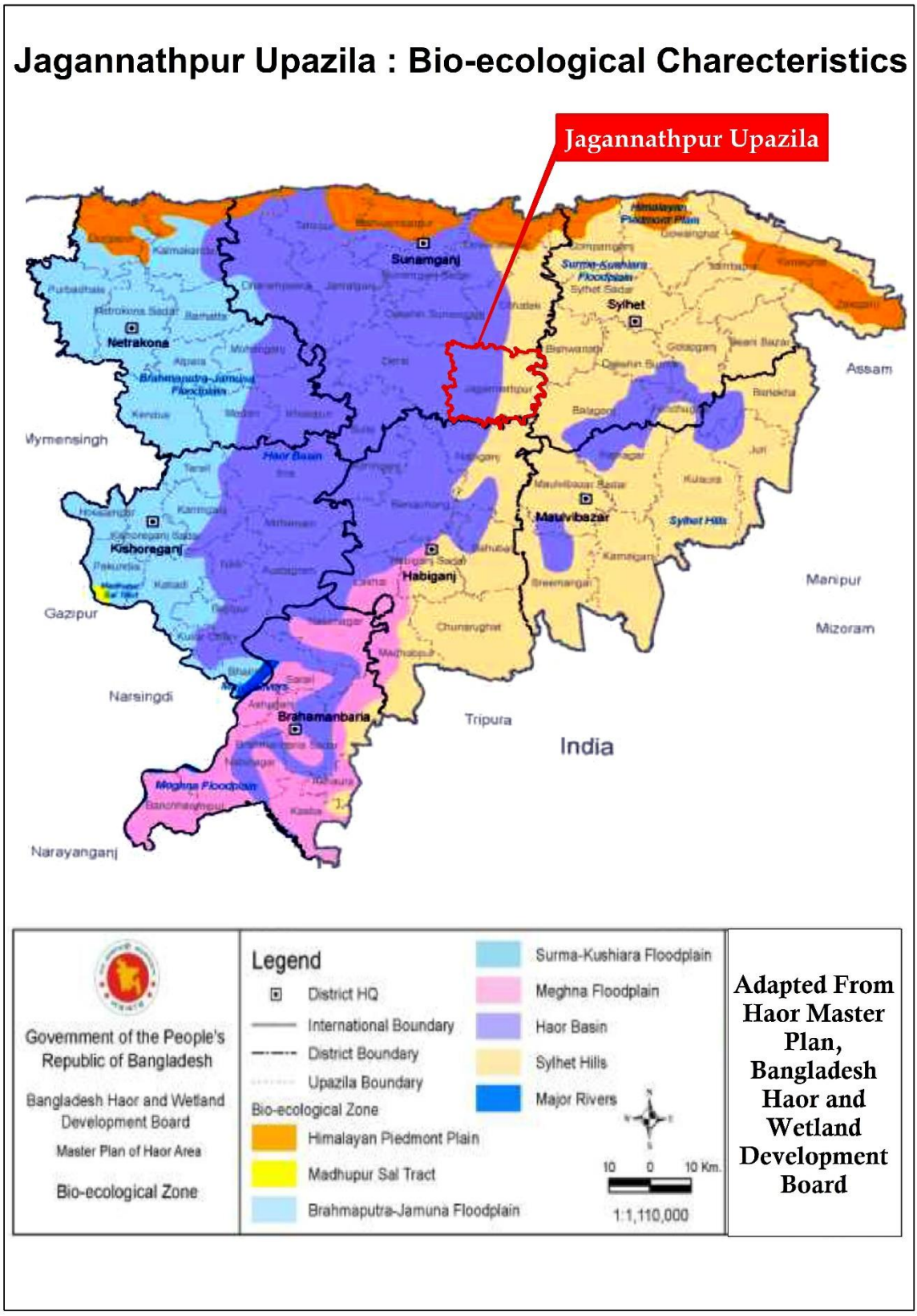

Figure 5: *Bio Ecological Characteristics Map*

5 RURAL ROAD CONNECTIVITY TO THE VILLAGES

5.1 SUMMARY OF THE VILLAGE CONNECTIVITY

Jagannathpur is an upazila with major haors. The rural road communication is quite poor here. Out of 313 villages, 22 are disconnected from the developed paved road network that brings huge sufferings for the people of those villages. The total rural road network of Jagannathpur is of 504.69 km and out of that, 275.31 km is paved and 229.38 km earthen.

