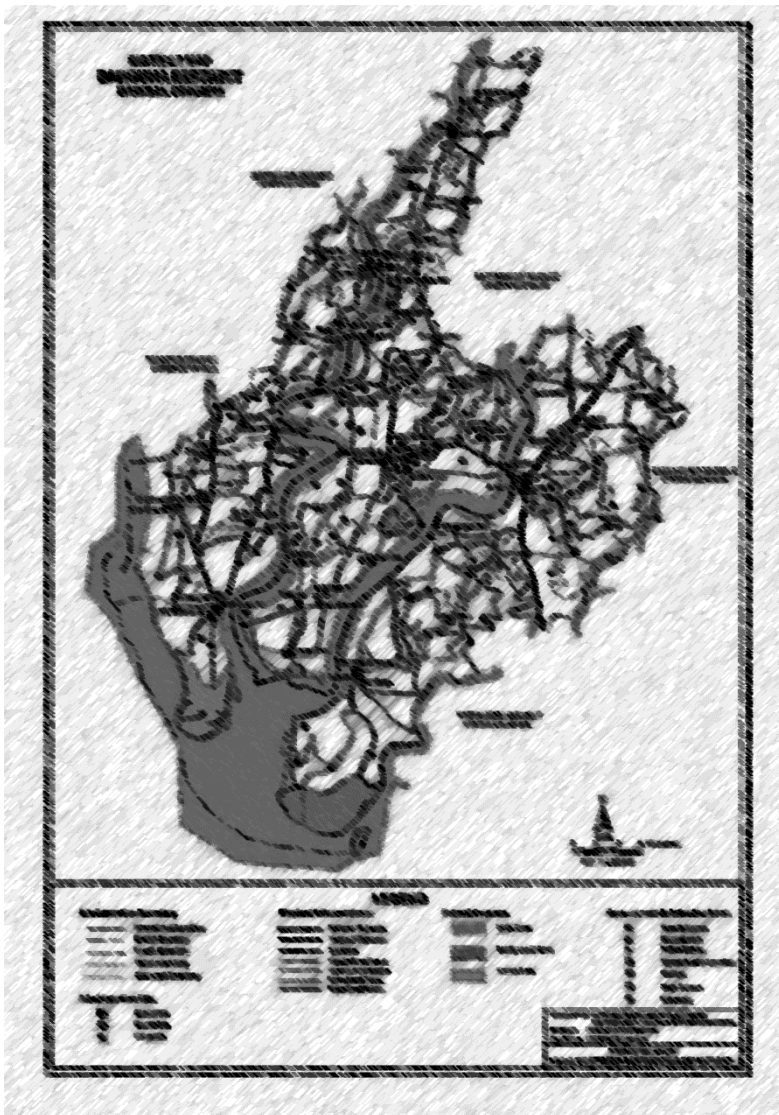




## URBAN DEVELOPMENT DIRECTORATE (UDD) GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Package-03: Establishment of BM Pillars, Physical Feature, Landuse & Topographic Survey under "Preparation of Payra-Kuakata Comprehensive Plan focusing on Eco-Tourism (PKCP)"



**TILLER**

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## **CHAPTER ONE**

### **1. Introduction**

#### **1.1 Project Background**

The region is located in the south- western part of Bangladesh. Barguna district is average 11 feet above from sea level. There are not enough authentic documents about the naming of Barguna district. Some historians think that once timber traders of northern part came here to buy timbers and they waited for favoring flow (Baro- Gone) of the river of Khakdon to overcome and consequently the region was named Baro-Gona. By the passing of age, Baro- Gona muted to Barguna. Beside someone thinks that to dragging the boats against the mainstream of tide it was used "Gun." So the region was named Barguna. Barguna police station was established in the last decade of the eighteenth century. It was upgraded into a sub-division in 1969 and finally the subdivision was turned into a district in 28 February 1984 after the liberation of Bangladesh. The Geo position of the district is between 21°50'05" to 23°04'10" North latitudes and between 89°59'50" to 91°04'08" east longitude.

Barguna Sadar and Patharghata are the two Upazila of this Barguna district the project areas to become more developed in a planned way. However, Barguna Sadar Upazila (barguna district) area 454.39 sq km, located in between 21°58' and 22°15' north latitudes and in between 89°59' and 90°14' east longitudes. It is bounded by betagi, mirzaganj and patuakhali sadar upazila upazilas on the north, bay of bengal and amtali upazila on the south, Amtali upazila on the east, patharghata and bamna upazilas on the west. Total population is 237613 where male population are 120830, female 116783, Muslim 220057, Hindu 17376, Buddhist 26, Christian 137 and others 17. Burishwar, Bishkhali, Khagdon and Nalidon rivers and Patkata, Barguna, Junia, Lalbongola and Phuldhalua canals are notable. Barguna Thana was formed in 1904 and it was turned into an upazila in 1984.

And Patharghata Upazila (Barguna district) area 387.36 sq km, located in between 22°14' and 22°58' north latitudes and in between 89°53' and 90°05' east longitudes. It is bounded by mathbaria and bamna upazilas on the north, bay of bengal on the south, barguna sadar and the bishkhali river on the east, sarankhola upazila and the Haringhata river on the west. Total population is 162025 where male is 82687, female 79338; Muslim 143466, Hindu 18464, Buddhist 18, Christian 21 and others 56. Bishkhali, Haringhata, Baleshwari are the main rivers of the Upazila. Patharghata thana, now an upazila, was formed in 1925.

#### **1.2 History**

There is no actual explanation found in the history. But the history of the name can be heard from the civil society members. Barguna is mainly the part of the Bakla Candradip. Most of the areas of the Barisal district were the part of Bakla Candradip oneday. However, different ideas found about the origin of the name. For example, it had come from the name "Boro Gunah". Others said that a Rakhain named Barguin came to here and the name of the Upazila was renamed by Barguna. Another concept is high good

characterized people's agglomeration in the area etc. And there is no history found about the name Patharghata. It is the public opinion that in the underground of the Upazila there is the existence of the stone. In 1903 this concept raised blowing in the mind of the people of that Upazila and it became got the name Patharghata. At that time in the British period Khan Jahan Ali (Rh.) swept forward big stones from Chittagong to Bagerhat and during that time he stop for a moment about one night in the estuary of Bishkhali and Boleshor river. For this reason, this area became got the name Patharghati. From Patharghati the present name Patharghata came.

### **1.3 Main occupations**

Agriculture 45.63%, fishing 5.67%, commerce 10.01%, service 3.56%, agricultural labourer 18.89%, wage labourer 4.57%, others 11.67%. Land use Cultivable land 45328 hectares, fallow land 93 hectares; double crop 10.59%, triple crop land 3.19%. Cultivable land under irrigation 1.75%. Among the peasants 41.53% are landless, 35.06% small peasant, 15.04% intermediate, 8.37% rich peasant. Average distribution of cultivable land per head 0.259 hectare.

### **1.4 Value of land**

The market value of the first grade arable land is Tk 2000 per 0.01 hectare. Main crops Paddy, pulse, sugarcane, watermelon, vegetables. Main fruits Banana, papaya, coconut, guava, plum. Fishing, dairy and poultry Shrimp 28, livestock 5, poultry 45, hatchery 1.

### **1.5 Communication facilities Roads**

Pucca 20 km, semi pucca 58 km and mud road 860 km. Traditional transport Palanquin and bullock cart. Most of these means of transport are extinct or nearly extinct. Manufactories Flour mill 6, rice mill 35, ice mill 25, saw mill 6. Cottage industries Goldsmith 25, blacksmith 50, wood work 12. Hats, bazars and fairs Hats and bazars are 17, most noted of which are Kalapara hat, Mahipur hat, *Kuakata*; fair 1 (rash-purnima mela), Main exports Paddy, hilsa fish.

### **1.6 NGO activities**

Operationally important NGOs are BRAC, CARITAS, ASA, Urban, Solve, SIKODA, KODEK, Samkalpa. Health centres: *Upazila* health complex 1, satellite clinic 1, family planning centre 9 and private clinic 1.

