

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"

Kanaighat Upazila, Sylhet



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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 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 Minster 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 **Kanaighat** Upazila of **Sylhet** District.

1 DESCRIPTION OF THE UPAZILA

1.1 GEOGRAPHY AND DEMOGRAPHY

The geographical area of Kanaighat Upazila is 391.88 square kilometers and has 9 unions, 198 mauzas, and 264 villages. The Upazila is 50km away from the district headquarters of Sylhet. Kanaighat is partly covered by 9 major haors/ wetlands and there exist 4 (four) rivers flowing over the Upazila. The total population of Upazila is 263969 of which 129319 are male and 134650 females, the total number of households are 46147 and the average household size is 5.7 with a population density of 674 (as per population census 2011).

1.2 EDUCATION FEATURES

According to the information of the relevant local government offices, there are 92 government & 25 non-government primary schools in the Upazila. On the other hand, Kanaighat has 20 non-government with only one government high schools, 6 private colleges, and 10 madrasahs. The literacy rate for the Upazila is 41.4% 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 Kanaighat 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 Kanaighat is 839.73 km and out of which, 261.24 km are paved and 578.49 km earthen.

1.4 AGRICULTURE, FOOD PRODUCTION, AND FISHERIES

Though the aggregate (coarse sand, stone chips & stone) business is the main source of income for the inhabitants, agriculture too has major importance for the economy of the people of Kanaighat. There are 101868 acres of arable land in Upazila. In the fiscal year 2010-11, the Rice production was 44855, 44855 & 15760 metric tons for Aus, Aman & Boro seasons respectively. The Upazila also produced 250 metric tons of Potato, and 10 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, Kanaighat has 10172 Acre of haor, pond & dighee that produced 4479 metric tons of fish. There also exist 21 poultry & 19 dairy farms.

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

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 23 Hatbazar and 6 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

Kanaighat Upazila of Sylhet 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.

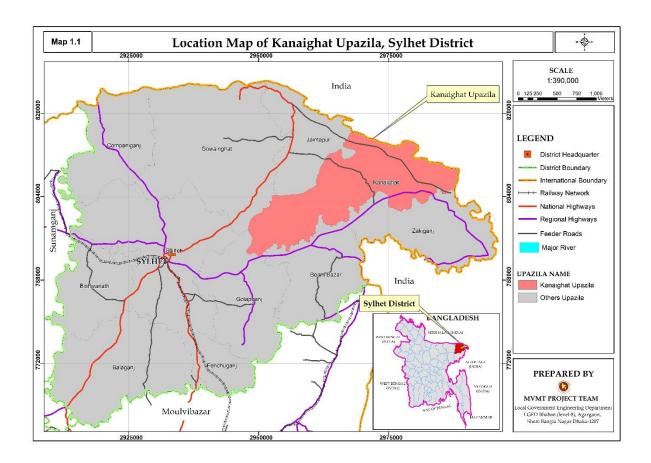


Figure 1: Upazila Location Map

3 APPROACH & METHODOLOGY

3.1 STUDY TEAM COMPOSITION

A team consisting of Senior Rural Road Infrastructure Specialist, Associate Rural Infrastructure Specialist, and Assistant Engineer engaged by the Project Management

Office (PMO) conducted the study. On the other hand, A team consisting of Deputy Team Leader cum Rural Infrastructure Engineer, Junior GIS expert, and Junior Engineer engaged by consulting firm (datEx & DECL JV) conducted the study. A participatory approach to review the database and identify priority transport infrastructure needs ('sub-projects) was instrumental. At the stakeholder consultation meeting held in each district, the database was reviewed, and priority needs were identified and together mapped working with representatives and LGED technical team. LGED

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

and LGI representatives surveyed each Upazila for the collection of detailed observations and validations of the proposed priority needs.