***Table 1**: Total villages in the unions and their connectivity*

SL No	Union	No of Villages	Connected Villages	Disconnected Villages
1	Asharkandi	49	46	3
2	Haldipur	28	23	5
3	Kalkalia	51	50	1
4	Mirpur	32	31	1
5	Pailgaon	34	27	7
6	Patali	50	48	2
7	Raniganj	37	37	0
8	Sayedpur	32	29	3
	Total =	**313**	**291**	**22**

5.2 VILLAGES AND THEIR CONNECTIVITY – UNION LEVEL

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

***Table 2**: Union wise connected & disconnected villages and their population*

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
Asharkandi (49)	1	Aiharkona	1072	Jamargaon	984
	2	Alampur	1146	Mitha Bharang	912
	3	Aminpur	61	Surtanpur	213
	4	Asharkandi	690		
	5	Atalia	0		
	6	Bagataki	147		
	7	Bara Fechi	1687		
	8	Bara Sheora	640		
	9	Chara	605		
	10	Charia	214		
	11	Chhelni	259		
	12	Chhota Sheora	1204		
	13	Dakshin Dighalbak	2859		
	14	Dakshin Sreenidhipur	71		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	15	Dasrai	944		
	16	Dasrai Chak	113		
	17	Fechi Sheora	171		
	18	Gram Rasulpur	61		
	19	Halimpur	168		
	20	Harighosh	1664		
	21	Jamalpur	1272		
	22	Joyda	1476		
	23	Joyharipur	1098		
	24	Kalambarpur	758		
	25	Kalia	38		
	26	Kamargaon	117		
	27	Kathalkhair	1092		
	28	Mandalibhag	352		
	29	Manihara	340		
	30	Milik	437		
	31	Mirkatan	261		
	32	Mirpursree	154		
	33	Mitha Bharang Chak	328		
	34	Paik Para	497		
	35	Patkura	1814		
	36	Ratna	102		
	37	Roudar	898		
	38	Sathal Dusti	225		
	39	Shahidnagar	302		
	40	Shambhupur	316		
	41	Shankarpur	652		
	42	Shasan Jhoda	268		
	43	Sreekrishnapur	613		
	44	Suklambarpur	480		
	45	Tajpur	689		
	46	Tilak (Part)	2467		
	Sub Total=		**30822**		**2109**
Haldipur (28)	1	Bashudeb Charan	1972	Betauka	1684
	2	Beri	703	Pandita	996
	3	Bhurakhali	0	Paschim Jagadishpur	1326
	4	Chilaura	4653	Shajansree	1785
	5	Daukar	299	Shaldigha	1349
	6	Gayeshpur	997		
	7	Gobrapur	673		
	8	Golapara Punji	2196		
	9	Haldipur	663		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	10	Harinakandi	0		
	11	Ismail Chak	215		
	12	Jatrapur	0		
	13	Kabirpur	1044		
	14	Kaichapuri	435		
	15	Kasiarkona	269		
	16	Khagaura	1107		
	17	Mahishakona	894		
	18	Nalua Naogaon	2328		
	19	Ohidnagar	716		
	20	Pandeb Kapon	203		
	21	Para Shimul	409		
	22	Rasulpur (Part)	1948		
	23	Samdhal	1171		
	Sub Total=		**22895**		**7140**
Kalkalia (51)	1	Aduya	146	Harinakanda	
	2	Bachaspatipur	553		
	3	Bade Isakpur	607		
	4	Bade Khasila	2152		
	5	Balbal	68		
	6	Balikandi	3009		
	7	Bara Mohammadpur	810		
	8	Bara Mohammadpur	217		
	9	Char Hatia	392		
	10	Choto dighalbak	57		
	11	Dhangpur	486		
	12	Galakhal	326		
	13	Ganeshwarpur	229		
	14	Gipura	485		
	15	Gopikona	207		
	16	Gorargaon	1006		
	17	Gungirgaon	429		
	18	Hijli	1692		
	19	Jani Bishnu	62		
	20	Jugalnagar	365		
	21	Kabilpur	163		
	22	Kadirpur	1148		
	23	Kalitayki	87		
	24	Kalkalia	1082		
	25	Kalyanpur	479		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	26	Kamarkhal	1184		
	27	Kanchanpur	138		
	28	Kandargaon	314		
	29	Khidirpur	298		
	30	Majidpur	189		
	31	Mohammed Hazi	242		
	32	Mokampara			
	33	Mollargaon	435		
	34	Nadampur	944		
	35	Nayagaon	281		
	36	Noapara	71		
	37	Parargaon	1342		
	38	Paschim Faridpur	110		
	39	Paschim Jagadishpur	2135		
	40	Patsuki	156		
	41	Sadarpur	14		
	42	Sadipur	2686		
	43	Sanuakhai	391		
	44	Senapach	155		
	45	Shangirgaon	351		
	46	Sreedharpasha	2210		
	47	Supar Mamudpur			
	48	Supar Mohammedpur	351		
	49	Talikona	1164		
	50		402		
	Sub Total=		**31820**		**0**
Mirpur (32)	1	Adhua	658	Gargaria	1939
	2	Amratali	1050		
	3	Atghar	1161		
	4	Bara Kapan	1370		
	5	Baur Kapon	1326		
	6	Bazarkandi	261		
	7	Dighinagar	465		
	8	Haliar Para	1245		
	9	Hasan Fatemapur	1036		
	10	Kajirgaon	192		
	11	Lahari	2769		