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Figure 1: Topographic Map of Barguna Sadar Upazila

Source: LGED digital map

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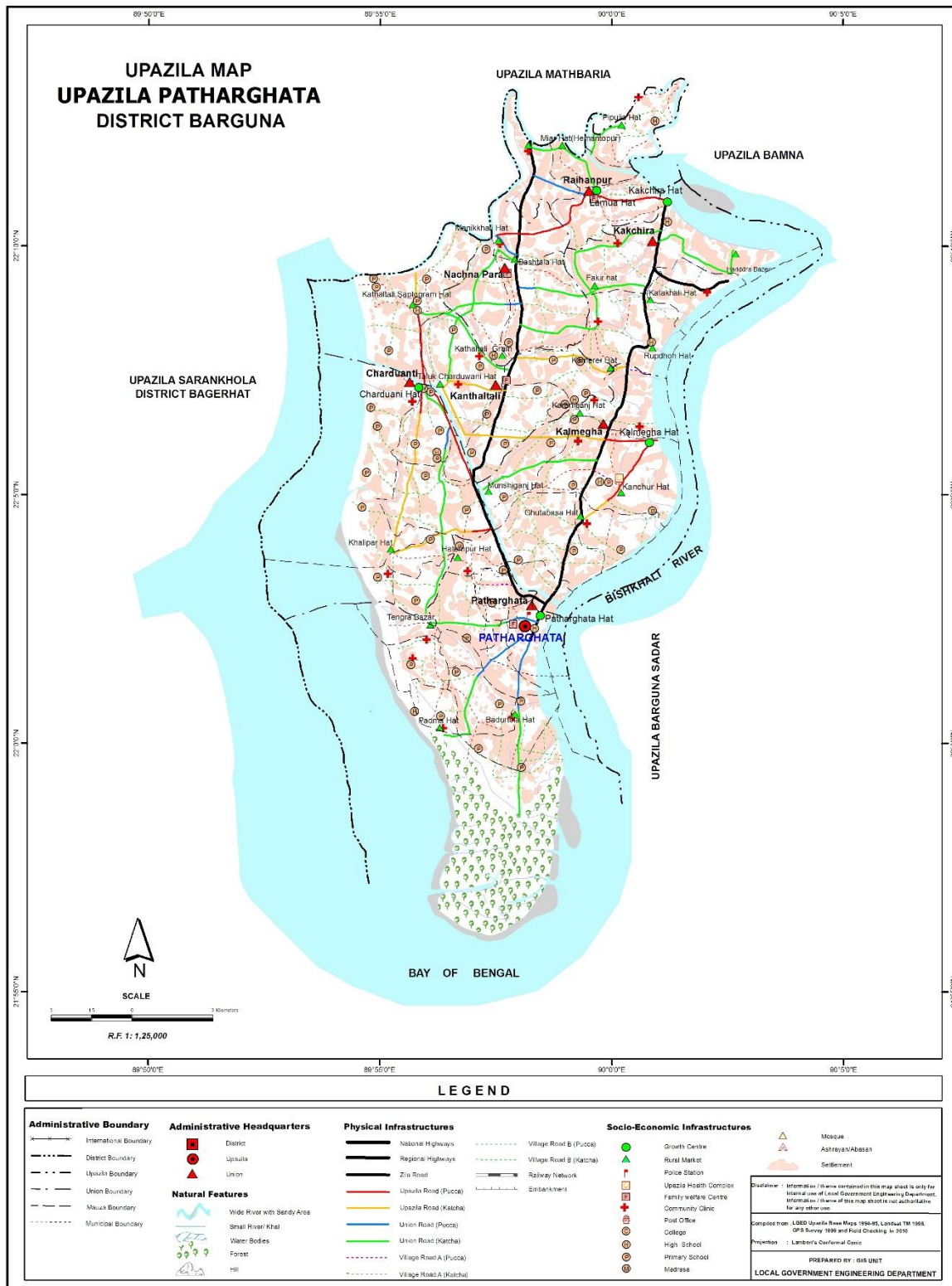


Figure 2: Topographic Map of Barguna Sadar Upazila

Source: LGED digital map

## **1.7 Objectives of the Project**

The objective of the project is to optimize resources and activities for sustenance of marginal people. The activities and resources are very important to the economy and life of the people of Bangladesh whose living conditions are inextricably linked to the productivity and sustainability of the region. There is no long term Holistic Development Plan for the Project area. Coastal zone needs to be integrated with the mainstream of development process of the country. So, an interdisciplinary development planning approach is urgent to optimize livelihood of the region. The Physical development planning problems, needing attention, are as follows:

- (i) To integrate ecology, economy and social resources with the mainstream of development process of the country
- (ii) To frame policies for the best use of land and its control for the Barguna Sadar and Patharghata Upazila.
- (iii) To optimize environment for sustenance of people.
- (iv) Formulation of Policies and plans for mitigation of different types of hazards, minimizing the adverse impacts of climate change and recommend possible adaptation strategies for the region.
- (v) Formulation of Policies and plans for gradual nucleation of settlements with policies and plans for development of growth centers of the area.
- (vi) Formulation of a guideline for development of tourism in Barguna Sadar and Patharghata Upazila, and also to accommodate future changes in existing land use pattern, socio-economic condition of the area and quality of life of the people.

## **1.8 The project location**

The proposed project would be prepared on a regional development perspective considering the region as a part of whole of Barguna Sadar and Patharghata Upazila and its 16 unions and 2 municipalities. In this development planning package since its location is strategically important from the regional context because this upazila is situated on the riverside area of the ocean. And Sundarbans, the largest mangrove forest of the world is also there. So geographically it carries a great importance.

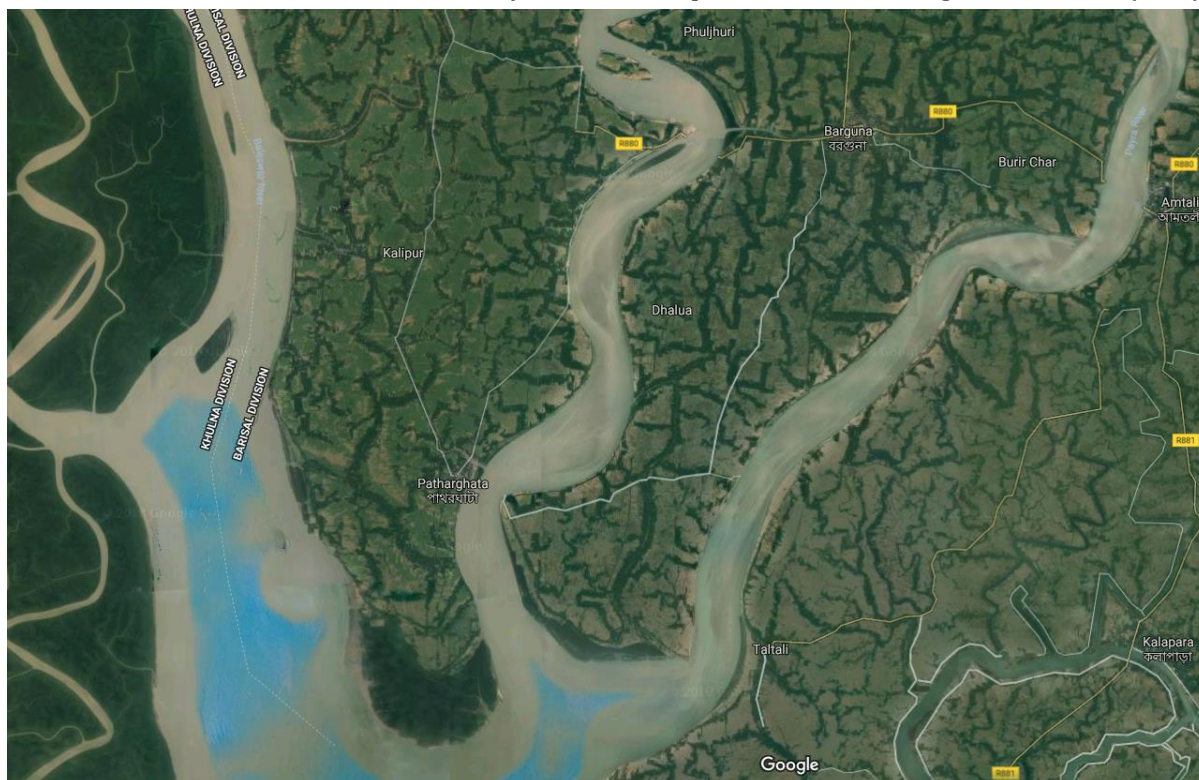


Figure 3: Project location in Google Map (Online)