3.2 STUDY AREA

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

3.3 DATABASE REVIEW AND ANALYSIS

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

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

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

3.4 Prioritization Criteria of Sub-projects

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

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

3.5 WEIGHTAGE DISTRIBUTION FOR PRIORITIZATION

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

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

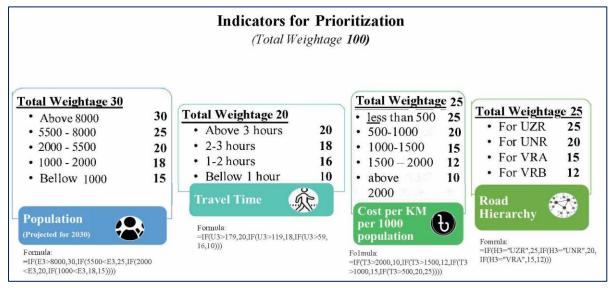


Figure 2: Prioritization indicators & their weightage values

3.6 Mapping Hard-to-reach Villages & Population

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

3.7 WRAP UP MEETING

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

3.8 VALIDATION WORKSHOP

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

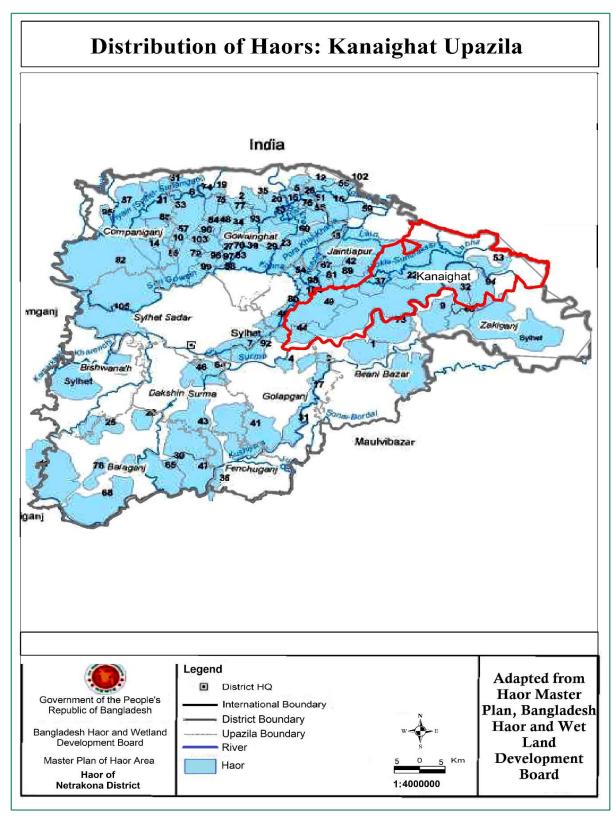
3.9 NATIONAL WORKSHOP

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

4 DESCRIPTION OF WETLANDS

4.1 DISTRIBUTION OF THE HAORS/ WETLANDS

The Upazila has a large portion of flash flood zone that covers almost 80-90% of its land area. The roads within the flood zone become inundated during monsoon, which requires attention to take relevant measures during road construction and maintenance.



4.2 HAOR/ WETLAND CATEGORY

However, in the north of the Upazila, it is Foot Hill and most of the Upazila is within floodplain range. Therefore, road or other infrastructure development in this Upazila does not have any major environmental consequences.

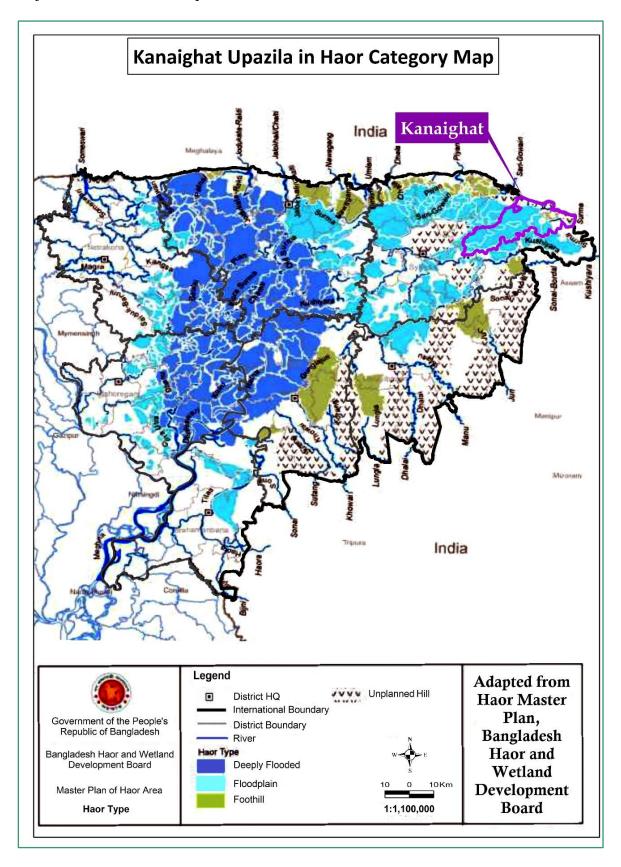


Figure 3: Haor Category Map.

4.3 BIO-ECOLOGICAL CHARACTERISTICS

The Bio-ecological characteristics map of the Upazila has been shown below. The map shows that it is mostly Sylhet Hills. A big part of Kanaighat Upazila is under Himalayan Piedmont Plain. Therefore, adequate openings for the road and road structures should be maintained.