	12	Lahari Gangpur	582		
	13	Mashajan	107		
	14	Mirpur	1045		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	15	Nabinagar	954		
	16	Nachirpur	387		
	17	Najipur	752		
	18	Noagaon	0		
	19	Pailbagh	471		
	20	Paschim Sreeramsi	1661		
	21	Pataria Darapar	556		
	22	Patuma	353		
	23	Purba Sreeramsi	275		
	24	Purbagaon	259		
	25	Radhanagar	734		
	26	Rajnagar	345		
	27	Ratiapara	632		
	28	Samashpur	340		
	29	Sathal	621		
	30	Shashanhabi	720		
	31	Sreekarpur	212		
	Sub Total=		**22539**		**1939**
Pailgaon (34)	1	Alipur	1445	Aihardas	335
	2	Alitali	2917	Alagadi	422
	3	Bagmayna Tagapur	709	Doyalnagar	1247
	4	Brahmanpur	160	Makarkona	957
	5	Chakri	159	Noapara	0
	6	Datta Bhaikar (Samargaon)	2823	Sata	1297
	7	Dwaitari	104	Satal Mukundapur	201
	8	Gaynakandi	225		
	9	Gopinathpur	183		
	10	Gotgaon	3727		
	11	Jalalpur	1940		
	12	Katia	1763		
	13	Khanpur	962		
	14	Kishorepur	534		
	15	Mashjan	451		
	16	Mujahidpur	1391		
	17	Nagargaon	548		
	18	Pailgaon	3171		
	19	Purba Katia	1635		
	20	Ramatipur	0		
	21	Rasulpur	675		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	22	Sadusadak	360		
	23	Sarikaith Hargram	2415		
	24	Sunatala	694		
	25		447		
	26		158		
	27		537		
	Sub Total=		**30133**		**4459**
Patali (50)	1	Asampur	401	Islampur	649
	2	Bangaon	531	Prabhakarpur	1078
	3	Bariachin	183		
	4	Bharatpur			
	5	Chak Achimpur	75		
	6	Chandpur	424		
	7	Chandpur Chak			
	8	Chhalepur			
	9	Dari khanjanpur	417		
	10	Dhananjoypur	154		
	11	Digarkul	798		
	12	Durlabpur			
	13	Ekabara	196		
	14	Fatapur	178		
	15	Fuhirjala	164		
	16	Goalkur			
	17	Hamidpur	615		
	18	Jalalpur			
	19	Jangalgaon	347		
	20	Jointag			
	21	Kabirpur	275		
	22	Kaminipur	364		
	23	Kasabpur			
	24	Kasabpur Bazar			
	25	Khetrapasha	362		
	26	Lama Rasulganj Bazar	53		
	27	Laotala	56		
	28	Lohargaon	1434		
	29	Makrampur	470		
	30	Masardam			
	31	Miazpur	809		
	32	Minajpur	487		
	33	Mohammadpur Sera	1196		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	34	Nandirgaon	640		
	35	Nurbala	491		
	36	Parameshwarpur			
	37	Patali	1265		
	38	Patali Chak	339		
	39	Purba Faridpur	453		
	40	Radunikona	118		
	41	Rameshwarpur			
	42	Rasul Khanjan Bazar	801		
	43	Rasulpur	1781		
	44	Sachiani	1224		
	45	Samat	678		
	46	Sathal	305		
	47	Shasan	434		
	48	Sulmanpur	226		
	Sub Total=		**18744**		**1727**
Raniganj (37)	1	Ahamedabad	848		
	2	Alampur	411		
	3	Ananta Golamlipur	824		
	4	Apasadhu	912		
	5	Asimpur	836		
	6	Baghmoyna	3829		
	7	Balisree	723		
	8	Brahmangaon	335		
	9	Dharmanandi Khamarbagh	387		
	10	Dostapur	1294		
	11	Gachhigkhai	742		
	12	Gandharbapur	3397		
	13	Ghoshgaon	1587		
	14	Hilalpur	561		
	15	Ichagaon	2013		
	16	Islampur	1265		
	17	Joynagar	0		
	18	Kabirshal	0		
	19	Kadimgaon	367		
	20	Kamrakhai	0		
	21	Kubajpur	3990		
	22	Kusari	0		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	23	Mamina Harina Kandi	116		
	24	Megharkandi	932		
	25	Narikeltala	1577		
	26	Nayagaon	2631		
	27	Noapara	604		
	28	Paschim Brammangaon	572		
	29	Raniganj	881		
	30	Raninagar	566		
	31	Rotali	2821		
	32	Rupsha	682		
	33	Shibgonj	157		
	34	Sundarpur	278		
	35	Tekaiha	117		
	36	Teragaon	1382		
	37	Trilakshyanathpur	273		
	Sub Total=		**37910**		**0**
Sayedpur-Saharpara (32)	1	Agunkona	2133	Saharipara	626
	2	Ahamedabad	530	Saharipara	579
	3	Anuchanda	357	Saidpur	2289
	4	Atghar	0		
	5	Audatta	494		
	6	Budharail	2613		
	7	Chandi Hedayetpur	1501		
	8	Chitalia	877		
	9	Fatepur Kismat	784		
	10	Goalgaon	1130		
	11	Gopalpur	181		
	12	Goygor	0		
	13	Harikona	896		
	14	Ikamalashi	0		
	15	Ishankona	2289		
	16	Jalalabad	527		
	17	Kamal Shahara	268		
	18	Karimpur	718		
	19	Katka	0		
	20	Kurihal	0		
	21	Kurikir	359		
	22	Madhaya Mirpur	297		
	23	Mukthir Chak	335		