Source: Google Map

### 1.9 Description of the Project Area

A detailed description of the Project Area is given below:

Table 1: Area, Population and Density of the Project Area

Barguna Sadar Upazila								
Municipality	Union	Mouza	Village	Population		Density (per sq km)	Literacy Rate (%)	
				Urban	Rural		Urban	Rural
1	10	51	191	26954	210659	523	71.9	52.9
Patharghata Upazila								
Municipality	Union	Mouza	Village	Population		Density (per sq km)	Literacy Rate (%)	
				Urban	Rural		Urban	Rural
1	7	42	66	24488	137537	418	67.4	62.4

Haringhata Forest Eco Park, Laldia Forest of Patharghata Upazila and Padma Parjatan Kendra of Barguna Sadar Upazila - regions have the greater potential for tourism development as there are abundant resources to attract tourists. Especially Patharghata is developing very rapidly due to the ample opportunity for tourism development, which is acting as pull factor for private sector developers but the development was in an unplanned way. Hence, this project has been under taken to protect the region from depletion of its natural resources and character and tourism development as well. Moreover, honorable Prime Minister has already expressed his heartiest interest to develop char of this Upazila.

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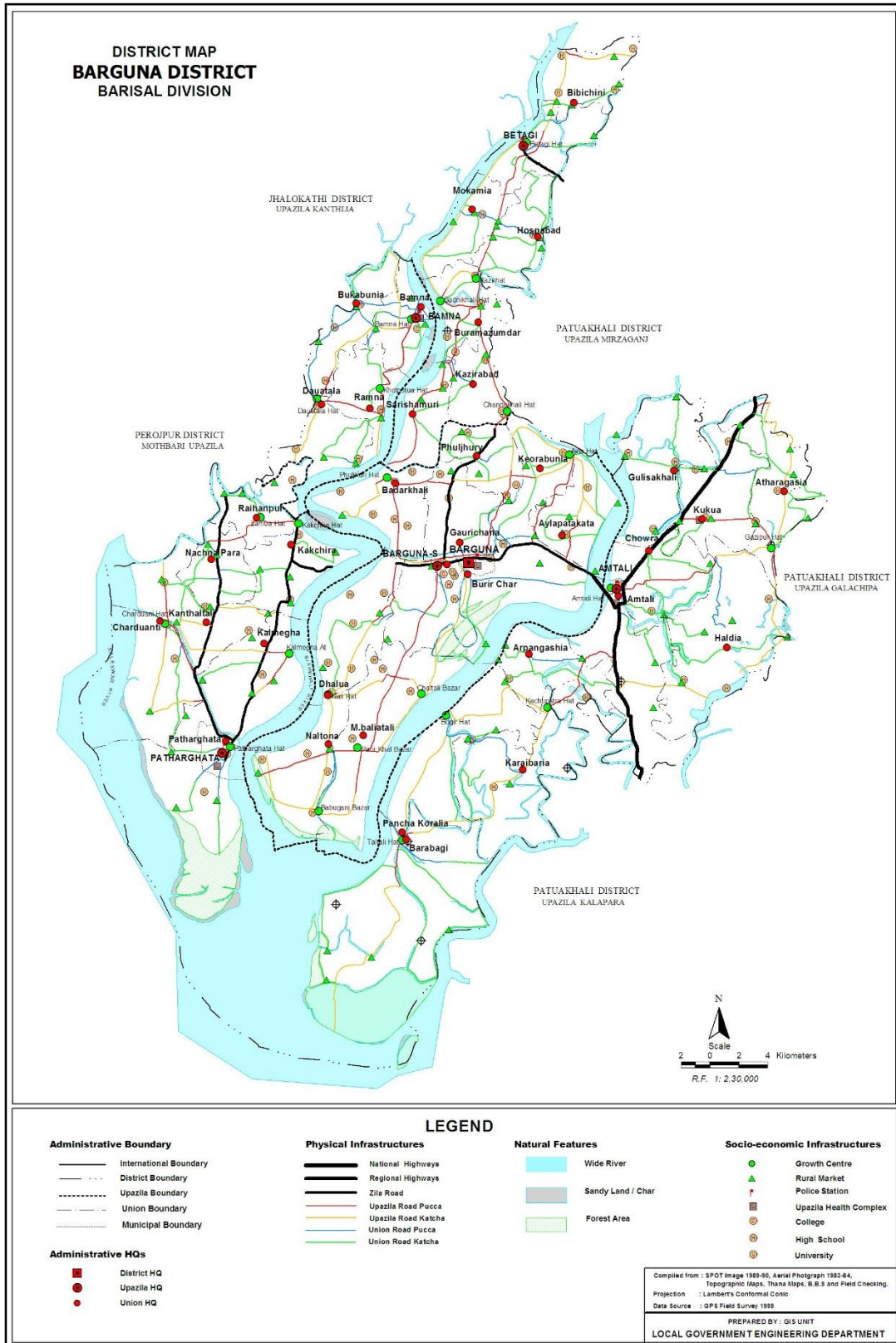


Figure 4: Project location in Barguna District Map

Source: LGED Digital Map

**1.10 List of Unions/Municipalities of the Study area**

Barguna Upazila is comprised of one municipalities and 10 unions and Patharghata Upazila is comprised of one municipality and 6 unions.

Table 2: List of Union/Municipalities

<b>SL</b>	<b>Municipality/Union</b>	<b>Name</b>
<b>1.</b>	Municipality	Barguna Municipality
<b>2.</b>	Union	Aylapatakata
<b>3.</b>	Union	Badarkhali
<b>4.</b>	Union	Burir Char
<b>5.</b>	Union	Dhalua
<b>6.</b>	Union	Fuljhury
<b>7.</b>	Union	Gaurichana
<b>8.</b>	Union	Keorabunia
<b>9.</b>	Union	M.Baliatali
<b>10.</b>	Union	Naltona
<b>11.</b>	Union	Aylapatakata
<b>12.</b>	Municipality	Patharghata Municipality
<b>13.</b>	Union	Charduani
<b>14.</b>	Union	Kakchira
<b>15.</b>	Union	Kalmegha
<b>16.</b>	Union	Kanthaltali
<b>17.</b>	Union	Nachna Para
<b>18.</b>	Union	Raihanpur