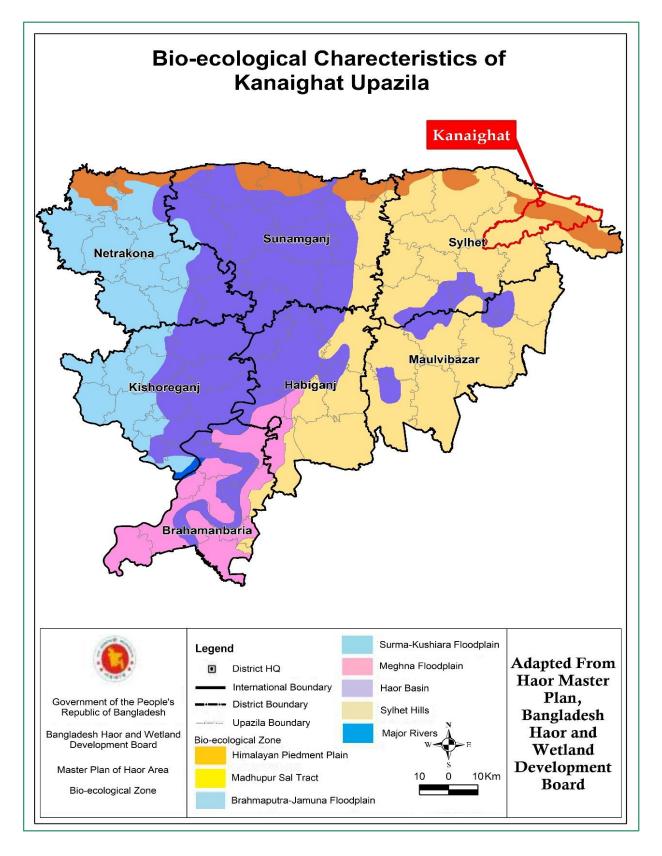


Figure 4: Bio Ecological Characteristics Map

5 RURAL ROAD CONNECTIVITY TO THE VILLAGES

5.1 SUMMARY OF THE VILLAGE CONNECTIVITY

The feature of rural road communications in Kanaighat Upazila is contrasted. Out of 263 villages, 20 are disconnected from the developed paved road network which brings huge suffering for the people of those villages. The total rural road network of Kanaighat is 839.73 km and out of which, 261.24 km are paved and 578.49 km earthen.

Table 1: Total villages in the unions and their connectivity

SL No	Union	No of Villages	Connected Villages	Disconnected Villages
1	Bara Chatul	32	29	3
2	Dakshin Banigram	30	27	3
3	Jhingrabari	34	31	3
4	Kanaighat	24	22	2
5	Paschim Dighirpar	24	23	1
6	Paschim Lakshmip Rasad	21	18	3
7	Purba Dighirpar	37	36	1
8	Purba Lakshmi Prasad	32	31	1
9	Rajaganj	29	26	3
	Total	263	243	20

5.2 VILLAGES AND THEIR CONNECTIVITY – UNION LEVEL

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

Table 2: Union-wise connected & Hard-to-Reach Villages and their population

			Paraletica 2021		Population 2021
Union	Sl. No.	Connected Village	Population 2021 (Based on census 2011)	Disconnected Village	(Based on census
		Ü		Z .	2011)
	1	Ag Faud	913	Ag Faud	303
	2	Bagaragan	581	Dakshin Haratail	118
		Balla	397	Kadirgram	664
	3	Barachatul	1480		
	4	Betu	737		
	5	Dakshin Muktarpur	203		
	6	Dalkhirai	947		
	7	Darikhel	114		
	8	Dungragram	643		
	9	Haru Faud	1392		
	10	Indrakona	289		
	11	Jamira	922		
Bara Chatul	12	Kazir Patan	888		
Ch	13	Kurarpar	1077		
ara	14	Lakhairgram	1899		
Ë	15	Majhbarai	495		
	16	Maligram	1354		
	17	Mulli Faud	417		
	18	Naya Faud	724		
	19	Nayagram	645		
	20	Parbatpur	1138		
	21	Rangarai	590		
	22	Ratanpur	610		
	23	Rautgram	525		
	24	Sonatala	221		
	25	Uparbarai	792		
	26	Uttar Muktarpur	1229		
	27	Uttar Roypur	1695		
		Sub Total	22917		1085
	1	Akuni	667	Dakshin Bardesh	608
gram	2	Chhatrapur	995	Paschim Brahamangram	2727
Bani	3	Dakshin Bangram	2034	Uttar Dhali Bil	489
Dakshin Banigram	4	Dakshin Dhali Bil	1413		
Da	5	Gachhbari	898		
	6	Gharaigram	1162		

Union	Sl. No.	Connected Village	Population 2021 (Based on census 2011)	Disconnected Village	Population 2021 (Based on census 2011)
	7	Golalpar	476		
	8	Halabadi 3rd	371		
	0	Part	3/1		
	9	Halabadi 4th Part	635		
	10	Harampur	917		
	11	Kandigram	356		
	12	Kayetgram	1709		
	13	Khlerpar	988		
	14	Lamar Taluk	884		
	15	Majhergram	504		
	16	Mazarhara	279		
	17	Nayagaon	638		
	18	Nayagram	1949		
	19	Pachim Dalairmati	584		
	20	Pachim Nij Baurbaghg	2642		
	21	Panchaghari	649		
	22	Paschim Sardarmati	971		
	23	Paschimgram	513		
	24	Purba Nij Baurbhag	1542		
	25	Purbagram	767		
	26	Sardari Para	804		
	27	Uttar Bangram	315		
		Sub Total	25662		3824
	1	Ag Taluk	1886	Gannikandi	1536
	2	Amarpur	944	Lama Jhingabari	1320
	3	Bakhairpar	873	Purba Ag Faud Narayanpur	3854
	4	Banshbari	470		
	5	Bhadra Chati	608		
	6	Bhararimati	574		
ari	7	Bhatarkuna	334		
rab	8	Chalitabari	762		
Jhingrabari	9	Dakshin Nayamati	261		
, ,	10	Darijimati	1313		
	11	Digar Nayamati	518		
	12	Fagu Kaptanpur	1563		
	13	Fakra Chati	644		
	14	Goailpur	1575		
	15	Jhingarkhal	496		
	16	Katalpur	234		