Union	Sl. No	Connected Villages	Population 2021 (Based on BBS 2011)	Disconnected Villages	Population 2021 (Based on BBS 2011)
	24	Muradabad	824		
	25	Narayanpur	1150		
	26	Paschimpara	1559		
	27	Purbo Brammangaon	769		
	28	Tegharia	1695		
	29	Tilak (Part)	237		
	Sub Total=		**22523**		**3494**

5.3 MAP OF DISCONNECTED VILLAGES & PROPOSED ROADS

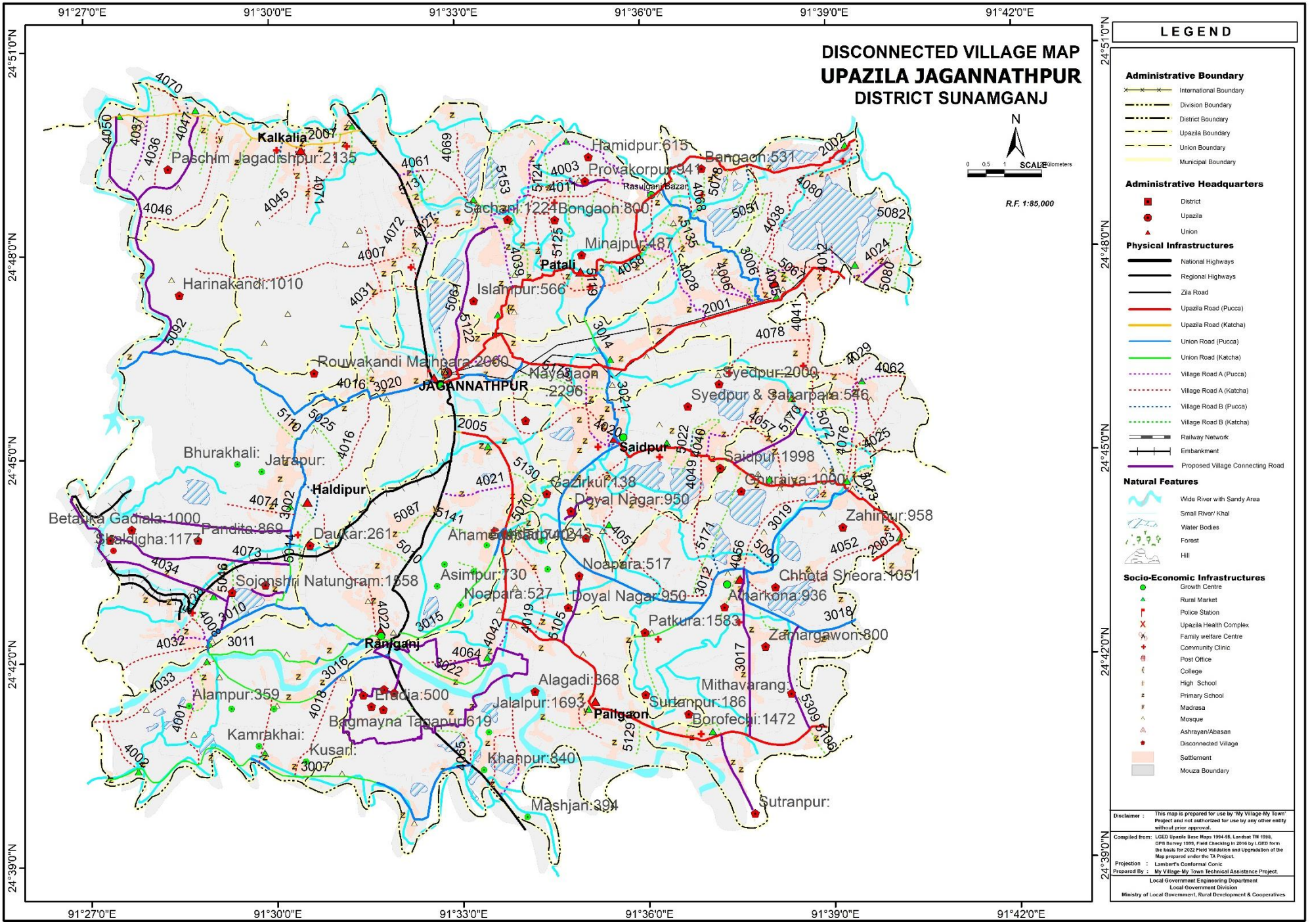

Figure 6: *Upazila Map*

6 CONSULTATION MEETING & FIELD VISIT

6.1 UPAZILA LEVEL MEETING

The consultant arranged a meeting at upazila conference room with the support of the UE office, that was participated by UNO, UE and all the UP Chairmen & their secretaries.

Figure 7: *Upazila level Consultation Meeting*

During the meeting, consultant team briefly discussed about the project and instructed the UP Chairmen and UE office for the database correction along with mapping procedure. The team worked on both the database and upazila map and obtained the necessary outputs subsequently.

6.2 VISIT TO CASE STUDY UNION

The consultant visited "Daurai-Mithabhoranj Road" (ID: 690474023) in Asharkandi, the case study union and observed the alignment there. During the case study union visit, the condition of this upazila road is observed. GPS data has been recorded along the alignment, photos have been taken subsequently and some of it are attached here that can demonstrate the alignment condition clearly.

Figure 8: *Condition of the visited road alignment at Case Study union*

Figure 9: *Condition of the visited road alignment at Case Study union*

Figure 10: *Condition of the visited road alignment at Case Study union*

Figure 11: *Condition of the visited road alignment at Case Study union*

As an all weather village road, it serves around 2500 villagers of Chhota Sheora & Oiarkona. The length of this road is 3.2km that is completely unpaved. The condition of this road at present allows the road users to use mostly two-wheelers & electro powered auto rickshaws during dry season. In the monsoon, part of the road becomes inundated and unusable. Inhabitants use boats for crossing the flooded portion and rest of the alignment by foot mostly.

7 DATA COLLECTION & ANALYSIS