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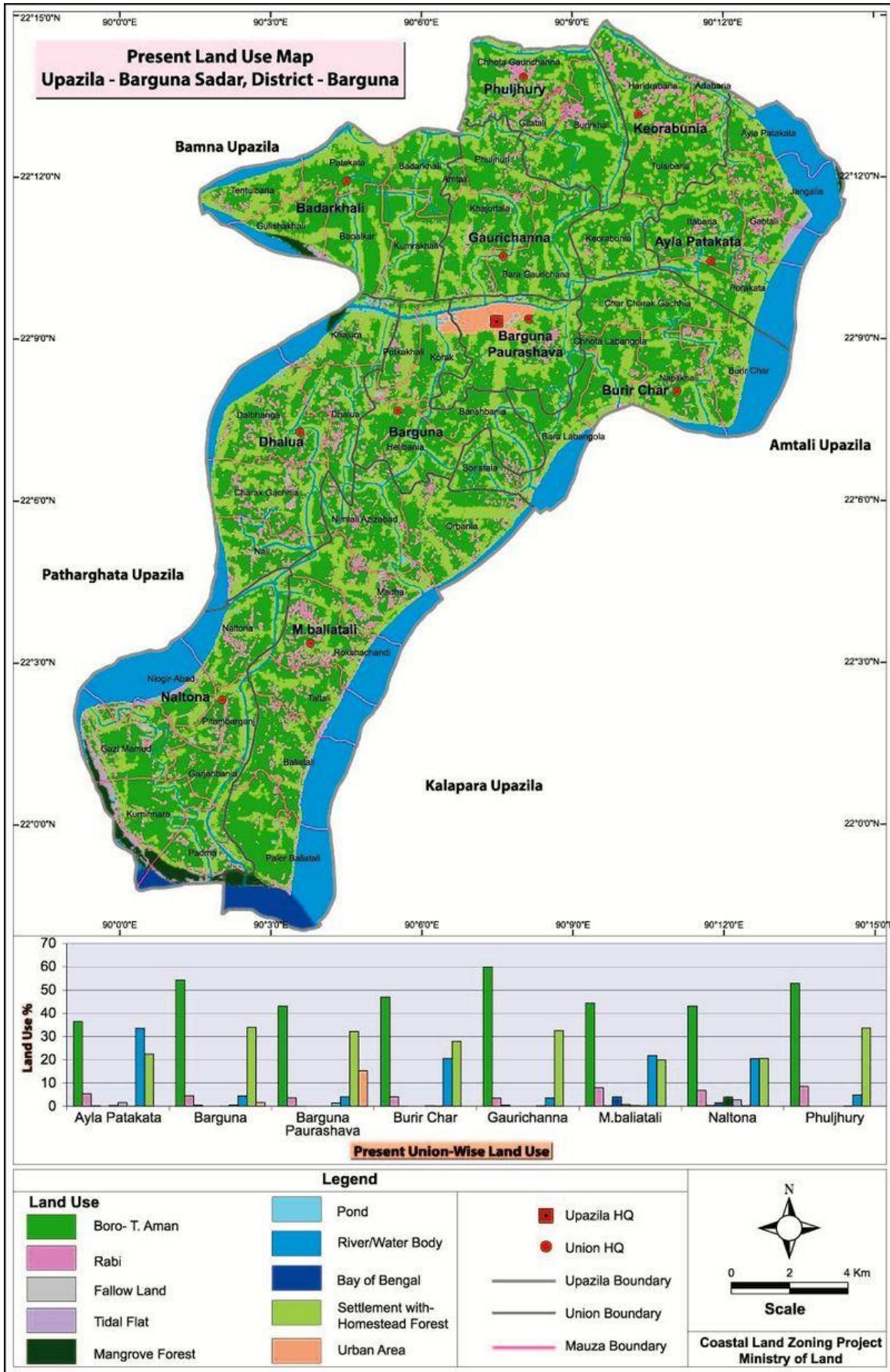


Figure 5: Land Use wise Union Map of Barguna Sadar Upazila and Patharghata Upazila (Source: Zannat, 2017)

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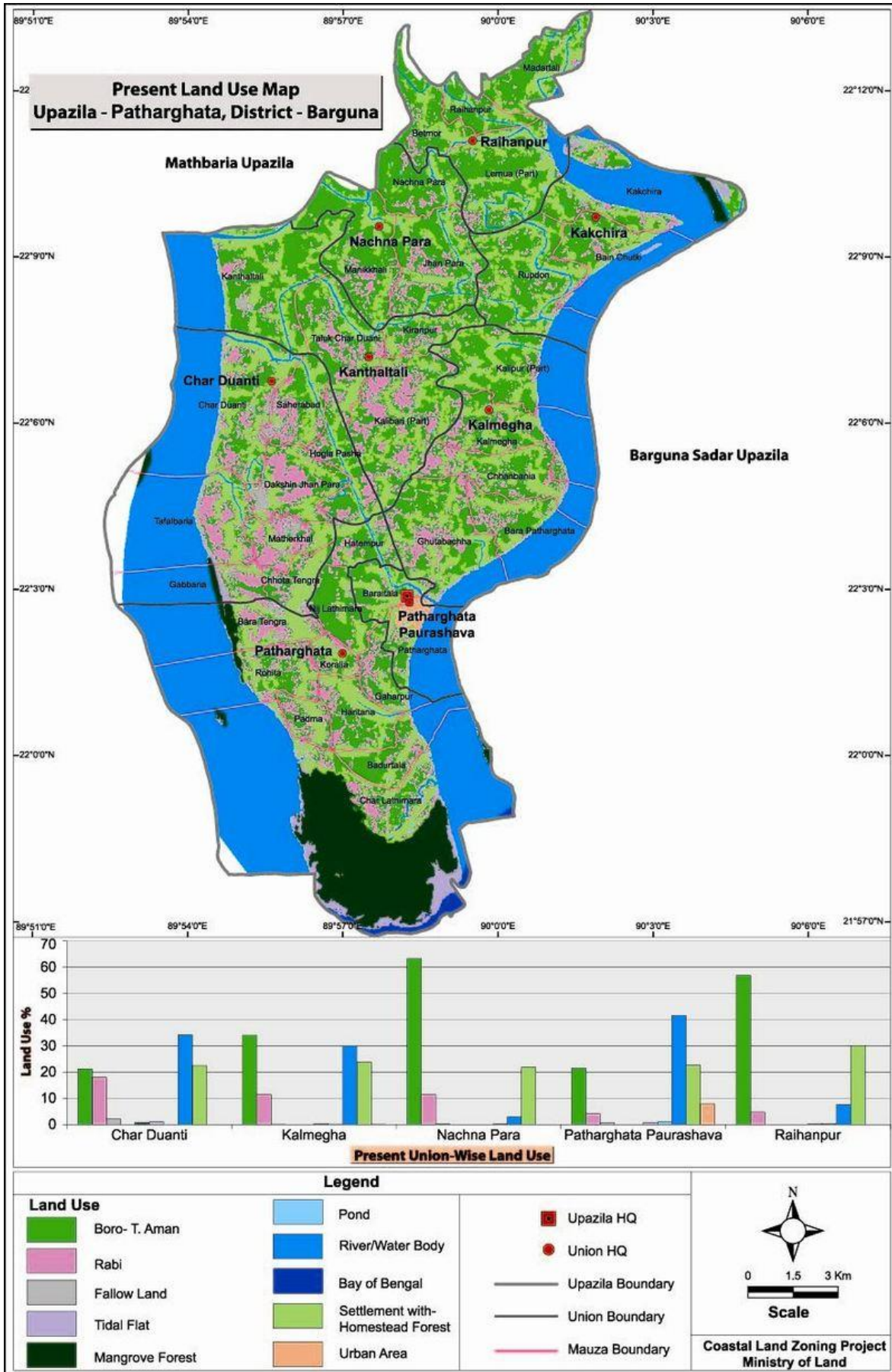


Figure 6: Land Use wise Union Map of Barguna Sadar Upazila and Patharghata Upazila (Source: Zannat, 2017)

## **Chapter 2**

### **2. Scope of Work**

#### **2.1 Introduction**

The Survey firms shall have to follow the following step-wise integrated activities for the stated scope of work on the intended different survey works. He/she would have to interlink the intended survey activity with different steps of other related activities conducted by other different survey firms. A detailed methodology of the specific survey work including 5 procedures for relating its output with that of other different surveys and activities (both attribute and spatial data of physical feature, topographic, land use, transportation, hydrological, socio-economic and other required hard and soft data), which would be imparted by other different survey firms has to be mentioned clearly in the proposed technical proposal. The survey firm has to combine the rural database with that of database (GIS database) of municipality area. A presentation of the proposed methodology shall have to make before the Proposal Evaluation Committee (PEC) as part of technical proposal evaluation. The bidder has to make the presentation by using his/her own hardware and software along with valid license. The Client may the premise of the firm without providing prior notice (if necessary).