Union	Sl. No.	Connected Village	Population 2021 (Based on census 2011)	Disconnected Village	Population 2021 (Based on census 2011)
	17	Khalagaon	1083		
	18	Khasermati	243		
	19	Majh Taluk	522		
	20	Merar Chati	576		
	21	Miahgul	880		
	22	Nayagram	619		
	23	Nij Jhingabari	460		
	24	Pachim Kaptanpur	1310		
	25	Pachim Patramati	706		
	26	Purbagram	598		
	27	Rajpur	706		
	28	Sardanakandi	1349		
	29	Tinchati Narayanpur	1934		
	30	Upar Jhingabari	3323		
	31	Yarkandi	87		
		Sub Total	27451		6710
	1	Agri Para	615	Paschim Birdhal Haor	158
	2	Bhati Dihi	1692	Sutargaon	899
	3	Chatigram	1052		
	4	Chhota Desh	3331		
	5	Gauripur	457		
	6	Gosainpur	1271		
	7	Jantipur	435		
	8	Kachu Para	919		
	9	Krishnapur	146		
+	10	Kuyarer Khala			
Kanaighat	11	Lama Gobenda Pur	252		
(an	12	Maheshpur	230		
 	13	Nij Gobindapur	544		
	14	Paschim Lakshmipur	392		
	15	Purba Birdhal	5488		
	16	Purba Birdhal Haor	282		
	17	Radhanagar	617		
	18	Sanandapur	46		
	19	Sonapur	919		
	20	Umagar	1126		
	21	Uttar Nayamati	216		
	22	Uttar Nij Chaura	2294		

Union	Sl. No.	Connected Village	Population 2021 (Based on census 2011)	Disconnected Village	Population 2021 (Based on census 2011)
		Sub Total	22324		1057
	1	Agar Chati	862	Agdi	1232
	2	Bhabaniganj	552		
	3	Bhararimati	512		
	4	Chapnagar	791		
	5	Daba Daranermati	861		
	6	Dakshin Julai	359		
	7	Joypur	1228		
	8	Kardi	618		
	9	Konagram	143		
oar	10	Lalar Chak	543		
Paschim Dighirpar	11	Majardi	465		
Jigl	12	Majardi-1	185		
m I	13	Majher Chati	817		
chi	14	Nayamati	497		
Pas	15	Paschim Julai	677		
	16	Paschim Kayarermati	362		
	17	Paschim Thakurermati	451		
	18	Purba Dalairmati	702		
	19	Purba Patramati	1071		
	20	Purnakhala	316		
	21	Sadialermati	316		
	22	Satghari	172		
	23	Satpari	787		
		Sub Total	13287		1232
	1	Assam Para	666	Bara Band 3rd Part	1431
	2	Bara Band 1st Part	1170	Kukubari Lakshimi Prashad	959
asad	3	Bara Band 2nd Part	832	Sonatan Punji	2321
nip Ra	4	Bara Band 4th Part	852		
Paschim Lakshmip Rasad	5	Baurbhag 1st Part	1647		
im L	6	Baurbhag 2nd Part	2295		
Pasch	7	Baurbhag 3rd Part	452		
	8	Baurbhag 4th Part	2116		
	9	Dakshin Lakshmi Prashad	1463		

Union	Sl. No.	Connected Village	Population 2021 (Based on census 2011)	Disconnected Village	Population 2021 (Based on census 2011)
	10	Eraligul	240		
	11	Goarkpur	938		
	12	Kalinagar	1334		
	13	Kuyarghari	2024		
	14	Nihalpur	708		
	15	Nunchhara T.g.	1176		
	16	Purba Ag Faud	752		
	17	Purba Halabadi	162		
	18	Uttarlakshimi Prashad	1058		
		Sub Total	19885		4711
	1	Ballagram	348	Matijura	408
	2	Bhabanipur	400		
	3	Chhatratanagar	658		
	4	Dakshin Kuyarermati	348		
	5	Dakshin Noyamati	115		
	6	Dhanmairmari	852		
	7	Dighirpar	1416		
	8	Dwoyarimati	262		
	9	Himmatermati	823		
	10	Indrapur	121		
	11	Joy Faud	1422		
<u> </u>	12	Karchhati	796		
rpa	13	Kotalpur	283		
ighi		Khulurmati	765		
J Q	14	Kumairmati	494		
Purba Dighirpar	15	Laluhara	780		
Pt	16	Lantirmati	957		
		Machgram	453		
		Majhargram	895		
	17	Manikpur	631		
	18	Maunagar	485		
	19	Noagram	549		
	20	Paschim Kunagram	713		
	21	Paschim Razpur	178		
	22	Purba Bramangram	376		
	23	Purba Dharpanagar	1486		
	24	Purba Kaptanpur	145		
	25	Purba Kunagram	261		

Union	Sl. No.	Connected Village	Population 2021 (Based on census 2011)	Disconnected Village	Population 2021 (Based on census 2011)
	26	Purba	1064		
		Kuyarmati			
	27	Purba Rampur	355		
	28	Purba Razpur Purba	275		
	29	Sadorermati	222		
	30	Purba Thakurermati	551		
	31	Ramdhanermati	164		
	32	Shahapur	1990		
	33	Zitpur	387		
		Sub Total	22020		408
	1	Bajekhel	417	Baragram	543
	2	Barakher	1414		
	3	Barchatal	1584		
	4	Bhallukmara	1165		
	5	Bhati Barapait	2374		
	6	Chhota Faud	564		
	7	Daukergul	2798		
	8	Dona T. G.	2321		
	9	Eraligul	2427		
	10	Kachari Para	80		
	11	Kalijuri	776		
	12	Kandla	1801		
ad	13	Keoti Haor	981		
i Prasad	14	Lobhachhara T.g.	881		
hm	15	Madarpur	296		
aks	16	Manipur	469		
a L	17	Mecha	594		
Purba Lakshmi	18	Mikirpara	1281		
Ь	19	Mulagul T.g.	328		
	20	Nakti Para	1043		
	21	Narayanpur	1484		
	22	Nij Karaballa	419		
	23	Paschim Ujan Barapait	549		
	24	Paschimpara	704		
	25	Paschim Karaballa	348		
	26	Purba Karaballa	1434		
	27	Purba Laxmipur	169		
	28	Purba Ujan Barapait	784		
	29	Satipur	38		