The consultant collected data from the field on hard to reach/ disconnected villages. Data were collected of those villages including population, road alignment information *(type, length, condition)*, travel time, structure required on the alignment, potential riverine routes that can be used for multi-modal transport system etc. The data then analyzed, categorized and finally used to obtain a priority list along with a map *(Figure:6)* showing prioritized roads and disconnected villages. The proposed riverine & road connectivity by the UE office have been discussed in this section.

7.1 PROPOSED RIVERINE ROUTES

As per actual field visit and data analysis from haor development board, Jagannathpur upazila is within deep haor zone. Around 40% of the area is highland and other 60% are flood plain area. Six rivers have passed through Jagannathpur upazila. That are Kushiara (Kalni), Dauka, Ratna, Naljur, Magura, Katagang river.

At monsoon large area of the upazila gets inundated due to flash flood and heavy rainfall at the uphill. The water level rises resulting the 60% of the upazila submerged. Water depth in the deep haor zone becomes 8-10 feet. Almost 4-5 months a year, waterways become the only mode of transport within the flooded zone. During this part of the year, larger boats and trawlers are readily available to transport community & commodity. During fieldwork, it has been known that, there are 2 riverine routes that can be used as multi-modal transport for part of the year.

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

Table 3: *Proposed riverine routes*

Sl. No	Name of the Riverine Route	Name of the Stream	Type of the Stream	Types of Water Vehicle	Need of excavation
1	Raniganj – Rowail	Kushiara (Kalni) River	Intermittent *(April – Sept)*	Small boat, Engine boat, Trawler	No
2	Islampur Gorosthan – Uttor Jagannathpur GPS ghat	Noljur River	Intermittent *(April – Aug)*	Large boat, Engine boat, Trawler	No

7.2 PROPOSED ROADWAY FOR DISCONNECTED VILLAGES:

At present, roads are the most dominant mode of transportation. Most of the structures were built on the rivers to make the road communication effective. Yet, 16 (sixteen) bridges and 17 (seventeen) culverts are needed to fulfil the purpose. A summary of the rural roads of Jagannathpur upazila is given below: 504.69 km and out of that, 275.31 km is paved and 229.38 km earthen

Table 4: Summary of the rural roads in the upazila

Total Road Length of the Upazila (KM)	Paved Length (KM)	Unpaved Length (KM)	Length of unpaved roads of disconnected villages (KM)
504.69	275.31	229.38	60.89

7.2.1 PROPOSED ALL WEATHER ROUTES:

There are no all weather roads proposed to connect the HTRV within the upazila.