The project would provide a framework for a planned development of tourism along with all necessary facilities at Barguna Sadar and Patharghata Upazila.

#### **2.2 Geo-referencing Maps, Ground Control Point (GCP) survey**

##### **2.2.1 Map Projection Systems**

The Maps will be projected in BTM coordinates. Survey Firm will be needed to collect the appropriate parameters and implement it during the map projections.

##### **2.2.2 Quality Control of Geo-referencing**

To ensure the quality and accuracy of the geo-referencing, the Survey Firm has to take all the measure including taking the GCP points and geo-reference the maps utilizing the GCP points.

##### **2.2.3 Selection of Ground Control Point (GCP)**

At least 8 nos. of GCP (Tic) should be selected in ground for each of mouza sheet for conducting GCP survey. The joint team of UDD and the personnel appointed by the Survey Firm will select the GCP. Geo-referenced (x, y, z) permanent Bench Mark (BM) pillars uniformly distributed covering the project area have to be established to carry out the total topographic, physical feature and land use survey or as per direction of PD. Design drawing of BM pillars has to be approved by the Project Director (PD).

##### **2.2.4 GCP Survey for ground truthing**

For each mouza sheets, at least 8 GCP points has to be selected and taken utilizing the RTK GPS. The configuration of the RTK GPS has to be of latest technology with highest level of accuracy.

## **2.4. Submission of Data and Map**

### **2.4.1 Map Printing at proper scale**

After completing the survey and all the GIS processing, the Maps have to be printed by the survey firm. Maps would be printed at the scale 1:1980 with proper annotations, titles and legend. The color grading and symbols for the map layout should be in accordance with the standards of the Client.

### **2.4.2 Superimpose the Prepared Layer by Layer Data on Mouza Map**

We will superimpose all the surveyed data prepared in layer by layer on the mouza map.

### **2.4.3 Survey Report**

After completing all the surveys, a survey report including both spatial and attribute database has to be submitted by the Survey Firm along with its progress report.

### **2.4.4 Institutional Arrangement**

The client will form a committee to communicate, monitor and check the tasks accomplished by the Survey Firm.

### **2.4.5 Team Composition**

The Survey Firm will form a highly qualified team to accomplish the tasks as specified in the ToR. Adequate personnel and technical capabilities for providing training on the above-mentioned tasks.

The survey firm has to perform the following tasks including surveys and studies:

## **2.5 Construction and Establishment of Bench Mark (BM)/Ground Control Point (GCP)**

Pillars covering the project area including approximately 5 km. grid in rural area (pillar 10"X10", Base 3'X 3', height 5'). RCC pillars are to be constructed marking unique identification number Coordinate X, Y of these pillars along with Z value is to be marked on base map for future reference.

## **2.6 Physical Feature Surveys**

Physical feature survey will have to be conducted for the whole of project (rural or rural-urban fringe) area. Location and dimension (X, Y, Z value) of all existing structures including building type, height, floor type and use of each floor, year of construction/ age, collection of household population data, Ownership of the building and to transfer the data compatible to cohort population forecast, homestead boundary, homestead area, cropping pattern, cropping intensity, location of riser of gas of each household, location of well, tube well, pond, tap water etc, toilet with sewerage facility, safety tank and open drain etc. all water control structures including khal (natural and man-made), cross section of waterbodies specially khal , hill areas with one feet interval and existing routes/ roads, embankments, dykes, box culvert, sluice gate etc., vegetation cover, culmination between flood Plain and homestead, ground water harvesting devise, river ghat/ganj, railway station and railway line, all type of roads, location of all existing exposed light/electric, telephone posts and national electric grid/towers/transformer, gas, water, sewerage line etc. Tiller also will conduct survey with RTK GPS and total station survey for 15.58 sq.km and 13.11 sq.km urban areas of Barguna and Patharghata

respectively, Rural survey with Satellite image and ground-checking of major settlements through RTK GPS and total station survey of the Project area (All kind of Survey Uses by RTK GPS). Two nos BM Pillar for Barguna Municipality area, Two nos BM Pillar for Patharghata Municipality area. Rural survey with Satellite image and ground-checking of major settlements through RTK GPS and total station survey for the rural area. One nos BM Pillar for rural survey area each union. Different Types of Survey (as Directed by PD) and Studies (Different scale of survey maps and print outs will be finalized in consultation with the PD).

## **2.7 Topographic Survey**

The Topographic database shall be obtained from geo-referenced 3-D (four band) image and further cross-checked and ground truthing by using RTK-GPS and Total Station to obtain and verify 3-D data (X, Y, Z value) on location and alignment of all data obtained from physical feature survey including roads, flood embankments and other drainage divides. Location and alignment of all drainage and irrigation channels/canals showing depth and direction of flow. Closed boundary/outline of homestead, water bodies, swamps, forest etc. junctions, spot heights or land levels at roughly 10 m intervals for the Plain area, appropriate interval for sea area and close interval as and when required such as dyke, embankment, roads, rail-roads, river bank, rail line etc.

## **Chapter 3**

### **3. Mobilization and Orientation**

#### **3.1 The Executing Agency**

Urban Development Directorate (UDD) was established through a government order in 17th July 1965. This directorate is working under the Ministry of Housing and Public Works. Since its inception, UDD is contributing in developing Master Plan/Land Use Plan for small, medium and large town and cities of Bangladesh. Thus it is contributing in development of the localities and lifestyle of peoples of Bangladesh in direct and indirect ways.

Vision of UDD is to augment the quality of life of the people by improving the environment through planned development activities for adequate infrastructure, services and utility provision, to make optimum utilization of resources especially land and to ensure a geographically balance urbanization. It also aims to reduce local and regional disparity by alleviating poverty and to create good governance in the country through people participation and empowering of woman. Urban Development Directorate would welcome any co-operation, assistance and patronage from national and international quarters.

#### **3.2 The Consultant**

**Tiller** was founded in 2009 and grown up with focus on Urban & Regional context, developing the avenues in Urban Designing & Planning, Infrastructure Design, Disaster Management, Social Research, GIS Mapping and IT services. **Tiller** is led by a robust, talented & experienced group of Urban Planner, Engineer, Architect, Social Scientist, Environmental scientist and IT professionals. The agreement between Urban Development Directorate (UDD) and consultant Tiller has been held on 21 June, 2018 Package-03: Establishment of BM Pillars, Physical Feature, Landuse & Topographic Survey under “Preparation of Payra-Kuakata Comprehensive Plan focusing on Eco-Tourism (PKCP)”.



Figure 7: Project contract signing ceremony between Urban Development Directorate (UDD) and Tiller on 21 June, 2018

### **3.3 Mobilization of the Consultant's Team**

The contract signed on 21 June 2018, the team of Tiller has initiated their project activities with immediate action. A progress line-up from the consulting team is being reported here on different components of task: Md Tamzidul Islam Managing Director, Tiller meet with PMO about some issues like database preparation, database format development, GIS data collection and processing, typology of physical feature, major obstacle to collect data and others factors that might have influence for this project. Barguna Sadar and Patharghata are the two diversified Upazila in Bangladesh. A lot of opportunities relating to planning and development existing in these Upazila. Tourism and Economic zone development are the most influence factor for this area and have a potential source of economic growth in Bangladesh. To prepare a successful plan physical feature survey has a great influence and for this project we will accomplish the task including others component of this package under the Payra Kuakata Development Plan.



Figure 8: PIC meeting

### **3.3 Initial Meetings**

#### **3.3.1 Work Schedule**

Preparation and adjustment work is undergoing with Microsoft Project. The submission has scheduled to be made within 30th onward.

#### **3.3.2 Satellite Imagery Collection**

Required processed satellite images will be collected from the client Urban Development Directorate (UDD).

#### **3.3.3 Mouza Map Preparation**

Digitized and georeferenced mouza maps will be collected from the client Urban Development Directorate (UDD).