Union	Sl. No.	Connected Village	Population 2021 (Based on census 2011)	Disconnected Village	Population 2021 (Based on census 2011)
	30	Saudgram	1260		
	31	Sonarkher	586		
		Sub Total	31329		543
	1	Ansarpur	516	Ag Kufa	1627
	2	Bara Faljur	2097	Alanagar Pahar	358
	3	Bhatir Faud	920	Konagram	554
	4	Chhota Faljur	997		
	5	Chhota Mirzarghar	666		
	6	Dalai Chati	645		
	7	Dawadari	687		
	8	Dewan Chak	404		
	9	Fatehganj Haor	473		
	10	Fathgonj	1375		
	11	Gazipur	1145		
	12	Hamidpur	420		
	13	Khagrikandi	983		
	14	Khalpar	3758		
	15	Khowazpur	488		
	16	Lalar Chak	2335		
	17	Lama Para	696		
	18	Laxmipur	551		
	19	Mainarpahar	1509		
	20	Majh Kufa	1031		
	21	Mayna	1961		
	22	Nayamati Pahar	1217		
	23	Nij Mirzarghar	1233		
	24	Nij Talbari	1495		
	25	Parkul	1267		
	26	Razagonj	1643		
		Sub Total	30512		2539

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

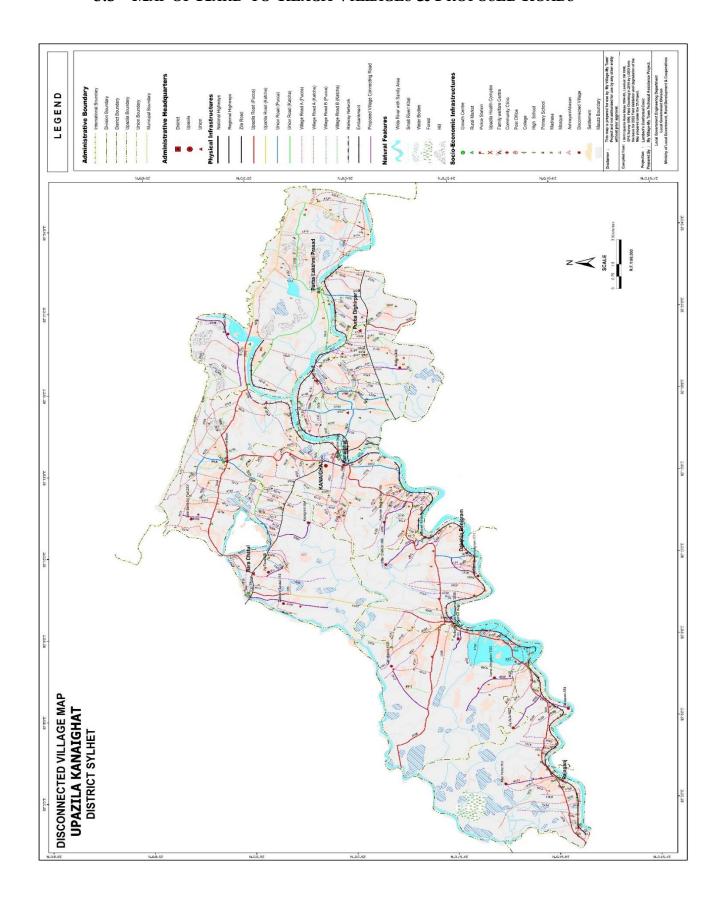


Figure 5: Upazila Map

6 DATA COLLECTION & ANALYSIS

The consultant team collected data from the field on Hard-to-Reach Villages. Data were collected from those villages including population, road alignment information (type, length, condition), travel time, a structure required on the alignment, potential Riverine routes that can be used for a multi-modal transport system etc. The data were then analyzed, categorized, and finally used to obtain a priority list along with a map (Figure:5) showing prioritized roads and Hard-to-Reach Villages. The proposed Riverine & road connectivity by the UE office have been discussed in this section.

6.1 Proposed Roadway for Hard-to-Reach Villages:

At present, roads are the most dominant mode of transportation. Most of the structures were built on the rivers to make road communication effective.