7.2.2 PROPOSED SUBMERSIBLE ROUTES:

There are 16 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 5: Proposed submersible roads in the upazila

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
1	Asharkandi UP-Kalnirchar Road	690473017	Submersible	4.275
2	Guprapur Bazar - Nasni via Saldigha	690474034	Submersible	2.2
3	Chilaura Pondita Point-Betauka GPS Via Naluar hour Road	690474035	Submersible	6.95
4	Jagadishpur-Horinakandi-Naluar Hoar	690474047	Submersible	4.2
5	Talikona Borakhali Road	690474050	Submersible	8.5
6	Ismailchalk - Betauka via Baudaran	690474073	Submersible	8.13
7	Islampur Graverd-Uttor Jagannathpur GPS Road	690475061	Submersible	5
8	Chatla (Jagannathpur- Begumpur UZR) - Oihar Das road	690475105	Submersible	1.5
9	Atghar LGED Road - Gorgorikandi via Beti Teek Submersible Road	690475144	Submersible	3
10	Syedpur Pilot High School Road Bridge Approach -Saharpara Islamia Madrasha Shakamal GPS Road Connection via Hapati Haor	690475170	Submersible	3.03
11	Joyda Culvert to Mithavarang Road	690475214	Submersible	1.2
12	Mithavarang - Oiarkona Road	690475309	Submersible	1.4
13	Jagannathpur-Begumpur road-Katia Purva Par -Katia Eadgaon Via Purva Katia GPS Road	690475150 (Proposed)	Submersible	2
14	Swajansree - Natunpara Rd.	No ID	Submersible	2

Sl. No	Road Name	Road ID	Road Condition	Unpaved length (Km)
15	Arlia Rasulganj Road - Provakorpur Sunapur Digurkul Via Rasulganj Bazer Road	No ID	Submersible	4
16	Romapotipur GPS-Doyalnagar Submersible Road	No ID	Submersible	3.5

7.2.3 PROPOSED ROADS FOR DISCONNECTED VILLAGES HAVING NO ID:

There are 3 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 disconnected villages having No ID*

Sl. No	Road Name	Road ID	Unpaved length (Km)
1	Swajansree - Natunpara Rd.	No ID	2
2	Arlia Rasulganj Road - Provakorpur Sunapur Digurkul Via Rasulganj Bazer Road	No ID	4
3	Romapotipur GPS-Doyalnagar Submersible Road	No ID	3.5

7.2.4 PRIORITY FOR ROAD DEVELOPMENT

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

Table 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 same score. At these cases, the minimum budget required for providing connectivity to thousand people- will get more priority compared to more budget required roads. The roads bearing ID will have the higher priority than the roads without ID.

8 CONCLUSION & RECOMMENDATIONS

- Part of Jagannathpur Upazila is deeply flooded and part of it is floodplain zone. 6 (six) rivers dominate the ecosystem, transport system of the Upazila. That are Kushiara (Kalni), Dauka, Ratna, Naljur, Magura & Katagang rivers. During monsoon, these rivers carry huge volume of flood water from Khasi & Jainta hills. Though the Upazila has a number of rivers, riverine transport is available in this Upazila during April – September. Small boats, Engine boats, Heavy trawlers carrying agricultural products and passengers during monsoon. The rivers can supply irrigation water throughout the year but it does not have enough water for riverine transportation except monsoon.
- 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 22 disconnected villages. To develop rural connectivity, there are proposals for only 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, the vulnerability is getting intense. The year 2022 has shown catastrophic flood that was not seen over the last 18years *(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 Upazila Jagannathpur in Sunamganj district is highly recommended.