#### **3.3.4 Inception Report Preparation**

For inception report preparation it has scheduled to submit within 2 week after preparing the mobilization report.

#### **3.3.5 Survey Activities**

Already the sites have been visited by the consulting team members to get the proper knowledge of the current status of the socio-economic condition, the infrastructures and the problems of the Pourashava and Upazila. The team has also rented a house for office setup.

## Chapter 4

### 4. Work Program

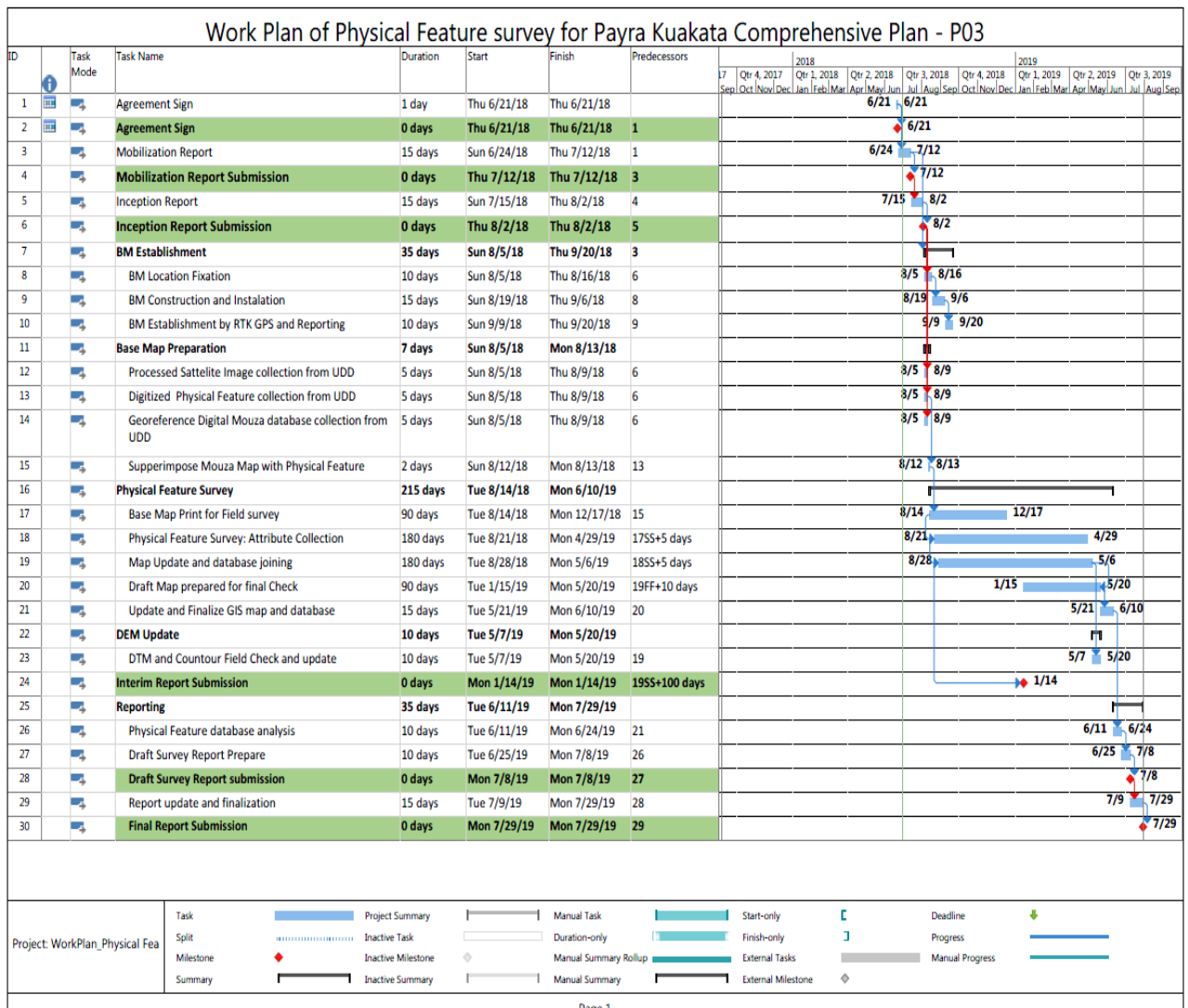
#### 4.1 Overview

The consultancy service would commence with the debriefing meeting. This meeting would help the consultant team to introduce themselves to the Counterpart with UDD, and would facilitate to delivery better working relation during the project works in performing the reconnaissance survey of PKCP project area. At the meeting the team would get in in-depth overviews of the relevant materials that PKCP have in their possession and share their experience in preparation an exhaustive list of collection of documents and drawings to be reviewed.

#### 4.2 Work Plan

The work plan has been prepared by consultation with the project director of this project.

Table 3: Work plan of the project



### 4.3 Team composition and task assignment for the project

Table 4: Team composition and task assignment for the project

Name of Staff	Firm/ Organization	Area of Expertise	Position Assigned	Task Assigned
Tamzidul Islam	Tiller	Expert in GIS/RS, Digital Data Management, Mapping for City and Town Master Plan, Town Infrastructure Development and Regional Development Project.	GIS Expert	<p>(i) To take over the charges of prepare topographic, physical feature_landuse and other related map of the area,</p> <p>(ii) To conduct GIS based analysis for preparation of the planning package for the project as directed by Team Leader and the PD.</p> <p>(iii) Installation and troubleshooting of GIS in UDD project office and head office;</p> <p>(iv) Ensure the quality of the map and related work.</p> <p>(v) To support consulting team members to prepare multi-sectoral planning component by using GIS and integrate these components into the planning package.</p> <p>(vi) Preparation of reports and plan of the project as assigned by the PD; &amp; (vii) Any other related Jobs as assigned by PD</p>
Tanvir Ahmed	Tiller	Expert in digital data preparation and management, mapping, survey design, AutoCAD, GIS etc.	Survey Expert	Designing and conducting of survey, Monitoring data collection to ensure quality data for the project, Processing of collected data, Assist in final report preparation.
Mustafigur Rahman	Tiller	Experience in the Structure Plan, Master Plan and Detailed Area Development Plan for different Metropolitan City	Junior Urban planner	(i) To assist the team leader to take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team;

Name of Staff	Firm/ Organization	Area of Expertise	Position Assigned	Task Assigned
		as Urban Planner and Preparation of Pourashava Master Plans of Chittagong Region under UTIDP, LGED as Urban Planner and has also expertise in the Structure Plan and Action Area Plan of Madaripur and Rajoir Upazila, Madaripur District.		<p>(ii) To assist the team leader in reviewing the existing plans and implementation problems;</p> <p>(iii) To assist the team leader in reviewing land use planning guidelines considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics,;</p> <p>(iv) To assist the team leader in reviewing land category for the project area; and also to prepare land use matrix; (vi) To assist the team leader to identify and plan development project for the area; and also to interpret the recommendations of sectoral studies into spatial form</p> <p>(v) To assist the team leader in formulating plan implementation strategy and policy;</p> <p>(vi) Preparation of reports and plan for the project as assigned by the PD:</p> <p>(vii) To be responsible for Knowledge transfer to Project Personnel; and (viii) Any other related Jobs as assigned by PD.</p>
Jubaer rashid	Tiller	Experienced in preparing development plan, GIS, RS, Photogrammetry etc.	Photogrametric Expert	To manage and conduct photogrammetric data Preparation of 3D map Assist GIS expert and urban planner in quality control of the collected data.
Nasrin Sultana	Tiller	Expert in GIS/RS, Digital Data Management, Mapping for City and Town	Junior GIS Expert	To conduct GIS based analysis for preparation of the planning package for the project as directed by GIS expert.