Table 3: Summary of the rural roads in the Upazila

Total Road Length of the Upazila (KM)	Paved Length (KM)	Unpaved Length (KM)	Length of unpaved roads of Hard-to-Reach Villages (KM)
839.73	261.24	578.49	54.78

6.1.1 Proposed All-Weather Routes:

There are 17 all-weather roads proposed to connect the HTRV within the Upazila. The road name, ID, road condition, and the length of the unpaved roads are as bellow;

Table 4: Proposed all-weather roads in the Upazila

SL No	Road Name	Road ID	Road Type by Surface Condition	Unpaved length (km)
1	Lubachara-Borogram Road.	691594003	All Weather	6.25
2	Chatul -Haratail Road	691594012	All Weather	3.48
3	charipara- vabanigong bazar road (nababi Road)	691594038	All Weather	0.78
4	Baradesh (UZR) - Bardesh Bazar Road.	691594062	All Weather	1.185
5	Ragajong Bazara - Khagri Kandi- AtlarPar Road	691594077	All Weather	4.5
6	Raipur-Hadarkandi Road	691594086	All Weather	3.45
7	Chuttadesh-Birdal Hoar Road.	691594087	All Weather	2.5
8	Augkupa-Pardakhal Road	691594090	All Weather	3.5
9	Lama Zinga Bari-Zingarkhal Road.	691594093	All Weather	4.51
10	Matijura RHD- Matijura Road	691594113	All Weather	2.1
11	achbari-Horipur G.C. Road to Gordana Kandi Road.	691594146	All Weather	4.9

SL No	Road Name	Road ID	Road Type by Surface Condition	Unpaved length (km)
12	Borbond Village Road	691595004	All Weather	1.75
13	Noyagram UZR - Brammangram Ferry Ghat Road.	691594181	All Weather	2.5
14	Machukhal Bridge East (UZR) to Dalibeel Road	691594063	All Weather	0.8
15	Augfoud Narainpur Uttar UZR - Simer bazar road via Daknail Dakshin	691594191	All Weather	4.05
16	Agfoud-Sharoker Khal Road (chatul)	691595003	All Weather	1.43
17	UZR Konagram -Surmadyke road	691595112	All Weather	1.5

6.1.2 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 (<u>Annexure-2</u>) 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

- ➤ Kanaighat Upazila is located within the *Middle Meghna Flood Plain zone*. Kanaighat is partly covered by 9 major 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 20 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 Upazila Kanaighat in Sylhet district is highly recommended.

DETAILS OF GROWTH CENTER & HATBAZAR

			Market Category		Market	Moulvot					Lan	d Area ((Acre)	Lease/	Lease/
Sl. No.	Union	Market Name	Category (GC=Gro wth Center, HB=Hat Bazar) Market Listed? (Yes/ No)		Category (General/ Special/ Collection center)	Market Category (Wholesale/ Retail/both	Hat Day	Chandina Viti (Number)	Chandina Viti (Land)	Chandina Viti (Shop)	Toha	Khas	Private	Khas Collec tion BDT (2020)	Khas Collecti on BDT (2019)
1	(1 No.Purba Laxmi Prasad) Paschim Laxmi Prasad	' Mulagul hazar HR Yec V		Wholesale	2	36	0.55	36	0.35	1.79	0.00	2000	0		
2	(1 No.Purba Laxmi Prasad) Paschim Laxmi Prasad	Montazgonj bazar	НВ	Yes	General Market	Both	2	16	0.25	40	0.12	0.43	0.00	700000	540000
3	1 No. Purba Laxmi Prasad	Kandola naya bazar	НВ	Yes	General Market	Wholesale	2	0	0.00	0	0.00	0.00	0.40	45000	22150
4	1 No. Purba Laxmi Prasad	Dona bazar	НВ	Yes	General Market	Both	2	30	0.20	30	0.00	1.00	0.00	30500	0
5	1 No. Purba Laxmi Prasad	Bagicha bazar	НВ	No	General Market	Wholesale	0	0	0.00	0	0.00	0.30	0.00	0	0
6	2 No. Paschim Laxmi Prasad	Shoroighat noya bazar	GC	Yes	General Market	Both	2	106	0.52	106	0.03	4.13	0.00	617500	710512
7	2 No. Paschim Laxmi Prasad	Borobond bazar	НВ	Yes	General Market	Wholesale	2	12	0.04	12	0.09	0.11	0.00	51559	30100
8	2 No. Paschim Laxmi Prasad	Bodbari bazar	НВ	No	General Market	Wholesale	1	0	0.00	0	0.00	0.13	0.00	0	0
9	2 No. Paschim Laxmi Prasad	Badsha bazar	НВ	No	General Market	Wholesale	1	0	0.00	0	0.00	0.00	0.66	0	0
10	2 No.Paschim Laxmi Prasad	Andhur mukh bazar	НВ	Yes	General Market	Both	2	39	0.20	39	0.11	0.55	0.00	12000	70000
11	3 No. Purba Dighirpar	Soroker bazar	НВ	No	General Market	Both	2	0	0.00	0	0.00	30.7 7	0.00	675500 0	5600000
12	3 No. Purba Dighirpar	Bhoter bazer	НВ	No	General Market	Wholesale	3	0	0.00	0	0.00	0.00	0.00	0	0
13	4 No. Shatbank	Bhabanigonj bazar	НВ	Yes	General Market	Both	2	14	0.13	20	0.13	0.32	0.00	25000	166000
14	4 No. Shatbank	Bangla bazer	НВ	Yes	General Market	Both	2	12	0.06	10	0.05	0.27	0.00	2000	1200
15	4 No. Shatbank	Lover muk bazer	НВ	No	General Market	Wholesale	0	13	637.00	13	0.05	0.22	0.00	0	0
16	5 No. Bara Chatul	Chatul bazar	GC	Yes	General Market	Both	2	180	0.90	207	0.20	1.51	0.00	120000	760512