ANNEXURE - 1

DETAILS OF GROWTH CENTER & HATBAZAR

Union	Market Name	Market Category (*GC=Growth Center, HB=Hat Bazar*)	Market Listed? (Yes/ No)	Market Category (General/ Special/ Collection center)	Market Category (Wholesale/ Retail/both)	Hat Day	Chandina Viti (Number)	Chandina Viti (Land)	Chandina Viti (Shop)	Land Area (Acre)			Lease/ Khas Collection BDT (2020)	Lease/ Khas Collection BDT (2019)
										Toha	Khas	Private		
Asharkandi	Naya bander hat	HB	Yes	General Market	Both	2	0	0.00	50	0.00	1.50	1.73	27000	31000
Asharkandi	Daurai hat	GC	Yes	General Market	Both	2	16	0.08	16	0.67	1.38	1.42	7990	17100
Asharkandi	Barofechi hat	HB	Yes	General Market	Wholesale	1	0	0.00	10	0.00	0.00	0.95	10240	0
Asharkandi	Katal khair hat	HB	Yes	General Market	Wholesale	2	0	0.00	8	0.00	0.41	0.00	0	0
Asharkandi	Pathkura bazar	HB	Yes	General Market	Wholesale	0	0	0.00	11	0.00	0.32	1.36	0	0
Asharkandi	Tilak bazar	HB	Yes	General Market	Wholesale	0	0	0.00	7	0.00	0.25	0.00	0	0
Asharkandi (Jagannathpur Pourosova)	Jagannathpur bazar	GC	No	General Market	Both	2	85	1.09	117	0.35	1.28	3.23	1251000	1155000
Haldipur	Chilaura bazar	HB	Yes	General Market	Both	1	12	0.06	22	0.04	0.31	0.00	1	490
Haldipur	Guprapur hat	HB	Yes	General Market	Wholesale	0	0	0.00	13	0.00	0.32	0.81	0	490
Haldipur	Polikona bazar	HB	No	General Market	Wholesale	0	0	0.00	3	0.00	0.05	0.00	0	0
Kalkalia	Kalkhalia bazar	HB	Yes	General Market	Both	1	25	1.16	30	0.30	2.91	0.03	59052	57000
Kalkalia	Mohammadgonj bazar	HB	Yes	General Market	Both	1	20	0.11	22	0.07	0.18	1.33	18560	16005
Kalkalia	Shadipur hat	HB	No	0	Wholesale	0	0	0.00	0	0.00	0.00	0.00	0	0
Mirpur	Kewanbari hat	HB	Yes	General Market	Both	1	20	0.15	23	0.44	0.37	0.48	14271	13980
Mirpur	Tuker bazar	HB	Yes	General Market	Wholesale	1	0	0.00	12	0.00	0.00	1.59	7580	1325
Mirpur	Sreeamishi hat	HB	Yes	General Market	Both	1	30	0.20	20	0.19	0.39	0.19	3375	3905

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		
Mirpur	Mirpur bazar	HB	Yes	General Market	Both	1	30	0.20	32	0.58	0.39	0.59	1530	1440
Pailgaon	Shadin bazar	HB	Yes	General Market	Wholesale	1	0	0.00	57	0.55	0.00	0.51	2585	3330
Pailgaon	Polligonj bazar	HB	Yes	General Market	Wholesale	1	11	0.23	22	0.04	0.27	0.22	2445	4500
Patali	Rasulganj bazar	GC	Yes	Special Market	Both	2	50	0.45	60	0.40	3.41	1.47	5600786	2621000
Patali	Lautala hat	HB	Yes	General Market	Wholesale	1	0	0.00	0	0.00	0.74	3.18	10580	1400
Patali	Aralia bazar	HB	Yes	General Market	Wholesale	1	31	0.85	34	0.36	1.17	0.51	2580	3100
Patali	Kashabpur hat	HB	No	General Market	Both	2	0	0.00	50	0.00	0.00	0.00	153000	139000
Raniganj	Raniganj bazar	GC	Yes	Special Market	Both	2	97	0.60	123	0.23	8.41	1.00	4131525	2079000
Raniganj	Shibgonj bazar	HB	Yes	General Market	Both	1	65	0.40	68	0.30	1.47	3.50	70000	68000
Raniganj	Roail bazar	HB	Yes	General Market	Both	1	35	2.12	45	1.28	3.85	0.00	0	0
Raniganj	(Shonatapur)janata bazar	HB	Yes	General Market	Wholesale	0	0	0.00	9	0.00	0.00	0.34	0	0
Raniganj	Gopalgonj bazar	HB	Yes	General Market	Wholesale	0	0	0.00	6	0.00	0.35	0.00	0	0
Raniganj	Shantegonj bazar	HB	Yes	General Market	Wholesale	0	0	0.00	4	0.00	1.11	0.00	0	0
Sayedpur-Saharpara	Soyedpur bazar	GC	Yes	General Market	Both	1	40	0.60	87	0.77	1.88	0.05	320000	375505
Sayedpur-Saharpara	Shaharpara bazar	HB	Yes	General Market	Wholesale	1	12	0.19	14	0.04	0.25	0.00	0	0
Sayedpur-Saharpara	Pirergaon bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
Sayedpur-Saharpara	Shonatanpur bazar	HB	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
Sayedpur-Saharpara(Jagannathpur Pourosova)	Bober bazar	HB	Yes	General Market	Both	1	20	0.35	33	0.03	0.31	1.16	172000	153000