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<b>Name of Staff</b>	<b>Firm/ Organization</b>	<b>Area of Expertise</b>	<b>Position Assigned</b>	<b>Task Assigned</b>
		Master Plan, Town Infrastructure.		Installation and troubleshooting of GIS in UDD project office and head office; Ensure the quality of the map and related work.  To support consulting GIS Expert to prepare multi-sectoral planning component by using GIS and integrate these components into the planning package.
Riazul Islam	Tiller	ArcGIS V10, 10.1, 10.2, 10.5	GIS/RS Technician	Management of GIS data collected from field survey Assist GIS expert in processing the data Assist planner to prepare the reports.

## 5. Reconnaissance survey and activity

### 5.1 Overview

Reconnaissance survey has done to clarify the brief survey of the study area that can provide the assessment team with valuable information to help plan the field data collection. After a meeting between Project Director (PD) and Project manager (PM) with the consultants for reconnaissance survey was scheduled to start from 11 July, 2018. An official letter was issued for the Reconnaissance survey which have been included in the annexure of this report.

### 5.2 Team Member of the reconnaissance survey

1. Tamzidul Islam, Managing Director, Tiller
2. Mehedi Mudasser, Urban Planner
3. Romim Samaddar, GIS Analyst

### 5.3 Meeting with Local Stakeholders

In the reconnaissance survey several meeting was held with the following stake holders

1. Mayor, Barguna Sadar Municipality
2. Mayor, Patharghata Municipality
3. Chairman, Barguna Sadar Upazila
4. Chairman, Patharghata Upazila
5. Assistant Engineer, Patharghata Municipality
6. Assistant Engineer, Barguna Sadar Municipality
7. Meeting with Local people
8. Meeting in tea stall

### 5.4 Document and Maps Collected During the Reconnaissance Survey

1. Geology map-sedimentation
2. Geology map-fault lines
3. Hydrology map-SRTM DEM
4. Hydrology map
5. Soil major type
6. Topographic maps of 1942
7. Broad landuse map
8. Statistical Data from Bangladesh Burro of Statistics (BBS)
9. Pourashava map, UDD

## 5.5 Major Findings

Several times the physical plan have been done in this area, especially in the municipality area, but none of those plans have been implemented. The development should be in a proper manner by maintaining rules and regulation to protect the liveable environment. Lack of infrastructure, drainage, waste disposal point, recreational spot etc. are the major problems of these areas.

### 5.5.1 Basic Information of the Study area

In Barguna Sadar Upazila and Patharghata Upazila the population are 261343 and 163927 where population density is 575.15 and 423.19 per sq. km. in a literacy rate of 62.0% and 63.2% respectively. The basic information of Barguna Sadar and Patharghata are given bellow which have been collected from secondary sources.

Table 5: List of institution of the project area: Barguna Sadar Upazila

SL No.	Name	Number
1.	Govt. Primary Schools:	106
2.	Private Primary School	104
3.	Community Primary School	11
4.	Junior High School	11
5.	High School	58
6.	Madrasas	41
7.	Hat Bazaars	17
8.	Post Offices	32
9.	Upazila Health Complex	11
10.	Upazila Health and Family Planning Center	07

Table 6: List of institution of the project area: Patharghata Upazila

SL No.	Name	Number
1.	Govt. Primary Schools:	61
2.	Non-Registered Primary School	1
3.	Registered Primary School	76
4.	Kindergarten School	6
5.	NGO School	21
6.	Govt. High School	0
7.	Non-Govt. High School	29
8.	Madrasas	18
9.	Hat Bazaars	23
10.	Post Offices	19
11.	Upazila Health Complex	4

### **5.5.2 Meeting with Stakeholders and Project Area during Reconnaissance Survey**

The survey firm has conducted reconnaissance survey including Focus Group Discussion, Tea Stall Meeting etc.; meeting with the local public representatives including Mayor of the municipalities, Upazila chairman, counsellor etc. The photos of the reconnaissance survey have been attached below.

### **5.5.3 Meeting with Municipalities and Upazila Parishad**

There are two municipalities (Barguna Sadar and Patharghata) in the Barguna Sadar and Patharghata Upazila. By discussion with the municipality member and official it is found that there is a lot of problem in plan implementation. Lack of infrastructure like-road, water supply, electricity etc. is a common phenomenon. In the present situation these two Upazila might be a virtuous economic hub in the economic development of Bangladesh and they are very much enthusiastic for the Payra-Kuakata Comprehensive Plan. The Upazila Chairman of Patharghata Upazila requested to prepare the plan considering the tourism development. He mentioned the lack of recreational park in the Pourashava area, huge drainage problem, and scarcity of electricity. The Chairman of Barguna Sadar Upazila's is not out of that. He also mentioned same type of problems. Both Chairmen said that unemployment problem is the main hindrance of their region. The Mayor of the Patharghata Upazila said that generally the wastage at household level are being dumped besides the river which created water pollution and overall environmental pollution. He requested to draze the khal of the Upazila. The Upazila Chairman proposed that if any ship building industry and other industries related to fishing can be established to vibrant the economy of the Upazila. As besides the Payra port, the Upazila is not developed. Many infrastructural development is an urgent need. Both Mayor mentioned about the low budget which are given to them per year about 60 lac taka. These are not sufficient at all. During rainy season the two upazilas become gonr under the water. Some specific issues came out from the voice of the Mayor of Barguna Sadar Upazila are -footpath and drainage are urgent need for the people of Barguna, ensure amusement park for the purashava people, in Upazila Health complex people can't get proper treatment due to the unavailability of doctors. The khas ponds should be re-excavated to attain the rain water which ensure the demand of drinking water of the Barguna Sadar Upazila people, illegal infrastructures should be demolished from the Varani Khal and Khaddo river to save the Pourashava from water logging, truck terminal is necessary to reduce traffic jam, after establishing bridges on Bishkhali and Payra river in future, a bypass road is necessary to build at the south side of the Pourashava, the educational institutions have to be newly established or repaired. Eco tourism can be finalized in Balaituli, Gulbunia, Noltona, Ferryghat char, and Majher char, Majher Char can be declared as the economic zone, Veribadh road is necessary, more cyclone shelter cum school are needed and finally the Pourashava office should be replaced in dedicated zone so that the activities can be run properly.



Figure 9: Meeting with Mayor of Barguna Sadar Pourashava (Right) and Patharghata Pourashava (Left)



Figure 10: Meeting with Chairmen of Barguna Sadar Upazila (Right) and Patharghata Upazila (Left)

#### 5.5.4 Tea Stall Meeting at in front of Barguna Sadar Paurasava

During reconnaissance survey a tea stall meeting was done to understand the people’s perception about present situation of the study area. Most of the people are concerned with road, drain, pure drinking water. They requested to prepare ‘Ghatla’ in the water for the other side of the people detached from the Pourashava. They have suffered a lot in crossing the khal. The women and children can’t come to the Pourashava at that way. They have to pass a long distance to come to the Pourashava is the main hindrance of getting better education and health treatment.

Table 7: List of people joined in tea stall meeting

Sl	Name	Address
01	Md. Lal Mia	2 No. Ward, Barguna Sadar Pourashava
02	Abdul Kobir Haoladar	4 No. Ward, Barguna Sadar Pourashava
03	Ripon Mollik	6 No. Ward, Barguna Sadar Pourashava
04	Raju Molla	6 No. Ward, Barguna Sadar Pourashava
05	Md. Shafiq Sheikh	7 No. Ward, Barguna Sadar Pourashava



Figure 11: Meeting with local people at tea stall



### **5.5.5 Focus Group Discussion (FGD) at Main Bazar of Barguna Sadar and Kathbazar in Patharghata**

A focus group discussion was arranged at main bazar of Barguna Sadar and Kathbazar in Patharghata Upazila to understand the local scenario of socio-economic activities and the problems they actually face to live and lead a happy life. They are very much enthusiastic about the development plan of Barguna Sadar and Patharghata Upazila. They need more economic activities so that more job opportunities can create. They said that electricity, medical facilities and communication system are the main problem. Bothe Upazilas' people mentioned that outside the Pourashava areas most of the roads are katcha suffered a lot for the people living outside the Pourashava areas. The people of Barguna Upazila said that especially 4, 6 and 7 no. ward are more vulnerable in that case. They are not satisfied with services delivered from the local govt. Both groups mentioned the water logging problem. Besides they are very much concerned with industrial development that hinder the livable environment.