			Market Category		Market	Market					Lan	d Area ((Acre)	Lease/	Lease/
Sl. No.	Union			Hat Day	Chandina Viti (Number)	Chandina Viti (Land)	Chandina Viti (Shop)	Toha	Khas	Private	Khas Collec tion BDT (2020)	Khas Collecti on BDT (2019)			
17	5 No. Bara Chatul	Maligram bazar	НВ	Yes	General Market	Wholesale	2	20	0.12	30	0.05	0.36	0.00	1700	0
18	5 No. Bara Chatul	Chatul idgha bazar	НВ	No	General Market	Wholesale	2	0	0.00	0	0.00	0.00	0.40	0	0
19	7 No. Dakshin Banigram	Bardesh bazar	НВ	Yes	General Market	Both	2	12	0.06	10	0.14	1.30	0.74	6000	5583
20	7 No. Dakshin Banigram	Manikgonj bazar	НВ	Yes	General Market	Wholesale	2	30	0.20	58	0.08	0.41	0.00	0	0
21	7 No. Dakshin Banigram	Noya bazar	НВ	Yes	General Market	Both	2	12	0.07	16	0.02	0.12	0.00	45000	22150
22	8 No. Jhingabari	Gachbari bazar	GC	Yes	General Market	Both	2	262	2.78	262	0.66	3.44	0.00	118333 2	1250000
23	8 No. Jhingabari	Mukiganj bazar	НВ	Yes	General Market	Both	2	38	0.34	38	0.10	0.64	0.00	0	0
24	8 No. Jhingabari	Shimer bazer	НВ	Yes	General Market	Wholesale	2	5	0.23	5	0.03	0.08	0.00	0	0
25	9 No. Rajaganj	Razaganj bazar	GC	Yes	General Market	Both	2	13	0.09	22	0.08	0.45	0.00	54000	52000
26	9 No. Rajaganj	Talbari bazer	НВ	Yes	General Market	Wholesale	2	0	0.00	0	0.00	0.15	0.00	0	0
27	Kanaighat	Birdal bazar	НВ	Yes	General Market	Wholesale	0	0	0.00	0	0.00	0.63	0.00	45000	42000
28	Kanaighat	Omargonj bazar	НВ	Yes	General Market	Wholesale	2	0	0.00	0	0.00	0.60	0.00	2900	2800
29	Kanaighat (6 No. Sadar)	Chotodesh naya bazer	НВ	No	General Market	Wholesale	0	0	0.00	0	0.00	0.13	0.00	0	0
30	Kanaighat Pourashava	Kanaighat bazar	GC	No	General Market	Both	2	144	1.72	144	0.28	4.08	0.00	0	0
31	Rajaganj	Chander bazer	НВ	No	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0
32	7 No. Dakshin Banigram	Manikgonj bazar	НВ	Yes	General Market	Wholesale	2	30	0.20	58	0.08	0.41	0.00	0	0
33	7 No. Dakshin Banigram	Noya bazar	НВ	Yes	General Market	Both	2	12	0.07	16	0.02	0.12	0.00	45000	22150

			Market Category		Market	36.34					Lan	d Area (Acre)	Lease/	Lease/
Sl. No.	Union	Market Name	(GC=Gro wth Center, HB=Hat Bazar) Market Listed? (Yes/ No)		Category (General/ Special/ Collection center)	Market Category (Wholesale/ Retail/both	Hat Day	Chandina Viti (Number)	Chandina Viti (Land)	Chandina Viti (Shop)	Toha	Khas	Private	Khas Collec tion BDT (2020)	Khas Collecti on BDT (2019)
34	8 No. Jhingabari	Gachbari bazar	GC	Yes	General Market	Both	2	262	2.78	262	0.66	3.44	0.00	11833 32	125000 0
35	8 No. Jhingabari	Mukiganj bazar	НВ	Yes	General Market	Both	2	38	0.34	38	0.10	0.64	0.00	0	0
36	8 No. Jhingabari	Shimer bazer	НВ	Yes	General Market	Wholesale	2	5	0.23	5	0.03	0.08	0.00	0	0
37	9 No. Rajaganj	Razaganj bazar	GC	Yes	General Market	Both	2	13	0.09	22	0.08	0.45	0.00	54000	52000
38	9 No. Rajaganj	Talbari bazer	НВ	Yes	General Market	Wholesale	2	0	0.00	0	0.00	0.15	0.00	0	0
39	Kanaighat	Birdal bazar	НВ	Yes	General Market	Wholesale	0	0	0.00	0	0.00	0.63	0.00	45000	42000
40	Kanaighat	Omargonj bazar	НВ	Yes	General Market	Wholesale	2	0	0.00	0	0.00	0.60	0.00	2900	2800
41	Kanaighat (6 No. Sadar)	Chotodesh naya bazer	НВ	No	General Market	Wholesale	0	0	0.00	0	0.00	0.13	0.00	0	0
42	Kanaighat Pourashava	Kanaighat bazar	GC	No	General Market	Both	2	144	1.72	144	0.28	4.08	0.00	0	0
43	Rajaganj	Chander bazer HB No 0		0	0	0	0	0.00	0	0.00	0.00	0.00	0	0	