ANNEXURE - 2

PRIORITY LIST FOR ROAD DEVELOPMENT

Priority	Connecting Union	Connecting Village	Population 2021 (Based on BBS 2011)	Road Name	Road ID	Road Type	Road Type by Surface Condition	Total Road Length (10+11+12)	Paved length (km)	HBB Length (km)	Unpaved length (km)	HBB + Unpaved (11+12) in (km)	Approx. Cost of Road (lac)	Structure/ Gap (meter)	Cost of Structure (in Lac)	Total Cost (in lac) (Roads + Structures)	Population /KM (4÷13)	Tentative Budget/1000 Population (in lac)	Travel Time (in min)	Weightage for Population	Weightage for Travel Time	Weightage for Cost per 1000 Population	Weightage for Road Type	Total Weightage (21+22+23+24)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	Kalkalia	Harinakanda	2446	Jagadishpur-Horinakandi-Naluar Hoar	690474047	VRA	Submersible	4.2			4.2	4.2	756	15	135	891	582	364	63	20	16	25	15	**76**
2	Pailgaon	Satha, Nowapara, Alakdi, Makhorkuna, Terautia, Oiardash, Mokondorpur	7562	Chatla (Jagannathpur- Begumpur UZR) - Oihar Das road	690475105	VRB	Submersible	2		0.5	1.5	2	360		0	360	3781	48	23	25	10	25	12	**72**
3	Chilaura Haldipur	Shaldigha	1349	Guprapur Bazar - Nasni via Saldigha	690474034	VRA	Submersible	2.2			2.2	2.2	396		0	396	613	294	33	18	10	25	15	**68**
4	Mirpur	Gorgorikandi	2292	Atghar LGED Road - Gorgorikandi via Beti Teek Submersible Road	690475144	VRB	Submersible	3.5	0.5		3	3	540	30	270	810	764	353	45	20	10	25	12	**67**
5	Chilaura Haldipur	Paschim Jagadishpur	1157	Talikona Borakhali Road	690474050	VRA	Submersible	8.5			8.5	8.5	1530		0	1530	136	1322	128	18	18	15	15	**66**
6	Chilaura Haldipur	Betauka Gadiala	1146	Ismailchalk - Betauka via Baudaran	690474073	VRA	Submersible	11.13	3		8.13	8.13	1463.4	20	180	1643.4	141	1434	122	18	18	15	15	**66**
7	Asharkandi	Mithavarang	912	Joyda Culvert to Mithavarang Road	690475214	VRB	Submersible	1.2			1.2	1.2	216		0	216	760	237	18	15	10	25	12	**62**
8	Asharkandi	Mithavarang	912	Mithavarang - Oiarkona Road	690475309	VRB	Submersible	1.4			1.4	1.4	252		0	252	651	276	21	15	10	25	12	**62**
9	Chilaura Haldipur	Pandita	996	Chilaura Pondita Point-Betauka GPS Via Naluar hour Road	690474035	VRA	Submersible	6.95			6.95	6.95	1251	20	180	1431	143	1437	104	15	16	15	15	**61**
10	Asharkandi	Jamargaon	984	Asharkandi UP-Kalnirchar Road	690473017	UNR	Submersible	5.7	1	0.425	4.275	4.7	846	360	3240	4086	209	4152	64	15	16	10	20	**61**
11	Patli	Islampur	649	Islampur Graverd-Uttor Jagannathpur GPS Road	690475061	VRB	Submersible	5			5	5	900	40	360	1260	130	1943	75	15	16	12	12	**55**
12	Syedpur	Syedpur +Saharpara	626	Syedpur Pilot High School Road Bridge Approach - Saharpara Islamia Madrasha Shakamal GPS Road Connection via Hapati Haor	690475170	VRB	Submersible	3.03			3.03	3.03	545.4	20	180	725.4	206	1160	45	15	10	15	12	**52**
13	Asharkandi	Surtanpur	213	Jagannathpur-Begumpur road-Katia Purva Par -Katia Eadgaon Via Purva Katia GPS Road	690475150	VRB	Submersible	2			2	2	360	50	450	810	107	3801	30	15	10	10	12	**47**
14	Patli	Provakorpur	1078	Arlia Rasulganj Road - Provakorpur Sunapur Digurkul Via Rasulganj Bazer Road	No ID	VRB	Submersible	4			4	4	720	10	90	810	270	751	60	18	16	20	12	**66**
15	Chilaura Haldipur	Sojonshri Natungram	1785	Swajansree - Natunpara Rd.	No ID	VRB	Submersible	2			2	2	360		0	360	893	202	30	18	10	25	12	**65**
16	Pailgaon	Doyalnagar	1088	Romapotipur GPS-Doyalnagar Submersible Road	No ID	VRB	Submersible	5.3	1.8		3.5	3.5	630		0	630	311	579	53	18	10	20	12	**60**

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