Figure 12: Focus group discussion with local people

## **5.6 Some Scenario of the Project Area**

For better understanding of the project area some snaps have been taken during reconnaissance survey. Patharghata Upazila mainly and also Barguna Upazila are two of the important areas for tourism and economic development. Haringhata, Laldia Forest and Padma Parjatan Kendra are the wonderful tourism locations in the project areas.

### **5.6.1 Union of the Study Area**

Barguna Upazila is comprised of one municipalities and 10 unions and Patharghata Upazila is comprised of one municipality and 6 unions. To sustain any kind of development, local government has to take a vital role. In the project area, most of the union parishad are physically well structured. A snaps of the union parishad are illustrated below with photos.

### **5.6.2 Potential and Mentionable Rivers of the Areas**

In Barguna Sadar Upazila Burishwar, Bishkhali, Khagdon and Nalidon rivers and Patkata, Barguna, Junia, Lalbongola and Phuldhalua canals are notable. And Patharghata Upazila is bounded by mathbaria and bamna upazilas on the north, bay of bengal on the south, barguna sadar and the bishkhali river on the east, sarankhola upazila and the Haringhata river on the west.

### **5.6.3 Economic Activity of the Study Area**

Like others' growth center of Bangladesh in Barguna Sadar and Patharghata Upazila regular economic activities are performed. A snap of economic activity is shown below-



Figure 13: Wood market besides Bishkhali river in Patharghata Upazila (Left) and Bazar in the Municipality area of Barguna Sadar

### **5.6.4 Tourism Spot of the Study Area**

There are two important tourism location in the Patharghata Upazila named- Haringhata Forest Eco-Park and Laldia Forest. There are a lot of opportunity can be created if these are properly designed and maintained. And in Barguna Sadar Upazila, there is no specific tourism spot except the Padma parjatan Kendra. The available transport are bus and motorbike to go there.



Figure 14: Haringhata Forest Eco Park of Patharghata Upazila under Barguna District



Figure 15: River view carries the potential of eco-tourism of Patharghata Upazila under Barguna District

**5.7**

## **5.7 Housing and Household Characteristics**

### **5.7.1 Household, Population and Density**

Table 8: Household, population and density of the two Upazila

Upazila	Household	Population (000)			Sex ratio (M/F)	Average size of household	Density per sq. km.
		Male	Female	Both sex			
Barguna Sadar	62086	129	133	262	97	4.2	575
Patharghata	43085	81	83	164	97	3.8	423
<b>Total</b>	<b>215842</b>	<b>438</b>	<b>455</b>	<b>893</b>	<b>96</b>	<b>4.1</b>	<b>488</b>

### **5.7.2 Type of Housing Structure**

Housing structures observed in both Upazila for dwelling households are jhupri, kutcha, semi-pucca and pucca. Among housing structures in the upazila, predominant is kutcha structure. In Barguna Sadar Upazila, dwelling households having such structures are

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76.61% in the upazila. The kutcha housing structures is reported as 78.86% for rural Dwelling households compared to 57.37% Urban Dwelling households. Dwelling households with pucca housing structures are only 1.45% in the upazila. Rural and Urban Dwelling households are better in housing standard because as many as 35.09% of them are found having semi-pucca and pucca structure, in contrast to merely 1.57% Rural Dwelling households.

And in Patharghata Upazila, dwelling households having such structures are as many as 68.40%. The kutcha housing structure is reported as 67.54% for rural dwelling households compared to 73.22% urban dwelling households. Dwelling households with pucca housing structure are only 0.62% in the upazila. Rural and urban dwelling households with pucca housing structure are found 0.22% and 2.79% respectively. Urban dwelling households are better in housing standard because as many as 9.29% of them are found having both semi-pucca and pucca structures, in contrast to merely 1.59% rural dwelling households.

### 5.7.3 Exposure to Risk

Table 9: Union-wise population exposure to risk in Barguna Sadar and Patharghata Upazila

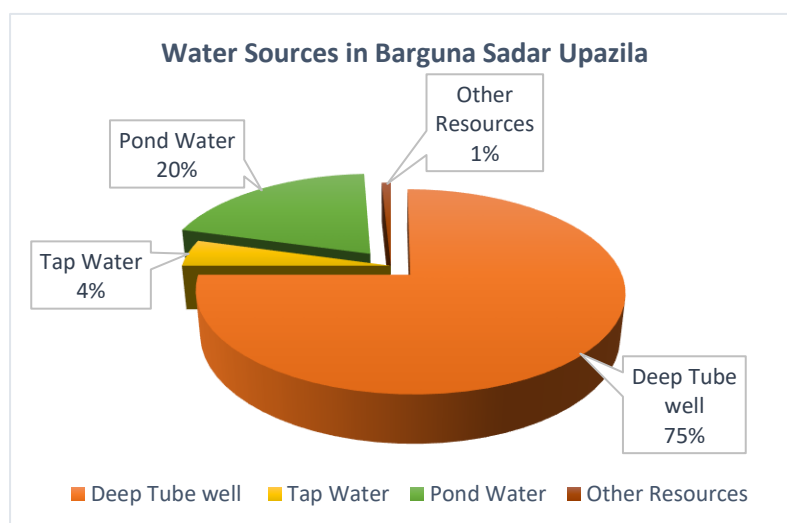
Upazila	Union	High Risk area	Risk zone	Risk free zone
		%	%	%
Barguna Sadar	Ayla Patakata, Badarkhali, Barguna, Burir	17.05	7.93	3.03
Patharghata	Char Duanti, Kakchira, Kalmegha,	19.09	-	-

Source: (Tamima, 2009)

### 5.7.4 Source of Drinking Water

In Barguna sadar Upazila, among source of drinking water, tube-well is predominant. Dwelling households reported using this source is 70.68% on the other hand dwelling households found drink deep tube-well water are 22.0%, tap water 1.27%, pond water 5.82% and water of other sources 0.24%.

In Barguna Sadar Upazila, among sources of drinking water, pond water is predominant. Dwelling households reported drinking pond water is



51.25%. On the other hand, dwelling households found drink tube-well water is 30.09%, deep tube-well water 15.76%, tap water 1.75% and water of other sources

### **5.7.5 Sanitation**

Access to sanitary latrines in Barguna Sadar upazila is recorded for 44.15% Dwelling households; in rural segment such households are counted 38.69% and in urban locality much higher 90.80%. Non sanitary latrines are found being used by 50.97% dwelling households. In rural and urban regions such households are 56.32% and 5.18% respectively. Dwelling households making use of open spaces in the upazila are 4.89%. And Access to sanitary latrines in Patharghata upazila is recorded for 44.15% dwelling households; in rural segment such households are counted 38.69% and in urban locality much higher 90.80%. Non sanitary latrines are found being used by 50.97% dwelling households. In rural and urban regions such households are 56.32% and 5.18% respectively. Dwelling households making use of open spaces in the upazila are 4.89%.

### **5.7.6 Access to Electricity**

In Barguna Sadar and Patharghata Upazila, dwelling households Connected to the power network are found 15.24% and 5.43%. 56.49% and 25.41% urban households and 10.41% and 1.81% rural households are found connected to power supply in Barguna Sadar and Patharghata Upazila respectively.

## **Chapter 6**

### **6. Conclusion**

This report is part of the project activities and progress of work. This will guide the future activities including field surveys, data collection, analysis, report preparation and map production. The primary profile of the project area based on secondary source and collection of data has been useful in understanding the characteristics of the project area.

It is understood that the project area mainly in Barguna Sadar and Patharghata Upazila and in these Upazila there are a lot of opportunities for economic growth comprising to tourism and industrial zone development. So, the successful completion of this project is very important for development of the project area in our national context and in the regional context.