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 (10÷17)	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	Kanaighat	Jhingrabari	Purba Ag Faud Narayanpur	3854	4416	Augfoud Narainpur Uttar UZR -Simer bazar road via Daknail Dakshin	691594191	VRA	All Weather	4.05			4.05	4.05	4.05	486.00	5.50	49.50	535.50	1090	121.27	60.75	20	16	25	12	73	1
2	Kanaighat	Jhingrabari	Lama Jhingabari	1320	1512	Lama Zinga Bari- Zingarkhal Road.	691594093	VRA	All Weather	4.51			4.51	4.51	4.51	541.20	3.00	27.00	568.20	335	375.69	67.65	18	16	25	12	71	2
3	Kanaighat	Jhingrabari	Gannikandi	1536	1760	achbari-Horipur G.C. Road to Gordana Kandi Road.	691594146	VRA	All Weather	4.90			4.90	4.90	4.90	588.00	20.00	180.00	768.00	359	436.39	73.50	18	16	25	12	71	3
4	Kanaighat	Paschim Lakshmip Rasad	Bara Band 3rd Part, Sonatan Punji, Sonatan Punji, Khulurmati	2831	3244	Borbond Village Road	691595004	VRB	All Weather	1.75			1.75	1.75	1.75	210.00	3.00	27.00	237.00	1854	73.07	26.25	20	10	25	12	67	4
5	Kanaighat	Dakshin Banigram	Paschim Brahamangram	2727	3124	Noyagram UZR - Brammangram Ferry Ghat Road.	691594181	VRA	All Weather	2.50			2.50	2.50	2.50	300.00	0.00	0.00	300.00	1250	96.02	37.50	20	10	25	12	67	5
6	Kanaighat	Purba Dighirpar	Matijura	1870	2143	Matijura RHD- Matijura Road	691594113	VRA	All Weather	2.10			2.10	2.10	2.10	252.00	5.00	45.00	297.00	1020	138.62	31.50	20	10	25	12	67	6
7	Kanaighat	Bara Chatul	Kadirgram	1850	2120	Raipur-Hadarkandi Road	691594086	VRA	All Weather	3.45			3.45	3.45	3.45	414.00	0.00	0.00	414.00	614	195.31	51.75	20	10	25	12	67	7
8	Kanaighat	Paschim Dighirpar	Agdi	1232	1412	charipara- vabanigong bazar road (nababi Road)	691594038	VRA	All Weather	3.04	2.26		0.78	3.04	0.78	93.60	3.00	27.00	120.60	1810	85.44	11.70	18	10	25	12	65	8
9	Kanaighat	Bara Chatul	Ag Faud	1650	1891	Agfoud-Sharoker Khal Road (chatul)	691595003	VRB	All Weather	1.43			1.43	1.43	1.43	171.60	0.00	0.00	171.60	1322	90.77	21.45	18	10	25	12	65	9
10	Kanaighat	Rajaganj	Ag Kufa	1627	1864	Augkupa-Pardakhal Road	691594090	VRA	All Weather	3.50			3.50	3.50	3.50	420.00	5.00	45.00	465.00	533	249.44	52.50	18	10	25	12	65	10
11	Kanaighat	Kanaighat	Paschim Birdhal Haor, Sutargaon	1057	1211	Chuttadesh-Birdal Hoar Road.	691594087	VRA	All Weather	2.50			2.50	2.50	2.50	300.00	3.00	27.00	327.00	484	270.01	37.50	18	10	25	12	65	11
12	Kanaighat	Dakshin Banigram	Uttar Dhali Bil	489	560	Machukhal Bridge East (UZR) to Dalibeel Road	691594063	VRA	All Weather	1.50	0.70		0.80	1.50	0.80	96.00	3.00	27.00	123.00	700	219.53	12.00	15	10	25	12	62	12
13	Kanaighat	Dakshin Banigram	Dakshin Bardesh	608	697	Baradesh (UZR) - Bardesh Bazar Road.	691594062	VRA	All Weather	2.30	1.12		1.19	2.30	1.19	142.20	2.00	18.00	160.20	588	229.97	17.78	15	10	25	12	62	13
14	Kanaighat	Rajaganj	Konagram	554	635	UZR Konagram - Surmadyke road	691595112	VRB	All Weather	1.50			1.50	1.50	1.50	180.00	2.00	18.00	198.00	423	311.93	22.50	15	10	25	12	62	14
15	Kanaighat	Rajaganj	Atlar Pahar	530	607	Ragajong Bazara - Khagri Kandi- AtlarPar Road	691594077	VRA	All Weather	4.50			4.50	4.50	4.50	540.00	20.00	180.00	720.00	135	1185.67	67.50	15	16	15	12	58	15
16	Kanaighat	Purba Lakshmi Prasad	Baragram	543	622	Lubachara-Borogram Road.	691594003	VRA	All Weather	6.25			6.25	6.25	6.25	750.00	15.00	135.00	885.00	100	1422.49	93.75	15	16	15	12	58	16
17	Kanaighat	Bara Chatul	Dakshin Haratail	118	135	Chatul -Haratail Road	691594012	VRA	All Weather	5.00	1.52		3.48	5.00	3.48	417.60	32.00	288.00	705.60	39	5218.94	52.20	15	10	10	12	47	17

^{***} 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)